

A THREE-PART DEBATE PART I

A CRITICAL EXAMINATION OF “THE MYTH OF NUCLEAR DETERRENCE”

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[Editor's note: The Nonproliferation Review presents here a debate in three parts, featuring a critique by Derrin Culp of Ward Wilson's 2008 award-winning article "The Myth of Nuclear Deterrence," a response from Wilson, and a finally a closing counter from Culp. We invite readers to join the debate via letters to the editor (sschwartz@miis.edu).]

Several years ago, Ward Wilson presented in this journal a wide-ranging challenge to what every generation of national security scholars and practitioners since the end of World War II has been taught about nuclear weapons. He asserted that nuclear deterrence amounts to far less than its proponents have claimed and provocatively suggested that nuclear deterrence is a myth. Relying upon both empirical and theoretical objections to nuclear deterrence, he concluded that its failures were clear-cut and indisputable, whereas its successes were speculative. Yet in spite of a flourishing trade in scholarly articles, think tank reports, blog posts, and opinion pieces concerning nuclear deterrence, nobody—including nuclear weapons scholars—has ventured more than a limited critique of Wilson's essay. There are, however, serious shortcomings in Wilson's arguments—deficiencies that make his essay an unpersuasive brief against nuclear deterrence. Wilson's thesis could be correct. His arguments, however, are unlikely to persuade any skeptical members of Congress, upon whom future progress in arms control depends, to reconsider the value they attach to nuclear weapons and nuclear deterrence.

KEYWORDS: Nuclear deterrence; nuclear weapons; United States; Soviet Union; Israel; United Kingdom

It has been more than three years since the *Nonproliferation Review* published Ward Wilson's award-winning essay, "The Myth of Nuclear Deterrence," in which he argued that nuclear deterrence is an unsound basis for a national security strategy.¹ Wilson made three key claims: first, nuclear deterrence rests upon a fatally flawed fundamental premise; second, deterrent threats are inherently not credible and lead antagonists and enemies to behave in ways that are inimical to the goals of deterrence; and third, nuclear deterrence has an unalloyed record of failure.

Numerous articles, blog posts, and opinion pieces advocating the abolition of nuclear weapons have cited Wilson's essay to support claims that absent proof that nuclear deterrence "works," the global community must banish nuclear weapons forever.² Key arguments from his essay also inform a substantial policy piece, "Delegitimizing Nuclear Weapons: Examining the Validity of Nuclear Deterrence," which Wilson coauthored for the James Martin Center for Nonproliferation Studies (CNS) for the Swiss Federal Department of Foreign Affairs.³ Some have claimed that Wilson "is increasingly the source of fundamental

Nonproliferation Review, Vol. 19, No. 1, March 2012

ISSN 1073-6700 print/ISSN 1746-1766 online/12/010051-18

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<http://dx.doi.org/10.1080/10736700.2012.655085>

challenges to the nuclear status quo," and that he "is well on his way to deconstructing the most fundamental beliefs about nuclear weapons."⁴ Given Wilson's comprehensive challenge to deterrence orthodoxy, critiques of the essay have been surprisingly few and far between.⁵

This article asserts, however, that there are significant deficiencies in Wilson's arguments for all three of his fundamental claims about nuclear deterrence. As long as members of the nuclear zero movement intend to rely upon this essay as an intellectual resource, they should be aware of these weaknesses.

Problem One: Deterrence Rests upon a Shaky Theoretical Foundation

Nuclear deterrence theory, according to Wilson, is based on the misguided belief that threats to retaliate by destroying cities and killing their inhabitants will induce sufficient fear and restraint among potential adversaries that they will not attack. "At the heart of the theory," Wilson writes, "is faith that the prospect of city destruction creates decisive leverage. No exchange is likely between adversaries with nuclear weapons . . . because a fight in which numerous cities are destroyed is unacceptable. In a conflict between a state with nuclear weapons and a state without nuclear weapons, even if only a few weapons are used against cities . . . the state without would immediately surrender."⁶

Wilson would have us believe that there has been widespread misconception among students of military history that destroying an enemy's cities is sufficient to elicit surrender in virtually all circumstances. He also conflates enemy decisions to surrender and enemy decisions not to attack (the latter being the objective of deterrent threats). As in the immediately preceding quotation, Wilson moves back and forth between the concepts of surrender and forbearance as if they were interchangeable; to Wilson, two different beliefs—that actual city destruction almost always brings about surrender, and that threats of retaliatory city destruction will almost always lead enemies to choose not to attack—are virtually indistinguishable.

Wilson invokes nuclear scholars from Bernard Brodie to Thomas Schelling to establish that "destroying cities . . . is central to nuclear war," and that "city attacks [are] squarely at the heart of nuclear deterrence."⁷ He then asserts that this emphasis on city destruction results from the belief that political leaders care deeply about those they govern, or at least identify strongly with them. "We assume," he writes, "that threats with nuclear weapons work because we assume that threats to harm civilians matter. We assume, in other words, that leaders are influenced in decisions about war and surrender by the deaths of noncombatants."⁸

What he means is that when nuclear powers communicate deterrent threats that hold opponents' cities at risk, it is not because enemy leaders are reluctant to see their economy, infrastructure, government buildings, cultural heritage, or environment destroyed. Instead, nuclear powers target cities because they assume that enemy leaders are—like them—sentimental. They are influenced by the deaths of co-nationals or members of the same clan or "tribe"; the deaths of people with whom the leaders identify and value as "their own" or similar to them; or the deaths of people on whom the leaders look paternally. Having witnessed the destruction of one of their cities and the deaths of their brethren, their people,

or their children, enemy leaders would certainly surrender rather than suffer further losses. And, if they would be inclined to capitulate following an actual city attack, they will forbear from attacking in the first place if faced with a deterrent threat targeting their cities.

The first half of Wilson's paper is an effort to prove that these are bad assumptions and that because nuclear deterrence relies upon them, it must be faulty as well. "The evidence," he writes, "supports the notion that there is a very high tolerance for civilian suffering in war," and as a result, "city attacks do not coerce."⁹ He seems to think that if he definitively disproves the idea that city destruction leads to surrender, he will—through some obscure logic—persuade his audience to believe that nuclear deterrence actually is built upon that very notion. He offers examples across a millennium of city destruction that did not lead to surrender—Hamburg, Coventry, the Japan fire bombings, Samarkand, Bokhara, Magdeburg, Atlanta, and Richmond. With each example comes the implied rebuke: "See, believers in nuclear deterrence, wrong yet again!"

In many of Wilson's examples, though, it is no great revelation that the destruction of a particular city was not militarily decisive. It is almost as if his initial premise had been that nuclear deterrence rests upon the belief that most apples are blue, and he then had proceeded to reveal the fragility of nuclear deterrence theory by carefully demonstrating that most apples are red.

What makes his claim initially seem reasonable is its appeal to the sensibilities of twenty-first-century Americans—the idea that when political leaders decide how to react to nuclear deterrent threats, the potential toll in human life (in particular, the lives of co-nationals) is the paramount consideration. This is what permits readers to nod in agreement and—at least momentarily—buy into Wilson's position that nuclear deterrence theorists actually believe in the power of city destruction to bring conflicts to a screeching halt. To someone who never had considered the issue, it would be completely understandable if nuclear deterrence theorists and nuclear war strategists had assumed that city destruction could (or even must) have a significant impact on military conflicts. Even if erroneous, it would ring true.

It would, however, be totally unexpected if nuclear deterrence theorists had thrown their entire professional and disciplinary training out the window and ignored the historical and political context of the Thirty Years War or Genghis Khan's Khwarazm campaign (two of Wilson's primary examples). Abundant information about both conflicts was available during the Cold War; it is not the product of very recent research and scholarship.

Although there was a Khwarazmian Empire, there was no Khwarazmian nation or tribe.¹⁰ The Turkish Khwarazm shahs imposed their territorial control little more than a decade before the Mongol invasion began in 1219. The rulers and administrative class were indifferent to the indigenous Persian population, economically exploited it, and antagonized local Islamic religious leaders. The largely mercenary Khwarazmian army was renowned for its brutality, and the shah's subjects periodically reciprocated by massacring bureaucrats and soldiers. "In none of the provinces they conquered did the Khwarazm Shahs ever succeed in creating a bond of interest between themselves and their subjects," according to historians Ali Sevim and Clifford Bosworth.¹¹ In fact, when Genghis Khan appeared in the east, the reigning shah immediately fled west. He did not

identify with the inhabitants of the cities that Genghis Khan attacked, mourn the civilian deaths, or stick around long enough even to consider surrendering.

As to the destruction of the Saxon city of Magdeburg in 1631, Wilson doesn't indicate why any of the Holy Roman Empire's thousand separate and semiautonomous political units might have been motivated to consider surrender because the deaths at Magdeburg mattered to them. Certainly the Catholic Habsburg emperor, whose own troops besieged Magdeburg, would not have considered surrender on account of civilian lives. Nor would have the other North German Protestant princes. In order to preserve or restore their traditional political, economic, and religious privileges, these princes subjected their population and territories to violence for decades, reacting to the ebb and flow of their military successes and failures and those of the foreign kings who intervened in pursuit of their own agendas. One can scarcely imagine that the monarchs of Denmark, Sweden, France, and Spain—all major parties to the conflict by 1631—cared at all about the deaths in Magdeburg.

It is unlikely that anyone who had read even a little bit of this history would have come away with the conclusion that city destruction usually brings about surrender or been surprised that it did not in these instances. One is left to wonder if Wilson believes that the "wise men and women"—American and Soviet—who developed deterrence theory were merely unaware of the historical record he cites or if instead they ignored or grossly misinterpreted it.

As for the city bombing campaigns of World War II, the examples of which Wilson also relies on, he simply states that "World War II bombing, despite the predictions, gives little support to the claim that bombing civilians is decisive."¹² Whose predictions? Wilson's authorities are the Italian general Giulio Douhet, author of *The Command of the Air* (1921) and Billy Mitchell, a US Army general who was court-martialed for insubordination and stripped of his rank in 1926.¹³ Although Douhet and Mitchell died in 1930 and 1936, respectively, Wilson gives the impression that during World War II they were at the table as leading advocates of city bombing. He does not offer any evidence that the military and political leaders who planned and authorized the bombing campaigns expected them to lead to prompt surrender.

A review of an admittedly small and arbitrary selection of analyses from the vast literature on strategic bombing in World War II strongly suggests that few of its proponents predicted that it would lead to surrender in either theater.¹⁴ Neither British nor US political and military leaders had a unified or internally consistent viewpoint on what strategic bombing could achieve, and both nations continuously reassessed their approach. Competing doctrinal schools emphasized targeting of cities and civilians (to break national morale), aircraft factories, heavy industry, small home and neighborhood-based suppliers, transportation infrastructure and logistical bottlenecks, and oil production and electrical transmission. British bombing doctrine emphasized destroying the Germans' will to fight, while US city bombing—in both Europe and Japan—consistently emphasized disrupting production that supported the enemy war effort. Yet this emphasis was neither absolute nor doctrinaire. Allied leaders generally felt it was better to bomb whatever they could—regardless of its genuine impact on the enemy—as long as they didn't lose an unacceptable number of planes and crews. As military historian

Tami Davis Biddle wrote in 2002, "By the winter of 1944–45 [the Americans] targeted just about everything they could think of, hoping to hit upon some means of affecting enemy behavior, directly or indirectly."¹⁵

During World War II, Sir Arthur Harris of the Royal Air Force's Bomber Command may have been the only true believer in the war-ending power of city bombing. He ardently believed that air power could deliver a lethal blow if properly resourced and freed from diversions such as antisubmarine warfare and providing cover for ground operations. His boss Winston Churchill, on the other hand, profoundly and unabashedly questioned the efficacy of strategic bombing to the bitter end. Even in June 1945, US military planners viewed strategic bombing not as a means to precipitate surrender, but as a way to weaken Japanese defenses and make the impending invasion less deadly to Americans.

Wilson's arguments hinge not only on the implausible premise that proponents of nuclear deterrence have totally misread the history of city attacks, but on the equally implausible notion that they have embraced a simplistic theory of how wars end: if an enemy's cities are destroyed, it will surrender.

Over the last two decades, scholars of what political scientists call "war termination" have tended to agree with political scientist Dan Reiter's assessment that "we know relatively little about how wars end, in contrast to the mountain ranges of ideas and scholarship we have about how wars start."¹⁶ Security studies scholar Elizabeth Stanley wrote in 2009 that "at a theoretical level, the question of war termination remains largely unanswered."¹⁷ Gideon Rose, now the editor of *Foreign Affairs*, asserted in his doctoral dissertation that "the facts on the final phases of most conflicts remain undigested."¹⁸ In his view, "the one insight common to the best work in the area is that ending a war is usually a torturous process."¹⁹ Much of the work on which this scholarship is based was available during the Cold War; it is hard to imagine that nuclear deterrence theorists were unaware of or dismissed it in favor of a mechanistic, binary theory of surrender.

Having posited that nuclear deterrence is grounded in faith that city destruction almost always elicits surrender, Wilson thereafter proceeds as if it is understood that deterrence theory assumes that threats to destroy cities in retaliation almost always elicit forbearance. He doesn't explain how he made this leap, or even acknowledge that he has made it, but the argument has *prima facie* validity anyway. An enemy that would surrender upon the actual destruction of its cities could reasonably be expected to refrain from attacking, if faced with retaliation that would destroy its cities.

As University of Leeds international studies professor Christoph Bluth has pointed out, forbearance and surrender involve two very different kinds of decisions, one made while deterrence still has a chance to succeed and the other after deterrence already has failed.²⁰ Scholars of war termination observe that both the decision-making process and the cost-benefit calculations when a state is approaching the end of a military conflict are likely to be very different from those that precede the start of a war. The most basic distinction is that decisions to attack or forbear are based upon much less information about antagonists' intentions, motivations, and capabilities than decisions to surrender or continue fighting; the latter come after additional months or years of diplomacy, battles, and changing domestic and international politics.²¹

Rose noted that “the politico-military decisions which national leaders make at the end of a war are similar theoretically to those made at the beginning, but the former occur against the backdrop of the fighting itself—the triumphs and defeats experienced, the costs incurred and the hopes and passions raised.”²² Stanley wrote that “belligerents continuously update their expectations [of victory or defeat, gains and costs] throughout [a] war, based on observed battle outcomes, rejected diplomatic offers and unreasonable demands from the other side.”²³ Rose cited theorist Carl von Clausewitz’s observation that “the original political objects [of a war] can greatly alter during the course of the war and may finally change entirely since they are influenced by events and their probable consequences.”²⁴ Wilson’s unacknowledged pivot from “deterrence theory assumes that city destruction causes surrender” to “deterrence theory assumes that threats of city destruction cause forbearance” is therefore dubious.

If in fact nuclear deterrence does rely fundamentally upon the threat of city destruction, such faith probably didn’t result from nuclear strategists grossly misreading the record of city destruction, ignoring the scholarship on war termination, treating forbearance and surrender as the same thing, or harboring romantic and historically unsupported notions of how Harry Truman, Dwight D. Eisenhower, Joseph Stalin, or Nikita Khrushchev would have reacted to destruction of a major city.

So how else might nuclear deterrence theory have acquired such reliance? Perhaps, after all, national leaders actually are averse to losing their infrastructure, natural environment, palaces, and cultural patrimony—even if indifferent to the survival of their countrymen. The most likely factor, however, is the most obvious one: a sober comparison of the magnitude of destruction nuclear weapons could inflict versus anything mankind previously had known.

Wilson would discount such comparisons, based largely upon Japanese leaders’ willingness to subject civilians to ghastly and unprecedented punishment in the Allied fire bombings during the spring of 1945 and their delayed surrender after Hiroshima. Those episodes demonstrate to his satisfaction that not even Hiroshima-level nuclear attacks can guarantee that an enemy will surrender.²⁵ But how could Cold War nuclear policy makers not have considered the possibility, or even the likelihood, that nuclear weapons had abruptly rendered all of the historical examples cited by Wilson—including those of 1945—totally irrelevant?

How could they not have wondered if a US nuclear attack on Tokyo immediately after Pearl Harbor might have had a dramatically different impact than the fire bombings that began more than three years into Japan’s war with the United States, after Japan already had sustained more than a million military deaths?²⁶ Or if a single nuclear attack that immediately killed 10 percent of metropolitan Tokyo’s population (approximately 700,000 deaths) might have evoked a far different reaction from Japan’s leaders than the fire bombings, which occurred over five months and killed 150,000–250,000 people nationwide?²⁷ What if, in 1945, the United States had possessed thermonuclear weapons and attacked Japan with a single bomb that obliterated Tokyo?²⁸ Is it not ludicrous to deny the significance of the quantum increase in lethality with nuclear weapons and to discount completely the impact this knowledge may have had on the evolution of nuclear deterrence?

Of course, counterfactuals cannot disprove Wilson's claim, and if he were to insist that there is no level of prospective civilian deaths or physical destruction that dependably can deter national leaders, he would not be alone. Some military and political officials in the Bill Clinton and George W. Bush administrations believed that certain leaders can be deterred only by threats to their own life. Under both presidents the Department of Defense and the Department of Energy engaged in research on "bunker-buster" nuclear weapons intended to hold at risk deeply buried fortresses where such an enemy might otherwise hide and survive, even as the United States delivered retaliatory nuclear strikes that utterly destroyed his country.²⁹

But is Wilson's fundamental premise about nuclear deterrence—at least the US practice of deterrence—correct? Did American leaders generally believe that threatening to destroy Soviet cities was the best way to create Soviet fear of unacceptable losses? Were declaratory US nuclear policies and nuclear war plans consistent with that belief? It is beyond the scope of this critique either to answer these important questions or to evaluate the specific authorities upon whom Wilson relies. However, evidence that US nuclear weapons targeting practices during the first three decades of the nuclear era were quite loosely informed by deterrence theory and did not focus on destroying Soviet cities seems to challenge Wilson's premise.³⁰

Historian David Alan Rosenberg wrote in 1983 that while the conceptual work "of strategic theorists . . . occasionally influenced the thinking of high policymakers or strategic planners, it generally had little relevance in the 1945–1960 period to the pragmatic concerns of operational planners."³¹ That conclusion reverberated in the reminiscences of senior defense and nuclear weapons laboratory officials in a 2005 Sandia National Laboratories oral history of US strategic nuclear policy. According to the officials, throughout the 1940s and 1950s the executive branch, Congress, and the labs all "made it up as we went along." The growth and composition of the nuclear arsenal in the 1950s and 1960s was driven by the capabilities of the nuclear weapons complex without a clear understanding of national policies, objectives, or military requirements for nuclear weapons, the officials said.³² Stanford University scholar Lynn Eden agreed, characterizing SIOF-62 (the US Single Integrated Operational Plan, the military's actual plan for fighting a nuclear war in the early 1960s) as a "capabilities plan" in which targeting derived from the availability of weapons and delivery vehicles rather than a determination of military need.³³ William Kaufman, a key Department of Defense consultant in the 1960s and 1970s, recalled the emergence of counterforce in the 1960s, saying that "nobody could guarantee that if you did counterforce and not counter-city, it would work out. But it was worth a chance."³⁴

The nuclear establishment's willingness through the 1960s to explore numerous approaches to targeting—command and control, military assets, civilian populations, "no cities," industrial capacity, and economic recovery—recapitulated the experimental and theoretically malleable US approach to WWII strategic bombing. During that period, developing a consensus on the nature of deterrence apparently was a low priority. According to Rosenberg, the National Security Council's 1960 "Hickey Committee" report to President Eisenhower essentially ignored the president's charge to advise him on whether deterrence would be better served by targeting military or urban industrial

targets.³⁵ SIOPs were viewed not as instruments of deterrence, but as plans of retaliation should deterrence fail, according to Eden.³⁶ In the early 1970s, nuclear war planners explicitly considered whether deterrence should be a stated mission of the SIOP, and decided no.³⁷ SIOP-62, the product of fifteen years of nuclear age strategizing, included nearly 3,300 weapons, 7,800 megatons, and approximately 3,700 targets in all categories.³⁸ A contemporary estimate placed its destruction at 54 percent of the Soviet population, 71 percent of the urban population, and 82 percent of buildings.³⁹ None of this is consistent with an argument that US nuclear policy makers or war planners had a clear conception of deterrence based upon the belief that threats to destroy a handful of cities would deter Soviet aggression.

Problem Two: Deterrent Threats Are Inherently Not Credible and Provoke Attack and Resistance Rather than Forbearance

Wilson claims that most people associate nuclear weapons with extermination attacks: "One of the salient weaknesses of nuclear deterrence has always been its implicit reliance on threats of extermination attacks."⁴⁰ This association, in Wilson's view, undermines the credibility of nuclear deterrent threats. Political leaders just don't believe that their adversaries would actually follow through on a threat to exterminate them. Why? Not because of morality or because exterminating others is inconsistent with human nature, but because of statistics.

Threats Not Credible

Wilson's views on this point arise from his own "moderately thorough review of the history of warfare across some 3,000 years."⁴¹ He concludes that the Third Punic War was the only war of extermination during those millennia and that wars of extermination are by their nature extremely rare. "It is difficult to argue that a human action that has only occurred once in 3,000 years is likely to recur."⁴²

In other words, the historical absence of wars of extermination is not simply a lucky roll of the dice, based upon unique historical circumstances that won't necessarily prevail forever. Unlike in the investment world, here past performance actually is a guarantee of future results, and one should expect that in the future, wars of extermination will occur rarely, if ever. If threats of extermination attack are not credible because leaders believe such attacks almost never occur, and if the threat to use nuclear weapons is synonymous with the threat to exterminate, then nuclear threats cannot be credible either.

There are some problems with this line of reasoning. For one, Wilson does not support his claim that nuclear deterrent threats are inextricably linked to extermination in the minds of political and military leaders (or in the popular imagination). No doubt images and descriptions of doomsday and Armageddon figure prominently in movies, television, and other popular culture representations of nuclear war, but what is the basis for claiming that most US or Soviet leaders associated nuclear war with extermination of their peoples?

The main difficulty, though, is that the count of wars of extermination is Wilson's and his alone. It is based upon his definition—a war that "must aim at the total destruction and slaughter of the adversary"—as well as his assessment of the facts and his judgment of intent.⁴³ History's great genocides are excluded. A war that actually wiped out 50 percent of a population would not qualify, nor would a war that aimed merely to displace an entire nation and turn its people into refugees, or a war that destroyed the most potent symbols of a nation's collective identity. Imagine a war that left many Americans alive, yet destroyed the original Declaration of Independence, the Grand Canyon, the Statue of Liberty, the Capitol, the Supreme Court, and the Gettysburg battlefield. The issue of intent is particularly vexing, given that elsewhere, Wilson cautions that discerning leaders' intent is daunting.⁴⁴ Wilson is entitled to opine on a vast swath of global military history, but one can imagine that if he were to provide the scorecard with his war-by-war assessment of just how close each conflict came to a "war of extermination," there would be countless second opinions.

His definition of wars of extermination also is curiously inconsistent with his assertions elsewhere in the essay that attacks on civilians are invariably perceived as attempts to exterminate the targeted population.⁴⁵ Given the litany of attacks on cities that Wilson reports, one might have expected him to infer that extermination attacks had been abundant. His conclusions that extermination attacks are innately rare and that threats to exterminate are innately not credible are at odds with his statement that neither human nature nor norms of morality inevitably preclude such attacks.⁴⁶ And in the real world, they also are beside the point. What truly lacks credibility is the idea that national leaders, in making existential decisions about how to interpret and respond to possible nuclear threats, would give anywhere near as much weight to any idiosyncratic reckoning of the historical frequency of extermination attacks as to the warheads that they know are pointed at them.

Nuclear Deterrent Threats Cause Resistance, Not Forbearance

Wilson also argues that threats of nuclear retaliation elicit unlimited resistance rather than restraint and are counterproductive to the goal of deterrence. In his view, communicating nuclear threats is politically equivalent to engaging in terrorism, and societies perceive terrorist violence against civilians as threats of extermination. "Terrorism," he writes, "is supposed to work by killing civilians in order to shock and horrify governments into complying with a terrorist's demands. Nuclear attack also threatens civilians . . . even nuclear attacks aimed at military targets."⁴⁷

He also recounts a key finding from Max Abrahms's 2006 article "Why Terrorism Does Not Work": terrorist violence against civilians rarely achieves the terrorists' political objectives because it is viewed as an attempt to destroy the victims' "values, society or both."⁴⁸ This leads Wilson to the question, "if terrorist attacks are the closest and best analogy to nuclear attacks against cities, and if terrorist attacks rarely succeed, what basis is there for confidence that nuclear deterrence will succeed?"⁴⁹ Put slightly differently, if actual terrorist violence against citizens doesn't induce governments to meet terrorist

demands, why would a mere threat of violence against citizens through nuclear retaliation induce governments to accede to demands not to attack?

Wilson acknowledges—but quickly moves on from—one problem with trying to evaluate nuclear deterrence using this tortured analogy to terrorism: “Nuclear attacks would kill innocents on a scale so vast that it seems difficult to count ordinary terrorism as the same phenomenon.”⁵⁰ That is a huge problem, but hardly the only one. Not only does he draw a hefty conclusion—that attacks against civilians are invariably interpreted as threats of extermination—from a single source, he unjustifiably enlarges Abrahms’s findings to get there.

Abrahms identifies the things that victims of terrorism fear may be taken away from them; in twenty cases, he says it is some combination of values, society, nation, or state. An aggressive interpretation of this formulation could mean that victims of terrorist violence fear subjugation or even enslavement—both outcomes that well might lead a society to resist to the death. But the loss of values, society, nation, or state does not necessarily imply extermination—a term that Abrahms’s article never uses.⁵¹ Abrahms does not conclude, as Wilson does, that “if you attack civilians . . . no matter what sort of message you intend to communicate, you are likely to simply convince your opponent that you intend to exterminate him.”⁵² In three instances, Abrahms’s wording can be interpreted to mean that societies perceive terrorism against civilians as attempts to wipe out an entire people, but Wilson has selected the most extreme and least defensible interpretation of Abrahms’ findings.⁵³ Yet the biggest problem with this argument is that it never actually associates nuclear deterrence with the logic of terrorism. All of Wilson’s important points link nuclear attack—not deterrent threats—to terrorist violence. None of these, obviously, can be evaluated empirically:

- “Nuclear attack also threatens civilians.”⁵⁴
- “A nuclear attack against a city—even if it were only a single weapon used against a single city, and even if it were accompanied by a strongly worded diplomatic message—seems likely to be read as a sign that the enemy intends to attempt to destroy your country completely.”⁵⁵
- “It seems likely that most leaders would interpret nuclear attacks against cities not as sophisticated signaling or as demonstrations of resolve, but as the first in a series of attacks intended to annihilate the entire country.”⁵⁶
- It may well be that—far from motivating nations to concede—nuclear attacks drive nations to fight to the death.”⁵⁷

This approach blurs the distinction between deterring and attacking. Reprising the earlier error of conflating forbearance and surrender, Wilson here conflates threatening to harm civilians and actually doing it. As laid out by Wilson, State A attempts to dissuade State B from attacking State A or its allies by threatening to retaliate against State B with nuclear weapons. State A is threatening to harm civilians in State B, in order to “shock and horrify” State B’s government enough so that it will not attack. Therefore, according to Wilson, State A (the one trying to foreclose the possibility of attack on itself) is acting like a terrorist. State A’s threat to retaliate somehow causes State B to resist and attack it.

In contrast, Wilson's statement that "terrorism is supposed to work by killing civilians in order to shock and horrify governments into complying with a terrorist's demands" has it exactly right. It is the actual killing of civilians rather than the threat to kill civilians that might induce a government to meet terrorists' demands. Wilson also mentions that in World War II, the Allied governments unapologetically called the city bombing campaigns against Japan and Germany "terror bombing," reinforcing the idea that the act of killing civilians, rather than threatening to kill civilians, is at the heart of terrorism. Ethicists can differ in their conclusions, but there has to be a distinction between threatening to inflict harm and actually doing it.

In the case where State B attacks State A, in spite of State A's threat to retaliate with nuclear weapons, nuclear deterrence has failed, but not because State B misread State A's threat as the threat of extermination. A's threat itself did not push B over the edge and cause the initial attack. The threat to retaliate may not have been persuasive, but it was not, by its nature, counterproductive, as Wilson alleges.

Problem Three: Nuclear Deterrence Has a Dismal Track Record

In the final sections of his paper, Wilson pulls together various strands of evidence concerning the effectiveness of nuclear deterrence. Taking up the argument that nuclear deterrence cannot necessarily claim credit for the absence of nuclear attacks or great power conflict since 1945, he enunciates a tough standard in order to claim that prize: "In order to answer the question 'did deterrence work?' you must first be able to know whether your opponent had a fully formed intention to attack and then refrained from doing so because of your threat."⁵⁸ This standard seems excessive for several reasons, not the least of which is that "fully formed" is very much in the eye of the beholder.

As in Wilson's reckoning of historical wars of extermination, intent here is key. He emphasizes the difficulty of discerning statesmen's intentions, but seems of two minds about the implication of this caveat. His quotation from behavioral scientist Alexander L. George and political scientist Richard Smoke urges skepticism concerning evidence that leaders were deterred.⁵⁹ On the other hand, he says that because statesmen are reluctant to admit they've been thwarted, one should be cautious in accepting their statements that they were not; leaders may have been deterred more than they let on.⁶⁰

Furthermore, Wilson's threshold reflects the perspective that a firm decision to attack must precede consideration of retaliatory threats; the processes of deciding to attack, evaluating threats of retaliation, and deciding not to attack are sequential and independent. However, these processes occur simultaneously and influence each other. It would seem reasonable to conclude that nuclear deterrence had succeeded if an enemy's knowledge and perception of the deterrent threat had removed attack from his menu of viable options, or substantially raised his threshold for considering attack. Compared to Wilson's standard for deterrence success, this alternative is very modest. One can at least imagine the possibility of demonstrating that a deterrent threat changed an enemy's assessment or ranking of its options in this way.

Bluth recently attempted to do precisely that, arguing that the threat of Western retaliation with nuclear weapons (coupled with the death of Stalin) had several profound effects on Soviet national policy and military doctrine.⁶¹ According to Bluth, nuclear deterrent threats convinced Soviet leaders that attacking the West was tantamount to national suicide and initiating the end of civilization on earth. It led them to repudiate the Leninist doctrine of the “inevitability of war,” reject war with imperialist states as a tool to advance world revolution, reconsider the strategic merits and potential of surprise attack, contain conflicts at a local or sub-regional level, and make avoidance of global or total war their ultimate objective.

Wilson repeats his “chicken and egg” conundrum when he notes that “there is little evidence that either the United States or the Soviet Union was ever on the brink of launching an aggressive war against the other” and asks, “How is it possible to assert that deterrence prevented war without clear evidence that war was ever imminent?”⁶² If there was not a potential great power military confrontation to be deterred, he wonders, how can one credit deterrence with anything?

Here again, Wilson has specified a threshold for crediting nuclear deterrence—war between America and the Soviet Union was imminent—that would be almost impossible to document. However, the term “nuclear crisis” did not permanently enter America’s national security lexicon by accident; in a handful of incidents—Suez in 1956, Berlin in 1959, Cuba in 1962, the Middle East in 1973—US leaders acutely perceived a significantly heightened risk of nuclear conflict with another nuclear state.

Many would agree, though, that the Cold War antagonists were not perpetually on the brink of war. Even so, unlike Ohio State University’s John Mueller, in his classic *International Security* article “The Essential Irrelevance of Nuclear Weapons: Stability in the Postwar World,” Wilson doesn’t advance any explanation as to why not, if not nuclear deterrence.⁶³ In fact, he questions why we even need such an explanation. “Most major wars,” he writes, “are followed by periods, sometimes quite long periods, of relative peace.” He asks why explanations offered for periods of peace after earlier wars aren’t considered sufficient for the nuclear era.⁶⁴ It would be easy to turn these questions on their head. Why should analysts fall back on facile explanations for peace such as “war weariness,” “economic exhaustion,” and “domestic political distraction” that are largely disconnected from international relations theory?

At least through the 1970s, the United States and Soviet Union were ideologically hostile, mutually suspicious, and fearful of each other. In the early Cold War period, US public political discourse often addressed American desires to “roll back” the Soviet domination of Eastern Europe, and the national security establishment contemplated preventive wars against the Soviet Union and China.⁶⁵ For much of the Cold War, the Soviet Union was not a “status quo state.” So if not fear of nuclear war, what was it that kept such virulently adversarial foes at arm’s length? Answering this question was beyond the scope of Wilson’s essay, but acknowledging it should not have been.

Wilson challenges the validity of nuclear deterrence theory by reciting a litany of instances when possession of nuclear weapons purportedly failed to confer the expected advantage. This list is a mixture of diplomatic and military disappointments, including America’s inability to gain decisive diplomatic advantage over the Soviet Union during

the brief US nuclear monopoly and then military difficulties in Korea, Vietnam, Iraq, and Afghanistan. It also includes the Soviet Union's defeat in Afghanistan, the United Kingdom's three-month Falkland Islands war with Argentina, and the Yom Kippur War.

The list rests upon a conception of nuclear deterrence as a strategy that should prevent not merely attack on a state's or its allies' home soil, but also civil wars, diplomatic challenges, and attacks on non-allies or remote imperial outposts. Any debit in a nuclear weapon state's foreign relations ledger constitutes a failure of nuclear deterrence and proves the worthlessness of nuclear weapons. For Wilson, this list is a potent indictment of nuclear deterrence, but it is more like a caricature. Nuclear deterrence is only expected to work if the dissuader's threats of nuclear retaliation appear credible to the potential attacker. Did deterrence really fail Britain in the spring of 1982? Did anyone truly believe there was an understood, implied British threat to retaliate with nuclear weapons should some country invade the Falklands? Is it understood today that the United States would retaliate with nuclear weapons if Germany used military force to pursue an irredentist claim to American Samoa?

To impugn the deterrent value of nuclear weapons because they cannot do everything nuclear states would desire is akin to questioning that aspirin relieves headaches and prevents death from certain heart attacks because it does not also prevent baldness. This particular recurring indictment of nuclear deterrence should be allowed a dignified retirement.

We cannot prove that since 1945, nuclear deterrence has prevented nuclear and conventional attacks on the homeland of nuclear states and their allies. But none of Wilson's examples of nuclear states' military or diplomatic setbacks in any way weakens the argument that nuclear deterrence has been an incredibly important factor. Even Wilson grudgingly agrees, at least halfway: "Although the practical record does not indict this form of deterrence, the general theoretical objections to it still apply."⁶⁶ It is bothersome that Wilson makes sweeping statements about the ineffectiveness of deterrence without appraising the scholarship on the two cases he considers the strongest examples of failed deterrence—the Yom Kippur War and the Falkland Islands War.⁶⁷ Likewise, he offers no evidentiary support for his overall judgment that "although the successes of nuclear deterrence over the thirty years from 1950 to 1980 are speculative, its failures are not."⁶⁸

Wilson is correct that by 1973, both Egypt and Syria knew that Israel had a nuclear weapons program, and there are hints that Egypt may have believed that Israel already possessed deliverable weapons.⁶⁹ The evidence consists of Egyptian president Gamal Abdel Nasser's earlier public statements and private assertions to US officials that he would launch a preventive attack on Dimona if he believed Israel was near a nuclear breakout; a US diplomatic estimate that Nasser actually would follow through on this threat; Seymour Hersh's reportage that the Soviets informed Egypt that Israel had three operational warheads; and private correspondence with former Egyptian generals and the editor of a prominent Arabic newspaper. Analysts also infer that Egypt may have pegged the Israel nuclear threat as serious based upon limited evidence that the Egyptian military was developing Dimona options and upon Anwar Sadat's conversations with Henry

Kissinger, possibly intended to alert Israel that Egyptian military actions would not threaten Israel's core interests.

But these hints are hardly dispositive. Israeli nuclear expert Avner Cohen wrote in 2010 that "the issue has never been rigidly researched in the Arab side" and that in his discussions with Egyptian military and political leaders who claimed to have had advance knowledge of Israeli nuclear capability, "it was never clear . . . whether their claims were based on actual factual knowledge or on their own theoretical presumptions."⁷⁰

Even unambiguous evidence that Egypt and Syria believed before the 1973 war that Israel had nuclear weapons would not prove that nuclear deterrence failed Israel as Wilson argues. One would need to know, in addition, how those nations assessed Israel's intentions and its resolve, what they deemed the core national security interests that, if violated, might push Israel to nuclear retaliation, and how that affected their military behavior. According to Cohen, "speculations persist that among the reasons [Egypt and Syria] had chosen in 1973 limited war aims . . . is their belief that if they crossed certain Israeli red lines and . . . tried to inflict serious destruction on Israel's society and economy, then Israel might resort to using its nuclear weapons."⁷¹ That perspective suggests that nuclear deterrence may have been quite successful, but we just cannot say with any certainty. US, Israeli, Egyptian, Syrian, and Soviet intelligence archives and other official sources have yet to release information that might begin to justify a high-confidence judgment like Wilson's.⁷²

As to the Falklands War, Bluth recently asserted that "nuclear deterrence was not relevant because the UK government had no intention to use nuclear weapons and the Argentines did not believe it would do anything to defend the Falkland Islands."⁷³ He and other scholars who have studied Wilson's examples intimately might well conclude that deterrence's failures are no less speculative than its successes.

Conclusion

"The Myth of Nuclear Deterrence" makes an unpersuasive case that nuclear deterrence has three fatal flaws. Demonstrating that, historically, city destruction has not led to surrender and that national leaders have evinced unlimited tolerance for civilian deaths seems to undermine beyond redemption Wilson's claim that deterrence theorists somehow came to believe exactly the opposite. If, as Wilson asserts, nuclear deterrence does rest foundationally upon faith that threats of city destruction elicit forbearance because leaders are highly sensitive to civilian deaths, he needs to offer another explanation and better evidence than just the testimony of venerable nuclear weapons scholars. This alternative explanation would need to assume that the people who made nuclear deterrence theory came to their faith without either misunderstanding, willfully disregarding, or being ignorant of the history of city attacks, noncombatant casualties, and war termination dynamics.

Other serious weaknesses in Wilson's argument include blurring the differences between related but distinguishable phenomena, stretching Abrahms's findings about terrorism to an unreasonable degree, and citing the unpublished findings of his own

research in military history as authority for his assertions about the likelihood and credibility of extermination attacks.

In the previously mentioned CNS report, "Delegitimizing Nuclear Weapons," Wilson's hand is evident in the statement "the problem in trying to judge the truth of claims about nuclear deterrence is that proof—the essential ingredient of prudent judgment—is entirely missing."⁷⁴ He has also said that "if nuclear deterrence were on trial for murder, you'd never convict. There's just not enough evidence."⁷⁵ Wilson believes that his training in philosophy has greatly enhanced his work as a nuclear weapons scholar, so perhaps in the future he will address head-on this recurring theme of "proof" in nuclear weapons policy and decision making.⁷⁶ What does proof mean, and how does it relate to evidence? Why must the gold standard of proof (whatever that may mean) be demanded in nuclear matters, when most governmental, military, business, and family activities muddle through day-by-day on a much lower standard of certainty? Most important, what makes the absence of proof that nuclear deterrence "works" so much more compelling than the absence of proof that it does not?⁷⁷ Let us hope that Wilson's forthcoming book will develop more plausible and promising arguments.

NOTES

1. Ward Wilson, "The Myth of Nuclear Deterrence," *Nonproliferation Review* 15 (November 2008), pp. 421–39.
2. Russ Wellen, "Deterrence: Hardest Argument in the World to Refute," *The Faster Times*, March 30, 2010, <thefastertimes.com/nukesandotherwmd/2010/03/30/deterrence-hardest-argument-in-the-world-to-refute/>; Randy Rydell, "The Future of Nuclear Arms: A World United and Divided by Zero," *Arms Control Today*, April 2009, pp. 21–25; Rob van Riet, "Nuclear Deterrence Theory: Still Alive and Kicking," *Waging Peace Today*, June 3, 2011, <wagingpeacetoday.blogspot.com/2011/06/nuclear-deterrence-theory-still-alive.html>; Richard Tanter, "Rethinking Extended Nuclear Deterrence in the Defence of Australia," *The Asia-Pacific Journal*, December 14, 2009, <www.japanfocus.org/-richard-tanter/3269>; and Tad Daley, *Apocalypse Never: Forging the Path to a Nuclear Weapon-Free World* (Piscataway, New Jersey: Rutgers University Press, 2010).
3. Ken Berry, Patricia Lewis, Benoît Péloupidas, Nikolai Sokov, and Ward Wilson, "Delegitimizing Nuclear Weapons: Examining the Validity of Nuclear Deterrence," James Martin Center for Nonproliferation Studies, May 2010, <cns.miis.edu/opapers/pdfs/delegitimizing_nuclear_weapons_may_2010.pdf>, p. 71.
4. "Ward Wilson Joins CNS as Senior Fellow April 20, 2010," James Martin Center for Nonproliferation Studies, press release, <cns.miis.edu/activities/100421_ward_wilson_joins_cns.htm>.
5. Philipp C. Bleek, Bruno Tertrais, and Edward A. Corcoran, "Nuclear Myth-Busting," *Nonproliferation Review* 16 (July 2009), pp. 131–42; and Christoph Bluth, "The Reality and the Limitations of Nuclear Deterrence," POLIS Working Papers No. 3, University of Leeds, 2010.
6. Wilson, "The Myth of Nuclear Deterrence," pp. 421–22.
7. *Ibid.*, pp. 422–23.
8. *Ibid.*, p. 423.
9. *Ibid.*, pp. 427, 429.
10. One historian called the empire "a loose and flimsy structure." See J.J. Saunders, *The History of the Mongol Conquests* (New York, NY: Barnes & Noble Publishers, 1971), p. 56. This paragraph based upon David Morgan, *The Mongols* (New York, NY: Basil Blackwell Inc., 1987), p. 67; A. Sevim and C.E. Bosworth, "The Seljuks and the Khwarazm Shahs," in M.S. Asimov and C.E. Bosworth, eds., *History of Civilizations of Central Asia* (Paris: UNESCO, 1998), pp. 176–81; Saunders, *The History of the Mongol Conquests*, pp. 56–57; and Jeremiah Curtin, *Mongols: A History* (Conshohocken, PA: Combined Publishing, 1996), p. 104.

11. Sevim and Bosworth, "The Seljuks and the Khwarazm Shahs," p. 181.
12. Wilson, "The Myth of Nuclear Deterrence," p. 425.
13. "William Mitchell," *Encyclopædia Britannica Online Academic Edition*. Encyclopædia Britannica Inc., 2011.
14. This paragraph is based upon the following sources: Tami Davis Biddle, *Rhetoric and Reality in Air Warfare: The Evolution of British and American Ideas about Strategic Bombing, 1914–1945* (Princeton, NJ: Princeton University Press, 2002), pp. 176–250; A.C. Grayling, *Among the Dead Cities: Was the Allied Bombing of Civilians in WWII a Necessity or a Crime?* (London, UK: Bloomsbury Publishing Plc., 2006), pp. 15–79; Barrett Tillman, *Whirlwind: The Air War Against Japan, 1942–1945* (New York, NY: Simon & Schuster, 2010), pp. 67–105, 134–73; Gian P. Gentile, *How Effective is Strategic Bombing? Lessons Learned from World War II to Kosovo* (New York, NY: New York University Press, 2000), pp. 79–103; and Martin Van Creveld, *The Age of Airpower* (New York, NY: Public Affairs, 2011), pp. 153–70.
15. Biddle, *Rhetoric and Reality in Air Warfare*, p. 292.
16. Dan Reiter, *How Wars End* (Princeton, New Jersey: Princeton University Press, 2009), p. 1.
17. Elizabeth A. Stanley, *Paths to Peace: Domestic Coalition Shifts, War Termination and the Korean War* (Palo Alto, California: Stanford University Press, 2009), p. 19.
18. Gideon G. Rose, "Victory and Its Substitutes: Foreign Policy Decision-Making at the Ends of Wars," PhD diss., Harvard University, 1994, p. 16.
19. *Ibid.*, p. 14.
20. Bluth, "The Reality and the Limitations of Nuclear Deterrence."
21. *Ibid.*
22. *Ibid.*, p. 3.
23. Stanley, *Paths to Peace*, p. 23.
24. Rose, "Victory and Its Substitutes," p. 12.
25. Wilson, "The Myth of Nuclear Deterrence," p. 427.
26. Werner Gruhl, "Japanese Casualties," Web Table 11, *Imperial Japan's World War Two 1931–1945: Neglected Remembrance* (Piscataway, New Jersey: Transaction Publishers Rutgers, 2006), <www.japanww2.com/wt11.htm>.
27. *Ibid.* Gruhl presents four estimates in this range. Metropolitan Tokyo 1945 population (6,778,804) from "The United States Strategic Bombing Survey: The Strategic Air Operation of Very Heavy Bombardment in the War Against Japan (Twentieth Air Force) Final Report," US Government Printing Office, September 1, 1946, Appendix A, p. 34. The hypothesized 10 percent would have exceeded actual Japanese civilian deaths (1942–45) from all causes, including Hiroshima and Nagasaki. Michael Clodfelter, *Warfare and Armed Conflict: A Statistical Encyclopedia of Casualty and Other Figures, 1494–2007*, third ed. (Jefferson, North Carolina: McFarland & Company, Inc, 2008), pp. 565, 595, 658, 878.
28. The world's first thermonuclear device, "Mike," tested at Enewetak Atoll on November 1, 1952, had a yield of 10.4 megatons. The explosion completely vaporized Elugelab Island and portions of two other nearby islands, leaving a crater 164 feet deep and 1.2 miles wide. Mike's "fireball alone would have engulfed Manhattan; its blast would have obliterated all New York's five boroughs." See Richard Rhodes, *Dark Sun: The Making of the Hydrogen Bomb* (New York, NY: Simon & Schuster, 1995), p. 510.
29. For an overview of how US nuclear weapons planning evolved in the early 1990s after the fall of the Soviet Union, see Hans M. Kristensen, "Targets of Opportunity," *Bulletin of the Atomic Scientists*, September/October 1997, pp. 22–28. For a brief discussion of the leader willing to sacrifice his entire country as long as he survives, see Roger Speed and Michael May, "Assessing the United States' Nuclear Posture," in George Bunn and Christopher F. Chyba, eds., *U.S. Nuclear Weapons Policy: Confronting Today's Threats* (Washington, DC: Brookings Institution Press, 2006), p. 267.
30. This section is based upon Sandia National Laboratories, "U.S. Strategic Nuclear Policy: An Oral History, 1942–2004," 2005, available at the National Security Archive website, <www.gwu.edu/~nsarchiv/nukevault/ebb361/index.htm>; David Alan Rosenberg, "Nuclear War Planning," in Michael Howard, George Andreopoulos, and Mark R. Shulman, eds., *The Laws of War: Constraints on Warfare in the Western World* (New Haven, Connecticut: Yale University Press, 1994), pp. 160–90; Lynn Eden, "The U.S. Nuclear Arsenal and Zero: Sizing and Planning for Use—Past Present and Future," in Catherine M. Kelleher and Judith Reppy, eds., *Getting to Zero: The Path to Nuclear Disarmament* (Stanford:

Stanford University Press, 2011), pp. 69–89; and David Alan Rosenberg, "The Origins of Overkill: Nuclear Weapons and American Strategy, 1945–1960," *International Security* 7 (Spring 1983), pp. 3–71.

31. Rosenberg, "The Origins of Overkill," p. 10.
32. Sandia National Laboratories, "U.S. Strategic Nuclear Policy," chapter 1.
33. Eden, "The U.S. Nuclear Arsenal and Zero," p. 75.
34. Sandia National Laboratories, "U.S. Strategic Nuclear Policy," chapter 1.
35. Rosenberg, "The Origins of Overkill," p. 174.
36. Eden, "The U.S. Nuclear Arsenal and Zero," p. 75.
37. *Ibid.*
38. Rosenberg, "Nuclear War Planning," p. 175.
39. Eden, "The U.S. Nuclear Arsenal and Zero," p. 74.
40. Wilson, "The Myth of Nuclear Deterrence," p. 429.
41. *Ibid.*
42. *Ibid.*, pp. 429, 430.
43. *Ibid.*, pp. 429–30.
44. *Ibid.*, p. 432.
45. *Ibid.*, p. 431.
46. *Ibid.*, p. 429.
47. *Ibid.*, p. 430.
48. Max Abrahms, "Why Terrorism Does Not Work," *International Security* 31 (Fall 2006), p. 56.
49. Wilson, "The Myth of Nuclear Deterrence," p. 432.
50. *Ibid.*
51. Likewise, Abrahms's article does not use the word "genocide," and given the context, the two appearances of "annihilate" arguably refer to political and value systems, rather than people.
52. Wilson, "The Myth of Nuclear Deterrence," p. 431.
53. Abrahms, "Why Terrorism Does Not Work," specifically: "Target countries view the negative consequences of terrorists attacks . . . as evidence that the terrorists want them destroyed" (p. 59); "The 'dominant' response was that the Palestinians wanted to 'conquer Israel' and 'destroy a large portion of the Jewish population'" (p. 75); and "Target countries view the deaths of their citizens . . . as proof that the perpetrators want to destroy their societies, their publics, or both" (p. 76).
54. Wilson, "The Myth of Nuclear Deterrence," p. 430.
55. *Ibid.*, p. 431.
56. *Ibid.*
57. *Ibid.*
58. *Ibid.*
59. *Ibid.*
60. *Ibid.*
61. Bluth, "The Reality and the Limitations of Nuclear Deterrence."
62. Wilson, "The Myth of Nuclear Deterrence," p. 433.
63. John Mueller, "The Essential Irrelevance of Nuclear Weapons: Stability in the Postwar World," *International Security* 13 (Fall 1988), pp. 55–79.
64. Wilson, "The Myth of Nuclear Deterrence," pp. 433–34.
65. For a discussion of "rollback" proposals and concepts, see Robert R. Bowie and Richard H. Immerman, *Waging Peace: How Eisenhower Shaped an Enduring Cold War Strategy* (New York, NY: Oxford University Press, 1998), pp. 125–27. For a brief discussion of high-level US government proposals for preventive war against the Soviet Union, see Scott D. Sagan and Kenneth N. Waltz, *The Spread of Nuclear Weapons, A Debate Renewed* (New York, NY: W.W. Norton & Company, 2003), pp. 55–59.
66. Wilson, "The Myth of Nuclear Deterrence," p. 435.
67. *Ibid.*, p. 434. Regarding the Yom Kippur War, Wilson cites newspaper and TV stories indicating that prior to the start of this war, there already was sufficient public speculation about the existence of an Israeli nuclear weapon to have tipped off Egypt and Syria, even if their own intelligence had failed to take note.
68. *Ibid.*

69. This paragraph draws from the following sources: Seymour Hersh, *The Samson Option: Israel's Nuclear Arsenal and American Foreign Policy* (New York, NY: Random House, 1991), p. 227; Avner Cohen, "Cairo, Dimona, and the June 1967 War," *Middle East Journal* 50 (1996), pp. 192–97; T.V. Paul, *The Tradition of Non-Use of Nuclear Weapons* (Palo Alto, CA: Stanford University Press, 2009), pp. 148, 260; Maria Rost Rublee, *Nonproliferation Norms: Why States Choose Nuclear Restraint* (Athens, GA: University of Georgia Press, 2009), p. 117; and James J. Walsh, "Bombs Unbuilt: Power, Ideas and Institutions in International Politics," PhD diss., Massachusetts Institute of Technology, 2001, p. 141.
70. Avner Cohen, *Worst-Kept Secret: Israel's Bargain with the Bomb* (New York, NY: Columbia University Press, 2010), p. 293; Cohen, *Worst-Kept Secret*, note 83, p. 294.
71. *Ibid.*
72. Abraham R. Wagner, adjunct professor of international and public affairs, Columbia University, e-mail correspondence with author, August 3, 2011.
73. Bluth, "The Reality and the Limitations of Nuclear Deterrence," citing Christoph Bluth, "The British Resort to Force in the Falklands/Malvinas Conflict 1982: International Law and Just War Theory," *Journal of Peace Research* 24 (1987), pp. 5–20.
74. Berry et al., "Delegitimizing Nuclear Weapons," p. 24.
75. Ward Wilson, "Doubts About Nuclear Deterrence," Nuclear Age Peace Foundation, February 7, 2011, <www.wagingpeace.org/articles/db_article.php?article_id=205>.
76. Thomas Meal, "Alumni Success Story: No Winning Weapons," College of Arts and Sciences, American University, 2010, <www.american.edu/cas/success/no-winning-weapons-alum-wilson.cfm>.
77. I am indebted to Richard K. Betts for an e-mail exchange suggesting this final point.