

Word count: 11,487

The History of Proliferation Optimism:
Does It Have A Future?

Matthew Kroenig

Assistant Professor of Government, Georgetown University and
Stanton Nuclear Security Fellow, Council on Foreign Relations

June 4, 2012

Prepared for the Nonproliferation Policy Education Center

Should we worry about the spread of nuclear weapons? At first glance, this might appear to be an absurd question. After all, nuclear weapons are the most powerful weapons ever created by man. A single nuclear weapon could vaporize large portions of a major metropolitan area, killing millions of people, and a full-scale nuclear war between superpowers could end life on Earth as we know it. For decades during the Cold War, the public feared nuclear war and post-apocalyptic nuclear war scenarios became a subject of fascination and terror in popular culture. Meanwhile, scholars carefully theorized the dangers of nuclear weapons and policymakers made nuclear nonproliferation a top national priority. To this day, the spread of nuclear weapons to additional countries remains a foremost concern of U.S. leaders. Indeed, in his 2012 annual threat assessment to the U.S. Congress, Director of National Intelligence James Clapper argued that nuclear proliferation poses one of the greatest threats to U.S. national security.¹

Recently, however, academics have become more vocal in questioning the threat posed by the spread of nuclear weapons. Students of international politics known as “proliferation optimists” argue that the spread of nuclear weapons might actually be beneficial because it deters great power war and results in greater levels of international stability.² Other scholars, whom I label “proliferation anti-obsessionists,” maintain that nuclear proliferation is neither good nor bad, but irrelevant.³ They claim that nuclear weapons do not have any meaningful effect on international politics and that the past seventy years of world history would have been roughly the same had nuclear weapons never been invented. Some take this line of argument even further and argue that the only real problem is not the nuclear weapons themselves, but great

¹ James Clapper. Director of National Intelligence. “Unclassified Statement for the Record on the Worldwide Threat Assessment of the US Intelligence Community for the Senate Select Committee on Intelligence.” January 31, 2012.

² See, for example, Kenneth Waltz, *Theory of International Politics* (New York: McGraw-Hill, 1979).

³ See, for example, John Mueller, *Atomic Obsession: Nuclear Alarmism from Hiroshima to Al-Qaeda* (New York: Oxford University Press, 2009).

power nonproliferation policy.⁴ They argue that the cure that countries like the United States implement in order to prevent other states from acquiring nuclear weapons is much worse than the disease of the spread of nuclear weapons itself.

While these arguments remain provocative, they are far from new. The idea that a few nuclear weapons are sufficient to deter a larger adversary and keep the peace has its origins in the early strategic thinking of the 1940s. Moreover, a critical review of this literature demonstrates that many of these arguments are much less sound than they initially appear. Indeed, both proliferation optimism and proliferation anti-obsessionism rest on internal logical contradictions.

In this essay, I argue that the spread of nuclear weapons poses a grave threat to international peace and to U.S. national security. Scholars can grab attention by making counterintuitive arguments about nuclear weapons being less threatening than power holders believe them to be, but their provocative claims cannot wish away the very real dangers posed by the spread of nuclear weapons. The more states that possess nuclear weapons, the more likely we are to suffer a number of devastating consequences including: nuclear war, nuclear terrorism, global and regional instability, constrained U.S. freedom of action, weakened alliances, and the further proliferation of nuclear weapons. While it is important not to exaggerate these threats, it would be an even greater sin to underestimate them and, as a result, not take the steps necessary to combat the spread of the world's most dangerous weapons.

The essay proceeds in three parts. First, I provide a critical review of the proliferation optimism literature, including a careful consideration of the argument's historical origins. Next, I detail the various threats posed by nuclear proliferation, supported by nuclear deterrence theory, historical evidence, and frequently illustrated with a discussion of a case currently on the

⁴ Ibid.

minds of nonproliferation officials: Iran's rapidly advancing nuclear program. I conclude with an implication of my analysis for the scholarly study of nuclear proliferation and for U.S. nonproliferation policy.

An Intellectual History of Proliferation Optimism

Many of the key pillars of proliferation optimism arguments made today can be found in early Cold War debates about nuclear strategy. These pillars include the ideas that a small nuclear arsenal capable of targeting an enemy's cities is sufficient for deterring a powerful adversary and that nuclear wars, because they would be so devastating for everyone involved, will never be fought. These ideas stood in stark contrast to other strands of deterrence thinking that emphasized counterforce targeting, nuclear vulnerability, nuclear brinkmanship, inadvertent and accidental nuclear escalation, and limited nuclear wars.⁵ It is noteworthy that some of the most influential early advocates of minimum deterrence and proliferation optimism (indeed, as we will see below, these ideas are mutually reinforcing) cannot truly be understood without reference to the parochial interests and resource-constrained environments in which the strategic thinkers who developed them operated.

Early Academic writing: Shortly after the first use of nuclear weapons on Hiroshima and Nagasaki, U.S. strategists began to grapple with the question of what the atomic bomb meant for international peace and security. The first answer given is one that presaged the contemporary

⁵ On the evolution of nuclear strategy, see Lawrence Freedman. *The Evolution of Nuclear Strategy* (New York: Palgrave Macmillan, 2003)

proliferation optimism literature, namely, that nuclear weapons are an “absolute weapon” that are terrifyingly destructive, invulnerable to enemy attack, and that render great power war obsolete.⁶

Perhaps the first person to articulate this position was University of Chicago economist Jacob Viner in a speech to the American Philosophical Society in Philadelphia on November 16, 1945 – just months after the first use of nuclear weapons on Hiroshima and Nagasaki.⁷ In the speech, Viner argued that counterforce nuclear targeting would be useless and splendid first strikes impossible. In doing so, he laid the basis for subsequent claims about a minimum nuclear posture being sufficient to deter a more powerful adversary. Viner argued, “the atomic bomb, unlike battleships, artillery, airplanes, and soldiers, are not an effective weapon against its own kind. A superior bomb cannot neutralize the inferior bomb of an enemy.” Viner went on to argue that the awesome destructive power of nuclear weapons would induce great caution in leaders and possibly produce peace among the major powers. In his words, “the universal recognition that if war does break out, there can be no assurance that the atomic bombs will not be resorted to may make statesmen and people determined to avoid war even where in the absence of the atomic bomb, they would regard it as the only possible procedure under the circumstances for resolving a dispute or a clash of interests.”⁸

The proliferation optimism position received further elaboration a few months later in Bernard Brodie’s classic book *The Absolute Weapon*.⁹ In great detail, Brodie explained the basic features of the minimum deterrence and proliferation optimism position. He argued that nuclear weapons are invulnerable, ruling out the possibility of an enemy launching a disarming first

⁶ See, for example, Bernard Brodie, *The Absolute Weapons: Atomic Power and World Order* (New York: Harcourt Brace Jovanovich, 1946).

⁷ Jacob Viner, “The Implications of the Atomic Bomb for International Relations,” Proceedings of the American Philosophical Society, delivered November 16, 1945.

⁸ Ibid.

⁹ Bernard Brodie, *The Absolute Weapon*, 1946.

strike. He also claimed that nuclear weapons have such terrifying effects that they would make war too costly to wage, potentially leading to peace. In his most oft-quoted line, Brodie declared, “Thus far the chief purpose of our military establishment has been to win wars. From now on its chief purpose must be to avert them.”¹⁰

The optimism position was quickly countered, however, in what would become the first incarnation of the optimism-pessimism debate, predating the now-famous Waltz-Sagan debate by over thirty years.¹¹ Beginning with a series of basing studies done for the Department of Defense, Albert Wohlstetter, an American strategist working at the Rand Corporation in Santa Monica, California, argued that nuclear weapons are not as invulnerable as they appeared to optimists like Brodie. Rather, he argued that the “balance of terror” that optimists had written so eloquently about, was actually quite “delicate.”¹² He demonstrated that U.S. nuclear forces were potentially vulnerable to a Soviet first strike and that this vulnerability could tempt Moscow to launch a nuclear war. His study led to a number of improvements in the survivability of U.S. nuclear forces, including the moving of U.S. air bases beyond the range of Soviet bombers and the hardening of ballistic missile silos.

Wohlstetter’s study also undermined a key pillar of proliferation optimism. If nuclear forces were potentially vulnerable, encouraging an enemy nuclear attack, it was not a great leap to argue that the spread of nuclear weapons would not necessarily lead to peace. Just as a belief in minimum deterrence supports the idea of a nuclear peace, attention to nuclear vulnerability and counterforce nuclear war necessarily leads to proliferation pessimism. Indeed, it is difficult to find analysts who simultaneously believe that nuclear posture matters and that the spread of

¹⁰ Ibid.

¹¹ Scott D. Sagan and Kenneth N. Waltz, *The Spread of Nuclear Weapons: A Debate* (New York: W.W. Norton, 1997).

¹² Albert Wohlstetter, “The Delicate Balance of Power,” Santa Monica, CA: Rand Corporation, 1958.

nuclear weapons necessarily leads to peace. It should come as no surprise, therefore, that Albert Wohlstetter was a proliferation pessimist. In subsequent writing, Wohlstetter catalogued the potential downsides of nuclear proliferation for U.S. interests, even if nuclear weapons spread to friendly states, such as America's NATO allies.¹³ First, he identified nuclear war as a potential problem. A few nuclear weapons would not be enough for deterrence, but rather "The problem of deterring a major power requires a continuing effort because the requirements for deterrence will change with the counter-measures taken by the major power."¹⁴ But, if that investment was not made, deterrence could fail and nuclear war could result. Second, Wohlstetter worried that the spread of nuclear weapons within the NATO alliance would undermine alliance cohesion by making the allied states less interdependent. Third, Wohlstetter forecasted that the spread of nuclear weapons would lead to the further spread of nuclear weapons. He criticized U.S. decision makers for calculating the pros and cons of nuclear proliferation to an "Nth" state without also figuring in the potential negative consequences of what he called the "N+1 problem."¹⁵

The optimism-pessimism debate did not remain relegated to the ivory tower for long, however. Shortly thereafter, powerful players in government began adapting the ideas of proliferation to fit their strategic circumstances and to advance their parochial interests.

The French *Force de Frappe*: In 1960, France entered the nuclear club with its first nuclear test.¹⁶ French leaders, including President Charles de Gaulle, did not believe that France could

¹³ Albert Wohlstetter, "Nuclear Sharing: NATO and the N+1 Country," *Foreign Affairs*, Vol. 39, No. 3 (April 1961) p. 355-387.

¹⁴ Ibid.

¹⁵ Ibid.

¹⁶ On France's nuclear program, see Lawrence Scheinman. *Atomic Energy Policy in France under the Fourth Republic* (Princeton University Press, 1965).

rely on the United States and NATO to provide for France's security. As de Gaulle would famously ask, would Washington really be willing to trade New York for Paris in a nuclear war? France, therefore, acquired an indigenous nuclear weapons capability that would allow Paris to pursue a more independent foreign policy. Having developed the bomb, French strategic and military thinkers were soon confronted with a new problem: how would they use their nuclear weapons? In the early and mid-1960s, therefore, France began developing a nuclear doctrine.

At the same time that U.S. and Soviet thinkers began articulating the aspects of nuclear doctrine that would come to characterize the superpower nuclear competition throughout the Cold War (counterforce nuclear targeting, limited nuclear options, the importance of assured destruction, the advantages provided by nuclear superiority over rivals, and the pursuit of active and passive defenses), France, a medium power operating with fewer resources than the superpowers, was compelled to develop a more modest nuclear strategy. In large part due to its limited means, France eschewed the warfighting strategies of the superpowers and instead developed a minimal deterrent doctrine, in which French military planners aimed to be able to threaten significant damage against Soviet cities in the event of a Soviet invasion of France.¹⁷

Unlike the superpowers, France did not have the luxury of working down from strategy to capabilities, but instead had to work backwards, developing a strategy around given capabilities. As French strategic thinker Colonel Pierre-Marie Gallois put it, France pursued a nuclear "strategy of the means."¹⁸ In the words of de Gaulle, "we do not have the ambition to make a force as powerful as those of the Americans or Soviets, but a force proportionate to our

¹⁷ For a thorough discussion of the development of French nuclear strategy, see Bruno Tertais, "Destruction Assurée: The Origins and Development of French Nuclear Strategy, 1945-1982," in Henry D. Sokolski ed., *Getting MAD: Nuclear Mutual Assured Destruction, Its Origins and Practice* (Carlisle, PA: Strategic Studies Institute, 2004).

¹⁸ *Ibid.*, p. 95.

means, our needs, and our size.”¹⁹ Accordingly, the key pillars of French doctrine reflected France’s resource constraints. “Deterrence of the strong by the weak” was the belief that a small state can deter a much larger adversary as long as the smaller state has the ability to conduct a nuclear attack against the larger state’s cities.²⁰ “Sufficiency” was the idea that a small number of nuclear weapons was sufficient for deterrence and that anything more was overkill.²¹

France’s small size and lack of strategic depth prevented it from adopting the warfighting postures of the superpowers. As Gallois put it, “France has nothing to cede that would not be herself.”²² France’s vulnerability, therefore, demanded that France launch an immediate and full-scale nuclear attack on an adversary at the initiation of hostilities. Unable to build a large enough arsenal to maintain an assured destruction capability against the Soviet Union, France aimed only, according to Gallois, to “tear an arm” off the aggressor.²³ While U.S. secretary of Defense Robert McNamara famously assessed that destroying large portions of the Soviet population and economy was necessary to deter Moscow, French thinkers thought that the Soviet Union could be deterred if France could inflict damage on the Soviet Union roughly equivalent to the destruction of the entire country of France. In the words of one French official, “French nuclear forces have been calculated to permit reaching a population of the adversary of the same order as that of our own country. If France were destroyed, our adversary would lose the equivalent of France.”²⁴ A lack of adequate delivery vehicles also prevented France from following a counterforce strategy. France’s plans for the development of a land-based ICBM were canceled due to their expense, leaving Paris with a countervalue option only. As strategist

¹⁹ Ibid, p. 86

²⁰ Ibid, p. 64.

²¹ Ibid, p. 86.

²² Pierre Marie Gallois, *Le Sablier du Siecle: memoires* (Lausanne: L’Age d’homme, 1999), p. 402.

²³ Tertais, p. 83.

²⁴ Ibid, p. 82.

Raymond Barre described, “it was the less costly option...France, a medium-sized nation with limited resources, cannot pretend seeking parity with the two great nuclear powers. The only way which is opened to us is that of the current strategy.”²⁵

Like proliferation optimists on the other side of the Atlantic, French strategists believed that if a small nuclear arsenal in France could deter the Soviet Union, then the spread of nuclear weapons elsewhere could have a pacifying effect on international politics more broadly. As Gallois argued, a nuclear arsenal "increases the risk, counsels discretion, and consequently strengthens the strategy of dissuasion. As atomic armament grows more widespread...the notion of dissuasion will also become more common, each nation practicing it according to its means...It will not be long before we may have to give up war altogether.”²⁶

Unsurprisingly, pessimists in the United States were skeptical of French strategy and doctrine. Albert Wholstetter assessed that if the United States struggled to develop a survivable nuclear arsenal capable of deterring the Soviet Union, then the French did not stand a chance of developing a truly independent deterrent capability. At the end of the day, thought Wolhstetter, “The burden of deterring a general war as distinct from limited wars is still likely to be on the United States and therefore, so far as our allies are concerned, on the alliance.”²⁷

In sum, the notion that a few nuclear weapons would be sufficient to deter great power war was warmly welcomed and advocated by strategic thinkers in Paris. Once it became a nuclear weapon state, France’s resource-constrained environment did not permit it to adopt anything other than a minimum deterrent posture. France was not the only place, however, where nuclear doctrines emphasizing minimum deterrence were developed in response to the available means.

²⁵ Ibid, p. 96.

²⁶ Pierre Marie Gallois, *Stratégie de l'âge nucléaire* (Paris: François-Xavier de Guibert, 1960).

²⁷ Albert Wholstetter, “Nuclear sharing,” 1961.

Polaris:

In the late 1950s and early 1960s, a similar minimum deterrence strand was developing among U.S. nuclear strategists.²⁸ Like in France, circumstances would compel military planners, this time in the U.S. Navy, to argue that a few nuclear weapons would be sufficient to deter a more powerful foe, paving the way for proliferation optimists that would follow in their footsteps.

In the early stages of the Cold War, the U.S. Navy was the only major U.S. military service cut out of the strategic nuclear mission. This would have major implications for service budgets and inter-service rivalries as nuclear capabilities were of paramount importance in the Cold War's superpower rivalry and the Navy desired a foothold in the nuclear game. The Navy sought to edge its way into a role by developing "super carriers," aircraft carriers large enough for nuclear-armed fighters to take off and land, but the program was cancelled by President Truman in 1949 for budgetary reasons.

Then, in the mid-1950s, under the leadership of Admiral Arleigh Burke, the Navy began developing the innovative *Polaris* submarine launch ballistic missile system (SLBM). *Polaris* provided the Navy with a nuclear role. Indeed, Burke argued that *Polaris*'s unique advantages, such as greater survivability, made it a candidate to replace the more vulnerable fixed ICBMs operated by the Air Force.

Critics in other services soon countered, however, that SLBMs did not meet the requirements of U.S. nuclear strategy. SLBMs, unlike bombers and land-based ICBMs, were not accurate enough to engage in counterforce targeting. Moreover, submarines could not carry sufficient firepower to guarantee an assured destruction capability against the Soviet Union.

²⁸ This section draws heavily from Harvey M. Sapolsky, "The U.S. Navy's Fleet Ballistic Missile Program and Finite Deterrence," in Henry D. Sokolski, *Getting MAD: Nuclear Mutual Assured Destruction, Its Origins and Practice* (Carlisle, PA: Strategic Studies Institute, 2004).

The Navy could not credibly argue that Polaris had capabilities that it did not have, but they could, and did, challenge the prevailing logic of deterrence. In a prize-winning essay, Paul Bracken, a Naval commander working under Burke coined the term “finite deterrence.” Bracken, and eventually Burke, argued that the massive nuclear attacks and counterforce targeting envisioned by the Air Force and the Army were unnecessary. Rather, they claimed that a few survivable nuclear weapons capable of destroying enemy soft targets – the precise capabilities provided by Polaris – were sufficient for deterrence.

In the end, Burke and the Navy lost the bureaucratic battle. While SLBMs became a central element of U.S. nuclear force structure, they did not replace bombers and ICBMs. Arguments about maintaining superiority across the entire spectrum of capabilities were more persuasive in the context of a heating up Cold War. Nevertheless, the ideas of “finite” and “minimum deterrence,” developed by Bracken and Burke, motivated in no small part, to advance the Navy’s position in an inter-service competition are alive and well today in the writings of academic proliferation optimists.

Proliferation Optimism: Proliferation optimism was revived in the academy in Kenneth Waltz’s 1979 book, *Theory of International Politics*.²⁹ In this, and subsequent works, Waltz argued that the spread of nuclear weapons has beneficial effects on international politics. He maintained that states, fearing a catastrophic nuclear war, will be deterred from going to war with other nuclear-armed states. As more and more states acquire nuclear weapons, therefore, there are fewer states against which other states will be willing to wage war. The spread of nuclear weapons, according to Waltz, leads to greater levels of international stability. Looking to the empirical record, he argued that the introduction of nuclear weapons in 1945 coincided with an

²⁹ Waltz, *Theory of International Politics*, 1979.

unprecedented period of peace among the great powers. While the United States and the Soviet Union engaged in many proxy wars in peripheral geographic regions during the Cold War, they never engaged in direct combat. And, despite regional scuffles involving nuclear-armed states in the Middle East, South Asia, and East Asia, none of these conflicts resulted in a major theater war. This lid on the intensity of conflict, according to Waltz, was the direct result of the stabilizing effect of nuclear weapons.

Following in the path blazed by the strategic thinkers reviewed above, Waltz argued that the requirements for deterrence are not high. He argued that, contrary to the behavior of the Cold War superpowers, a state need not build a large arsenal with multiple survivable delivery vehicles in order to deter its adversaries. Rather, he claimed that a few nuclear weapons are sufficient for deterrence. Indeed, he went even further, asserting that any state will be deterred even if it merely suspects its opponent *might* have a few nuclear weapons because the costs of getting it wrong are simply too high.

Not even nuclear accident is a concern according to Waltz because leaders in nuclear-armed states understand that if they ever lost control of nuclear weapons, resulting in an accidental nuclear exchange, the nuclear retaliation they would suffer in response would be catastrophic. Nuclear-armed states, therefore, have strong incentives to maintain control of their nuclear weapons. Not even new nuclear states, which lack experience managing nuclear arsenals, would ever allow nuclear weapons to be used or to fall into the wrong hands.

Following Waltz, many other scholars advanced arguments in the proliferation optimism school. For example, Bruce Bueno de Mesquita and William Riker explore the “merits of selective nuclear proliferation.”³⁰ John Mearsheimer made the case for a “Ukrainian nuclear

³⁰ Bruce Bueno de Mesquita and William H. Riker. “An Assessment of the Merits of Selective Nuclear Proliferation.” *Journal of Conflict Resolution*. Vol. 26, No. 2. (June 1982), p. 283-306.

deterrent,” following the collapse of the Soviet Union.³¹ In the run up to the 2003 Gulf War, John Mearsheimer and Steven Walt argued that we should not worry about a nuclear-armed Iraq because a nuclear-armed Iraq can be deterred.³² And, in recent years, Barry Posen and other scholars have argued that nuclear proliferation in Iran does not pose an unmanageable threat, again arguing that a nuclear-armed Iran can be deterred.³³

What’s Wrong with Proliferation Optimism?

The proliferation optimist position, while having a distinguished pedigree, has several major flaws. Many of these weaknesses have been chronicled in brilliant detail by Scott Sagan and other contemporary proliferation pessimists.³⁴ Rather than repeat these substantial efforts, I will use this section to offer some original critiques of the recent incarnations of proliferation optimism.

First and foremost, proliferation optimists do not appear to understand contemporary deterrence theory. I do not say this lightly in an effort to marginalize or discredit my intellectual opponents. Rather, I make this claim with all due caution and sincerity. A careful review of the contemporary proliferation optimism literature does not reflect an understanding of, or engagement with, the developments in academic deterrence theory over the past few decades in top scholarly journals such as the *American Political Science Review* and *International Organization*.³⁵ While early optimists like Viner and Brodie can be excused for not knowing

³¹ John Mearsheimer, “The Case for a Ukrainian Deterrent.” *Foreign Affairs* Vol. 72, No. 3 (Summer 1993), p. 50-66.

³² John Mearsheimer and Stephen Walt, “An Unnecessary War.” *Foreign Policy* (January/February 2003), p. 51-59.

³³ Barry R. Posen, “We Can Live with a Nuclear Iran,” *The New York Times*, February 27, 2006.

³⁴ Scott D. Sagan and Kenneth N. Waltz, *The Spread of Nuclear Weapons*, 1997.

³⁵ See, for example, Robert Powell, “Nuclear Brinkmanship with Two-Sided Incomplete Information.” *American Political Science Review* 82, 1 (1988), p. 155-178; Robert Powell, “Nuclear Deterrence and the Strategy of Limited Retaliation,” *American Political Science Review* 83, 2 (1989), p. 503-519; Matthew Kroenig, “Nuclear

better, the writings of contemporary proliferation optimists ignore much of the past fifty years of academic research on nuclear deterrence theory.

In the 1940s, Viner, Brodie, and others argued that the advent of Mutually Assured Destruction (MAD) rendered war among major powers obsolete, but nuclear deterrence theory soon advanced beyond that simple understanding.³⁶ After all, great power political competition does not end with nuclear weapons. And nuclear-armed states still seek to threaten nuclear-armed adversaries. States cannot credibly threaten to launch a suicidal nuclear war, but they still want to coerce their adversaries. This leads to a credibility problem: how can states credibly threaten a nuclear-armed opponent? Since the 1960s academic nuclear deterrence theory has been devoted almost exclusively to answering this question.³⁷ And, unfortunately for proliferation optimists, the answers do not give us reasons to be optimistic.

Thomas Schelling was the first to devise a rational means by which states can threaten nuclear-armed opponents.³⁸ He argued that leaders cannot credibly threaten to intentionally launch a suicidal nuclear war, but they can make a “threat that leaves something to chance.”³⁹ They can engage in a process, the nuclear crisis, which increases the risk of nuclear war in an attempt to force a less resolved adversary to back down. As states escalate a nuclear crisis there is an increasing probability that the conflict will spiral out of control and result in an inadvertent or accidental nuclear exchange. As long as the benefit of winning the crisis is greater than the incremental increase in the risk of nuclear war, threats to escalate nuclear crises are inherently credible. In these games of nuclear brinkmanship, the state that is willing to run the greatest risk

Superiority and the Balance of Resolve: Explaining Nuclear Crisis Outcomes,” *International Organization*, forthcoming.

³⁶ Bernard Brodie, *The Absolute Weapon*, 1972.

³⁷ See, for example, Robert Powell. *Nuclear Deterrence Theory: The Search for Credibility* (New York: Cambridge University Press, 1990).

³⁸ Thomas Schelling, *Arms and Influence* (New Haven: Yale University Press, 1966).

³⁹ *Ibid.*

of nuclear war before backing down will win the crisis as long as it does not end in catastrophe. It is for this reason that Thomas Schelling called great power politics in the nuclear era a “competition in risk taking.”⁴⁰ This does not mean that states eagerly bid up the risk of nuclear war. Rather, they face gut-wrenching decisions at each stage of the crisis. They can quit the crisis to avoid nuclear war, but only by ceding an important geopolitical issue to an opponent. Or they can the escalate the crisis in an attempt to prevail, but only at the risk of suffering a possible nuclear exchange.

Since 1945 there were have been many high stakes nuclear crises (by my count, there have been twenty) in which “rational” states like the United States run a frighteningly-real risk of nuclear war.⁴¹ By asking whether states can be deterred or not, therefore, proliferation optimists ask the wrong question. The right question to ask is: what risk of nuclear war is a specific state willing to run against a particular opponent in a given crisis? Optimists are likely correct when they assert that Iran will not intentionally commit national suicide by launching a bolt-from-the-blue nuclear attack on the United States or Israel. This does not mean that Iran will never use nuclear weapons, however. Indeed, it is almost inconceivable to think that a nuclear-armed Iran would not, at some point, find itself in a crisis with another nuclear-armed power. It is also inconceivable that in those circumstances, Iran would not be willing to run any risk of nuclear war in order to achieve its objectives. If a nuclear-armed Iran and the United States or Israel have a geopolitical conflict in the future, over, for example, the internal politics of Syria, an Israeli conflict with Iran’s client Hezbollah, the U.S. presence in the Persian Gulf, passage through the Strait of Hormuz, or some other issue, do we believe that Iran would immediately capitulate? Or is it possible that Iran would push back, possibly even brandishing nuclear

⁴⁰ Ibid.

⁴¹ Matthew Kroenig, “Nuclear Superiority and the Balance of Resolve,” forthcoming.

weapons in an attempt to coerce its adversaries? If the latter, there is a real risk that proliferation to Iran could result in nuclear war.

An optimist might counter that nuclear weapons will never be used, even in a crisis situation, because states have such a strong incentive, namely national survival, to ensure that nuclear weapons are not used. But, this objection ignores the fact that leaders operate under competing pressures. Leaders in nuclear-armed states also have very strong incentives to convince their adversaries that nuclear weapons could very well be used. Historically we have seen that leaders take actions in crises, such as placing nuclear weapons on high alert and delegating nuclear launch authority to low level commanders, to purposely increase the risk of accidental nuclear war in an attempt to force less-resolved opponents to back down.

Moreover, not even the optimists' first principles about the irrelevance of nuclear posture stand up to scrutiny. Not all nuclear wars would be equally devastating.⁴² Any nuclear exchange would have devastating consequences no doubt, but, if a crisis were to spiral out of control and result in nuclear war, any sane leader would rather be facing a country with five nuclear weapons than one with thirty-five thousand. Similarly, any sane leader would be willing to run a greater risk of nuclear war against the former state than against the latter. Indeed, systematic research has demonstrated that states are willing to run greater risks and are, therefore, more likely to win nuclear crises when they enjoy nuclear superiority over their opponents.⁴³ Proliferation optimists miss this point, however, because they are still mired in 1940s deterrence theory. It is true that no rational leader would choose to launch a nuclear war, but, depending on the context, she would almost certainly be willing to risk one.

⁴² See for example, Herman Kahn, *On Thermonuclear War* (New York: Greenwood Press, 1978).

⁴³ Matthew Kroenig, "Nuclear Superiority and the Balance of Resolve," forthcoming.

Nuclear deterrence theorists have proposed a second scenario under which rational leaders could instigate a nuclear exchange: limited nuclear war.⁴⁴ By launching a single nuclear weapon against a small city, for example, a nuclear-armed state could signal its willingness to escalate a crisis, while leaving its adversary with enough left to lose to deter the adversary from launching a full-scale nuclear response. In a future crisis between China and the United States, for example, China could choose to launch a nuclear strike on Honolulu to demonstrate its seriousness. In that situation, with the continental United States intact, would Washington choose to launch a full-scale nuclear war on China that could result in the destruction of many more American cities? Or would it back down? China might decide to strike calculating that Washington would prefer a humiliating retreat over a full-scale nuclear war. If launching a limited nuclear war could be rational, it follows that the spread of nuclear weapons increases the risk of nuclear use. Again, by ignoring contemporary developments in scholarly discourse and relying exclusively on understandings of nuclear deterrence theory that became obsolete decades ago, optimists fail to make a compelling case.

The optimists also error by confusing stability with the national interest. Even if the spread of nuclear weapons contributes to greater levels of international stability (which discussions above and below suggest it might not) it does not necessarily follow that the spread of nuclear weapons is in the U.S. interest. There might be other national goals that trump stability, such as reducing to zero the risk of nuclear war in important geopolitical regions. Optimists might argue that South Asia is more stable because India and Pakistan both possess nuclear weapons, but certainly the risk of nuclear war is higher than if nuclear weapons did not exist on the subcontinent. In addition, it is wrong to assume that stability is always in the U.S. national interest. Sometimes it is, but sometimes it is not. If stability is obtained because

⁴⁴ Klaus Knorr *Limited Strategic War* (New York: Praeger, 1962).

Washington is deterred from using force against a nuclear-armed adversary in a situation where using force could have advanced national goals, stability harms, rather than advances, U.S. national interests.

The final gaping weakness in the proliferation optimist argument, however, is that it rests on a logical contradiction. This is particularly ironic, given that many optimists portray themselves as hard-headed thinkers, following their premises to their logical conclusions. But, the contradiction at the heart of the optimist argument is glaring and simple to understand: either the probability of nuclear war is zero, or it is nonzero, but it cannot be both. If the probability of nuclear war is zero, then nuclear weapons should have no deterrent effect. States will not be deterred by a nuclear war that could never occur and states should be willing to intentionally launch large-scale wars against nuclear-armed states. In this case, proliferation optimists cannot conclude that the spread of nuclear weapons is stabilizing.

If, on the other hand, the probability of nuclear war is nonzero, then there is a real danger that the spread of nuclear weapons increases the probability of a catastrophic nuclear war. If this is true, then proliferation optimists cannot be certain that nuclear weapons will never be used.

In sum, either the spread of nuclear weapons raises the risk of nuclear war and, in so doing, deters large-scale conventional conflict. Or there is no danger that nuclear weapons will be used and the spread of nuclear weapons does not increase international stability. But, despite the claims of the proliferation optimists, it is nonsensical to argue that nuclear weapons will never be used and to simultaneously claim that their spread contributes to international stability.

Proliferation Anti-obsessionists: Other scholars, who I label “anti-obsessionists” argue that the spread of nuclear weapons has neither been good nor bad for international politics, but rather

irrelevant. They argue that academics and policymakers concerned about nuclear proliferation spend too much time and energy obsessing over something, nuclear weapons, that, at the end of the day, are not all that important.

In *Atomic Obsession*, John Mueller argues that widespread fears about the threat of nuclear proliferation are overblown.⁴⁵ He acknowledges that policymakers and experts have often worried that the spread of nuclear weapons could lead to nuclear war, nuclear terrorism and cascades of nuclear proliferation, but he then sets about systematically challenging each of these fears. He contends that nuclear weapons have had little effect on the conduct of international diplomacy and that world history would have been roughly the same had nuclear weapons never been invented. Finally, Mueller concludes by arguing that the real problem is not nuclear proliferation, but nuclear nonproliferation policy because states do harmful things in the name of nonproliferation, such as take military action and deny countries access to nuclear technology for peaceful purposes.

Similarly, Ward Wilson argues that, despite the belief held by optimists and pessimists alike, nuclear weapons are not useful tools of deterrence.⁴⁶ In his study of the end of World War II, for example, Wilson argues that it was not the U.S. use of nuclear weapons on Hiroshima and Nagasaki that forced Japanese surrender, but a variety of other factors, including the Soviet Union's decision to enter the war. If the actual use of nuclear weapons was not enough to convince a country to capitulate to its opponent he argues, then there is little reason to think that the mere threat of nuclear use has been important to keeping the peace over the past half century. Leaders of nuclear-armed states justify nuclear possession by touting their deterrent benefits, but

⁴⁵ John Mueller, *Atomic Obsession*, 2009.

⁴⁶ Ward Wilson, "The Myth of Nuclear Weapons," *The Nonproliferation Review* vol. 15, no. 3 (November 2008), p. 421-439.

if nuclear weapons have no deterrent value, there is no reason, Ward claims, not to simply get rid of them.

Finally, Anne Harrington de Santana argues that nuclear experts “fetishize” nuclear weapons.⁴⁷ Just as capitalists according to Karl Marx bestow magical qualities on money, she argues that leaders and national security experts do the same thing to nuclear weapons. Nuclear deterrence as a critical component of national security strategy, according to Harrington de Santana, is not inherent in the technology of nuclear weapons themselves, but is rather the result of how leaders in countries around the world think about them. In short, she argues, “Nuclear weapons are powerful because we treat them as powerful.”⁴⁸ But, she maintains, we could just as easily “defetish” them, treating them as unimportant and, therefore, rendering them obsolete. She concludes that “Perhaps some day, the deactivated nuclear weapons on display in museums across the United States will be nothing more than a reminder of how powerful nuclear weapons used to be.”⁴⁹

The anti-obsessionists make some thought-provoking points and may help to reign in some of the most hyperbolic accounts of the effect of nuclear proliferation. They remind us, for example, that our worst fears have not been realized, at least not yet. Yet, by taking the next step and arguing that nuclear weapons have been, and will continue to be, irrelevant, they go too far. Their arguments call to mind the story about the man who jumps to his death from the top of a New York City skyscraper and, when asked how things are going as he passes the 15th story window, replies, “so far so good.”

⁴⁷ Anne Harrington de Santanna, “Nuclear Weapons as the Currency of Power: Deconstructing the Fetishism of Force.” *The Nonproliferation Review*, Vol. 16, No. 3 (2009), p. 325-345.

⁴⁸ *Ibid.*, p. 327.

⁴⁹ *Ibid.*, p. 342.

The idea that world history would have been largely unchanged had nuclear weapons never been invented is a provocative one, but it is also unfalsifiable. There is good reason to believe that world history would have been different, and in many ways better, had certain countries not acquired nuclear weapons.

Let us take Pakistan as an example. Pakistan officially joined the ranks of the nuclear powers in May 1998 when it followed India in conducting a series of nuclear tests. Since that time, Pakistan has been a poster child for the possible negative consequences of nuclear proliferation. Pakistan's nuclear weapons have led to further nuclear proliferation as Pakistan, with the help of rogue scientist A.Q. Khan, transferred uranium enrichment technology to Iran, Libya, and North Korea.⁵⁰ Indeed, part of the reason that North Korea and Iran possess uranium enrichment programs today is because they got help from Pakistan. Pakistan has arguably become more aggressive since acquiring nuclear weapons, displaying an increased willingness to sponsor cross-border incursions into India with terrorists and irregular forces.⁵¹ In a number of high-stakes nuclear crises between India and Pakistan, U.S. officials worried that the conflicts could escalate and intervened diplomatically to prevent a nuclear exchange on the subcontinent. The U.S. government also worries about the safety and security of Pakistan's nuclear arsenal, fearing that Pakistan's nukes could fall into the hands of terrorists in the event of a state collapse or a break down in nuclear security. And we still have not witnessed the full range of consequences arising from Pakistani nuclear proliferation. Islamabad has only possessed the bomb for a little over a decade, but they are likely to keep it for decades to come. It is possible that we could still one day witness a nuclear war between India and Pakistan. In short,

⁵⁰ Matthew Kroenig, *Exporting the Bomb: Technology Transfer and the Spread of Nuclear Weapons* (Ithaca: Cornell University Press, 2010).

⁵¹ Paul Kapur, *Dangerous Deterrent: Nuclear Weapons Proliferation and Conflict in South Asia* (Palo Alto: Stanford University Press, 2007).

Pakistan's nuclear capability has already had deleterious effects on U.S. national security and these threats are only likely to grow over time.

In addition, the anti-obsessionists are incorrect to argue that the cure of U.S. nuclear nonproliferation policy is worse than the disease of proliferation. Many observers would agree with Mueller that the U.S. invasion of Iraq in 2003 was a disaster, costing much in the way of blood and treasure and offering little strategic benefit. But the Iraq War is hardly representative of U.S. nonproliferation policy. For the most part, nonproliferation policy operates in the mundane realm of legal frameworks, negotiations, inspections, sanctions, and a variety of other tools. Even occasional preventive military strikes on nuclear facilities have been far less calamitous than the Iraq War. Indeed, the Israeli strikes on nuclear reactors in Iraq and Syria in 1981 and 2007, respectively, produced no meaningful military retaliation and a muted international response. Moreover, the idea that the Iraq War was primarily about nuclear nonproliferation is a contestable one, with Saddam Hussein's history of aggression, the unsustainability of maintaining the pre-war containment regime indefinitely, Saddam's ties to terrorist groups, his past possession and use of chemical and biological weapons, and the window of opportunity created by September 11th, all serving as possible prompts for U.S. military action in the Spring of 2003.

The claim that nonproliferation policy is dangerous because it denies developing countries access to nuclear energy also rests on shaky ground. If anything, the global nonproliferation regime has, on balance, increased access to nuclear technology. Does anyone really believe that countries like Algeria, Congo, and Vietnam would have nuclear reactors today were it not for Atoms for Peace, Article IV of the NPT, and other aspects of the nonproliferation regime that have provided developing states with nuclear technology in exchange for promises to

forgo nuclear weapons development? Moreover, the sensitive fuel-cycle technology denied by the Nuclear Suppliers Group (NSG) and other supply control regimes is not necessary to the development of a vibrant nuclear energy program as the many countries that have fuel-cycle services provided by foreign nuclear suppliers clearly demonstrate. Finally, the notion that nuclear energy is somehow the key to lifting developing countries from third to first world status does not pass the laugh test. Given the large upfront investments, the cost of back-end fuel management and storage, and the ever-present danger of environmental catastrophe exemplified most recently by the Fukushima disaster in Japan, many argue that nuclear energy is not a cost-effective source of energy (if all the externalities are taken into account) for any country, not to mention those developing states least able to manage these myriad challenges.

Taken together, therefore, the argument that nuclear nonproliferation policy is more dangerous than the consequences of nuclear proliferation, including possible nuclear war, is untenable. Indeed, it would certainly come as a surprise to the mild mannered diplomats and scientists who staff the International Atomic Energy Agency, the global focal point of the nuclear nonproliferation regime, located in Vienna, Austria.

The anti-obsessionists, like the optimists, also walk themselves into logical contradictions. In this case, their policy recommendations do not necessarily follow from their analyses. Ward argues that nuclear weapons are irrelevant and, therefore, we should eliminate them.⁵² But, if nuclear weapons are really so irrelevant, why not just keep them lying around? They will not cause any problems if they are as meaningless as anti-obsessionists claim and it is certainly more cost effective to do nothing than to negotiate complicated international treaties and to dismantle thousands of warheads, delivery vehicles, and their associated facilities.

⁵² Ward Wilson, "The Myth of Nuclear Weapons," 2008.

Finally, the idea that nuclear weapons are only important because we think they are powerful is arresting, but false. There are properties inherent in nuclear weapons that can be used to create military effects that simply cannot, at least not yet, be replicated with conventional munitions. If a military planner wants to quickly destroy a city on the other side of the planet, his only option today is a nuclear weapon mounted on an ICBM. Therefore, if the collective “we” suddenly decided to “defetishize” nuclear weapons by treating them as unimportant, it is implausible that some leader somewhere would not independently come to the idea that nuclear weapons could advance his or her country’s national security and thereby re-fetishize them.

In short, the optimists and anti-obsessionists have brought an important perspective to the nonproliferation debate. Their arguments are provocative and they raise the bar for those who wish to argue that the spread of nuclear weapons is indeed a problem. Nevertheless, their counterintuitive arguments are not enough to wish away the enormous security challenges posed by the spread of the world’s most dangerous weapons. These myriad threats will be considered in the next section.

Why Nuclear Proliferation Is a Problem

The spread of nuclear weapons poses a number of severe threats to international peace and U.S. national security including: nuclear war, nuclear terrorism, global and regional instability, constrained freedom of action, weakened alliances, and further nuclear proliferation. This section explores each of these threats in turn.

Nuclear War. The greatest threat posed by the spread of nuclear weapons is nuclear war. The more states in possession of nuclear weapons, the greater the probability that somewhere,

someday, there will be a catastrophic nuclear war. A nuclear exchange between the two superpowers during the Cold War could have arguably resulted in human extinction and a nuclear exchange between states with smaller nuclear arsenals, such as India and Pakistan, could still result in millions of deaths and casualties, billions of dollars of economic devastation, environmental degradation, and a parade of other horrors.

To date, nuclear weapons have only been used in warfare once. In 1945, the United States used nuclear weapons on Hiroshima and Nagasaki, bringing World War II to a close. Many analysts point to the sixty-five-plus-year tradition of nuclear non-use as evidence that nuclear weapons are unusable, but it would be naïve to think that nuclear weapons will never be used again simply because they have not been used for some time. After all, analysts in the 1990s argued that worldwide economic downturns like the great depression were a thing of the past, only to be surprised by the dot-com bubble bursting in the later 1990s and the Great Recession of the late Naughts.⁵³ This author, for one, would be surprised if nuclear weapons are not used again sometime in my lifetime.

Before reaching a state of MAD, new nuclear states go through a transition period in which they lack a secure-second strike capability. In this context, one or both states might believe that it has an incentive to use nuclear weapons first. For example, if Iran acquires nuclear weapons, neither Iran, nor its nuclear-armed rival, Israel, will have a secure, second-strike capability. Even though it is believed to have a large arsenal, given its small size and lack of strategic depth, Israel might not be confident that it could absorb a nuclear strike and respond with a devastating counterstrike. Similarly, Iran might eventually be able to build a large and survivable nuclear arsenal, but, when it first crosses the nuclear threshold, Tehran will have a small and vulnerable nuclear force.

⁵³ Steven Weber, "The End of the Business Cycle?" *Foreign Affairs* Vol. 76, No. 4 (July/August 1997), p. 65-82.

In these pre-MAD situations, there are at least three ways that nuclear war could occur. First, the state with the nuclear advantage might believe it has a splendid first strike capability. In a crisis, Israel might, therefore, decide to launch a preventive nuclear strike to disarm Iran's nuclear capabilities and eliminate the threat of nuclear war against Israel. Indeed, this incentive might be further increased by Israel's aggressive strategic culture that emphasizes preemptive action. Second, the state with a small and vulnerable nuclear arsenal, in this case Iran, might feel use 'em or lose 'em pressures. That is, if Tehran believes that Israel might launch a preemptive strike, Iran might decide to strike first rather than risk having its entire nuclear arsenal destroyed. Third, as Thomas Schelling has argued, nuclear war could result due to the reciprocal fear of surprise attack.⁵⁴ If there are advantages to striking first, one state might start a nuclear war in the belief that war is inevitable and that it would be better to go first than to go second. In a future Israeli-Iranian crisis, for example, Israel and Iran might both prefer to avoid a nuclear war, but decide to strike first rather than suffer a devastating first attack from an opponent.

Even in a world of MAD, there is a risk of nuclear war. Rational deterrence theory assumes nuclear-armed states are governed by rational leaders who would not intentionally launch a suicidal nuclear war. This assumption appears to have applied to past and current nuclear powers, but there is no guarantee that it will continue to hold in the future. For example, Iran's theocratic government, despite its inflammatory rhetoric, has followed a fairly pragmatic foreign policy since 1979, but it contains leaders who genuinely hold millenarian religious worldviews who could one day ascend to power and have their finger on the nuclear trigger. We cannot rule out the possibility that, as nuclear weapons continue to spread, some leader will choose to launch a nuclear war, knowing full well that it could result in self-destruction.

⁵⁴ Thomas Schelling, "Reciprocal Fear of Surprise Attack," (Santa Monica, CA: Rand Paper, 1958).

One does not need to resort to irrationality, however, to imagine a nuclear war under MAD. Nuclear weapons may deter leaders from intentionally launching full-scale wars, but they do not mean the end of international politics. As was discussed above, nuclear-armed states still have conflicts of interest and leaders still seek to coerce nuclear-armed adversaries. This leads to the credibility problem that is at the heart of modern deterrence theory: how can you credibly threaten to attack a nuclear-armed opponent? Deterrence theorists have devised at least two answers to this question. First, as stated above, leaders can choose to launch a limited nuclear war.⁵⁵ This strategy might be especially attractive to states in a position of conventional military inferiority that might have an incentive to escalate a crisis quickly. During the Cold War, the United States was willing to use nuclear weapons first to stop a Soviet invasion of Western Europe given NATO's conventional inferiority. As Russia's conventional military power has deteriorated since the end of the Cold War, Moscow has come to rely more heavily on nuclear weapons in its strategic doctrine. Indeed, Russian strategy calls for the use of nuclear weapons early in a conflict (something that most Western strategists would consider to be escalatory) as a way to de-escalate a crisis. Similarly, Pakistan's military plans for nuclear use in the event of an invasion from conventionally stronger India. And finally, Chinese generals openly talk about the possibility of nuclear use against a U.S. superpower in a possible East Asia contingency.

Second, as was also discussed above, leaders can make a "threat that leaves something to chance."⁵⁶ They can initiate a nuclear crisis. By playing these risky games of nuclear brinkmanship, states can increase the risk of nuclear war in an attempt to force a less resolved adversary to back down. Historical crises have not resulted in nuclear war, but many of them, including the 1962 Cuban Missile Crisis, have come close. And scholars have documented

⁵⁵ Klaus Knorr, *Limited Strategic War*, 1962.

⁵⁶ Thomas Schelling, *Arms and Influence*, 1966.

historical incidents when accidents could have led to war.⁵⁷ When we think about future nuclear crisis dyads, such as Iran and Israel, there are fewer sources of stability than existed during the Cold War, meaning that there is a very real risk that a future Middle East crisis could result in a devastating nuclear exchange.

Nuclear terrorism. The spread of nuclear weapons also increases the risk of nuclear terrorism.⁵⁸

It used to be said that “terrorists want a lot of people watching, not a lot of people dead,” but the terrorist attacks of September 11, 2001 changed expert perceptions of the terrorist threat.⁵⁹

September 11th demonstrated that Al Qaeda and other modern terrorist groups are interested in imposing massive casualties and there are few better ways of killing large numbers of civilians than detonating a nuclear weapon in a major metropolitan area. While September 11th was one of the greatest tragedies in American history, it would have been much worse had Osama Bin Laden been able to acquire nuclear weapons. Osama Bin Laden declared it a “religious duty” for Al Qaeda to acquire nuclear weapons and radical clerics have issued fatwas declaring it permissible to use nuclear weapons in Jihad against the West.⁶⁰ Unlike states, which can be more easily deterred, there is little doubt that if terrorists acquired nuclear weapons, they would use them. Indeed, in recent years, many U.S. politicians and security analysts have agreed that nuclear terrorism poses the greatest threat to U.S. national security.⁶¹

Wanting nuclear weapons and actually possessing them, however, are two different things and many analysts have pointed out the tremendous hurdles that terrorists would have to

⁵⁷ See, for example, Scott Sagan, *The Limits of Safety: Organizations, Accidents, and Nuclear Weapons* (Princeton University Press, 1993).

⁵⁸ On nuclear terrorism, see, for example, Michael Levi, *On Nuclear Terrorism* (Cambridge: Harvard University Press, 2007).

⁵⁹ Brian Michael Jenkins, “The New Age of Terrorism,” Santa Monica, CA: Rand, 2006.

⁶⁰ Fissile Materials Working Group, “After Bin Laden: Nuclear Terrorism Still a Top Threat,” *Bulletin of the Atomic Scientists* May 13, 2011.

⁶¹ *Ibid.*

overcome in order to acquire nuclear weapons.⁶² Nevertheless, as nuclear weapons spread, the possibility that they will eventually fall into terrorist hands increases. States could intentionally transfer nuclear weapons, or the fissile material required to build them, to terrorist groups. There are good reasons why a state might be reluctant to transfer nuclear weapons to terrorists, but, as nuclear weapons spread, the possibility that a leader might someday purposely arm a terrorist group increases. Some fear, for example, that Iran, with its close ties to Hamas and Hezbollah, might be at a heightened risk of transferring nuclear weapons to terrorists. Moreover, even if no state would ever intentionally transfer nuclear capabilities to terrorists, a new nuclear state, with underdeveloped security procedures, might be vulnerable to theft, allowing terrorist groups or corrupt or ideologically-motivated insiders to transfer dangerous material to terrorists. There is evidence, for example, that representatives from Pakistan's atomic energy establishment met with Al Qaeda members to discuss a possible nuclear deal.⁶³ Finally, a nuclear-armed state could collapse, resulting in a breakdown of law and order and a loose nuclear weapons problem. U.S. officials are currently very concerned about what would happen to Pakistan's nuclear weapons if the government were to fall. As nuclear weapons spread, this problem is only further amplified. Iran is a country with a history of revolutions and a government with a tenuous hold on power. The regime change that Washing has long dreamed about in Tehran could actually become a nightmare if a nuclear-armed Iran suffered a break down in authority, forcing us to worry about the fate of Iran's nuclear arsenal.

Regional instability: The spread of nuclear weapons also emboldens nuclear powers contributing to regional instability. States that lack nuclear weapons need to fear direct military attack from

⁶² Michael Levi, *On Nuclear Terrorism*, 2007.

⁶³ David Albright, *Peddling Peril: How the Secret Nuclear Trade Arms America's Enemies* (New York: Free Press, 2012).

other states, but states with nuclear weapons can be confident that they can deter an intentional military attack, giving them an incentive to be more aggressive in the conduct of their foreign policy. In this way, nuclear weapons provide a shield under which states can feel free to engage in lower-level aggression. Indeed, international relations theories about the “stability-instability paradox” maintain that stability at the nuclear level contributes to conventional instability.⁶⁴

Historically, we have seen that the spread of nuclear weapons has emboldened their possessors and contributed to regional instability. Recent scholarly analyses have demonstrated that, after controlling for other relevant factors, nuclear-weapon states are more likely to engage in conflict than nonnuclear-weapon states and that this aggressiveness is more pronounced in new nuclear states that have less experience with nuclear diplomacy.⁶⁵ Similarly, research on internal decision-making in Pakistan reveals that Pakistani foreign policymakers may have been emboldened by the acquisition of nuclear weapons, which encouraged them to initiate militarized disputes against India.⁶⁶

Currently, Iran restrains its foreign policy because it fears a major military retaliation from the United States or Israel, but with nuclear weapons it could feel free to push harder. A nuclear-armed Iran would likely step up support to terrorist and proxy groups and engage in more aggressive coercive diplomacy. With a nuclear-armed Iran increasingly throwing its weight around in the region, we could witness an even more crisis prone Middle East. And in a poly-nuclear Middle East with Israel, Iran, and, in the future, possibly other states, armed with nuclear weapons, any one of those crises could result in a catastrophic nuclear exchange.

⁶⁴ Glenn H. Snyder, “The Balance of Power and the Balance of Terror,” in *The Balance of Power*, ed. Paul Seabury (San Francisco: Chandler, 1965), p. 184-201.

⁶⁵ Robert Rauchhaus, “Evaluating the Nuclear Peace Hypothesis: A Quantitative Approach,” *Journal of Conflict Resolution* Vol. 53, No. 2 (April 2009), p. 258-277; Michael Horowitz, “The Spread of Nuclear Weapons and International Conflict: Does Experience Matter?” *Journal of Conflict Resolution* Vol. 53, No. 2 (April 2009), p. 234-257.

⁶⁶ Paul Kapur, *Dangerous Deterrent*, 2007.

Nuclear proliferation can also lead to regional instability due to preventive strikes against nuclear programs. States often conduct preventive military strikes to prevent adversaries from acquiring nuclear weapons. Historically, the United States attacked German nuclear facilities during World War II, Israel bombed a nuclear reactor in Iraq in 1981, Iraq bombed Iran's Bushehr reactors in the Iran-Iraq War in the 1980s and Iran returned the favor against Iraq's Osiraq reactor, a U.S.-led international coalition destroyed Iraq's nuclear infrastructure in the first Gulf War in 1991, and Israel bombed a Syrian nuclear reactor in 2007. These strikes have not led to extensive conflagrations in the past, but we might not be so lucky in the future. At the time of writing in 2012, the United States and Israel were polishing military plans to attack Iran's nuclear program and some experts maintain that such a strike could result in a wider regional war.

Constrained freedom of action. The spread of nuclear weapons also disadvantages American's national security by constraining U.S. freedom of action. As the most powerful country on the planet, with the ability to project power to every corner of the globe, the United States has the ability to threaten or protect every other state in the international system. This is a significant source of strategic leverage and maintaining freedom of action is an important objective of U.S. national security policy.⁶⁷

As nuclear weapons spread, however, America's military freedom of action is constrained. The United States can use, or credibly threaten to use, force against nonnuclear states. The threat of military action against nuclear-armed states is much less credible, however, because nuclear-armed states can deter U.S. military action with the threat of nuclear retaliation. In January 2012, for example, Iran threatened to close the Strait of Hormuz, a narrow Persian

⁶⁷ See, for example, Donald Rumsfeld, *The National Defense Strategy of the United States of America*, March 2005.

Gulf waterway through which roughly 20% of the world's oil flows, and the United States issued a counter-threat, declaring that Washington would use force to reopen the Strait if necessary. If Iran had had nuclear weapons, however, Washington's threats would have been much less credible. Would a U.S. President really be willing to risk nuclear war with Iran in order to reopen the Strait? Maybe. But, maybe not. While the United States might not be deterred in every contingency against a nuclear-armed state, it is clear that, at a minimum, the spread of nuclear weapons greatly complicates U.S. decisions to use force.

Undermines alliances: The spread of nuclear weapons also complicates U.S. alliance relationships. Washington uses the promise of military protection as a way to cement its alliance structures. U.S. allies depend on America's protection, giving Washington influence over allied states' foreign policies. Historically, the United States has offered, and threatened to retract, the security guarantee carrot to prevent allied states from acting contrary to its interests. As nuclear weapons spread, however, alliances held together by promises of military protection are undermined in two ways. First, U.S. allies may doubt the credibility of Washington's commitments to provide a military defense against nuclear-armed states, leading them to weaken ties with their patron. As Charles de Gaulle famously asked about the U.S. commitment to defend France from the Soviet Union during the Cold War, would Washington be willing to trade New York for Paris? Similarly, if Iran acquires nuclear weapons, U.S. partners in the Middle East, such as Israel and Gulf States, will question Washington's resolve to defend them from Iran. After all, if the United States proves unwilling to use force to prevent Iran from acquiring nuclear weapons, would it really be willing to fight a war against a nuclear-armed

Iran? Qatar, for example, already appears to be hedging its bets, loosening ties to Washington and warming to Tehran.

Second, nuclear proliferation could encourage client states to acquire nuclear weapons themselves, giving them greater security independence and making them less dependable allies. According to many scholars, the acquisition of the *force de frappe* was instrumental in permitting the French Fifth Republic under President Charles de Gaulle to pursue a foreign policy path independent from Washington and NATO.⁶⁸ Similarly, it is possible that Turkey, Saudi Arabia, and other regional states will acquire independent nuclear capabilities to counter Iran's nuclear arsenal, greatly destabilizing an already unstable region and threatening Washington's ability to influence regional dynamics.

Further proliferation. Nuclear proliferation poses an additional threat to international peace and security because it causes further proliferation. As former Secretary of State George Schultz once said, "proliferation begets proliferation."⁶⁹ When one country acquires nuclear weapons, its regional adversaries, feeling threatened by its neighbor's new nuclear capabilities, are more likely to attempt to acquire nuclear weapons in response. Indeed, the history of nuclear proliferation can be read as a chain reaction of proliferation. The United States acquired nuclear weapons in response to Nazi Germany's crash nuclear program. The Soviet Union and China acquired nuclear weapons to counter the U.S. nuclear arsenal. The United Kingdom and France went nuclear to protect themselves from the Soviet Union. India's bomb was meant to counter China and it, in turn, spurred Pakistan to join the nuclear club. Today, we worry that if Iran

⁶⁸ See, for example, Lawrence Scheinman, *Atomic Energy Policy in France*, 1965; Wilfred L. Kohl, *French Nuclear Diplomacy* (Princeton, NJ: Princeton University Press, 1971).

⁶⁹ Philipp Bleek, *The Nuclear Domino Myth: Why Proliferation Rarely Begets Proliferation*. PhD Dissertation. Department of Government, Georgetown University, 2010.

acquires nuclear weapons, other Middle Eastern countries, such as Egypt, Iraq, Turkey, and Saudi Arabia, might desire nuclear capabilities, triggering an arms race in a strategically important and volatile region.

Of course, reactive proliferation does not always occur. In the early 1960s, for example, U.S. officials worried that a nuclear-armed China would cause Taiwan, Japan, India, Pakistan, and other states to acquire nuclear weapons.⁷⁰ In hindsight, we now know that they were correct in some cases, but wrong in others. Using statistical analysis, Philipp Bleek has shown that reactive proliferation is not automatic, but that rather, states are more likely to proliferate in response to neighbors when three conditions are met 1) there is an intense security rivalry between the two countries, 2) the potential proliferant state does not have a security guarantee from a nuclear-armed patron 3) and the potential proliferant state has the industrial and technical capacity to launch an indigenous nuclear program.⁷¹ In other words, reactive proliferation is real, but it is also conditional. If Iran enters the nuclear club, therefore, it is likely that some, but not all, of the countries that we currently worry about will eventually follow suit and become nuclear powers.

We should worry about the spread of nuclear weapons in every case, therefore, because the problem will likely extend beyond that specific case. As Wohlstetter cautioned decades ago, proliferation is not an N problem, but an N+1 problem. Further nuclear proliferation is not necessarily a problem, of course, if the spread of nuclear weapons is irrelevant or even good for international politics as obsessionists and optimists protest. But, as the above discussion makes clear, nuclear proliferation, and the further nuclear proliferation it causes, increases the risk of nuclear war and nuclear terrorism, threatens global and regional stability, constrains U.S.

⁷⁰ Francis J. Gavin, "Blasts from the Past: Proliferation Lessons from the 1960s," *International Security*, Vol. 29, No. 3 (Winter 2004/2005), p 100-135.

⁷¹ Philipp Bleek, *The Nuclear Domino Myth*, 2010.

freedom of action, and weakens America's alliance relationships, giving us all good reason to fear the spread of nuclear weapons.

Conclusion

This article analyzed the past, present, and future of proliferation optimism. It began by reviewing the academic and policy origins of the pillars of proliferation optimism thinking. Next, it examined more recent work in this tradition, including a review of both proliferation optimism and proliferation anti-obsessionism. I demonstrated that this literature brings an important perspective to bear on the question of nuclear proliferation and reins in worst-case analyses of the consequences of nuclear proliferation. At the same time, I argued that, in making the case for the irrelevance of nuclear weapons, this literature swings too far in the opposite direction. Moreover, I demonstrated that too often these theorists support their arguments with contradictory logics and weak empirical evidence. Finally, I restated the argument about why the spread of nuclear weapons continues to pose a threat to international peace and security. Despite the claims of optimists, there is no getting around the fact that nuclear proliferation increases the risks of nuclear war, nuclear terrorism, regional instability, constrained U.S. freedom of action, weakened U.S. alliances, and further proliferation.

The findings of this article have important implications for the scholarly study of nuclear proliferation. While proliferation optimism and proliferation anti-obsessionism have made the field of nonproliferation studies more interesting in recent years, their inherent logical weaknesses means that they should remain niche, not mainstream, approaches to the study of nuclear proliferation. This article, therefore, aims to bring proliferation pessimism back in. The diffusion of the most powerful weapons ever invented by man is a serious problem. Period. The burden of proof is on those who wish to claim otherwise. So far, the optimists and anti-

obsessionists have made us think, but they have not made their case. It is not yet (and my guess is that it never will be) time for the discipline to shift its null hypothesis from the point of view that the spread of nuclear weapons is bad to the position that it is either good or irrelevant.

The argument of this article is mostly good news for U.S. nonproliferation policy. It is difficult, if not impossible, to find U.S. national security officials who believe that the spread of nuclear weapons is beneficial or irrelevant. That is not to say that proliferation optimism has not crept into the corridors of power in more subtle ways. Its influence can be found whenever national security officials too easily dismiss the problems posed by nuclear proliferation or breezily assert that a new nuclear state can be deterred. On balance, however, optimism has had more of an effect in the classroom than in the situation room. U.S. officials are correct to treat the spread of nuclear weapons as a serious threat and to go to great lengths to prevent it. Indeed, it would be downright dangerous if Washington were to follow the advice of optimists and anti-obsessionists. Would U.S. citizens (including proliferation optimists) really stand by if Washington distributed nuclear weapons to other countries in a Quixotic quest for stability? Would foreign officials be able to contain their laughter if U.S. officials were to announce at the next NPT Review Conference that the aim of U.S. nonproliferation policy was to “defetishize” nuclear weapons? Of course, there are things that U.S. officials could do better and the fine-tuning of U.S. nonproliferation policy makes an important subject for another article.

For now, however, we should rest assured, knowing that U.S. policymakers are too reasonable to be anything other than proliferation pessimists.