

The Illogic of Zero

Throughout 2009, proponents of the abolition of nuclear weapons were unlucky. Almost each time they tried to make their case on the international scene, the real world came to haunt them. On April 5, 2009, North Korea tested a long-range missile just a few hours before President Barack Obama delivered a major speech in Prague, disclosing his vision of a nuclear-weapons-free world.¹ On May 25, Pyongyang proceeded with a second nuclear test, a few days after signatories of the Non-Proliferation Treaty (NPT) had applauded the new U.S. vision in a preparatory meeting for the 2010 NPT Review Conference in New York. And on September 21, Iran officially informed the International Atomic Energy Agency (IAEA) of the existence of a heretofore secret nuclear enrichment facility in Qom, just three days before a planned historic summit of the UN Security Council in Washington, D.C.

Developments such as these, however, are not the only problem facing a nuclear-weapons-free world. The intellectual and political movement in favor of abolition suffers from unconvincing rationales, inherent contradictions, and unrealistic expectations. A nuclear-weapons-free world is an illogical goal.

Eliminating Nuclear Weapons: Unconvincing Rationales

The arguments of abolitionists fall in three broad categories: nuclear weapons should be eliminated “because we must,” “because we can,” and “because we should.”

Because We Must

The common interpretation of the NPT is that there is a legal commitment to abolish nuclear weapons as a quid pro quo for nonproliferation. Yet, this

Bruno Tertrais is a senior research fellow at the Fondation pour la Recherche Stratégique in Paris, France, and a member of the editorial board of *The Washington Quarterly*. He can be reached at b.tertrais@frstrategie.org.

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interpretation is debatable. Article VI of the treaty encourages states to “pursue negotiations in good faith on effective measures relating to cessation of the nuclear arms race at an early date and to nuclear disarmament, and on a treaty on general and complete disarmament under strict and effective international control.”² The text, therefore, should not be interpreted as being a simple and straightforward commitment to abolition of nuclear weapons by signatories. It is simply an obligation imposed on *all parties* to *negotiate* on three distinct issues: 1) measures relating to the cessation of the arms race, 2) matters relating to nuclear disarmament, and 3) a treaty on general and complete disarmament, without any clear indication of legal or material prioritization. (It could be argued that the cessation of the arms race is a prerequisite for the other two. China, the most vocal proponent of abolition among the five old nuclear powers [France, Russia, United Kingdom, and the United States], does not respect this by continuing to produce fissile material and adding dual-capable ballistic missiles to its arsenal.) Furthermore, as the negotiating record clearly shows, the disarmament clause was never meant to be a core aspect of the NPT, making it even less a precondition for adhering to the nonproliferation clauses.³

There is also an alleged moral dimension here. The NPT is often judged to be an unequal and discriminatory instrument where integrity and validity cannot be indefinitely sustained. But if that was the case, why would it have been unanimously prolonged for an unlimited duration in 1995? And why would it have become, with the addition of Cuba in 2003, one of the most universal treaties in force?⁴ The reality is that the vast majority of nonnuclear member states benefit from the existing regime. Aside from the fact that many of them are indirectly protected by nuclear weapons, the NPT goes a long way to ensure nonnuclear states that their neighbors or potential adversaries will not themselves become nuclear.

Also, many argue that nuclear weapons should be abolished because they are simply immoral: former IAEA Director-General Mohamed ElBaradei, for instance, compares them with “slavery or genocide.”⁵ But to compare the existence of weapons that are not used—and are meant to prevent war—with actual acts of physical destruction or degradation of human beings is not only logically incorrect but also ethically dubious.

Because We Can

A more interesting argument is that the strategic and technological context has changed so much in the past 20 years that long-distance conventional weapons could effectively be a substitute for nuclear deterrence. It is true that “[the U.S.] current conventional military power is more than sufficient to defeat any other conventional military force,” but this argument misses the point.⁶ First, it only

applies to the United States; none of its allies or adversaries has the same capabilities. Second, it is far from certain that even modern conventional weapons alone would be able to hold a major power such as Russia or China at bay. Such countries could very well believe—not entirely without reason—that Western public opinions would not support a sustained and prolonged conventional bombing campaign against them. Third, it may not even be a practical option to deter regional powers. Proponents of abolition often argue that threatening regime change through the use of force could be enough. Saddam Hussein, however, was not impressed by the threat of regime change. And the U.S.-led coalition’s difficulties in Iraq since 2003 have probably devalued the threat of invasion as a deterrent for at least another two decades.

The equivalent destructive power of nuclear weapons can be unleashed in a matter of seconds. The horror associated with their use makes them particularly terrifying due to their deadly effects because of radiation.⁷ It is because of these anticipated effects that nuclear deterrence has been much more effective in preventing wars than any other previous instruments or mechanisms. As Margaret Thatcher once reportedly said, “There is a monument to the failure of conventional deterrence in every French village.” Thomas Schelling reminds us that the worlds of 1914 and 1939, the years that mark the beginning of each world war, were nuclear-free ones.⁸ Yet, they resulted in the loss of approximately 80 million lives. Today, with nuclear weapons, the idea of a major war between great powers seems unlikely.

The last time a war took place between major powers was more than 70 years ago, which is an historical anomaly.⁹ Children born in 1945 are now reaching retirement age without having ever having seen a world war. In recent history, the fact that World War II took place only two decades after the first one shows that leaders and peoples can have very short memories. Although globalization and economic interdependence have advanced, history shows that political passions can easily trump economic rationales, as they did in Europe in 1914—the year in which World War I began even though the continent was at the height of “the first globalization” and war was believed to be a “Great Illusion” (Norman Angell) because it had no economic rationality.

Did the existence of global institutional systems fostering international cooperation and the peaceful settlement of disputes play a key role in avoiding a third world war? A system was already in place in the 1930s—the League of Nations—that proved powerless in preventing World War II: Germany and

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Changes in nuclear policies and postures have not had any impact on emerging nuclear programs.

Japan withdrew from it. (Of course, the UN is a more effective instrument and includes all major powers, but the UN did not play the central role in managing the Cold War confrontation and recent crises have shown that great powers can just choose to bypass the world organization.) Perhaps the growing democratization of the world played a role since democracies apparently do not fight each other? The argument is

certainly valid within the Western world, but cannot account for the absence of major war with China or Russia, two of the largest non-democracies in the world today. The bottom line is that it is very difficult to explain the absence of war among major powers in the past 65 years without taking into account the existence of nuclear weapons.¹⁰

Nuclear weapons have also limited the risk of chemical and biological weapons use: no nuclear-capable country has ever been the victim of such an attack. The history of the Middle East provides a good case study. Egypt used chemical weapons against Yemen between 1962 and 1967, but not against Israel in the 1973 war. Iraq used them against Iran from 1983 to 1988, but did not fire its Scud missiles loaded with chemical and biological weapons against Israel or the U.S.-led coalition in 1991. Could conventional weapons deter such risks as efficiently? The answer is likely to be no.

In addition, a post-nuclear world may be a highly unstable one. “Un-inventing” nuclear weapons would take several decades. Many countries would probably keep a *de facto* latent capability to reconstruct their nuclear arsenal, possibly triggering a “race to rearm” at the onset of the first major international crisis—not unlike what happened at the end of World War II when the United States rushed to develop the atomic bomb for fear that Germany would do it first.¹¹ The elimination of nuclear weapons would also compel most significant strategic players to increase their conventional military expenditures to maintain an identical level of security without nuclear weapons.

Because We Should

The most recent argument, and one which is a core rationale in the international debate started by four U.S. statesmen in January 2007, is that the nuclear risks—nuclear proliferation, accident, and terrorism—are so grave today that only abolition will eliminate them.¹² There is no question that nuclear perils continue to exist. Whether they are much graver than they were in the past is highly debatable.¹³ The risk of nuclear terrorism in particular, which is at the forefront of current U.S. concerns, has been consistently overestimated

over the years. Despite the dire previsions of many experts since 1945, no serious, elaborate, and well-funded attempt to organize such an act of terror is known to have ever taken place. Most actors lack either the will or the capability.¹⁴

Nuclear stockpiles are also generally much safer than they were 20 years ago. The oldest U.S. and Soviet “tactical” weapons, which did not include the most sophisticated security locks, have been retired. Efforts under the Nunn-Lugar program and the 2002 Global Partnership have secured most ex-Soviet materials. In the last decade, Pakistan’s nuclear build-up has been accompanied by stronger security measures. The acceleration of U.S.-led efforts to secure weapons and fissile materials—a goal of the April 2010 Nuclear Summit in Washington, D.C.—will decrease that risk even further. In any case, the question of terrorism can hardly be a key argument for abolition: what matters is to ensure the security of fissile material, whether it comes from weapons or from reactors.

Inherent Contradictions of Abolition as a “Vision”

Most reasonable proponents of nuclear abolition are, of course, well aware of these objections. That is why they suggest that abolition should be emphasized as a distant but discernible end state—a “vision”—that if adopted, will help manage and reduce nuclear risks. But why and how such a vision would make a significant difference in terms of securing nuclear arsenals and enhancing stability has never been clearly and convincingly articulated. Could this make a difference by limiting the risks of further nuclear proliferation in the near and medium term? Proponents argue that driving toward zero would elevate the nonproliferation regime and “lend additional weight to efforts already under way to avoid the emergence of a nuclear-armed North Korea and Iran.”¹⁵ It would also motivate non-aligned countries, such as Brazil, Egypt, or South Africa, to subscribe to new nonproliferation measures, such as signing the IAEA Additional Protocol, or trading an alleged right to enrichment and reprocessing for fuel assurances or multinational fuel banks.

Yet, changes in nuclear policies and postures since the late 1980s—the massive reductions in arsenals, the destruction of entire categories of systems, the cessation of testing by the five original nuclear weapons states, and the diminution of the role of nuclear weapons in Western countries—have not had any impact whatsoever on the nuclear programs of India, Iran, Iraq (before 1991), Israel, Libya (before 2003), North Korea, or Pakistan. In fact, if history is any guide, the relationship might actually work the other way round—arms control negotiations began in June 1969, one year after the NPT was concluded.

Furthermore, one is left to wonder why non-aligned countries would be more inclined to agree to bolster nonproliferation if the United States and

Russia slashed their arsenals to a small amount, such as a total of 1,000 warheads each. The history of the past 25 years shows that disarmament moves tend to be met either with skepticism or with additional demands. In fact, it sometimes seems that no bargain with the most vocal critics of nuclear weapons states will be possible short of a complete and irreversible nuclear disarmament.

History shows that nuclear weapons are useful to deter more than just nuclear use.

But what about a no-first-use posture, based on the premise that the sole purpose of nuclear weapons should be to deter the use of nuclear weapons? Would that not be a key step in demonstrably reducing reliance on nuclear weapons? Unfortunately, no-first-use offers false promises. A closer examination of the issue suggests that the prospective costs of such a doctrine largely

outweigh its potential benefits.¹⁶ The historical record shows that nuclear weapons are useful to deter more than just nuclear use; to proclaim a “sole purpose” doctrine would amount to a net security loss for most countries. And why would no-first-use statements, which could be reversed in a minute, be considered more important by critics of nuclear weapons states than the concrete, tangible steps they have taken to reduce nuclear arsenals?

Finally, far from being “a goal that disciplines the mind,” the vision of abolition could actually *augment* nuclear dangers.¹⁷ Affirming a commitment to zero would make it increasingly difficult to maintain a cadre of well-trained and motivated scientists, engineers, and soldiers to operate and monitor nuclear forces, and to get governments to fund such forces. The risk of incidents might rise. Events of the past three years in the United States such as the nuclear-armed cruise missiles mistakenly flown by the U.S. Air Force, nuclear missile components sent by error to Taiwan, and others highlight what happens when the nuclear culture is left to decay. In fact, it remains to be seen, as Obama suggests, whether or not going down the road to zero *while* maintaining a credible nuclear deterrent as long as nuclear weapons exist is possible. (In addition, a massive drawdown in nuclear arsenals may eventually force Western countries to revert to population targeting if deterrence is to remain efficient in the transition period to zero. Would this be consistent with the “moral heritage” that is put forward by proponents of abolition?¹⁸)

Countries which are protected by a nuclear umbrella such as Japan or Turkey might feel less comfortable with the U.S. commitment, regardless of any soothing words that may be uttered by Washington, and reopen their own nuclear debates at home. Others in the Middle East, such as Saudi Arabia, would

be even more inclined to look for independent means to assure their protection. It would take more than just dialogue to reassure them. Smaller countries that seek to balance Western power may actually feel encouraged to develop nuclear weapons or a “breakout” option if they believed that the West is on its way to getting rid of them.

The history of biological weapons should be a cause for caution. Japan started its program just a few years after the 1925 protocol that banned chemical and biological weapons use was signed. The Soviet Union took its own program to the next level by establishing the *Biopreparat* organization in charge of developing modified pathogens immediately after the 1972 convention that banned biological weapons production was signed. Once nuclear weapons were prohibited, they would become an extraordinary trump card for any international outlaw. Meanwhile, increased reliance on conventional weapons—a logical corollary of the downgrading of nuclear deterrence—might actually fuel proliferation dynamics, since Western superiority has often been a key motivation in this regard.

For those who already have nuclear weapons, the smaller the U.S. arsenal becomes, the less costly it would be to become “an equal of the United States.” China has never shown any inclination to become a nuclear superpower, but that calculus might change if Washington ever reduced its total arsenal to, say, a 1,000 weapons.

Reducing and ultimately eliminating nuclear weapons and stockpiles might also create security risks because of the important movement of fissile materials that it would involve: most experts agree that vulnerabilities to theft are at the highest during transportation.

By creating high expectations, abolitionism may end up with diplomatic effects which are the opposite of those they seek. Non-aligned countries could easily use the failure to achieve this goal as a reason (or a pretext) for not contributing to the reinforcement of the nonproliferation regime.¹⁹ Also, the abolition discourse would “confer more legitimacy on the egalitarian rhetoric that currently serve both the proliferators and the de facto nuclear countries.”²⁰ The emphasis on abolition would distract the current nonproliferation regime from the “real world” priorities of rolling back Iran and North Korea. As one author put it, the 1928 Briand-Kellogg treaty, which “outlawed” war, “became a substitute for difficult actions or an excuse for not taking them.”²¹ The argument that arms control is an escape from the more valuable goal of abolition should in fact be reversed: abolition as a vision would distract from arms control.²² The French philosopher Paul Ricoeur argues that one of the functions of a utopia is to help a society escape from hard realities; this may well be applicable to abolition.²³

Going to Zero: Unrealistic Expectations

Proponents of abolition also fail to be convincing when they tackle the question of the roadmap or how to get there. To claim that the key is for Washington to launch a “vigorous diplomatic effort to convince the world of the logic of zero” shows a faith in U.S. leadership that is nothing short of extraordinary given the current trends in nuclear matters.²⁴ In the past 20 years, Russia has increased the role of nuclear weapons in its defense policy while crucial countries have reached (e.g., North Korea) or neared (e.g., Iran) the nuclear threshold. Israel seems to be moving toward a survivable force including a second-strike capability. Even France, a staunch U.S. ally, considers nuclear weapons to be essential to its security, and is very skeptical of the idea of going to zero. (It argues that it would not necessarily create a safer world. The French also doubt that abolition as a vision would be the key to reinforce the nonproliferation norm. And they fear that it would deflect attention from the immediate problems of Iran and North Korea.)

Abolition as a vision would distract from arms control.

But the most significant trend is happening in Asia. All three Asian nuclear countries—China, India, and Pakistan—are steadily building up their capabilities and show absolutely no sign in

being interested in abolition, other than in purely rhetorical terms. In a sense, their positions are close to those they put forward in the climate change debate, which is: why should reduction be a goal when significant development is still needed, at least in Asia? There is also the inescapable fact that, for at least three major actors on the international scene—China, India, and Russia—nuclear weapons are also, rightly or wrongly, seen as a symbol of great power status.

Even assuming that there was a modicum of great power consensus on the idea of going to zero, devising a regime for the verifiable elimination of nuclear weapons would be a daunting task. The experiences of the Biological and Toxin Weapons Convention in 1972 and of the Chemical Weapons Convention in 1993 show that eliminating an entire category of weapons of mass destruction, with significant dual-use issues, is extremely difficult. Also, Western countries that agreed to get rid of their biological and chemical weapons did so *because* they could still count on nuclear weapons to deter their use. In fact, historically speaking, there has never been a successful attempt to eliminate instruments that have such a key role in security policies.²⁵

If U.S. conventional superiority has always been an important proliferation driver for regional powers, it is also a reason for Moscow and Beijing to value their nuclear weapons. More investment in modern precision conventional

weapons and missile defense will make it even harder for China and Russia to subscribe to the abolition agenda. As the biggest nuclear power and a key international actor, the perception of Russia is particularly important here, and there is no doubt that the combination of U.S. advanced conventional weapons and ballistic missile defense is a subject of extreme concern to Moscow.²⁶ Many proponents of abolition acknowledge that Russia may present the most important challenge to a U.S. drive toward abolition.²⁷ But they offer no realistic solution to this problem. Cooperative missile defense, for instance, might be an option to deal with defiant states, but it would not assuage Russian fears. For Washington, this could only be valid for dealing with common threats, whereas what Moscow seems to really want is a “right of veto” on any use of strategic missile defense by the United States.

What about, then, a global conventional arms control and missile defense regime to deal with the skepticism or fears of non-Western actors? Here, the lessons of previous agreements should be a cause for caution. The Soviet Union violated the Anti-Ballistic Missile Treaty and the United States unilaterally abrogated it. Russia has suspended the implementation of the Conventional Forces in Europe Treaty and regularly threatens to withdraw from the 1987 Intermediate Nuclear Forces Treaty. The issues encountered in managing these two treaties pale in comparison with those that would have to be dealt with to cope with a post-nuclear world. As a leading proponent of abolition thoughtfully acknowledges:

The world has no experience of negotiating limits of the complexity that would be required for U.S. qualitative advantages to be taken into account. Moreover, nothing in the past twenty years indicates that the U.S. would be willing to negotiate the sorts of limitations on the development and deployment of its advanced conventional capabilities, including missile defenses and space capabilities, that China might seek before it would agree to limit and reduce its nuclear capabilities.²⁸

But behind the arms control technicalities lies a deeper and most important problem. The difficulty in imagining how to devise credible security arrangements has its roots in the fundamentally competitive and sometimes adversarial nature of international politics. As the U.S. Strategic Posture Commission put it, “the conditions that might make the elimination of nuclear weapons possible are not present today and establishing such conditions would require a fundamental transformation of the world political order.”²⁹ Again, many supporters of abolition recognize this fact but are unable to come up with credible solutions. To be sure, as many statesmen and theorists from Dag Hammarskjöld to Hans Morgenthau have argued, arms control may help transform political conditions since the relationship between them is a

two-way street. But U.S.-Soviet disarmament (as opposed to arms control) only began in the late 1980s, *after* the political atmosphere had changed.

There is no precedent for the political challenges that would need to be confronted to transition to a nonnuclear world. These include solving most of the core issues that have dominated international politics since 1945–1950 such as Kashmir, Palestine, Taiwan, the division of the Korean Peninsula, and the conditions of European security. To claim that “eliminating nuclear weapons would remove a divisive element in relations between the United States, Russia, and China, freeing them to work together to create a regime of cooperative security” is tantamount to turning the problem on its head. To go even another step further, taking the peaceful settlement of the Russia–China border as a precedent to resolve the India-Pakistan problem, requires an unreasonable suspension of disbelief.³⁰ In sum, the conservative camp has a point when it argues bluntly that:

Without a coherent, practical explanation of how such an unprecedented transformation of the world order could come about, proponents of nuclear zero have explained nothing... Absent that transition there is no plausible path to zero... Unfortunately, the international system appears to be no closer now to the necessary transformation than when the same need was recognized by Thucydides in the fifth century BC.³¹

Beyond Abolition: Real Priorities for the Early Twenty-First Century

Former U.S. Secretary of Defense James R. Schlesinger is on the mark when he argues that the U.S. abolition drive “reflects on a combination of American utopianism and American parochialism.”³² Of course, the concerns elaborated in this paper are not reasons not to reduce at least the number of and reliance on nuclear weapons. To make the most destructive weapons less relevant and less central to world affairs *without decreasing international security* is a laudable goal. If the idea of a world “free” of nuclear weapons is not a convincing objective, avoiding being “prisoners” of nuclear weapons is a worthy and noble cause.³³

It is possible to move in that direction. All nuclear-capable countries should exercise the utmost restraint in their nuclear policies, and reduce reliance on nuclear weapons as much as possible, but without compromising their security needs. The United States and Russia can certainly give up most of their nuclear arsenals, the size of which is an inheritance of the Cold War. They should completely discard any consideration of using nuclear weapons as a technical substitute for the limitation of conventional ones. The early coming into force of the Comprehensive Test Ban Treaty and of a verifiable fissile material cut-off treaty would create barriers against nuclear competitions. Avoiding further proliferation should remain an absolute priority: allowing Iran and North Korea to continue their current policies will foster more proliferation and instability,

which will spell disaster one way or the other with the explosion of a nuclear weapon in anger as the end result sometime during the first part of this century.

The agenda laid out in the historic UN Security Resolution 1887 (2009) provides a good summary of what the coming decade's nonproliferation and disarmament priorities could be.³⁴ But the international community should do more. A serious reform of international governance, for instance—in particular of the UN Security Council—could go a long way to alleviate nuclear temptations or the use of nuclear technology as an instrument of power. It may not entirely be a coincidence that almost all the main contenders for a permanent seat at the UN Security Council—Brazil, Germany, India, Japan, and South Africa—have uranium enrichment capabilities.

Nuclear weapons are not eternal, and there are scenarios which would make elimination possible even before July 2045, the hundredth anniversary of the Trinity test that preceded the nuclear bombing of Hiroshima. A global and durable improvement of relations between great powers, which probably presumes a positive domestic political evolution in Russia and China, would help create the right conditions for the discussion of the abolition of nuclear weapons. And while there is no credible substitute for their existence today, the pace of scientific and technological research could be surprising: the idea of the development of alternatives to nuclear weapons in maybe three or four decades should not be excluded in analyses.

Abolition is not an unreachable goal. But getting there will be even more difficult than what most of its proponents assert. The good news for abolitionists is that some of the arguments put forward by their opponents are not entirely credible. The “un-invention” of nuclear weapons is *not* impossible: after several decades during which there would not be any functional nuclear explosive device, the know-how and the materials required to make safe and effective weapons could begin to vanish. And the verification and compliance challenges may not be as daunting as long as one does not put the cart before the horse: in the unprecedented era of international cooperation that would allow for the abolition of nuclear weapons, these issues would be much more manageable than in today's world. The same could be said for arms control in the field of conventional weapons and missile defense. In sum, if abolition was to become politically feasible, it would almost automatically become technically feasible as well.

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Meanwhile, two organizing principles suggested by two statesmen of the previous world war could be useful. Winston Churchill said, “Be careful above all things not to let go of the atomic weapon until you are sure and more than sure that other means of preserving peace are in your hands,” while Harry Truman urged us to “not become so preoccupied with weapons that we lose sight of the fact that war itself is the real villain.”³⁵ It would be in our interest to heed their advice.

Notes

1. Office of the Press Secretary, The White House, Prague, Czech Republic, April 5, 2009, http://www.whitehouse.gov/the_press_office/Remarks-By-President-Barack-Obama-In-Prague-As-Delivered/.
2. “Treaty on the Non-Proliferation of Nuclear Weapons,” July 1968, <http://www.un.org/events/npt2005/npttreaty.html>.
3. See Joachim Krause, “Enlightenment and Nuclear Order,” *International Affairs* 83, no. 3 (May 2007): 483–499 and Christopher A. Ford, “Interpreting Article VI of the Treaty on the Non-Proliferation of Nuclear Weapons,” *Nonproliferation Review* 14, no. 3 (November 2007): 401–428. Some also point to the 1996 advisory opinion given by the International Court of Justice, which states that: “There exists an obligation to pursue in good faith and bring to a conclusion negotiations leading to nuclear disarmament in all its aspects under strict and effective international control.” However, this did not create an additional legally binding obligation for nuclear weapons states.
4. Since the addition of Cuba in 2003, all countries without nuclear weapons are now parties to the treaty, with three exceptions: India, Israel, and Pakistan. The case of North Korea—which in 2003 announced its intention to withdraw from the NPT—is legally complex.
5. “You Can’t Bomb Knowledge,” *Newsweek*, December 21, 2009, <http://www.newsweek.com/id/226413>.
6. Ivo Daalder and Jan Lodal, “The Logic of Zero,” *Foreign Affairs* 87, no. 6 (November/December 2008): 83.
7. Most of the effects of nuclear weapons are blasts, heat, and indirect fires. But their secondary effects are essential in the psychology of deterrence: most people would rather die by a bullet than by radiation.
8. See Thomas C. Schelling, “A World Without Nuclear Weapons?” *Daedalus* 138, no. 4 (September 2009): 124–129.
9. Some compare the precedents of the post-1648 world or of the post-1815 world to the post–World War II world but these are poor examples. There were about 20 interstate military conflicts in the fifty years that followed the Westphalia treaties of 1648 on the European continent, involving most great powers of that time including Denmark, France, Holland, the Ottoman Empire, Poland, Russia, Spain, Sweden, and the United Kingdom. The same can be said for the period lasting from 1815–1914, which saw dozens of conflicts involving major European and Asian powers (excluding colonial wars).
10. See John Lewis Gaddis, Philip A. Gordon, Ernest R. May, and Jonathan Rosenberg, eds., *Cold War Statesmen Confront the Bomb: Nuclear Diplomacy since 1945* (Oxford: Oxford University Press, 1999).

11. See Schelling, "A World Without Nuclear Weapons?" p. 126.
12. See Ibid; George P. Shultz, William J. Perry, Henry A. Kissinger and Sam Nunn, "A World Free of Nuclear Weapons," *Wall Street Journal*, January 4, 2007, <http://online.wsj.com/article/SB116787515251566636.html>; George P. Shultz, William J. Perry, Henry A. Kissinger, and Sam Nunn, "Toward a Nuclear-Free World," *Wall Street Journal*, January 15, 2008, http://online.wsj.com/public/article_print/SB120036422673589947.html.
13. See John Mueller, *Atomic Obsession. Nuclear Alarmism from Hiroshima to Al-Qaeda* (New York: Oxford University Press, 2010).
14. See Robin M. Frost, "Nuclear Terrorism After 9/11," *Adelphi Paper*, no. 378 (London: International Institute for Strategic Studies [IISS], 2005); Michael A. Levi, *On Nuclear Terrorism* (Cambridge, MA: Harvard University Press, November 2007); Brian M. Jenkins, *Will Terrorists Go Nuclear?* (Amherst, MA: Prometheus Books, September 2008).
15. Shultz et al., "A World Free of Nuclear Weapons."
16. See Morton H. Halperin, Bruno Tertrais, Keith B. Payne, K. Subrahmanyam, and Scott D. Sagan, "The Case for No First Use: An Exchange," *Survival* 51, no. 5 (October–November 2009): 17–46.
17. "What To Do With the Vision of Zero," *Economist*, November 13, 2008.
18. See Shultz et al., "A World Free of Nuclear Weapons."
19. Harold Brown, "New Nuclear Realities," *The Washington Quarterly* 31, no. 1 (Winter 2007–2008): 19, http://www.twq.com/08winter/docs/08winter_brown.pdf.
20. Gilles Andreani, "Is Non-proliferation a Lost Cause?" *Halifax International Security Forum Paper Series* (Washington, D.C.: German Marshall Fund of the United States, November 2009), http://www.gmfus.org/halifax/docs/HalifaxPaper_Andreani_Final.pdf.
21. Brown, "New Nuclear Realities," p. 17.
22. See Jonathan Schell, "The Folly of Arms Control," *Foreign Affairs* 79, no. 5 (September–October 2000).
23. Paul Ricoeur, *Lectures on Ideology and Utopia* (New York: Columbia University Press, 1986). The point is made by Tiphaine de Champchesnel, "Un 'monde sans armes nucléaires' ou l'utopie du zéro" (A 'World without Nuclear Weapons' or the Utopia of Zero) in *Annuaire Français de Relations Internationales* (French International Relations Yearbook) (Brussels: Bruylant, 2010 [forthcoming]) (in French).
24. Daalder and Lodal, "The Logic of Zero," p. 82.
25. A comparison could be made with attempts made to abolish the use of gunpowder in the nineteenth century. For challenges regarding the abolition of nuclear weapons, see Philip Taubman, "The Trouble With Zero," *New York Times*, May 10, 2009, <http://www.nytimes.com/2009/05/10/weekinreview/10taubman.html>.
26. See Dennis M. Gormley, "The Path to Deep Nuclear Reductions: Dealing with American Conventional Superiority," *Proliferation Papers*, no. 29 (Paris: Institut Français des Relations Internationales, Fall 2009), http://cns.miis.edu/other/PP29_Gormley.pdf.
27. See George Perkovich and James M. Acton, "Abolishing Nuclear Weapons," *Adelphi Paper*, no. 396 (London: IISS, 2008); George P. Shultz, Sidney D. Drell, and James E. Goodby, eds., *Reykjavik Revisited: Steps Towards a World Free of Nuclear Weapons* (Stanford, CA: Hoover Institution Press, December 2008); Sidney D. Drell and James E. Goodby, *A World Without Nuclear Weapons: End-State Issues* (Stanford, CA: Hoover Institution Press, 2009).

28. George Perkovich, "The Next Big Steps Required to Move toward Nuclear Disarmament," p. 15 (paper, Helinski, Finland, October 22–24, 2009) (presented at conference titled "The NPT and a World Without Nuclear Weapons").
29. *America's Strategic Posture*, Final Report of the Congressional Commission on the Strategic Posture of the United States (Washington, D.C.: United States Institute of Peace, May 2009), p. 17, http://www.usip.org/files/America's_Strategic_Posture_Auth_Ed.pdf.
30. Drell and Goodby, *A World Without Nuclear Weapons*, pp. 33–34.
31. *Planning the Future U.S. Nuclear Force II*, National Institute for Public Policy, 2009, pp. 122–124.
32. Melanie Kirkpatrick, "Why We Don't Want a Nuclear-Free World," *Wall Street Journal*, July 13, 2009, <http://online.wsj.com/article/SB124726489588925407.html>.
33. Champchesnel, "Un 'monde sans armes nucléaires' ou l'utopie du zéro."
34. See UN Security Council Resolution 1887 (2009), SC/9746, September 24, 2009, <http://www.un.org/News/Press/docs/2009/sc9746.doc.htm>.
35. Winston Churchill, address to the U.S. Congress, quoted in speech by Margaret Thatcher at Lord Mayor's Banquet, November 10, 1986, <http://www.margaretthatcher.org/Speeches/displaydocument.asp?docid=106512&doctype=1> and Harry S. Truman, *Mr. Citizen* (New York: Bernard Geiss and Associates, 1960), p. 267.