

**NUCLEAR WEAPONS AND INTERGENERATIONAL EXPLOITATION**

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Nuclear weapons, it is sometimes said, are a Faustian bargain. Their terrifying power lowers the risk of war, though at the risk of appalling carnage should one nonetheless break out.<sup>1</sup> Nuclear weapons' defenders, in rejecting disarmament, insist that they play a key role in keeping the peace.<sup>2</sup> In the debate over nuclear proliferation, they hold that the bomb has prevented war in the past and will often do so in the future. Some maintain that we should tolerate—sometimes even welcome—its spread.<sup>3</sup> Disarmament advocates and critics of proliferation attack both claims.<sup>4</sup>

But if this is a Faustian bargain, it is an odd one. If the nuclear optimists are right, these weapons make the risk of war very small. We ourselves, maybe even our children and grandchildren, are unlikely to pay any costs at all. But that does not mean that the bill will never come due. Even leading nuclear optimists do not claim that nuclear weapons bring the risk of war down to zero. Many also hold that competition

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<sup>1</sup> John J. Mearsheimer, "The Case for a Ukrainian Nuclear Deterrent," *Foreign Affairs* 72, no. 3 (Summer 1993): 65; Bradley A. Thayer, "Nuclear Weapons as a Faustian Bargain," *Security Studies* 5, no. 1 (Autumn 1995): 149-63.

<sup>2</sup> John J. Mearsheimer, "Back to the Future: Instability in Europe After the Cold War," in *The Cold War and After: Prospects for Peace: Expanded Edition*, eds. Sean M. Lynn-Jones and Steven E. Miller (Cambridge, MA: MIT Press, 1993), 168; Keith B. Payne, "The Case Against Nuclear Abolition and for Nuclear Deterrence," *Comparative Strategy* 17, no. 1 (January-March 1998): 3-43; Michael Quinlan, "The Future of Nuclear Weapons: Policy for Western Possessors," *International Affairs* (London) 69, no. 3 (July 1993): 485-96; C. Paul Robinson and Kathleen C. Bailey, "To Zero or Not to Zero: A U.S. Perspective on Nuclear Disarmament," *Security Dialogue* 28, no. 2 (June 1997): 149-58; Kenneth N. Waltz, "Nuclear Myths and Political Realities," *American Political Science Review* 84, no. 3 (September 1990): 731-45.

<sup>3</sup> See notably Mearsheimer, "The Case for a Ukrainian Nuclear Deterrent," and Kenneth N. Waltz, "More May Be Better," in Scott D. Sagan and Kenneth N. Waltz, *The Spread of Nuclear Weapons: A Debate Renewed* (New York: Norton, 2003), 3-45.

<sup>4</sup> For arguments that nuclear weapons do not greatly reduce the risk of war, see Barry M. Blechman and Cathleen S. Fisher, "Phase Out the Bomb," *Foreign Policy* 97 (Winter 1994/95): 79-96, Michael McGwire, "Is There a Future for Nuclear Weapons?" *International Affairs* (London) 70, no. 2 (April 1994): 211-28; John Mueller, "The Essential Irrelevance of Nuclear Weapons: Stability in the Postwar World," in Lynn-Jones and Miller, *The Cold War and After*, 45-69. The most influential critique of nuclear optimism is Scott D. Sagan, "More Will Be Worse," in Sagan and Waltz, *Spread of Nuclear Weapons*, 46-87. Surveys and commentaries on the nuclear optimism-pessimism debate include Peter D. Feaver, "Optimists, Pessimists, and Theories of Nuclear Proliferation Management," *Security Studies* 4, no. 4 (Summer 1995): 754-72; Jeffrey W. Knopf, "Recasting the Proliferation Optimism-Pessimism Debate," *Security Studies* 12, no. 1 (Autumn 2002): 41-96; Peter R. Lavoy, "The Strategic Consequences of Nuclear Proliferation: A Review Essay," *Security Studies* 4, no. 4 (Summer 1995): 695-753; and Thayer, "Nuclear Weapons as a Faustian Bargain."

and war will persist.<sup>5</sup> In the long run, barring vast changes of a sort that most optimists consider utopian, deterrence must thus break down. Claims that “[n]uclear deterrence provides the United States with security and stability”<sup>6</sup> or that “[t]here is no inevitability of nuclear accident or miscalculation between the United States, Russia, or any other nuclear power”<sup>7</sup> are true at best in the short to medium term. Nuclear weapons may make *us* safer, but at the expense of our descendants. Every generation benefits until war breaks out; every postwar generation will pay the bill.

Analysts have long recognized that nuclear weapons threaten future people.<sup>8</sup> Contemporary debates over disarmament and proliferation nearly always assume, however, that they are good or bad for a given country *in general*. In fact, we can no more assume a harmony of interests among generations than among nations. Just as the belief that all states benefit from the international status quo muddles analysis,<sup>9</sup> so too does the assumption that all generations gain or lose from nuclear deterrence. To say, for example, that nuclear disarmament could “reduce U.S. security” by making conventional war more likely<sup>10</sup> is misleading because it fails to specify *which* Americans. Compared with the status quo, disarmament might well reduce present people’s security, while benefiting those born three hundred years from now. Similarly, if Ukraine had retained its nuclear weapons, as John Mearsheimer urged, this might have discouraged Russian attack.<sup>11</sup> But if he is right that war is endemic to

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<sup>5</sup> John J. Mearsheimer, *The Tragedy of Great Power Politics* (New York: Norton, 2001); Kenneth N. Waltz, *Man, the State and War: A Theoretical Analysis* (New York: Columbia University Press, 1959).

<sup>6</sup> Robinson and Bailey, “To Zero or Not to Zero,” 156.

<sup>7</sup> Payne, “Case Against Nuclear Abolition,” 25.

<sup>8</sup> Jefferson McMahan, “Nuclear Deterrence and Future Generations,” in *Nuclear Weapons and the Future of Humanity: The Fundamental Questions*, ed. Avner Cohen and Steven Lee (Totowa, NJ: Rowman & Allanheld, 1986), 319-39; Jonathan Schell, *The Fate of the Earth and The Abolition* (Stanford: Stanford University Press, 2000).

<sup>9</sup> Edward Hallett Carr, *The Twenty Years' Crisis, 1919-1939: An Introduction to the Study of International Relations* (New York: Harper & Row, 1964), chapter 4.

<sup>10</sup> Charles L. Glaser, *Analyzing Strategic Nuclear Policy* (Princeton: Princeton University Press, 1990), 169.

<sup>11</sup> Mearsheimer, “The Case for a Ukrainian Nuclear Deterrent.”

international politics, it would surely have meant losing Kiev later. Seen like that, nuclear deterrence seems a less savory bargain. Unlike Faust, who took his sins on his own head, we are sending our *descendants* to hell.

This article builds a bridge between recent nuclear debates and philosophical writings on intergenerational justice.<sup>12</sup> Most critics of nuclear deterrence and proliferation have argued either that it is intrinsically wrong to target civilians, or that war is more likely than we think. Here I assume that enemy civilians are fair game, and show that nuclear deterrence leads to morally rotten consequences *if the nuclear optimists are right*. First, I summarize the logic of optimism and argue that, even if these weapons reduce the risk of conflict, catastrophic war remains inevitable. Next, I outline three theories of intergenerational justice—based in social contract theory, distributive justice, and utilitarianism—and show that in each case nuclear deterrence fails the test. As when we drive SUVs or run up budget deficits, here too we scoop the benefits while passing on the costs. It is a wicked bargain, but does much to explain why both fossil fuels and the bomb are so hard to give up.

Third, I contend that states that have not yet obtained nuclear weapons have no justification for doing so—even if, in the short term, it would make them more secure. Sooner or later war will come, and instead of Baghdad or Tehran they will inherit rocks and radioactive ash. Advocates of horizontal proliferation like Mearsheimer and

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<sup>12</sup> Works on intergenerational justice include Bruce Edward Auerbach, *Unto the Thousandth Generation: Conceptualizing Intergenerational Justice* (New York: Peter Lang, 1995); Wilfred Beckerman and Joanna Pasek, *Justice, Posterity and the Environment* (Oxford: Oxford University Press, 2001); Dieter Birnbacher, *Verantwortung für zukünftige Generationen* (Stuttgart: Reclam, 1988), translated as *La responsabilité envers les générations futures* (Paris: Presses universitaires de France, 1994); Avner de-Shalit, *Why Posterity Matters: Environmental Policies and Future Generations* (London: Routledge, 1995); *Energy and the Future*, ed. Douglas MacLean and Peter G. Brown (Totowa, NJ: Rowman and Littlefield, 1983); *Fairness and Futurity: Essays On Environmental Sustainability And Social Justice*, ed. Andrew Dobson (Oxford: Oxford University Press, 1999); *Obligations to Future Generations*, ed. R. I. Sikora and Brian Barry (Philadelphia: Temple University Press, 1978); Derek Parfit, *Reasons and Persons* (Oxford: Clarendon, 1987), part 4; *Responsibilities to Future Generations: Environmental Ethics*, ed. Ernest Partridge (Buffalo, NY: Prometheus Books, 1981); and Edith Brown Weiss, *In Fairness to Future Generations: International Law, Common Patrimony, and Intergenerational Equity* (Tokyo: United Nations University, 1989).

Kenneth Waltz are unwittingly inviting people to exploit their own descendants. Nevertheless, it is Russia and the United States with their huge arsenals, not “rogue states,” that pose the greatest threat to the planet. Ideally, they ought to abandon all their nuclear weapons. But nuclear states cannot reliably bind themselves not to rearm in the course of a conflict. A failed attempt at disarmament could make catastrophic war more likely rather than less. The best Moscow and Washington can do under present conditions is to slash their arsenals.

The logic of nuclear optimism implies that minimum deterrence at around 200 warheads each should be at least as stable as the status quo. But neorealists should support deep cuts in Russian and American forces *even if it is not*. They believe major war cannot be banished from world politics. Given a choice between war sooner with limited damage, and war later with unlimited damage, we ought to prefer the former, since we internalize more of the costs of our own defense. Liberals, Marxists and constructivists may contend that nuclear war is *not* inevitable, and that a failed attempt at minimum deterrence could stymie trends toward international peace. But if Moscow and Washington should seek to justify huge arsenals on this ground, they ought to be working much harder to promote a peaceful world.

This article strips away the fig leaf in which optimists have clothed the bomb. If nuclear weapons do not make war less likely, seeking to spread or perpetuate them is foolish. But if they do, it is exploitative. States that face a severe threat will go nuclear regardless of the long term consequences. Nevertheless, my argument has practical implications. Not all states confront dire existential threats. Sometimes whether they acquire the bomb will depend on fierce internal battles in which ethical considerations may tip the balance. For outsiders to encourage proliferation in such cases is not just a blunder, but a crime. Moreover, the logic of nuclear optimism

suggests that nuclear states can and should go down to minimum deterrents.

Nevertheless, critics of the status quo face the same challenge as do other environmental activists of convincing people to change policies from which they reap most of the benefits, and pass on most of the costs.

### **A Faustian Bargain—But Who Pays the Bill?**

Nuclear weapons, so goes the case for the defense, make aggression hard and deterrence easy. States can hope for only small gains if they go to war. We may chip away at an adversary's border, but if we march on his capital, we risk our own annihilation. Even gamblers grow cautious when faced with the bomb. Whereas states may start a conventional war without being sure that they can win, any state that provokes nuclear retaliation against its cities can be certain that it will lose. We need not even know that the opponent will strike back; we need only fear that he *might*. Nuclear weapons make calculating the costs and benefits of war easy. "Do we expect to lose one city or two? Two cities or ten?" asks Kenneth Waltz. "When these are the pertinent questions, political leaders stop thinking about running risks and start worrying about how to avoid them."<sup>13</sup> The bomb cuts the chance of war *because* it is so destructive.

Nuclear weapons have several other helpful effects. First, strategies based on mutual assured destruction mitigate the security dilemma. With MAD we do not need more nuclear weapons than the opponent, or even as many; we need only enough to inflict unacceptable damage. Sensible leaders see that they need not run arms races; indeed, they can tolerate huge changes in relative power. Territorial expansion is not necessary, nor does it add much security. States can pursue conventional arms control with less anxiety. In a crisis they have little incentive to strike first, since even after

losing much of their force they can inflict intolerable damage on the opponent. Second, since most states covet their neighbors' territory less than they value their own, coercive threats are less credible than threats of retaliation. Deterrence thus favors defenders and reinforces the status quo. Finally, states do not have to mobilize public support for conventional armies. Because the bomb is an absolute weapon, they need no longer keep up with the Joneses (or Ivanovs), and in any case nuclear weapons cost less than soldiers. This spares leaders the task of whipping up support for high military spending, and makes nuclear states less prone to hypernationalism.<sup>14</sup> On such grounds some optimists advocate limited proliferation.<sup>15</sup>

#### BARRING RADICAL CHANGE, CATASTROPHIC WAR IS JUST A MATTER OF TIME

Most critics of the nuclear peace thesis have sought to show that war is more likely than the optimists claim. But even if nuclear deterrence makes war very unlikely, it is a good bargain only if the risk of nuclear war is *so* low that it is worth running to prevent another World War I or II.<sup>16</sup> Since the first time deterrence failed could be the last, this is a high hurdle for it to clear.<sup>17</sup> At times Waltz seems to have trouble seeing how war could break out at all. Nevertheless, even he admits that

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<sup>13</sup> Kenneth N. Waltz, "The Origins of War in Neorealist Theory," in *The Origin and Prevention of Major Wars*, ed. Robert I. Rotberg and Theodore K. Rabb (Cambridge, UK: Cambridge University Press, 1989), 49-50, quotation at 50.

<sup>14</sup> Avery Goldstein, *Deterrence and Security in the 21<sup>st</sup> Century: China, Britain, France, and the Enduring Legacy of the Nuclear Revolution* (Stanford: Stanford University Press, 2000), 279-91; Robert Jervis, "Cooperation Under the Security Dilemma," *World Politics* 30, no. 2 (January 1978): 206-209; Mearsheimer, "Back to the Future," 156-57; Barry R. Posen, "Nationalism, the Mass Army, and Military Power," *International Security* 18, no. 2 (Autumn 1993): 124; Thayer, "Nuclear Weapons as a Faustian Bargain," 151-53; Stephen Van Evera, *Causes of War: Power and the Roots of Conflict* (Ithaca: Cornell University Press, 1999), 244-46; Waltz, "More May Be Better," 24-25, 30-31.

<sup>15</sup> Mearsheimer, "Case for a Ukrainian Nuclear Deterrent;" Stephen Van Evera, "Primed for Peace: Europe After the Cold War," in Lynn-Jones and Miller, *The Cold War and After*, 200; Waltz, "More May Be Better."

<sup>16</sup> Cf. Knopf, "Recasting the Proliferation Optimism-Pessimism Debate," 48-49, 54.

<sup>17</sup> Steven P. Lee, *Morality, Prudence, and Nuclear Weapons* (Cambridge, UK: Cambridge University Press, 1996), 139-40.

nuclear deterrence can fail.<sup>18</sup> Fierce leaders may be willing to pay high costs. While only a fanatic would *choose* a nuclear war, we know from the Cold War that others will *risk* it. Since nuclear brinkmanship inevitably entails a danger that things may get out of control, states in a crisis can stumble into war.<sup>19</sup> Indeed, evidence from the Cold War shows that we were lucky not to blunder into it.<sup>20</sup>

How low is the risk of major war among nuclear states? Waltz claims that it “approaches zero.”<sup>21</sup> But here “approaches” is not good enough. So long as the risk of nuclear war does not steadily decrease, if we wait long enough it becomes a near certainty.<sup>22</sup> Some events—such as monkeys typing *Hamlet* by striking keys at random—are *so* unlikely that we can effectively treat them as impossible. Even over eons the chances are tiny that they will ever occur.<sup>23</sup> Nuclear war does not fall into this category. In the six decades since the atomic bomb was invented, we have already seen one nuclear war (though a small and one-sided one), a superpower crisis in which President Kennedy estimated the risk of war at between one in three and one in two,<sup>24</sup> and several other scares and confrontations in which the risk of war was small but not negligible. While we can only guess at the statistical probability, an estimate of one percent per year during the Cold War does not seem outlandish. By 1989 it was probably less,<sup>25</sup> while at points, such as the Berlin and Cuban crises, it was surely higher. At a rate of one percent, the risk exceeds fifty percent after sixty-nine years.<sup>26</sup>

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<sup>18</sup> Waltz, “More May Be Better,” 17, 33; Waltz, “Nuclear Myths,” 744.

<sup>19</sup> Thomas C. Schelling, *Arms and Influence* (New Haven: Yale University Press, 1966).

<sup>20</sup> Richard K. Betts, “Universal Deterrence or Conceptual Collapse? Liberal Pessimism and Utopian Realism,” in *The Coming Crisis: Nuclear Proliferation, U.S. Interests, and World Order*, ed. Victor A. Utgoff (Cambridge, MA: MIT Press, 2000), 73; Sagan, “More Will Be Worse;” Sagan, “Sagan Responds to Waltz,” in Sagan and Waltz, *Spread of Nuclear Weapons*, 155-84.

<sup>21</sup> Waltz, “Nuclear Myths,” 740.

<sup>22</sup> Rudolf Avenhaus et al., “The Probability of Nuclear War,” *Journal of Peace Research* 26, no. 1 (February 1989): 91-99.

<sup>23</sup> [http://en.wikipedia.org/wiki/Infinite\\_monkey\\_theorem](http://en.wikipedia.org/wiki/Infinite_monkey_theorem) (accessed 2 April 2007).

<sup>24</sup> Avenhaus et al., “Probability of Nuclear War,” 91.

<sup>25</sup> *Ibid.*, 97.

<sup>26</sup> *Ibid.*, 91-92.

Today, the risk that the United States or Russia will deliberately start a nuclear war has fallen, but with the erosion of Russian command and control, the risk of accidental war may actually have risen. “Given the exceedingly short reaction time that is available to decision-makers,” T. V. Paul observes, “there is all the more reason to worry about a 1914 scenario of misjudgments, miscalculations and strategic fatalism occurring in the future....”<sup>27</sup>

Moreover, we may well be in the lull between storms. Nuclear rivalries and arms races are likely to resume. Under multipolarity, the risk may be greater than before.<sup>28</sup> Washington and Beijing may manage their rivalry as successfully as did Washington and Moscow, but we should not bank on it. Moreover, the greater the number of nuclear states, the bigger the risk that one will start war by accident or fall under the control of a madman.<sup>29</sup> Even if new nuclear states handle their weapons no worse than did the superpowers, can we assume they will do better?<sup>30</sup> Poor states have strong incentives not to build as many weapons as did the Soviet Union and the United States,<sup>31</sup> but this may not be true for China, India, or other new superpowers. At several points during the Cuban missile crisis, things could have gone badly wrong.<sup>32</sup> When those states have *their* Cuban crises, will they be as lucky each time? Sooner or later the cards will fall against us, and with enough time, in a big way.

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<sup>27</sup> “The Risk of Nuclear War Does Not Belong to History,” in *The Waning of Major War: Theories and Debates*, ed. Raimo Väyrynen (London: Routledge, 2006), 113-32, quotation at 121. For a critique of the view that World War I gives grounds for fearing accidental nuclear war, see Marc Trachtenberg, “The Coming of the First World War: A Reassessment,” in Trachtenberg, *History and Strategy* (Princeton: Princeton University Press, 1991), 47-99.

<sup>28</sup> Michael MccGwire, “Shifting the Paradigm,” *International Affairs* (London) 78, no. 1 (January 2002): 12.

<sup>29</sup> Victor A. Utgoff, “Proliferation, Missile Defence, and American Ambitions,” *Survival* 44, no. 2 (Summer 2002): 87-90. Nuclear proliferation may restrain some states from deliberately initiating war, but the risk of accidents will go up. Dagobert L. Brito and Michael D. Intriligator, “Proliferation and the Probability of War: A Cardinality Theorem,” *Journal of Conflict Resolution* 40, no. 1 (March 1996): 206-14.

<sup>30</sup> Sagan, “Sagan Responds to Waltz,” 167.

<sup>31</sup> Waltz, “More May Be Better,” 30-31.

<sup>32</sup> Philip Brenner, “Thirteen Months: Cuba’s Perspective on the Missile Crisis,” in *The Cuban Missile Crisis Revisited*, ed. James A. Nathan (New York: St. Martin’s Press, 1992), 193, 198-99; Raymond L.

Waltz mocks such calculations, pointing out that in 1960 C. P. Snow claimed it was a “statistical fact” that nuclear weapons would be used in the next ten years. “Apparently,” Waltz scoffs, “fifty-some years is not a long enough run to confirm the stability of nuclear deterrence.”<sup>33</sup> Indeed, it is not. A few decades of uneasy peace are far too short a time to show the probability of nuclear war at all. Was the risk over the last half century forty percent, or was it merely fifteen? We have no way to tell.<sup>34</sup> Even if nuclear deterrence is like Russian roulette, Joseph Nye argues, there is a great difference between games when the pistol has six chambers and when it has a hundred.<sup>35</sup> That is true—if one plays only a few times. Nuclear deterrence, however, is Russian roulette played every day for decades. Even if relations among the nuclear powers are good, on any day of the year there is *some* chance of nuclear war, as Russia’s 1995 activation of its “nuclear suitcases” showed.<sup>36</sup> The risk of being “shot” need not rise over time. Still, one cannot play Russian roulette indefinitely. Seen from the perspective of a human lifespan, whether a pistol goes off within a few days or a few weeks makes little difference. Similarly, whether large-scale nuclear war comes next year or in two centuries matters little over the long haul of the earth’s history, though it makes a difference to us.

Barring revolutionary changes in technology or the states system, if we keep nuclear weapons for hundreds or thousands of years, they are going to be used—by accident or design. We may have colonized nearby planets by then, or other changes

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Garthoff, *Reflections on the Cuban Missile Crisis* (Washington, DC: Brookings Institution, 1987), 39-41, 56-57, 62, 109; Sagan, “More Will Be Worse,” **PAGES**.

<sup>33</sup> Kenneth N. Waltz, “Waltz Responds to Sagan,” in Sagan and Waltz, *Spread of Nuclear Weapons*, 125-26, 151.

<sup>34</sup> Robert E. Goodin, “Nuclear Disarmament as a Moral Certainty,” in *Nuclear Deterrence: Ethics and Strategy*, ed. Russell Hardin, John J. Mearsheimer, Gerald Dworkin and Robert E. Goodin (Chicago: University of Chicago Press, 1985), 269-70; Lee, *Morality, Prudence, and Nuclear Weapons*, 87-88.

<sup>35</sup> Joseph S. Nye, Jr., *Nuclear Ethics* (New York: Free Press, 1986), 63.

<sup>36</sup> Lachlan Forrow et al., “Accidental Nuclear War: A Post-Cold War Assessment,” *New England Journal of Medicine* 338, no. 18 (April 30, 1998): 1327; Paul, “Risk of Nuclear War,” 124.

may have made nuclear weapons irrelevant.<sup>37</sup> Or they may not. Arguing in favor of missile defense, William Safire claims that “hitting a bullet with a bullet is hard to do,” but “[i]n time, after costly trial and error, the new defense will surely leapfrog the old offense, as it always does.”<sup>38</sup> Always? In the five hundred years since small arms appeared, nobody has discovered how to shoot down a bullet. Why assume that missile defense—or any other technical solution—will be more successful? Some innovations are not easily neutralized, and nuclear weapons may be one of them. Richard Garwin has noted that if we start with an annual risk of nuclear war of one percent, and can reduce it by 20 percent each year, the total risk for all time will amount to under five percent. This leads Nye to conclude that “[i]f we can continually reduce probabilities [of nuclear war], failure is not inevitable in any meaningful time frame.”<sup>39</sup> But aspiring to reduce the risk of nuclear war by twenty percent every year is optimistic even for a liberal. For realists, while the risk of war may vary, there is no reason to think it will steadily decline at all.<sup>40</sup> Nuclear weapons would have posed a serious threat to humanity any time in the past three thousand years.

Given that realists believe that conflict is a fact of life and are skeptical of quick fixes to enduring international problems, it is odd that many are so sanguine about nuclear weapons.<sup>41</sup> Keith Payne, for example, attacks abolitionists for combining pessimism about the prospects for war with faith that disarmament is possible.<sup>42</sup> He has a point, but the argument can be turned around: Why think that disarmament will fail, but that deterrence is likely to succeed indefinitely?<sup>43</sup> Surely

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<sup>37</sup> Nye, *Nuclear Ethics*, 67.

<sup>38</sup> “Friendly Dissuasion,” *New York Times*, May 3, 2001.

<sup>39</sup> Avenhaus et al., “Probability of Nuclear War,” 92; Nye, *Nuclear Ethics*, 120.

<sup>40</sup> Mearsheimer, *Tragedy of Great Power Politics*, chapter 10.

<sup>41</sup> Betts, “Universal Deterrence or Conceptual Collapse,” 52; Ken Booth and Nicholas J. Wheeler, “Beyond Nuclearism,” in *Security Without Nuclear Weapons? Different Perspectives on Non-Nuclear Security*, ed. Regina Cowen Karp (Oxford: Oxford University Press, 1992), 29.

<sup>42</sup> Payne, “The Case Against Nuclear Abolition,” 24.

<sup>43</sup> Regina Cowen Karp, “Introduction,” in Karp, *Security Without Nuclear Weapons*, 19.

realists should conclude that *both* pessimistic views are justified. Is anything more utopian (or despairing) than a British official's remark that "we've got to try and make stable deterrence work for the rest of history"?<sup>44</sup> "[S]imple statistical probability,"

Campbell Craig observes,

shows that the continuation of anarchy and of nuclear deterrence will sooner or later result in war, thermonuclear war. In the long term deterrence is bound to fail: to predict that it will succeed forever, never once collapsing into a nuclear war, is to engage in a utopian and ahistorical kind of thinking totally contrary to traditional Realist philosophy, as well as to defy the irrefutable logic of infinite probability.<sup>45</sup>

There are good realist reasons to think we may be stuck with nuclear weapons whether we like it or not. But we should *not* like it. Realism is a tragic philosophy, not a Panglossian one. Handed lemons, realists should not make lemonade.

The outlook is certainly bleak. Human casualties from an all-out nuclear war between NATO and Russia could be in the hundreds of millions or billions. At worst, the smoke from burning cities and oil facilities could plunge the earth into chilly darkness, though some claim that predictions of "nuclear winter" are overblown. The environment would remain poisoned for thousands of years.<sup>46</sup> Waltz argues that if nuclear war breaks out, no state is likely to escalate it to apocalyptic levels, and that if weak states acquire and use nuclear weapons, "the world will not end."<sup>47</sup> He is probably right—about the *first* nuclear war. But unless a nuclear exchange revolutionizes world politics, states will remain in competition. A small nuclear war

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<sup>44</sup> Quoted in Booth and Wheeler, "Beyond Nuclearism," 23.

<sup>45</sup> Campbell Craig, *Glimmer of a New Leviathan: Total War in the Realism of Niebuhr, Morgenthau, and Waltz* (New York: Columbia University Press, 2003), 172.

<sup>46</sup> Stephen Dycus, "Nuclear War: Still the Gravest Threat to the Environment," *Vermont Law Review* 25, no. 3 (Spring 2001): 753-72; Douglas Holdstock and Lis Waterston, "Nuclear Weapons, a Continuing Threat to Health," *Lancet* 355, no. 9214 (April 29, 2000): 1545; Alan Robock, Luke Oman and Georgiy L. Stenchikov, "Nuclear Winter Revisited with a Modern Climate Model and Current Nuclear Arsenals: Still Catastrophic Consequences," *Journal of Geophysical Research—Atmospheres*, in press; Theodore Rueter and Thomas Kalil, "Nuclear Strategy and Nuclear Winter," *World Politics* 43, no. 4 (July 1991): 588-90; Carl Sagan and Richard Turco, *A Path Where No Man Thought: Nuclear Winter and the End of the Arms Race* (London: Century, 1990).

<sup>47</sup> Waltz, "More May Be Better," 17, 34-35, quotation at 17; Waltz, "Nuclear Myths," 733.

might provide the swift kick needed to get states to accept world government or other radical reforms,<sup>48</sup> but this seems unlikely. Even if it did not teach states that nuclear weapons were usable,<sup>49</sup> the brutality and resulting bitterness would more likely make their relations Hobbesian. What country would join a federation with a state that had just destroyed two of its cities? *Eventually*—in the second, third, or twenty-eighth nuclear war—fanatics, fools or leaders fearing pre-emption will be at the helm, and use large numbers of hydrogen bombs.

#### NO HARMONY OF INTERESTS

“It is true that nuclear weapons, very attractive as a deterrent, begin to look awfully unattractive when the focus shifts to war fighting,” says Mearsheimer. “... This is a Faustian bargain, attractive only because the alternative—a reasonable chance of destructive great power conventional war—seems worse.”<sup>50</sup> Worse for whom? Who gains from this bargain, and who loses? If the optimists are right, nuclear weapons give the inhabitants of nuclear states a better chance of dying in bed. True, when major thermonuclear war breaks out, many or most will be killed, but that is unlikely to happen in our lifetimes, or even in our grandchildren’s. These benefits are not evenly shared out. Non-aligned states face the side effects of nuclear war—which could be huge<sup>51</sup>—without the gains.<sup>52</sup> Wild animals, who are more likely to suffer from nuclear than conventional war, also get the short end of the stick.

Notably, nuclear deterrence discriminates among *generations*. Nuclear deterrence, however stabilizing, is not foolproof. Stephen Van Evera argues that

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<sup>48</sup> Booth and Wheeler, “Beyond Nuclearism,” 41; Nye, *Nuclear Ethics*, 62-63.

<sup>49</sup> Colin Gray, “To Confuse Ourselves: Nuclear Fallacies,” in *Alternative Nuclear Futures: The Role of Nuclear Weapons in the Post-Cold War World*, ed. John Baylis and Robert O’Neill (Oxford: Oxford University Press), 18.

<sup>50</sup> Mearsheimer, “Case for a Ukrainian Nuclear Deterrent,” 65.

<sup>51</sup> Sagan and Turco, *A Path Where No Man Thought*, chapter 12.

<sup>52</sup> Douglas P. Lackey, *Moral Principles and Nuclear Weapons* (Totowa, NJ: Rowman & Allanheld, 1984), 187.

proliferation would be “a net benefit to peace in Europe,”<sup>53</sup> but acknowledges that MAD “becomes a nightmare if nondeterrable nuclear actors appear.” A nuclear world with the likes of Hitler would be still more dangerous than a conventional one. He takes comfort in the thought that “[t]his danger is not at the world’s doorstep.”<sup>54</sup> But sooner or later, unless the world has been transformed, new Hitlers will appear. Proliferation might be a net benefit over the next fifty years, but not the next five hundred. Nuclear optimists falsely assume an intergenerational harmony of interests. If they are right, we all gain from deterrence until it breaks down. But it *will* break down. To stop worrying and love the bomb means to doom our descendants, to save our own miserable hides.

### **Intergenerational Exploitation**

Nuclear deterrence thus raises issues of intergenerational justice. Intergenerational justice deals with our obligations to past or future generations, particularly those with which our own lives do not overlap.<sup>55</sup> Certain actions—such as cutting down forests or producing radioactive waste—let us make gains at our descendants’ expense. Tax cuts now, debt repayment later can be a winning formula for re-election, as recent U.S. history shows. “In many intergenerational situations...it is less costly in the short term to ignore the problem,” observes Kimberly Wade-Benzoni. “...In the long run, however, it ends up costing more—*but those costs accrue to a different set of people.*”<sup>56</sup> Intergenerational exploitation is particularly

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<sup>53</sup> Van Evera, “Primed for Peace,” 200.

<sup>54</sup> Van Evera, *Causes of War*, 248-50. Van Evera is less confident than other optimists, holding that nuclear weapons may prove “a curse or a blessing” (*ibid.*, 254).

<sup>55</sup> Auerbach, *Unto the Thousandth Generation*, 3.

<sup>56</sup> Peter Graf Kielmansegg, “Können Demokratien zukunftsverantwortlich handeln?” *Merkur: Deutsche Zeitschrift für europäisches Denken* 57, no. 7 (July 2003): 583-94; Kimberly A. Wade-Benzoni, “Legacies, Immortality, and the Future: The Psychology of Intergenerational Altruism,” *Research on Managing Groups and Teams* 8 (2006): 248; Wade-Benzoni, “Thinking About the Future: An Intergenerational Perspective on the Conflict and Compatibility Between Economic and Environmental Interests,” *American Behavioral Scientist* 42, no. 8 (May 1999): 1395-96, quotation from 1396 (emphasis in original).

common in the environmental sphere. Nuclear power raises many of the same distributive issues as nuclear deterrence. We enjoy the electricity now; future generations face most of the risks. We exploit our descendants by creating an externality in our favor, since “future generations must bear very significant costs without having received the benefits of the activities prior to the accident.”<sup>57</sup> So too with nuclear deterrence. The objection that “no reasonable person with even a limited acquaintance with the history of human affairs over the last 3,000 years could be confident of safe storage by methods involving human intervention over the enormous time periods involved”<sup>58</sup> applies at least as much to nuclear weapons as to nuclear waste. Does any reasonable person, let alone a realist, expect deterrence to work for millennia without catastrophic “accidents”?

Many of us feel intuitively that to squander resources or hand down heaps of radioactive waste to future generations is wrong.<sup>59</sup> Such intuitions draw support from three ethical standpoints: contractarianism, distributive justice and utilitarianism.<sup>60</sup>

## SOCIAL CONTRACT THEORY

John Rawls argued that those institutions are just which rational egoists would choose if they were ignorant of the position in society they would occupy. If such

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<sup>57</sup> Brian Barry, “Intergenerational Justice in Energy Policy,” in MacLean and Brown, *Energy and the Future*, 29; Weiss, *In Fairness to Future Generations*, quotation at 5. On the externalization of costs to future generations, see Birnbacher, *Verantwortung für zukünftige Generationen*, 247-48, n. 71.

<sup>58</sup> R. Routley and V. Routley, “Nuclear Energy and Obligations to the Future,” *Inquiry* 21, no. 2 (Summer 1978): 136.

<sup>59</sup> I set aside the question of whether nuclear power may harm future generations less than continuing to devour fossil fuels.

<sup>60</sup> Some critics may invoke what Derek Parfit (*Reasons and Persons*, chapter 16) calls the non-identity problem. Nearly any major public policy affects who is born and who is not. If we rely on nuclear weapons, different people will be born than if we had relied on conventional deterrence instead. Hence, even if this leads to disaster, so long as postwar people find their lives even minimally worth living, we will not be able to identify specific individuals whom they have harmed. Philosophers have suggested a variety of responses to the non-identity problem. But perhaps the best response is that it violates our basic moral intuitions. It means, for example, that squandering resources harms no one in the far future, since different people will be born than if we conserve. Such claims, as Parfit himself says (*Reasons and Persons*, 378) are scarcely plausible. In any case, for the non-identity problem to apply, future people must find life worth living. If their lives are wretched—as could well be the case after nuclear war—they could blame us for creating the conditions for them to be born at all.

egoists were to choose a rule which they wished all previous generations to have followed, it would be in their interest to avoid intergenerational exploitation.<sup>61</sup> If we did not know whether we would be born in 1960, 2400 or 3700, surely we would not agree to our present squandering of fossil fuels that is heating up the planet. The risk of being born into a later generation would be too great. Nor would we agree to rely on thousands of nuclear weapons that may leave, by 3700, little planet to inherit. This is all the more true because the benefits of nuclear deterrence may last for only a century or two before it breaks down, while a nuclear war's survivors will have to deal with the consequences for thousands of years. Even if we assume that the earth's population would be much smaller after a war, the odds of being born into a post-holocaust generation would be high indeed.

#### DISTRIBUTIVE JUSTICE

We can also appeal to the principle of distributive justice. Future generations deserve as good opportunities as we have had, and this includes a livable planet.<sup>62</sup> It also means the right to inherit what past generations have built up. It is true that past people were under no obligation to write *Crime and Punishment* or build the Library of Congress, and in that sense we have no right to inherit them.<sup>63</sup> But since they *did* create those goods, future generations have the same right to enjoy them as we did. In one sense, I do not deserve to inherit a family fortune that I have not lifted a finger to earn. Still, if my father hocks the family heirlooms and squanders the money on

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<sup>61</sup> Volkert Beekman, "Sustainable Development and Future Generations," *Journal of Agricultural & Environmental Ethics* 17, no. 1 (January 2004): 8-9; Ronald M. Green, "Intergenerational Distributive Justice and Environmental Responsibility," in Partridge, *Responsibilities to Future Generations*, 91-101.

<sup>62</sup> Brian Barry, "Circumstances of Justice and Future Generations," in Sikora and Barry, *Obligations to Future Generations*, 243; Barry, "Sustainability and Intergenerational Justice," in Dobson, *Fairness and Futurity*, 98, 106; Paul M. Wood, "Intergenerational Justice and Curtailments on the Discretionary Powers of Governments," *Environmental Ethics* 26, no. 4 (Winter 2004): 421.

<sup>63</sup> Terence Ball, "The Incoherence of Intergenerational Justice," *Inquiry* 28, no. 8 (September 1985): 328; Lukas H. Meyer, "More Than They Have a Right to: Future People and Our Future-Oriented

champagne and caviar, he wrongs me as well as our ancestors.<sup>64</sup> Likewise, we hold the planet in trust for future generations as well as our own.<sup>65</sup>

Critics will object that mere existence is not the only thing worth handing down. Nuclear deterrence may protect other parts of the human heritage, such as free political institutions. “If we have benefited from ‘life, liberty, and the pursuit of happiness,’” Nye asks, “why should we assume that the next generation would want only life?” After all, we take a risk every time we get into a car.<sup>66</sup> But this confuses threats to individuals with threats to the environment. If I expect to live another fifty years, risking a car accident is a reasonable cost-benefit calculation. If the greenhouse effect threatens the future of life on earth, the calculus of driving becomes very different. So too with nuclear weapons. However desirable it may be to preserve the better aspects of our civilization for future generations, this pales against the obligation to preserve the natural world and favorable conditions for life on it, *because they can last for so much longer*. “If we do not soon destroy ourselves, but instead survive for a typical lifetime of a successful species,” note Carl Sagan and Richard Turco, “there will be humans for another 10 million years or so. Assuming that our lifespan and numbers do not much grow over that period, the cumulative

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Projects,” in *Contingent Future Persons: On the Ethics of Deciding Who Will Live, or Not, in the Future*, ed. Nick Fotion and Jan C. Heller (Dordrecht: Kluwer, 1997), 148.

<sup>64</sup> Cf. Annette Baier, “The Rights of Past and Future Persons,” in Partridge, *Responsibilities to Future Generations*, 176. Some claim that people that do not yet exist cannot have rights (e.g., Beckerman and Pasek, *Justice, Posterity and the Environment*). Yet a terrorist who sets a time bomb that kills a dozen children eighty years later violates their rights even though the children were not born when the bomb was set and the bomb-maker is no longer alive when it goes off. Even an unborn child, as Joel Feinberg points out, can have the right to property, “contingent upon his birth, and instantly voidable if he dies before birth....Assuming that the child will be born, the law seems to say, various interests that he will come to have after birth must be protected from damage that they can incur even before birth.” That temporal logic precludes a future person from demanding her rights, whereas babies are merely physically and intellectually incapable of doing so, seems a morally irrelevant distinction. See Birnbacher, *Verantwortung für zukünftige Generationen*, 98-99; Feinberg, “The Rights of Animals and Unborn Generations,” in Partridge, *Responsibilities to Future Generations*, 146; Clark Wolf, “Intergenerational Justice,” in *A Companion to Applied Ethics*, ed. R. G. Frey and Christopher Heath Wellman (Malden, MA: Blackwell Publishing, 2003), 281.

<sup>65</sup> Weiss, *In Fairness to Future Generations*.

<sup>66</sup> Nye, *Nuclear Ethics*, 45, 65, quotation at 65.

human population—all of us who have ever lived—would then reach the startling total of about a quadrillion (a 1 followed by 15 zeros).<sup>67</sup> And this is just *one species*. Vertebrate animals have been around for some half a billion years; human beings for tens of thousands; sedentary civilizations for a few millennia, and the ideals of the Founding Fathers for about three centuries.

Barring catastrophe, sentient life, even human beings, will outlast Locke and Jefferson by a tidy few millennia. Past generations have thought their ideals worth preserving, but we would not want them to have put the planet at risk to do so. Suppose that nuclear weapons had been discovered in the twelfth century. Would the Crusaders have had the right to risk nuclear holocaust to save Christian Jerusalem from the Saracens? Would we countenance nuclear brinkmanship by Philip II in the name of the Counterreformation? As Barrie Paskins says, “Who are we, beings with a life expectancy of decades, to discuss the entire future of the planet in terms deriving exclusively from our concerns, concerns which may be expected to count for nothing in a few millennia with or without nuclear war?”<sup>68</sup>

Some will claim that this argument allows the future to tyrannize over the present.<sup>69</sup> Theories of distributive justice, however, may establish limits on what we owe.<sup>70</sup> We need not live in slums so that our grandchildren can live in palaces, because this would mean extreme and avoidable inequality. Nuclear deterrence, conversely, is in the long run almost sure to leave many future people worse off than we are. Any progress the future brings will be cancelled out by a major thermonuclear war—to say nothing of the calculus for non-human animals. Nuclear deterrence thus

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<sup>67</sup> Sagan and Turco, *A Path Where No Man Thought*, 72.

<sup>68</sup> Barrie Paskins, “Deep Cuts are Morally Imperative,” in *Ethics and Nuclear Deterrence*, ed. Geoffrey Goodwin (New York: St. Martin’s Press, 1982), 94.

<sup>69</sup> Nye, *Nuclear Ethics*, 64.

violates the principle that we should “leave ‘as much and as good’ of the public goods previous generations have bequeathed”<sup>71</sup>—such as a nonradioactive landscape—as we have enjoyed ourselves.

## UTILITARIANISM

Nuclear deterrence is also incompatible with total utilitarianism, which says we should want the greatest good for the greatest number.<sup>72</sup> Whatever benefits we presently draw from deterrence will be outweighed by centuries or millennia of suffering after it breaks down. Average utilitarianism, in contrast, says we should maximize the welfare of however many beings exist. If war killed everybody, average utility might remain fairly high. We would enjoy the blessings of deterrence until war broke out, and after that we would all be dead. But research in the 1990s indicated that even catastrophic war should not kill *everyone*,<sup>73</sup> and so long as some people or sentient animals survive a holocaust, nuclear deterrence will also reduce average utility. In any case, if nuclear war should drive us extinct, this is hardly a moral argument in its favor.

If only a single generation—call it generation H—stood to suffer from nuclear war, we might defend deterrence on contractarian or utilitarian grounds. Each generation, contractarians might claim, makes the Faustian bargain, and if war comes along on its watch, tough luck. Utilitarians might hope that the benefits that preceding generations A-G enjoyed from the nuclear peace would outweigh the suffering of generation H. But a nuclear war would penalize not only the generation that drew the short straw, but all generations that lived after it. *We* take a small *risk* of a nuclear

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<sup>70</sup> James Woodward, “The Non-Identity Problem,” *Ethics* 96, no. 4 (July 1986): 819-820.

Utilitarianism might require earlier generations to make disproportionate sacrifices, as Birnbacher (*Verantwortung für zukünftige Generationen*, 111-17) concedes.

<sup>71</sup> Baier, “Rights of Past and Future Persons,” 176.

<sup>72</sup> Birnbacher’s *Verantwortung für zukünftige Generationen* develops a detailed utilitarian theory of intergenerational ethics.

conflict, and enjoy a low risk of conventional war. Wartime generation H enjoys the benefits of nuclear deterrence until it breaks down. But its descendants are left picking up the pieces. Here, if the optimists are right, is where the exploitation comes in. Should the first few wars remain limited, their survivors may continue to benefit from the lower incidence of war nuclear weapons provide. But as wars recur the costs of deterrence will mount compared to its benefits, and those benefits will be wiped out almost completely when at last the “big one” arrives.

### COSMOPOLITAN VS. NATIONALIST ETHICS

The foregoing analysis has been cast in terms of what is right for the world. Many realists argue in just this way. Urging states to pursue their selfish interests, they often justify doing so through cosmopolitan arguments.<sup>74</sup> Waltz, for example, defends horizontal proliferation in terms of its effects on the system. Yet some may say that a state’s primary duty is not to the world, but to its own citizens.<sup>75</sup> This rests on the observation that government involves a fiduciary relationship.<sup>76</sup> Leaders, one might argue, have no more right to endanger their country’s interests than trustees have to donate the money entrusted to them to UNICEF. Even if one accepts this view of trusteeship,<sup>77</sup> it does not follow that they should protect their citizens at other countries’ expense. Though trustees bear an obligation to protect their charge’s interests, this does not mean they can do anything they please to innocent bystanders.

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<sup>73</sup> Alan Robock, “Scénario de notre dernier hiver,” *Le temps stratégique* 80 (1998).

<sup>74</sup> Thus Michael C. Desch holds that if states follow realist prescriptions, this will be best for the world. “It is Kind to be Cruel: the Humanity of American Realism,” *Review of International Studies* 29, no. 3 (July 2003): 415-26. Even Hans Morgenthau held that national survival was a precondition for achieving universal goods. In his view, A. J. H. Murray notes, “national self-preservation is a moral duty, but only ‘in the absence of an overriding moral obligation.’” His defense of the national interest thus “possesses a derivative justification.” “The Moral Politics of Hans Morgenthau,” *Review of Politics* 58, no. 1 (Winter 1996): 103-4.

<sup>75</sup> Thanks to a referee for suggesting this point, as well as the example of Israel in footnote 73.

<sup>76</sup> David Lewis, “Finite Counterforce,” in *Nuclear Deterrence and Moral Restraint: Critical Choices for American Strategy*, ed. Henry Shue (Cambridge, UK: Cambridge University Press, 1989), 93.

<sup>77</sup> I am not sure I do. Suppose that during a famine a trustee steals \$8 million from an heiress’s \$10 million trust fund and uses it to save several hundred people’s lives. I would not condemn him.

While it may be wrong to give Tommy's trust fund to charity, it would also be wrong to enlarge the fund by embezzling money from Tina's. Similarly, it may be wrong for states to increase their security through nuclear deterrence at the expense of neutral third parties or future generations.

Let us suppose, however, that leaders *do* have the right to harm other countries in the interest of their own citizens. Do nuclear weapons help them to do this? A state might increase its citizens' security by acquiring a nuclear monopoly. But such a monopoly is unlikely to last. Historically, one state's acquisition has often led its rivals to follow suit.<sup>78</sup> What if a state's *rival* is going nuclear? Here leaders have often believed that the best way to protect national security is to nuclearize in response. This may be true in the short term. But in most cases, conventional defense or even surrender would be a better way to ensure long-term national security. An enemy is most unlikely to launch a full-scale nuclear attack against a non-nuclear state, though it might use a few weapons for coercion. If only State A has nuclear weapons, it has little incentive to pre-empt in a crisis, and State B *cannot* pre-empt.<sup>79</sup> Nor is a limited nuclear war as likely to get out of control, because there is no risk of reciprocal escalation. While nuclear deterrence may save the next few generations from being red, it increases distant generations' chance of being dead, and that is not in the long-term national interest.<sup>80</sup> Even ethical theories that privilege national interests are very unlikely to demand nuclear deterrence, once future generations are factored in.

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<sup>78</sup> Bradley A. Thayer, "The Causes of Nuclear Proliferation and the Utility of the Nuclear Nonproliferation Regime," *Security Studies* 4, no. 3 (Spring 1995): 486-93.

<sup>79</sup> This assumes that State B's conventional weapons cannot threaten its nuclear force.

<sup>80</sup> McMahan, "Nuclear Deterrence and Future Generations." One might argue that people in the far future will not belong to the same nation, and that states therefore owe a greater obligation to the next few generations. Reasoning along communitarian lines, Avner de-Shalit holds that our *positive* obligations to future people diminish as they become more distant. Nevertheless, he holds that "[t]o people of the very remote future we have a strong 'negative' obligation—namely, to avoid causing them enormous harm or bringing them death, and to try and relieve any potential and foreseeable distress." *Why Posterity Matters*, 13, 54, 63-65, quotation from 13. Nuclear deterrence flunks this test.

Confronted with a foreign adversary, states ought, in principle, either to rely on conventional defense, or to surrender. If nuclear weapons are readily available, however, the latter is too much to ask. As David Lewis observes, even if surrender is the best of all choices, if a leader is not confident she could choose it, it may be unwise to try. Pakistan *ought* to give up its nuclear weapons in the interest of future generations, and in a war with India, it should accept defeat rather than rebuild them. But surely it would not—and if Pakistan scrambled to re-arm during a crisis, that might make nuclear war *more* likely. If this is so, wrong as it is to rely on nuclear deterrence, this is a case where, in Lewis’s words, “it is best to intend the second best.”<sup>81</sup> As we shall see, that second-best is minimum deterrence.

### **What Is To Be Done?**

Nuclear deterrence, if the optimists are right, buys today’s inhabitants of nuclear states a better chance of a ripe old age. It buys future generations rubble. If the optimists are wrong, the bargain looks still worse. Even if apocalyptic war is not inevitable, we should do all we can to avert it. “Where there is any risk of something infinitely awful happening,” Robert Goodin remarks, “then probabilities simply do not matter. Just so long as that outcome is possible...we must do whatever we can to avoid it. Infinite costs, discounted by any probability larger than zero, are still infinite.”<sup>82</sup> Certainly, if catastrophic war is even *likely*, the Faustian bargain is a bad

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The exception might be if a state’s enemies are bent on genocide. Suppose Israelis fear that in the absence of nuclear weapons their enemies would murder the Israeli nation. If they are right, then nuclear deterrence could serve the interests even of *future* generations of Israelis. Despite the near-inevitability of eventual nuclear war, Israelis might consider this a lesser risk than that of Arab genocide. Before acting on such a conclusion, Israel should explore every conceivable alternative, including a conventional military build-up, appeasing the Arabs or even shutting down the Zionist enterprise and moving to other parts of the world. If none of these is a feasible means of securing Israelis’ physical survival, then building a small nuclear arsenal might be justified. For an insightful discussion, see Henry Shue, “Liberalism: The Impossibility of Justifying Weapons of Mass Destruction,” in *Ethics and Weapons of Mass Destruction: Religious and Secular Perspectives*, ed. Sohail H. Hashmi and Steven P. Lee (Cambridge, UK: Cambridge University Press, 2004), 139-62.

<sup>81</sup> Lewis, “Finite Counterforce,” 74.

<sup>82</sup> Goodin, “Nuclear Disarmament as a Moral Certainty,” 274.

one indeed. But barring major technological or political changes, in the long-run total war is all but inevitable—if not the first nuclear war, then the tenth or twentieth. Jacques Chirac asserts that “[o]ur [nuclear] deterrent guarantees...that France's survival will never be placed into question by a major military power.”<sup>83</sup> *Never?* There is no security from long-term thermonuclear catastrophe.

In this devil's bargain the archfiends are Russia and the United States, though other states may have forces big enough to threaten global disaster.<sup>84</sup> “States with large arsenals and faulty bureaucratic routines may accidentally fire warheads *in large numbers*,” Waltz concedes, before adding, “States with small arsenals cannot do so.... Efforts should concentrate more on making large arsenals safe and less on keeping weak states from obtaining the small number of warheads they may understandably believe they need for security.”<sup>85</sup> Waltz is right. But while only the great powers hold humanity hostage, China, India and Pakistan are still buying security at their own descendants' expense. “[W]e ought to be disturbed by the apparently permanent position of nuclear weapons in the international system, even acknowledging that there is now little that can be done about it,” Lawrence Freedman wrote in 1989. “To believe that this can go on indefinitely without major disaster requires an optimism unjustified by any historical or political perspective.”<sup>86</sup>

*Is there anything we can do about it?* Mutual assured destruction may buy us security, but by mortgaging the future of untold future generations. We ought to prefer any policy that reduces the long-run threat to the world, even if it makes war more likely in the here and now. In principle, this can be done in two ways: by renouncing

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<sup>83</sup> Quoted in David S. Yost, “New Approaches to Deterrence in Britain, France, and the United States,” *International Affairs* (London) 81, no. 1 (January 2005): 89.

<sup>84</sup> Sagan and Turco, *A Path Where No Man Thought*, 126.

<sup>85</sup> “Waltz Responds to Sagan,” 154-55, emphasis added.

<sup>86</sup> Lawrence Freedman, *The Evolution of Nuclear Strategy: Second Edition* (London: Macmillan, 1989), 431-32.

nuclear deterrence altogether, or by developing a form that externalizes fewer costs to future people, even if we internalize more ourselves. The first is morally preferable to the second, but is open—at least for the most part—only to non-nuclear states.

#### NON-NUCLEAR STATES SHOULD RENOUNCE THE BOMB

States that have not already developed the bomb should not do so. Indeed, given the threat that it poses to future people, they should not even if this makes them more likely to be blackmailed or conquered.<sup>87</sup> People five hundred years from now will not much care who ran the country in the twenty-first century or whether it retained a particular province, whereas if they have to live in ruined and radioactive cities, they may care very much indeed. States need not become pacifists, but they should restrict their defense to conventional means. North Korea has mounted a strong deterrent even without nuclear weapons. Rather than threaten the Middle East with a nuclear arms race, Iran could follow Libya's example and appease the United States. Rather than doom many generations of South Asians to disaster, India and Pakistan should have relied on conventional weapons or relinquished Kashmir. Of course some countries will refuse to run such risks or make such sacrifices. But they do so at the expense of their own descendants.

#### RELIABLE DISARMAMENT IS NOT POSSIBLE

Whether states that already have nuclear weapons—including new arrivals such as India and Pakistan—should give them up is another matter. Even if nuclear states agreed to disarm, they might seek to rearm in a crisis. Whether conventional arsenals would be enough to deter a cheater from using nuclear weapons<sup>88</sup> is hard to judge. While a denuclearized world would have strong incentives to punish

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<sup>87</sup> McMahan, "Nuclear Deterrence and Future Generations."

<sup>88</sup> MccGwire, "Is There a Future for Nuclear Weapons?" 215.

proliferation,<sup>89</sup> faced with a great power's cheating or rearmament, states would more probably themselves rearm than to go to war to stop it. States in a rearmament race would likely have haphazard command and control, and a state that thought it had a lead might launch a preventive war. Nuclear disarmament could thus make nuclear war more likely rather than less.<sup>90</sup>

. As Charles Glaser notes, this is not an argument for proliferation by "[n]on-nuclear states that cannot build nuclear weapons...within the timespan of a reasonably long conventional war."<sup>91</sup> Nor would it forbid disarmament if states are unable to rearm quickly.<sup>92</sup> In that case they should give up the bomb for the same reasons that non-nuclear states should not build it in the first place. Nevertheless, we could scarcely be confident that states could *not* rearm quickly in a crisis, particularly if they had concealed weapons or secretly continued research. The race between America and Nazi Germany to invent the bomb is not an encouraging precedent. For the foreseeable future, nuclear states seem stuck with the Faustian bargain. In this case, it is only fair for them to pay a larger share of the costs.

#### MINIMUM DETERRENCE

An ideal form of deterrence would target the inhabitants of Washington and Moscow, without endangering third party countries, wild animals, the Library of Congress or the future of the species. One might seek to achieve this, for example, by replacing present arsenals with enhanced radiation weapons aimed at cities. The neutron bomb is often accused of "destroying people, not property," but from an

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<sup>89</sup> Jonathan Schell, "The Folly of Arms Control," *Foreign Affairs* 79, no. 5 (September/October 2000): 44.

<sup>90</sup> Charles L. Glaser, "The Flawed Case for Nuclear Disarmament," *Survival* 40, no. 1 (Spring 1998), 115-18; Lee, *Morality, Prudence and Nuclear Weapons*, 39-40, 298-99.

<sup>91</sup> "Flawed Case for Nuclear Disarmament," 123. The more troubling question is whether states that *can* build them quickly ought to do so before a crisis erupts.

<sup>92</sup> If "tacit knowledge" is essential for building nuclear weapons, after some decades states might require years to reinvent them. See Donald MacKenzie and Graham Spinardi, "Tacit Knowledge,

international and intergenerational perspective this would be its greatest virtue. Americans and Russians would die in a war, but Brazilians, bears and St. Basil's Cathedral would be spared. Unfortunately, relying on ERW will not work. Even neutron bombs, according to Carl Sagan, could start large fires which could contribute to nuclear winter.<sup>93</sup> In any case, cellars a few feet below ground could protect civilians from radiation.<sup>94</sup> Once simple measures of civil defense were adopted, ERW would no longer be a MAD deterrent.

Some analysts propose targeting military forces rather than cities, both to spare civilians, and also because it would be less likely to bring on nuclear winter. While targeting an enemy's nuclear forces could prove destabilizing, attacking conventional targets need not be.<sup>95</sup> But no such agreement could be verified. Missiles can be retargeted within seconds. Even if leaders did not aim at cities and oilfields on purpose, in the fog of war they might strike some by accident. Or they might change their minds in the course of the war and escalate to attacking cities. Without deep cuts, a "counterpower" strategy still entails the risk of catastrophe.<sup>96</sup> A force comprised solely of many accurate but very low-yield warheads might limit damage, but could still cause large fires, and the warheads' yield could be hard to verify.<sup>97</sup> Missile defenses, if they could be made to work, would avert the risks nuclear weapons pose both to present and future generations. Yet they face huge technical obstacles,<sup>98</sup> and in

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Weapons Design, and the Uninvention of Nuclear Weapons," *American Journal of Sociology* 101, no. 1 (July 1995): 44-99. Thanks to a referee for raising this point.

<sup>93</sup> Cited in J. J. Gertler, *Some Policy Implications of Nuclear Winter*, Rand Corporation P-7045 (1985): 10 n. 2. States might also be tempted to use ERW for offense and compellence, reducing stability. Goldstein, *Deterrence and Security*, 281, n. 43.

<sup>94</sup> S. T. Cohen, "Enhanced Radiation Warheads: Setting the Record Straight," *Strategic Review* 6, no. 1 (Winter 1978): 16.

<sup>95</sup> Nye, *Nuclear Ethics*, 111-14.

<sup>96</sup> Harold A. Feiveson et al., *The Nuclear Turning Point: A Blueprint for Deep Cuts and De-Alerting of Nuclear Weapons* (Washington, DC: Brookings Institution Press, 1999), 113; Sagan and Turco, *A Path Where No Man Thought*, 126, 131, 186, 199-203.

<sup>97</sup> Sagan and Turco, *A Path Where No Man Thought*, 131-32, 380, n. 13.25.

<sup>98</sup> Charles L. Glaser and Steve Fetter, "National Missile Defense and the Future of U.S. Nuclear Weapons Policy," *International Security* Vol. 26, No. 1 (Summer 2001), pp. 40-92.

any case, so long as there is no defense against such weapons as cruise missiles, cities can still burn, and nuclear winter remains a risk.<sup>99</sup> Combined with ambitious arms control, missile defenses could reduce the nuclear threat.<sup>100</sup> But without such measures, they are more likely to prove destabilizing. Similarly, reductions in warhead yield or a counterpower strategy could add security if accompanied with deep cuts in nuclear arsenals.<sup>101</sup> But to rely on adoption of a counterpower strategy or on mini-nukes alone depends too much on states' good faith and rationality. Given the potentially catastrophic consequences if states should break the agreement, this is not a risk we ought to run.

Deterrence at very low numbers of nuclear weapons seems more promising. Disarmament does have two big advantages. It would limit the number of nuclear powers, even if states broke out of an agreement.<sup>102</sup> And while a re-armament race could make nuclear war more likely, states would probably fight before both had achieved secure second-strike deterrents—and thus with small numbers of weapons.<sup>103</sup> But if disarmament led to rearmament and a limited nuclear war, things would not stop there. The survivors would most likely build large arsenals, and we would be back where we started, minus a handful of cities, a few million people, and any willingness to pursue either disarmament *or* minimum deterrence in the future.<sup>104</sup> Disarmament could thus *increase* the risk of catastrophe. Minimum deterrence lacks

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<sup>99</sup> Robock, Oman and Stenchikov, "Nuclear Winter Revisited," 13.

<sup>100</sup> David Goldfischer, "Rethinking the Unthinkable After the Cold War: Toward Long-Term Nuclear Policy Planning," *Security Studies* 7, no. 4 (Summer 1998): 165-94.

<sup>101</sup> David Lewis ("Finite Counterforce") argues that counterforce should not be destabilizing if combined with modest arsenals. Harold A. Feiveson points out that counterforce could still have pernicious effects ("Finite Deterrence," in Shue, *Nuclear Deterrence and Moral Restraint*, 286-87), but his criticisms would not apply to a *counterpower* strategy such as Nye advocates.

<sup>102</sup> Cf. Tom Milne and Joseph Rotblat, "Breakout from a Nuclear Weapons Convention," in *Nuclear Weapons: The Road to Zero*, eds. Joseph Rotblat and Frank Blackaby (Boulder, CO: Westview, 1998), 151.

<sup>103</sup> James N. Miller, Jr., "Zero and Minimal Nuclear Weapons," in *Fateful Visions: Avoiding Nuclear Catastrophe*, eds. Joseph S. Nye, Jr., Graham T. Allison and Albert Carnesale (Cambridge, MA: Ballinger), 26; Michael McCwire, "Comfort Blanket or Weapon of War: What Is Trident For?" *International Affairs* (London) 82, no. 4 (July 2006): 647-48.

disarmament's advantage of limiting the spread of nuclear weapons. But the risk of war would be lower, and thus in the long term states would be more likely to keep arsenals small enough to limit damage.<sup>105</sup> It is the more sustainable policy.

#### HOW MANY IS THE MINIMUM?

For damage reduction to be meaningful, nuclear arsenals would have to be small indeed. Even most of minimum deterrence's advocates have seen it as requiring hundreds if not thousands of warheads.<sup>106</sup> The logic of nuclear optimism, however, implies that we could go much lower. Waltz notes Bernard Brodie's statement that the USSR could be deterred with a single hydrogen bomb that could and would reliably be used on Moscow: "I would change that sentence by substituting 'might' for 'would,'" he remarks, "and by adding that the threat of a fission bomb or two would also do the trick."<sup>107</sup> Five warheads could wreck the Boston-Washington or San Diego-San Francisco corridors. Fifteen warheads could kill as many Russians as died in all of World War II.<sup>108</sup> As Stansfield Turner observes, to deter the Russians "probably takes the same number as it does to deter the United States—one. But let us play it safe. Call it five or ten, or some such number—still, it will not be in the hundreds or thousands."<sup>109</sup> We may need a few more weapons to ensure that some will survive and get through—but not more than a few. Even the chance that a couple of weapons *might* get through should deter attack.<sup>110</sup> "To locate virtually all missiles

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<sup>104</sup> Cf. Lee, *Morality, Prudence and Nuclear Weapons*, 404, n. 18.

<sup>105</sup> Cf. Glaser, *Analyzing Strategic Nuclear Policy*, 200.

<sup>106</sup> Graham Barral, "The Lost Tablets: An Analysis of the Concept of Minimum Deterrence," *Arms Control: Contemporary Security Policy* 13, no. 1 (April 1992): 79.

<sup>107</sup> Waltz, "Waltz Responds to Sagan," 141-42.

<sup>108</sup> Radomir Bogdanov and Andrei Kortunov, "On the Balance of Power," *International Affairs* (Moscow) no. 8 (1989): 9; Feiveson et al., *Nuclear Turning Point*, 52.

<sup>109</sup> Stansfield Turner, "The Dilemma of Nuclear Weapons in the Twenty-first Century," *Naval War College Review* 54, no. 2 (Spring 2001): 17.

<sup>110</sup> Rajesh M. Basrur, "International Relations Theory and Minimum Deterrence," *India Review* 4, no. 2 (April 2005): 125-43; Goldstein, *Deterrence and Security*, 44-54. Basrur takes this too far, however, when he argues that states can afford to be relaxed about their arsenals' survivability (136). The risk is not that vulnerable arsenals will encourage aggression, but that an enemy believing it is under attack will preempt. Rather than winning a bloodless victory, its hope would be to limit a catastrophic loss.

and aircraft is not good enough,” Waltz observes. “...What political-military objective is worth risking Vladivostok, Novosibirsk, and Tomsk, with no way of being sure that Moscow would not go as well?”<sup>111</sup> A state run by zealots or lunatics may not be deterred, but fanatics are likely to be undeterrable anyway.<sup>112</sup>

Are states actually this cost- and risk- averse? Roger Barnett points out that Germany and Japan fought on through World War II despite devastating bombing raids, and that Iraq tolerated massive deaths from international sanctions.<sup>113</sup> The relevant questions, however, are whether German and Japanese leaders would have *initiated* war in 1941 knowing that they could lose half a dozen of their biggest cities, and whether Saddam Hussein would have risked provoking a nuclear strike on Baghdad.<sup>114</sup> Moreover, supposing that they *were* willing to run such risks, is there reason to think a larger deterrent would have changed their minds? Barnett cites Muammar al-Qaddafi’s claim that he would have struck New York in response to the bombing of Libya as evidence that leaders will accept huge losses. But if the Libyan dictator’s words were anything more than bravado, they suggest that size does *not* matter, since he claimed to be willing to attack a state with a huge nuclear arsenal.

A stronger challenge comes from Keir Lieber and Daryl Press, who point out that as late as the 1960s U.S. officials seriously contemplated nuclear war against the Soviet Union. They argue that the mere *possibility* that the opponent will be able to retaliate may not be enough to deter a first strike. The Eisenhower Administration’s strategy of “massive retaliation,” they note, envisioned nuclear strikes in response to a Soviet invasion of Western Europe, and President Kennedy made inquiries about the

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<sup>111</sup> Waltz, “More May Be Better,” 22-23.

<sup>112</sup> Bogdanov and Kortunov, “On the Balance of Power,” 9.

<sup>113</sup> Roger W. Barnett, “What Deters? Strength, Not Weakness,” *Naval War College Review* 54, no. 2 (Spring 2001): 27.

<sup>114</sup> Cf. Basrur, “International Relations Theory and Minimum Deterrence,” 143 n. 41.

possibility of a disarming strike on the USSR.<sup>115</sup> It has long been well-known, however, that U.S. officials made plans for the first use of nuclear weapons. They thought such plans necessary if the United States was to have a credible deterrent. The key question is whether they would ever have acted on them when they knew that an hour later nuclear weapons could be falling on Washington. Whether leaders will gamble on disarming the opponent if the odds seem good enough is, as Lieber and Press say, an empirical matter, and deserves further investigation.<sup>116</sup>

In any case, a minimum deterrent need not be vulnerable. Some see the risk that one side would cheat on arms agreements as a barrier to very deep cuts.<sup>117</sup> But strategically speaking, it is hard to see why cheating would matter unless a state thought it could destroy all the opponent's warheads.<sup>118</sup> China has made the most out of its arsenal by separating its missiles into small units.<sup>119</sup> Any advanced industrial power could ensure survivability by fielding multiple submarines, each armed with one or two warheads.<sup>120</sup> We can never be positive that force levels do not matter, but maintaining arsenals that threaten to wreck the world has its risks as well.

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<sup>115</sup> Keir A. Lieber and Daryl G. Press, "The End of MAD? The Nuclear Dimension of U.S. Primacy," *International Security* 30, no. 4 (Spring 2006): 33, 38.

<sup>116</sup> Lieber and Press, "The End of MAD?" 11, 38. The possibility that the Soviet Union considered an attack on Chinese nuclear bases in 1969 may provide stronger support for the claim that first strikes on a nuclear state are thinkable, but it is unclear whether the Soviets were bluffing or in earnest. See Raymond L. Garthoff, *Détente and Confrontation: American-Soviet Relations from Nixon to Reagan, Revised Edition* (Washington, D.C.: The Brookings Institution, 1994): 237-38.

<sup>117</sup> Miller, "Zero and Minimal Nuclear Weapons," 32; Walter B. Slocombe, "Strategic Stability in a Restructured World," *Survival* 32, no. 4 (July/August 1990): 308.

<sup>118</sup> Cf. Richard H. Ullman, "Minimum Deterrence and International Security," in *The Arms Race in an Era of Negotiations*, ed. David Carlton and Carlo Schaerf (Basingstoke: Macmillan, 1991), 89-91. While arguing that cheating would likely have little strategic impact if the other state's forces were invulnerable, Ullman opposes cuts to very low levels, chiefly on the grounds that the discovery of cheating "could bring on a crisis in the domestic politics of the detecting state." Yet the result would almost certainly not be war but an arms build-up. Political tensions would rise, but deterrence should remain stable. Given the importance of deep cuts for limiting damage, this seems a risk well worth taking.

<sup>119</sup> P. K. Ghosh, "Deterrence Asymmetry and Other Challenges to Small Nuclear Forces," *Contemporary Security Policy* 25, no. 1 (April 2004): 43.

<sup>120</sup> While warning that Russia's existing deterrent is becoming increasingly vulnerable, Lieber and Press note ("The End of MAD?" 34) that "Russia could keep 50 mobile missiles on continuous peacetime alert or substantially increase its nuclear submarine patrols. Either step would dramatically reduce Russia's vulnerability." They argue that it would be hard for Moscow to do this. Deep cuts,

Carl Kaysen, Robert McNamara and George Rathjens argue that “forces of a size and structure that would permit the destruction of, say, a dozen or a few tens rather than hundreds or thousands of targets in a retaliatory attack” should be as good deterrents as larger forces.<sup>121</sup> Harold Feiveson and his colleagues recommend a minimum deterrent of 200 warheads, though they observe that this “could nearly as easily be 400 or 100.”<sup>122</sup> While war with 200 warheads each could still make World Wars I and II look like tussles in a sandbox, Sagan and Turco conclude that it would risk far less serious climatic consequences.<sup>123</sup> This creates a strong presumption in favor of deterrence at these levels, while continuing to explore the possibility of going still lower. Ironically, this is an agenda to which many nuclear optimists would agree.

WILL DEEP CUTS ENCOURAGE PROLIFERATION?

Critics of minimum deterrence have also argued that it could encourage nuclear proliferation. If deep cuts required nuclear states to resume testing, this might indeed complicate non-proliferation efforts.<sup>124</sup> If the United States and Russia can test, states might ask, why shouldn't we? But minimum deterrence should not require the resumption of testing. When many American experts testify that the Stockpile Stewardship Program ensures the US deterrent's reliability, what enemy would be crazy enough to gamble? As Rajesh Basrur points out, “[t]he adversary cannot assume that a risk is worth taking because the deterrer's weapons *might* not work. The potential consequences are not worth the risk.”<sup>125</sup> Criticisms of the Comprehensive

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however, would free resources to protect the remaining weapons, assuming that Russia received Western aid to offset the cost of reductions.

<sup>121</sup> “Nuclear Weapons After the Cold War,” in *A Nuclear-Weapon-Free World: Desirable? Feasible?* eds. Joseph Rotblat, Jack Steinberger and Bhalchandra Udgaonkar (Boulder, CO: Westview Press, 1993), 45.

<sup>122</sup> Feiveson et al., *Nuclear Turning Point*, 200;

<sup>123</sup> Sagan and Turco, *A Path Where No Man Thought*, pp. 229-240; cf. Robock, Oman and Stenchikov, “Nuclear Winter Revisited,” 14.

<sup>124</sup> I thank an anonymous referee for raising this point.

<sup>125</sup> Basrur, “International Relations Theory and Minimum Deterrence,” 136-37.

Test Ban on this ground have an air of unreality. As Senator John Kerry remarked during the CTBT debate:

If you were offered the option 10 years from now or 20 years from now with our current mechanisms and verification capacities to take 20, 30...warheads out of our entire arsenal and we offered you the option of dropping them on North Carolina or Virginia, I guarantee you you would say please do not do that because you know as well as I do the better percentage of them are going to go off, if not all of them....[Deterrence] is built on somebody's supposition that something might happen.<sup>126</sup>

Some worry that minimum deterrence could encourage non-nuclear states to compete with Russia and the United States.<sup>127</sup> But on the dominant model of nuclear proliferation, which holds that states acquire nuclear weapons in reaction to external threats, it is hard to see why the size of the Russian and American arsenals should matter.<sup>128</sup> Security-seeking proliferators, if they worry about survivability, will ask whether they can build a second-strike deterrent. A preventive or preemptive US strike would involve small numbers of warheads, if nuclear weapons were used at all. A rational security-seeker contemplating proliferation will thus not care whether the great powers have three hundred or three thousand warheads.<sup>129</sup> If, on the other hand, states seek nuclear weapons as a source of prestige, minimum deterrence might make proliferation more attractive by allowing small states to have as many as the great

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<sup>126</sup> Hearing before the Committee on Foreign Relations, United States Senate; 106<sup>th</sup> Congress, First Session; October 7, 1999, 68.

<sup>127</sup> David W. Tarr, *Nuclear Deterrence and International Security: Alternative Nuclear Regimes* (New York: Longman, 1991): 138, 147.

<sup>128</sup> John P. Holdren, "Getting to Zero: Is Pursuing a Nuclear-Weapon-Free World Too Difficult? Too Dangerous? Too Distracting?" in *A Nuclear-Weapon-Free World: Steps Along the Way*, eds. Frank Blackaby and Tom Milne (Basingstoke: Macmillan, 2000): 29-30; Ullman, "Minimum Deterrence and International Security," 95. On the "security model" of proliferation, see Scott D. Sagan, "Why Do States Build Nuclear Weapons? Three Models in Search of a Bomb," *International Security* 21, no. 3 (Winter 1996/97): 57-63; and Thayer, "The Causes of Nuclear Proliferation."

<sup>129</sup> Reasoning along the lines discussed in the following paragraph, a proliferator might conceivably conclude that great powers with a minimum deterrent lacked sufficient spare weapons to use in a preventive attack. But it could never be sure just how many weapons these powers saw as the bare minimum they must retain for deterrence—and hence how many they could spare—and in any case, as I argue in the next paragraph, discouraging proliferation is not sufficient grounds for retaining enormous arsenals.

powers. But by signaling that nuclear weapons are bad and that the powers were trying to kick the habit, it could also discourage proliferation.<sup>130</sup>

Critics of minimum deterrence also argue that it could promote proliferation among America's allies. These might fear that Washington would not use a small arsenal unless the U.S. homeland came under attack.<sup>131</sup> In fact it is hard to imagine any aggressor so reckless as to gamble on this assumption, given the cost of being wrong. Still, worst-case thinking might lead Germany, Japan, Taiwan or others to nuclearize. That would be too bad. The more states with nuclear weapons, the more chances that they will be used. In at least one case—Taiwan—proliferation could also lead to preventive war. Still, we should prefer a world with a higher risk of war but a lower risk of apocalyptic destruction. In such a world we pay more of the costs of our defense, and externalize fewer to future generations.

Some disarmament advocates argue that only the complete abolition of nuclear weapons can delegitimize their acquisition. They believe that continued reliance on nuclear deterrence—even at low levels—will ensure proliferation. But while a “low salience nuclear world” of *few* nuclear powers with minimum deterrents may not be sustainable,<sup>132</sup> a world of *many* small nuclear powers might be. If states accept the logic of minimum deterrence, they should not depart from this equilibrium. What would either an aggressor or a defender gain from an arms build-up? While such a world would not be ideal, it would be better than the status quo—and more likely to be a stable solution than a premature attempt at nuclear disarmament.

In any case, for now, steps toward minimum deterrence are also steps toward disarmament. So long as the latter remains our ultimate objective, deep cuts can only

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<sup>130</sup> Ullman, “Minimum Deterrence and International Security,” 95. On the “norms model” of proliferation, see Sagan, “Why Do States Build Nuclear Weapons?” 73-85.

<sup>131</sup> Tarr, *Nuclear Deterrence and International Security*, 135-38, 147.

help legitimate the nuclear non-proliferation regime. As Ken Booth and Nicholas Wheeler observe, “[b]ecause we do not yet know how to get rid of the last few hundred warheads...is not a sufficient reason for not going in that direction.”<sup>133</sup>

### **What if Realists are Wrong?**

Neorealists—who make up the majority of the nuclear optimists—believe we are doomed to perpetual conflict. On their logic, the worst that could happen if minimum deterrence proves less stable will be a small nuclear war—still better than the large nuclear war that we can expect at present. Liberals, Marxists and constructivists, on the other hand, may argue that the best way to escape nuclear deterrence altogether is to change the character of international politics.<sup>134</sup> This raises a potential objection to my argument. Perhaps today’s apparently fairly stable form of deterrence is just what we need for peace-inducing phenomena such as democratization, economic interdependence and integration to take hold. Kenneth Oye, for example, holds that the prolonged superpower standoff of the Cold War led to the Soviet Union’s liberalization.<sup>135</sup> A premature attempt at minimum deterrence could interrupt long-term peace-inducing processes,<sup>136</sup> harming future generations as well as ourselves.

This objection should be taken seriously. However, if Russia and the United States should appeal to hopes for long term progress toward peace to justify their huge arsenals, they ought to be working much harder to bring it about. Democratic peace

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<sup>132</sup> Robert O’Neill, “Britain and the Future of Nuclear Weapons,” *International Affairs* (London) 71, no. 4 (October 1995): 758-59.

<sup>133</sup> Booth and Wheeler, “Beyond Nuclearism,” 54.

<sup>134</sup> Glaser, “Flawed Case for Nuclear Disarmament,” 124; Michael Quinlan, “Aspiration, Realism, and Practical Policy,” in Baylis and O’Neill, *Alternative Nuclear Futures*, 54.

<sup>135</sup> Kenneth A. Oye, “Explaining the End of the Cold War: Morphological and Behavioral Adaptations to the Nuclear Peace?” in *International Relations Theory and the End of the Cold War*, eds. Richard Ned Lebow and Thomas Risse-Kappen (New York: Columbia University Press, 1995), 57-84; see also Thayer, “Nuclear Weapons as a Faustian Bargain,” 152. For a summary of liberal and constructivist arguments that nuclear weapons can lead toward peace, see Lieber and Press, “The End of MAD?” 9.

theory is the single most powerful liberal theory of peace. Many liberals agreed that it was vital for international peace that Russia make a successful transition to liberal democracy, but US spending on direct democracy assistance after the Cold War was paltry, amounting to \$16 million in fiscal year 2000 for all of Russia. This was transparently “assistance on the cheap.”<sup>137</sup> Nor, of course, has Russia itself done better: The Putin government’s failure to promote democracy requires no commentary. One way or another, Washington and Moscow are falling down on their obligations—either to make deep cuts now, or to create conditions for future disarmament.

Moreover, the possibility of radical change in international relations suggests that Britain and France have reason to consider nuclear disarmament. If the norms model of nuclear proliferation is right, it could set a good example, discouraging the spread of nuclear weapons around the world.<sup>138</sup> True, if major change does *not* occur, London and Paris will someday face an confrontation in which they will be tempted to rearm. If they do so before being defeated, this could mean nuclear war. But for Britain and France the risk seems remote. It is hard even to guess with what rival that crisis would be. Over the next century the spread of democracy, international integration or other change may transform international relations before a confrontation involving either state recurs. This strengthens the case for these two states taking a chance on nuclear disarmament. The non-proliferation benefits may outweigh the risk that rearmament will lead to war in a crisis.

### **Between Death and a Grievous Wound**

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<sup>136</sup> Cf. Nye, *Nuclear Ethics*, 84. Marxists who hold a teleological view of history would, of course, expect peace to result from quite different changes from those cited by liberals and constructivists.

<sup>137</sup> Sarah E. Mendelson, “Democracy Assistance and Political Transition in Russia: Between Success and Failure,” *International Security* 25, no. 4 (Spring 2001): 105.

<sup>138</sup> See McGwire, “Is There a Future for Nuclear Weapons?”

Most people think that the risk of holocaust evaporated with the end of the Cold War, and that the biggest nuclear threat comes from “rogue states” and terrorists. Most people are wrong. Losing a city or two will be horrible; a great power war may mean curtains for us all. While the chance of *intentional* world war is very low, the risk of accidental war remains. Indeed, with the decay of Russia’s command, control and communications, it has probably risen. Even if the West has reached the “end of history,” with war among stable liberal democracies seeming all but impossible, this is not true of the rest of the world,<sup>139</sup> including some powerful states with nuclear weapons. To think that we can get through even a century without serious great power rivalry is to discount all of modern history. Certainly, leading nuclear optimists do not believe this. If our present reliance on huge arsenals were the best realism had to offer, one could only agree that “[n]o serious thinker could...be satisfied with Realism...even if the scientific status of the theory were stronger than it is”<sup>140</sup>—for it would be a death sentence.

In fact, neorealist optimism suggests a partial escape: minimum deterrence. States that have not begun developing nuclear weapons should not start. “If deterrence works in the West,” asks Jaswant Singh, “as it so obviously appears to, since Western nations insist on continuing to possess nuclear weapons—by what reasoning will it not work in India?”<sup>141</sup> In reality, nuclear deterrence has only worked *so far*—and only because we were lucky. Indians and Pakistanis who take pride in their bombs plume themselves on what will wreck their cities and kill their descendants. But still more important, states with bloated arsenals should slim them. Neorealists should want

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<sup>139</sup> Francis Fukuyama, “The End of History?” in *The New Shape of World Politics: Contending Paradigms in International Relations* (New York: Foreign Affairs, 1997), 1-25.

<sup>140</sup> Robert O. Keohane, “Theory of World Politics: Structural Realism and Beyond,” in *Neorealism and Its Critics*, ed. Keohane (New York: Columbia University Press, 1986), 198.

<sup>141</sup> Jaswant Singh, “Against Nuclear Apartheid,” *Foreign Affairs* 77, no. 5 (September/October 1998): 43.

states to slash their arsenals even if it makes war more likely. As Paul Doty says, “The great gap...is...between a grievous but recoverable wound and death to most of the world as we know it.”<sup>142</sup> On a liberal, Marxist or constructivist analysis, a failed attempt at minimum deterrence could conceivably short-circuit trends that can make war obsolete. But even if so, nuclear states can only justify large arsenals by working much harder to create conditions for their abolition.

This article has argued that nuclear optimism should lead us to support nuclear nonproliferation as well as deep cuts in arsenals and—if it is ever feasible—disarmament. Some pessimists hold that organizational routines, bureaucratic politics and bounded rationality make control over nuclear weapons less reliable than optimists claim. If so, this only reinforces my prescriptions. Not only is the spread of nuclear weapons a bad thing, but it is yet another reason for Russia and the United States to downsize their arsenals to more manageable levels.<sup>143</sup>

#### MOTIVATING JUST BEHAVIOR

All these arguments may seem academic. Suppose that nuclear deterrence does exploit future generations—can any state be expected to renounce it? Nuclear war is one of many threats that humans pose to nature.<sup>144</sup> Yet when the threat is not concrete, it is easy to ignore the problem, and hope that it is exaggerated, or will somehow go away.<sup>145</sup> Global warming is starting, but will take some time to make itself felt.

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<sup>142</sup> Paul Doty, “Surviving the Nuclear Age in the Long Term,” in *Remember Your Humanity*, ed. Joseph Rotblat (Singapore: World Scientific, 1999), 292.

<sup>143</sup> Sagan, “More Will Be Worse,” 87. It could be argued, however, that minimum deterrence will be harder to achieve or less stable if new nuclear states are, as Sagan fears, dominated by military officers who are predisposed to favor preventive war.

<sup>144</sup> Jonathan Schell, *The Fate of the Earth*, in Schell, *Fate of the Earth and the Abolition*, 111.

<sup>145</sup> Kielmansegg, “Können Demokratien zukunftsverantwortlich handeln?” 585-86; Kimberly A. Wade-Benzoni, “A Golden Rule Over Time: Reciprocity in Intergenerational Allocation Decisions,” *Academy of Management Journal*, 45, no. 5 (October 2002): 1014; Wade-Benzoni, “Intergenerational Identification and Cooperation in Organizations and Society,” in *Identity Issues in Groups*, ed. Jeffrey T. Polzer (Amsterdam: JAI, 2003): 271.

Likewise, nuclear weapons may not make themselves felt at all until it is too late.<sup>146</sup> Faced with what activists believe is a threat to the very future of life on earth, mass publics remain infuriatingly complacent.<sup>147</sup> Theorists, seeing that nuclear deterrence seems to benefit us, take for granted that it also benefits our distant descendants. This is not surprising, since, as E. H. Carr says, “[t]he doctrine of the harmony of interests....is the natural assumption of a prosperous and privileged class.”<sup>148</sup>

Moreover, if the status quo benefits us, what is our incentive to act? By debunking the harmony of interests, Carr did not expect to turn the privileged countries into altruists; he hoped to make them more willing to bargain with revisionist states.<sup>149</sup> But future people have little bargaining leverage.<sup>150</sup> Schell’s advice that “[t]he living [should]...look on the gift of life the way any political representative should look on election to office—as a temporary trust to be used for the common good”<sup>151</sup> is an ideal rather than an enforceable policy. Corrupt politicians can anger *living* constituents. Unborn generations don’t vote.<sup>152</sup> Anti-nuclear campaigners and other environmental activists concerned with the distant future face a common challenge and should develop common strategies.<sup>153</sup>

Nevertheless, Robert Goodin has argued that people can be persuaded to forego exploiting even helpless victims if the moral case is clear—though such

<sup>146</sup> MccGwire, “Comfort Blanket or Weapon of War,” 648-49; Schell, *The Abolition*, 31.

<sup>147</sup> Perrin L. French and Judith Van Hoorn, “Half a Nation Saw Nuclear War and Nobody Blink? A Reassessment of the Impact of *The Day After* in Terms of a Theoretical Chain of Causality,” *International Journal of Mental Health* 15, nos. 1-3 (Spring-Summer-Fall 1986): 276-77.

<sup>148</sup> Carr, *Twenty Years’ Crisis*, 80. Theorists have more widely recognized the externalities we are creating for future generations with CO<sub>2</sub>, and most of all with nuclear power. Is that because nuclear waste provides the most tangible evidence?

<sup>149</sup> Carr, *Twenty Years’ Crisis*, 214, 237.

<sup>150</sup> Thomas Sieger Derr, “The Obligation to the Future,” in Partridge, *Responsibilities to Future Generations*, 39; Lukas H. Meyer, “Liberal Cosmopolitanism and Moral Motivation,” *Global Society*, 14, no. 4 (October 2000): 643.

<sup>151</sup> *Fate of the Earth*, 177.

<sup>152</sup> Kielmansegg, “Können Demokratien zukunftsverantwortlich handeln?”

<sup>153</sup> On relevant strategies to promote concern for the far future, see Derr, “The Obligation to the Future;” Meyer, “Liberal Cosmopolitanism and Moral Motivation;” Wade-Benzoni, “A Golden Rule Over Time;” and Wade-Benzoni, “Thinking About the Future.”

restraint goes only so far.<sup>154</sup> Forbearance is particularly likely if they understand that their actions threaten their own descendants and any legacy they may hope to leave.<sup>155</sup> States faced with a dire threat will proliferate and hang the long-term consequences. They are the equivalents of a poor state that by plundering resources robs its future people for the sake of present inhabitants. Just as outside aid may be needed to induce such a state to take the long view,<sup>156</sup> here we must find ways to reduce the threatened state's insecurity.

But the dilemma is not always so stark. Indians debated for decades whether to build the bomb. Even when China went nuclear only two years after the Sino-Indian war of 1962, "there was no consensus among officials in New Delhi that it was necessary to have a nuclear deterrent as a response."<sup>157</sup> Nor, after India's 1998 nuclear test, were Pakistan's counter-tests a foregone conclusion.<sup>158</sup> Decisions whether to nuclearize will often depend on hard-fought domestic debates,<sup>159</sup> in which moral concerns may sometimes tip the balance.

For states that have already nuclearized, going down to minimum deterrents may not cost anything. It will probably reduce the risk of accidental war,<sup>160</sup> while lowering the costs when war eventually breaks out. Waltz and his followers have made a strong case that nuclear weapons are superb deterrents. As Waltz himself recognizes, this means that just a few should be enough.

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<sup>154</sup> Robert E. Goodin, *Motivating Political Morality* (Cambridge, MA: Blackwell, 1992), chapter 4.

<sup>155</sup> Wade-Benzoni, "Legacies, Immortality, and the Future;" Wade-Benzoni, "Thinking About the Future," 1401-2.

<sup>156</sup> Weiss, *In Fairness to Future Generations*, 162-63.

<sup>157</sup> Šumit Ganguly, "India's Pathway to Pokhran II: The Prospects and Sources of New Delhi's Nuclear Weapons Program," *International Security* 23, no. 4 (Spring 1999): 148-77; Sagan, "Why Do States Build Nuclear Weapons?" quotation from 65.

<sup>158</sup> Samina Ahmed, "Pakistan's Nuclear Weapons Program: Turning Points and Nuclear Choices," *International Security* 23, no. 4 (Spring 1999): 195.

<sup>159</sup> Holdren, "Getting to Zero," 37.

<sup>160</sup> Glaser, "Flawed Case for Nuclear Disarmament," 118; Goldstein, *Deterrence and Security*, 296.