

## CHAPTER 1

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*Apocalypse Soon?*

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A NUCLEAR WAR broke out in the northwest suburbs of Chicago when I was a child there at the end of the 1960s.

The area was growing rapidly: every year thousands of acres of venerable Illinois farmland, some tilled by young Lincoln's contemporaries a century and a half earlier, simply disappeared. In its stead arose sprawling new housing developments. The new houses were soon filled with new children, who needed new schools. And the new schools needed new names. Many of these schools received banal and predictable designations, such as Olive School on Olive Street, Forest View High School on the edge of a forest preserve, Ivy Hill School in the massive new Ivy Hill subdivision. Two, however, acquired names that, in the politically supercharged atmosphere of the day, were like lightning in a bottle.

Most of the children's parents were politically quite conservative—electing a rising young Republican star named Donald Rumsfeld to Congress in the mid-1960s, and later dispatching paleoconservative Phil Crane to represent them throughout the last third of the twentieth century. Consequently, during the sixties, one faction on the school board chose to engage in a bit of political mischief at a moment when slogans such as “I ain't got no beef with no Viet Cong,” “Ban the Bomb,” and “Hey, hey, LBJ, how many kids did you kill today?” were stirring up the nation. So they decided to launch a nuclear strike. How? By arranging to name a high school after James B. Conant, the Harvard president whom President Roosevelt had asked to chair a new National Defense Research Committee to oversee all atomic research, the same committee that later advised President Truman to drop the new atomic bomb on a “vital war plant employing a large number of workers and closely surrounded by workers' homes.”<sup>1</sup>

But there was another school board faction that included, apparently, some of the few people in the area who did not make a habit of voting for Don Rumsfeld or Phil Crane every two years. These members, it seems, took umbrage at naming a high school after a man who had played a key role in creating what Conant's own granddaughter, writer Jennet Conant, later called "the most diabolical weapon in the history of mankind."<sup>2</sup> So they decided to launch a nuclear counterstrike. How? By arranging to name another area high school, just a dozen or so old alfalfa fields away, after the first great antinuclear writer: John Hersey, the Pulitzer Prize-winning *New Yorker* correspondent who reported on life, death, and misery in Hiroshima just weeks after America's incineration of the city on August 6, 1945. (New York University later named his reporting there as the top work of journalism in the twentieth century.)<sup>3</sup> Some years later, I myself graduated from this very high school.

James B. Conant High School in Hoffman Estates and John Hersey High School in Arlington Heights are still in business today, possibly competing against each other in girls' gymnastics or boys' wrestling or girls' cross-country at this very moment. Whether the larger nuclear truth of James B. Conant or John Hersey will ultimately prevail beyond Chicago's northwest suburbs is a question that has not yet been resolved. It is hardly hyperbole, however, to suggest that the fate of the human race may depend upon the answer.

*Apocalypse Never* reveals why we must abolish nuclear weapons, how we can, and what the world will look like after we do. I insist that if humanity hangs on to nuclear weapons indefinitely, some kind of nuclear catastrophe will ensue almost certainly. I illuminate the towering hypocrisy behind the nuclear double standard (according to which our nation possesses thousands of nuclear weapons but insists that others cannot aspire even to one) and contend that such a standard is not only morally indefensible, but also politically unsustainable. I confront humanity's fundamental long-term choice, bleak but inescapable: zero nuclear weapon states and zero nuclear weapons, or dozens of nuclear weapon states, thousands more nuclear weapons, and nuclear cataclysm only a matter of time.<sup>4</sup>

*Apocalypse Never* also demonstrates that the United States and other nuclear weapon states absolutely committed themselves, both politically

and legally, to eliminating their entire nuclear arsenals when they entered into the Nuclear Nonproliferation Treaty (NPT) more than four long decades ago. I argue that, for the United States today, nuclear weapons are militarily both unnecessary and useless—but that other, less powerful states can rationally draw different conclusions. I suggest foreign policy strategies that could alter the national security calculations of those less powerful states. I maintain that a comprehensive nuclear weapons policy agenda from President Barack Obama, one that fully integrates nonproliferation with disarmament, can both dramatically reduce immediate nuclear dangers and set us irrevocably on the road to abolition. I describe possible verification measures, enforcement mechanisms, and political architectures of a post-abolition world. I decisively repudiate the most frequent objection to abolition, “the breakout scenario”—the possibility that after abolition some state might whip back the curtain, reveal a dozen or so nuclear warheads (newly constructed or previously squirreled away), and proceed to rule the world.

Most importantly, *Apocalypse Never* asserts that the abolition of nuclear weapons is not only essential for the human race, but also achievable by the human race. I detail what both governments and social movements can do to get us from here to there. I sketch plausible future scenarios for eliminating nuclear weapons perhaps even as soon as the seventy-fifth anniversary of Hiroshima’s bombing—August 6, 2020. And I insist we can transform the abolition of nuclear weapons from a utopian fantasy into a concrete political goal.

In 1947, President Truman’s secretary of state, George Marshall, asked George F. Kennan to set up and lead the State Department’s first Policy Planning Staff, with the goal of thinking long-range about American national interests beyond the foreign policy issues of the hour. Kennan recalled, “The only advice [Marshall] had to give me was expressed in two deeply serious and unforgettable words: avoid trivia.”<sup>5</sup> Similarly, in this book, my aspiration is to think beyond the nuclear policy issues of the hour and the nuclear headlines of the day. I grapple instead with the nuclear big picture, evaluating our alternative nuclear futures and exposing the magnitude of the challenge that the Bomb ultimately poses to the human race.

Nevertheless, in doing so, I unapologetically envision an eventual answer to the nuclear question. I make the case that nuclear weapons

abolition can indeed come to pass, and that the nuclear peril can be put behind us for good. I aspire to persuade the reader that the threat of nuclear apocalypse can become a remote part of the human past, rather than remaining, as President Kennedy put it in his first address before the United Nations in 1961, “a nuclear sword of Damocles, hanging by the slenderest of threads,” hovering over us for all eternity.<sup>6</sup> (John F. Kennedy, it turns out, first came to the attention of the wider public in the summer of 1944, when an article about his exploits in the South Pacific aboard the U.S. Navy motor torpedo boat PT-109 appeared in the *New Yorker*—written by John Hersey.)

#### ATOMIC ORIGINS

The first man to envision the vast potential of nuclear energy, for both good and ill, was arguably the historian, futurist, socialist, feminist, speculative fiction pioneer, and united world visionary H. G. Wells. Wells was responsible for the germ of the idea of what might be the three most transformative military inventions of the twentieth century. First, in 1903, he published an essay called “The Land Ironclads” in the *Strand* magazine. He anticipated therein the tank warfare that began experimentally toward the end of the First World War and reached its apex two decades later with the Nazi German blitzkrieg that unleashed the Second World War, followed five years after that by the vast Soviet, American, British, and Canadian tank counteroffensives that brought about the final defeat of the German armies. Then, in 1908, only five years after the Wright brothers’ flight, Wells published a little book called *The War in the Air*, which not only anticipated military aircraft, but foresaw that air warfare would soon make obsolete the traditional wartime distinction between combatant and civilian. Finally, in 1914, before the First World War had commenced, he published a big book called *The World Set Free*. Drawing upon the work of British physicists Ernest Rutherford and Frederick Soddy (who had speculated that the atoms of certain elements might be split, thereby producing almost limitless quantities of energy), Wells described a future in which the human race enjoys the benefits of abundant atomic energy that is virtually infinite and free, but is then devastated by a vast conflagration waged primarily with atomic weapons. It was the first appearance, in literature, of the idea of nuclear war.<sup>7</sup>

Even Wells, however, probably did not anticipate that such a war would ensue scarcely three decades down the road. (He died, deeply despondent about the human prospect, on August 13, 1946.) The world's first atom bomb was detonated near Alamogordo, New Mexico on July 16, 1945. It was a plutonium implosion device, and yielded an explosion equivalent to the detonation of approximately 18,600 tons of dynamite (or "18.6 kilotons," a term coined to help people describe, if not comprehend, the new destructive powers of the nuclear age). J. Robert Oppenheimer, the chief scientist of the Manhattan Project that had built the bomb, referred to it simply as "the gadget."

The world's second atom bomb was dropped from the American B-29 superfortress *Enola Gay* and detonated over the Japanese city of Hiroshima on August 6, 1945. This bomb, nicknamed "Little Boy," was a uranium gunlike device, and it yielded an explosion of approximately thirteen kilotons. It had a much simpler design than the first bomb, and the atomic scientists were so certain that it would work that they did not even feel the need to test a prototype before using it in combat.

The world's third atom bomb was dropped from the American B-29 superfortress *Bockscar*, and detonated over the Japanese city of Nagasaki on August 9, 1945. This bomb, nicknamed "Fat Man," was a plutonium-implosion device like the first, and yielded an explosion of approximately twenty-two kilotons.

As a rule, the number of human beings who perish from the radioactive fallout of nuclear detonations is comparable to the number of those who die during the immediate blast and consequent mass fires. For example, the best estimates (and they are certainly only gross estimates) of the consequences of our bombings of Hiroshima and Nagasaki indicate that about 80,000 people died immediately at Hiroshima and about 40,000 at Nagasaki, with perhaps 200,000 more dying in subsequent weeks, months, and years.<sup>8</sup> (The casualties were reduced at Nagasaki, despite Fat Man's greater explosive force, because haze over the city forced *Bockscar's* bombardier to deliver the payload by radar instead of by visual reckoning, and because the hills around the city served to contain the blast.) Similarly, a 1984 study forecasting the effects of a massive 3,000-weapon atomic attack on the United States predicted that 50 to 100 million Americans would die immediately, with another 50 to 70 million perishing down the road.<sup>9</sup>

Many of the bombs constructed after Alamogordo, Hiroshima, and Nagasaki were much more powerful still, especially after the 1952 invention of the hydrogen bomb, sometimes called a thermonuclear device, which uses the nuclear fission reaction of an atom bomb to trigger a significantly larger nuclear fusion reaction. (The term *nuclear weapon* generally encompasses both atom and hydrogen bombs.) It is almost impossible to comprehend the power unleashed by one of these devices. Perhaps, as a way to at least take a stab, we can recall the bare facts of the detonation of the world's first thermonuclear device—the so-called “MIKE” test in the middle of the Pacific Ocean on November 1, 1952 (just three days before the election of Dwight D. Eisenhower as president).<sup>10</sup>

MIKE could not really be called a deliverable bomb or weapon. The device looked more like a factory—six stories high and as wide as an aircraft hangar. The chosen land was the Eniwetok atoll, a collection of about forty coral reefs in the Marshall Island chain, roughly 3,000 miles west of Hawaii. More than 10,000 U.S. Army, Navy, Air Force, and civilian personnel gathered at Eniwetok for the test. They bulldozed the entire island of Elugelab and constructed more than five hundred scientific monitoring stations on thirty different surrounding islands.

At 7:15 A.M., a team on a nearby ship sent off a precise sequence of radio signals—and MIKE exploded. It registered at 10.4 megatons, almost 1,000 times as large as the detonation of Little Boy at Hiroshima. Within seconds, it created a blinding white fireball more than three miles across. It hurled some 80 million tons of dirt and debris high into the air—radioactive material that, in the ensuing weeks, rained down on virtually every point on our planet, like a very fine atomic fairy dust, sprinkled upon us all. And it generated a hot mushroom cloud that rose vertically to an altitude of twenty-seven miles and spread horizontally for a distance of one hundred miles.

It's astounding that human beings can create such a thing. Imagine a mushroom cloud rising twenty-seven miles over the Eiffel Tower, or Buckingham Palace, or Red Square, or Tiananmen Square, or the Empire State Building, with pure devastation below, millions upon millions of incinerated corpses, not just humans but all living things, a perfectly sterilized landscape. All, in a single instant, from the detonation of a single bomb. One cannot help but marvel at this testament to humanity's

scientific and technological prowess. And more than a half century since the MIKE test, and a good ten or fifteen millennia since our ancestors emerged from the caves, at our persistent political, social, and ethical adolescence.

#### THE MAGNITUDE OF THE NUCLEAR PERIL

A curious transition took place during the course of the twentieth century, a transition that few seem to have noticed. For it has only been in the past hundred years or so that humanity has become the greatest enemy of humanity. Before the twentieth century, the greatest cataclysms were those inflicted by natural forces—earthquakes, tsunamis, hurricanes, volcanoes, pandemic. The deadliest earthquake known to history probably took place in 1556 in Shaanxi, China, killing an estimated 830,000 people. The bubonic plague killed 6 million in India in the 1890s, perhaps 43 million all around the world in the 1300s, and, in what must be the greatest natural mass death in all of history, about 100 million in the sixth and early seventh centuries, about half of all the humans on the planet. Fearsome as were the depredations inflicted by the Sargons, Alexanders, Caesars, Attilas, and Tamerlanes of the world, none of these could accumulate slaughters to compete with nature's tallies.

According to one estimate, however, in the first half of the twentieth-century alone, the cataclysms wrought by humans in the two world wars and their aftermath—through war, massacre, or human-induced famine—killed no less than 187 million people.<sup>11</sup> None of the trepidations inflicted by nature during this time, not even the great influenza pandemic of 1918–19, which may have killed as many as 50 million (and which probably was intensified by the devastation recently wrought by the Great War), could accumulate slaughters to compete with that tally.

Of course, a vigorous global thermonuclear exchange could outdo that 187 million on any Thursday morning. Among all the other great challenges we face at the dawn of the twenty-first century, nuclear weapons still hold the greatest potential to inflict the greatest harm on the family of humankind. Global thermonuclear war is still the worst-case scenario for the human race.

The post-cold war world has brought us a great paradox. The good news is that the apocalyptic threat that haunted humanity after 1945—thousands of intercontinental nuclear missiles simultaneously in flight,

passing each other as they streak in opposite directions over the North Pole, a climactic east-west showdown ending in a tie—has dramatically decreased (though this book may surprise readers by revealing that it has not entirely disappeared). But the bad news is that the prospect that an individual city, without warning, will suddenly be vaporized by an atomic warhead is probably now far more likely than before.

Speaking before a National Academy of Sciences conference in 2004, former secretary of defense William Perry said starkly, “I have never been as worried as I am now that a nuclear bomb will be detonated in an American city.”<sup>12</sup> The worldwide consequences of such an event—political, economic, psychological—are scarcely imaginable. While a single detonation would not bring about nuclear winter, mass extinctions, or the end of the world—the scenarios we feared would follow a massive Soviet-American nuclear exchange during the cold war—it would certainly kill thousands, perhaps hundreds of thousands, perhaps even more than a million. It would profoundly disrupt the world economy for years. It would likely leave hundreds or thousands of square miles of virgin earth uninhabitable for decades. As the late U.S. senator Alan Cranston, a Democrat from California who served from 1969 to 1993, liked to say, if a single nuclear weapon goes off a single time in a single city in the world, all other issues will instantly become trivial by comparison.

From the moment of his retirement from the Senate in 1993 until his death on the last day of the twentieth century, December 31, 2000, Senator Cranston devoted himself almost exclusively to the cause of nuclear weapons abolition—at a time when few from the mainstream foreign policy establishment were willing to join him. “I don’t miss the Senate,” he told the *San Francisco Examiner* just weeks before he died. “I had 24 years there, and that was great. . . . [But these days], I get more done on this issue because I can concentrate.”<sup>13</sup> In 1998, Jonathan Schell wrote, “Alan Cranston . . . has, in all likelihood, quietly done more than any other American to marshal public opinion behind the abolitionist cause.”<sup>14</sup> I served as Senator Cranston’s research director, grass-roots organizer, and brainstorm partner during the last three years of his life, when he served as head of the Gorbachev Foundation USA, the State of the World Forum, and the Global Security Institute. He was, to me, a great mentor, a great role model, and a great friend.

It is difficult to dispute that global climate change poses the single greatest long-term peril to human civilization, at least as such things can be perceived from our present vantage point. But it is equally difficult to dispute that the nuclear peril, in its many incarnations, poses the single greatest immediate peril. Although climate change is undoubtedly already having profound effects in certain areas, its most worrisome impacts probably still lie some two, three, or five decades down the road. But tomorrow morning, a major world city, without any warning, could suddenly disappear into a vaporized radioactive cloud. All in the blink of an eye, the snap of a finger, the single beat of a human heart.

Moreover, no matter how badly we screw up the earth's climate in the next century or so, it is difficult to conceive of any scenario by which such changes could wipe out the entire human race, let alone our planet's entire vast circle of life. Not so with nuclear weapons. The worst-case scenario in the nuclear realm—one that we survived so precariously for nearly half a century and one that we may well have to confront again—is extinction. Of not only our own species but perhaps even all species. The eradication of all life on our planet . . . brought about by our own hands.

“There’s something so extreme about these weapons and their capacity to destroy much of the world’s population that has a dimension of absurdity,” says psychiatrist and writer Robert Jay Lifton. “In my view, the only relatively accurate kind of perception of nuclear weapons is to see them in their apocalyptic dimension, in their world-destroying dimension. . . . One has to draw upon the apocalyptic dimension of what they do, and one also has to draw on the absurdity of us destroying our species by our own technology.”<sup>15</sup> To say that forever until the end of time we must base our national security on the threat to incinerate millions of innocents, and the possibility of exterminating us all, must be the most profoundly cynical doctrine imaginable. As Daniel Ellsberg (who, among other roles in American history, was intimately involved in the Cuban missile crisis as a consultant to the Kennedy White House) asks, “Is it really true that the only way to avert the ultimate evil is to threaten the ultimate evil?”<sup>16</sup> What could be more immoral than that? What possible national security justification could there be for that? What kind of people are we to just complacently accept that? Even the barest possibility that we could conduct such an act, in one quick

orgy of miscalculation or misunderstanding, must be beyond our toleration. At bottom, the continued deployment of the nuclear weapon in national military arsenals represents a profound failure of our political and moral ingenuity. Surely, the human imagination has the capacity to devise some other, better ideas for maintaining peace on earth.

#### THE ASPIRATION OF *APOCALYPSE NEVER*

When I set out to write this book, I did not intend to create an academic work for scholars, nuclear experts, and policy wonks. Nor did I want simply to preach to the antinuclear choir. My hope, instead, was to write a book for ordinary folks about our larger nuclear destiny. I actually gave serious thought to calling the book *Avoiding Thermonuclear War for Dummies*.

*Apocalypse Never* is not about some remote international political issue, and it does not engage in arcane and mysterious policy analysis. It is directly relevant to the lives of ordinary Americans and other citizens around the world. This book is about saving Chicago, and Los Angeles, and New York. It is about saving Manchester, and Lyon, and Haifa, and Mumbai, and Hyderabad, and Shanghai, and Seoul, and Hiroshima. For in 2013, or 2023, or tomorrow morning, one of these cities—and all the history, all the potential, all the lives therein—might simply disappear from the face of the earth.

In addition, my hope for this book is not just that many readers will buy it, learn from it, and enjoy it. Rather, *Apocalypse Never* aims to invigorate, expand, and empower the nuclear disarmament movement in this country and around the world. My deepest ambition is not only to offer a message of hope on the nuclear question, but to convince people that they can make those hopes real. I aspire for *Apocalypse Never* to play a crucial role in reawakening the long-dormant antinuclear movement. I want my readers to come away believing there is a struggle to be waged, a glorious goal to be achieved, an epochal triumph that our hands alone can bring to fruition.

I hope that you, the reader, will come to three conclusions after finishing *Apocalypse Never*. First, nuclear weapons abolition is essential. Second, nuclear weapons abolition is achievable. Third, you can play a crucial role in helping to bring it about. Consequently, I hope that you

will decide to devote your blood, toil, tears, and sweat—and perhaps even your treasure—to the cause. And I hope as well that you will recommend this book to your friends, colleagues, classmates, compatriots, and anyone you call a lover of peace. The more people who read this book and act upon its precepts, the more likely it will become that the human race can dodge the nuclear bullet forever, and eliminate nuclear weapons for good.

Books have certainly achieved such lofty goals in the past. *Common Sense*, a pamphlet by Thomas Paine, sold no less than half a million copies (fully 13 percent of the population of the thirteen colonies in 1776) and, by shaping public opinion, incalculably shaped the subsequent unfolding of the American Revolution. *Uncle Tom's Cabin*, by Harriet Beecher Stowe, did much the same for the slavery abolitionist movement in the middle of the nineteenth century. *The Jungle*, by Upton Sinclair, influenced change on such diverse fronts as food safety, labor protections, and animal rights at the beginning of the twentieth century. *Silent Spring*, by Rachel Carson, helped to shape the environmental movement in the early 1960s. *The Feminine Mystique*, by Betty Friedan, did the same for the second wave of the women's movement at about the same time. And *The Other America*, by Michael Harrington, almost singlehandedly instigated President Lyndon Johnson's War on Poverty.

Indeed, *The Fate of the Earth*, by Jonathan Schell, (along with *Protect and Survive*, a pamphlet by E. P. Thompson that offered a brilliant parody of a British civil defense pamphlet called *Protect and Survive*), played an enormous role in mobilizing the nuclear freeze movement, which reached its zenith on June 12, 1982, when perhaps as many as a million hardy souls gathered in New York's Central Park to demand that American and Soviet leaders freeze an arms race that was spiraling out of control. The slogan of the hour was "We've got to stop the train before we can put it in reverse."

"Playing small," said Nelson Mandela, quoting Marianne Williamson in his 1994 inauguration speech as president of South Africa, "does not serve the world."<sup>17</sup> Therefore, in this undertaking, I confess to harboring large goals. Like the aforementioned authors, I want *Apocalypse Never* to force the course of the river of history. I want it to serve as a key, crucial stimulus for putting that nuclear train in reverse and driving it all the way back into the station.

I take as a role model here one of my great literary heroes, Robert A. Heinlein, the futurist and science fiction genius. Heinlein did not make his reputation in the nuclear field. He was a fierce conservative or libertarian on many social and political issues, and his name does not often arise in the arena of nuclear disarmament. But after the atom bomb was revealed to the world in August 1945, Heinlein immediately grasped the historical stakes. So he decided to devote substantial efforts, in the wake of Hiroshima and Nagasaki, to alerting the public to the nature of the nuclear peril. Here is Heinlein, reflecting in 1980 on this period of his life:

After World War II I resumed writing with two objectives: first, to explain the *meaning* of atomic weapons through popular articles; second, to break out from the limitations and low rates of pulp science-fiction magazines. . . . My second objective I achieved in every respect, but in my first and much more important objective I fell flat on my face. . . . Unless you were already adult in August 1945 it is almost impossible for me to convey emotionally to you how people felt about the A-bomb, how many different ways they felt about it, how nearly totally ignorant 99.9% of our citizens were on the subject, including almost all of our military leaders and governmental officials. . . . I wrote nine articles intended to shed light on the post-Hiroshima age, and I have never worked harder on any writing, researched the background more thoroughly, tried harder to make the (grim and horrid) message entertaining and readable. . . . Was I really so naïf that I thought that I could change the course of history this way? No, not really. But, damn it, I had to try!<sup>18</sup>

I, too, do not consider myself a naïf. But I, too, have to try. I cannot guarantee any more success at this task now than Heinlein managed to achieve then. But as the hockey legend Wayne Gretzky likes to say, “You always miss 100 percent of the shots that you don’t take.”

#### CHARTING THE COURSE AND CARRYING THE TORCH

Dr. Martin Luther King liked to quote the nineteenth-century American preacher Theodore Parker, who said, “The arc of the moral

universe is long, but it bends toward justice.”<sup>19</sup> This book aspires to assess the whole of the nuclear challenge, our collective nuclear future, humanity’s long-term nuclear destiny, and to reveal what we must do to see that it ultimately bends toward abolition rather than catastrophe. I will argue that we ought to set nuclear weapons abolition as a concrete, attainable, real world political goal. One way to move toward any goal is to describe it in its ideal form. That is why this book devotes a great deal of attention to describing what a world free of nuclear weapons might actually look like.

In the very first paper I wrote as a college undergraduate—for Political Science 101 at Knox College in Galesburg, Illinois—I pronounced my verdict that Plato’s *Republic* was “too unrealistic” to hold any enduring philosophical merit. Professor Philip S. Haring awarded me a C+. When I stormed up to his office to demand an explanation, the professor, in fine Socratic form, immediately agreed with my assessment of Plato’s direct applicability. But then he asked me to consider whether a writer whose works have endured for some twenty-five centuries might still have something to teach. And he urged me to contemplate whether Plato might have had some other, deeper motive for writing such a philosophical fantasy. I sat for many hours in Knox’s Seymour Library contemplating our conversation. Eventually, I got it through my thick skull that, in writing about an ideal, Plato hoped he might cause readers to aspire to an ideal—and perhaps then endeavor to move the real world just a bit in that direction.

In January 2007 and again in January 2008, four lions of the American foreign policy establishment—former Republican secretary of state Henry Kissinger, former U.S. senator and chair of the Armed Services Committee Sam Nunn, former Democratic secretary of defense William Perry, and former Republican secretary of state George Shultz—authored a pair of landmark opinion pieces published in the *Wall Street Journal*. They called not only for greater attention to immediate nuclear dangers, but for the elimination of nuclear weapons everywhere.<sup>20</sup> In a stroke, the twin op-eds thrust the idea of abolition front and center into the nuclear policy debate. “The goal of a world free of nuclear weapons is like the top of a very tall mountain,” said the authors. “From the vantage point of our troubled world today, we can’t even see the top of the mountain, and it is tempting and easy to say we can’t get there from

here.” The twin contributions I aspire to make with this book are to discern clearly what the top of that mountain might look like, and to envision clearly the path by which we might navigate our ascent.

In April 2009, the clarion of abolition was sounded by an even higher-profile figure. President Barack Obama, speaking before a huge outdoor rally in Prague, said, “Today, I state clearly and with conviction America’s commitment to seek the peace and security of a world without nuclear weapons.” In this, in other statements, and in his early nuclear initiatives, the new American president indicated that the goal of universal nuclear weapons elimination would serve as the ultimate objective of all U.S. nuclear weapons policy actions. Nearly six months later, on September 24, the United Nations Security Council unanimously resolved “to create the conditions for a world without nuclear weapons, in accordance with the goals of the Treaty on the Non-Proliferation of Nuclear Weapons (NPT),” stamping the formal imprimatur of the international community on the vision of Prague.

But in Prague, just seconds after Obama made the statement quoted above, before anyone had the chance to imagine that the dream might be transformed into reality anytime soon, the president declared that complete nuclear disarmament would not “be achieved quickly, perhaps not in my lifetime.”<sup>21</sup> Then, in November, in Tokyo, he used the same formulation—only now “perhaps” had become “probably.” Japan, of course, is the land of the *hibakusha*—the survivors of Hiroshima and Nagasaki—many of whom have devoted their lives to seeing the last nuclear weapon dismantled before the last survivor has gone to the grave. The American president might just as well have said to them, “probably not in my lifetime . . . and definitely not in yours.”

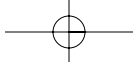
These sentences doused the advocates of abolition with a sudden and jarring bucket of cold water. But they also arguably offered the abolitionist movement a new central organizing principle, for at least the outset of the age of Obama.

In Chapters 3, 4, 5, and 6, I present four scenarios—nuclear terror, accidental nuclear launches or detonations, nuclear crises spinning out of control, and conscious intentional use—by which the indefinite preservation of nuclear weapons will almost certainly lead eventually to the detonation of nuclear weapons. The first two could happen, without any warning whatsoever, tomorrow morning. The second two probably

would offer just a little bit of lead time—before delivering the same result. Abolitionist advocates are often called naïve and idealistic, but what then should we call the notion that humanity can keep nuclear weapons around for another half century or so, yet manage to dodge all four of these nuclear bullets every time the trigger is cocked? Our message to President Obama must be that the time frame he presented in Prague and Tokyo fails utterly to appreciate the magnitude and immediacy of the nuclear peril. Can we wait until the second half of the twenty-first century before arriving at nuclear weapons abolition, President Obama? No, we can't.

In addition, in Chapters 9, 10, and 11, I present the outlines of the architecture we will need to invent to govern and perpetuate a nuclear weapon-free world, the likely consequences if someone tries to break out of that architecture and cheat, and plausible political processes that might be undertaken to enable us to achieve abolition by the seventy-fifth anniversary of Hiroshima's bombing. I do not presume these to be the last words on these subjects. But I do know that if we say today that we cannot achieve abolition before, say, August 4, 2061, Barack Obama's one hundredth birthday, then, undoubtedly, we will not. But if we set ourselves a far more urgent goal, we will begin to generate the political will and the political imagination that will be required to meet that deadline, and to get the job done. Can we achieve nuclear weapons elimination long before the end of your lifetime, President Obama? Yes, we can. Yes, we can.

In the end, the possibility of nuclear apocalypse risks not just the lives of our descendants, but also the legacies of our ancestors. Think about how they toiled to build the art, the science, and the civilization that all of us temporarily now enjoy, and use, and inhabit. Could anything degrade their memories more than to dance with this kind of disaster? Theodore Sturgeon calls upon us to honor "the main current which created you and in which you will create a greater thing still, reverencing those who bore you and the ones who bore them, back and back to the first wild creature who was different because his heart leaped when he saw a star."<sup>22</sup> Our imperative to keep ourselves from blowing up our world is our obligation to our vanished predecessors, those who invented writing, and before that language, and before that rational thought—the geniuses who took us slowly, step by step by step, from



creatures not so very far from our animal origins, to something a little bit closer to our divine destiny.

We must abolish nuclear weapons, and keep them abolished forever, because that is the debt we owe to Jane Addams and Dorothy Day, to Simon Bolivar and Johan Sebastian Bach, to Johannes Gutenberg and Galileo Galilei, to Ferdinand Magellan and Michelangelo Buonarotti, to Asoka and Caesar Augustus. It is our debt to the slaves who sweated, toiled, and perished to build the Great Pyramids—the tallest structures on Planet Earth until the construction of the Eiffel Tower in 1889, considered by their builders to be “stairways to heaven,” pointing toward the infinite sky. It is our debt to the unnamed Cro Magnon women and men, our grandparents, who painted those breathtaking landscapes in the Lascaux and Chauvet and Altamira caves some two hundred long centuries ago, and who held in their hearts the barest glimpse of a human destiny of infinite possibility.

It is up to us to carry on their work.

