

APOCALYPSE . . . WHEN?

It Matters Which Trend Lines One Follows:

Why Terrorism *Is* an Existential Threat Phil Torres

"Although we averted a nuclear nightmare during the Cold War, we now face proliferation of a scope and complexity that demands new strategies and new approaches," President Barack Obama remarked at a 2009 United Nations Security Council summit on nuclear weapons. "Just one nuclear weapon exploded in a city—be it New York or Moscow; Tokyo or Beijing; London or Paris—could kill hundreds of thousands of people. And it would badly destabilize our security, our economies, and our very way of life."¹

Obama is right: even a *single* nuclear weapon being detonated in a major urban area would have global repercussions. As a RAND corporation "scenario analysis" explores, a nuclear weapon being detonated in Los Angeles could not only kill 60,000 people instantly and expose some 150,000 more to radioactive contamination, but millions could attempt to flee the region. Even more, "the economic effects of the catastrophe are likely to spread far beyond the initial attack, reaching a national and even international scale." Global trade could be severely disrupted, local labor supplies in port cities could dwindle, and the largest insurance companies in the country could go bankrupt. "While exact outcomes are difficult to pre-

dict," the report states, "these hypothetical consequences suggest alarming vulnerabilities. Restoring normalcy to economic relations would be daunting, as would meeting the sweeping demands to compensate all of the losses."²

As Michael Shermer noted in his article, Osama bin Laden once called it his "religious duty" to acquire and use weapons of mass destruction (WMDs), including nuclear weapons, and in a recent issue of its propaganda magazine *Dabiq*, the Islamic State fantasizes about getting a nuclear weapon from Pakistan—which has a history of nuclear malfeasance—shipping it across the Atlantic to South America and then smuggling it through the "porous borders" of Central America into the United States. As the article states, this may sound "far-fetched," but it's "infinitely more possible today than it was just one year ago." And many nuclear terrorism experts agree: the issue isn't *whether* such an attack will occur but *when*. As a 2005 survey of eighty-five national security experts reports, "60 percent of the respondents assessed the odds of a nuclear attack within 10 years at between 10 and 50 percent, with an average of 29.2 percent."³ Almost 80 percent of participants identified terrorists as the likely perpetrators of such an attack. While an attack did not, of course, occur before 2015, we may have to thank the same thing that got us through the Cold War without a nuclear holocaust: luck.

Does this mean that terrorism constitutes an existential threat? It depends on how one defines that term—and, to be sure, many pundits and politicians use it hyperbolically to refer to scenarios that would, in some vague sense, be "bad." For the present, let's go with Shermer's definition of *terrorism* as "a threat to our very existence as a civilization or species." This being the case, one could make an argument that nuclear terrorism might constitute an existential threat, given the likely social, political, and economic effects of a nuclear attack. In fact, while the number of terrorist attacks, totaling more than 140,000 between 1970 and 2014, has *declined* over the past few decades, the lethality of attacks—that is, the number of victims per incident—has *increased*. And according to the most recent data, "the number of lives lost to terrorism increased by 80 percent in 2014, reaching the highest level ever recorded at 32,658."⁴



By comparison, 18,111 died of terrorism in 2013. As a Central Intelligence Agency (CIA) document from 2000 presciently notes, terrorism attacks “will become increasingly sophisticated and designed to achieve mass casualties. We expect the trend toward greater lethality in terrorist attacks to continue.”⁵ So do I, as we’ll explore below.

The underlying cause of this historical shift away from smaller attacks and toward less frequent but more catastrophic displays of violence concerns at least two factors: media coverage, which insofar as terrorism is a form of communication enables the message to reach more people, and religion. In fact, the Global Terrorism Index affirms that religious extremism is now the primary driver behind global terrorism, with Islamic groups such as Boko Haram in Nigeria and the Islamic State in Iraq and Syria leading the way. This is germane because secular terrorists are less likely to engage in indiscriminate violence against noncombatants. In contrast, terrorists motivated by religious ideologies often see themselves as engaged in a cosmic struggle that has only one acceptable outcome: the total destruction of God’s enemies and the triumph of his will. This is especially the case with *apocalyptic terrorism*, which has come to dominate the ideological landscape in the Middle East since the 2003 United States–led preemptive invasion of Iraq, in part because many Sunnis and Shi’ites in the region saw the war as an unambiguous fulfillment of prophecy.

For the apocalyptic terrorist in particular, not only is there a cosmic struggle between good and evil, but the culmination of world history—typically marked by an Armageddon-like battle—is imminent. This belief, when ensconced deep in one’s psyche, can produce in the true believer an exaggerated sense of moral urgency, leading him or her to pursue catastrophic violence in the service of catalyzing *The End*. For such individuals, revenge becomes a “divine calling.”⁶ The apocalyptic warrior doesn’t merely want a fight but a *fight to the death*. Or, to borrow a metaphor from former CIA Director Jim Woolsey, terrorists of this ilk “are not seeking a place at the table, but are seeking to blow up the table and kill everyone sitting there.”⁷

The point is that apocalyptic terrorism is *the most dangerous form of terrorism* because it shifts all value expectations from the worldly to the otherworldly, and in doing so it devalues present life in favor of the afterlife. As bin Laden declared in a 2006 audio recording, “As for us, we have nothing to lose. One who swims in the sea does not fear the rain.”

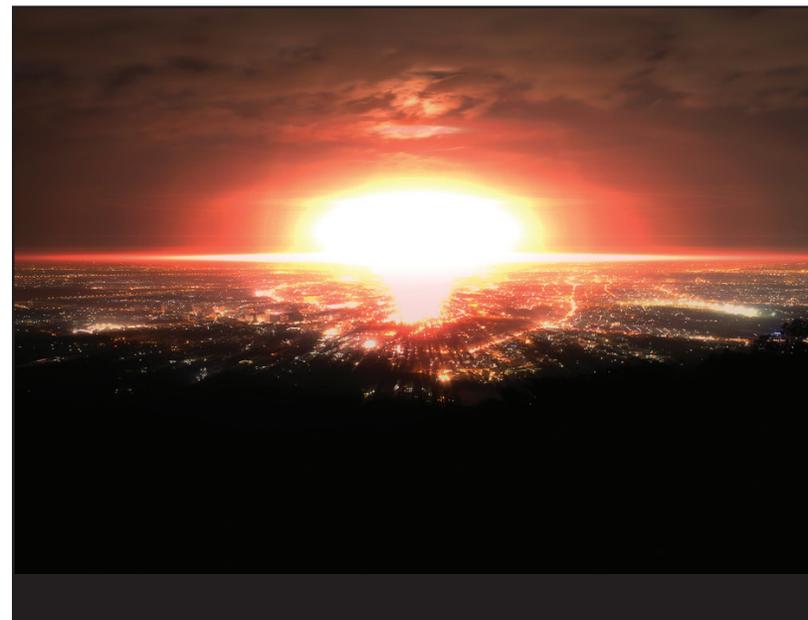
All of this is worrisome on its own, but it becomes even more so when one peers into the future. There are several reasons for thinking that, even if terrorism today doesn’t constitute an existential threat to Western civilization, it very likely will by the *end of the century*, or perhaps in the next few decades. Below are three reasons for anticipatory anxiety about the future of terrorism—about how it could continue to shift toward greater lethality, as the CIA article above noted.

1. Environmental degradation.

How does one become a religious fanatic? What are the root causes of religious extremism? The first point to recognize is that radicalization doesn’t occur in a vacuum.

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The societal conditions in which one finds oneself can nontrivially inflate the probability that religious moderates come to accept extreme ideologies. Once accepted, these ideologies can then influence, shape, and determine one’s behavior in the world—a fact that Sam Harris has correctly



emphasized—leading the “true believer” to engage in acts of horrific violence that would otherwise be morally unthinkable. History is replete with examples in which societal stress and the resulting cultural disorientation pushed groups or individuals into extremism. As James Rinehart writes, “terrorist attacks exemplify the presence of serious, unresolved conflicts within a society.”⁸

In the case of apocalyptic terrorism, Mark Juergensmeyer points to three “conditions that make it likely for cosmic war to be conceived as being located on a worldly stage.” The first concerns the crisis being “perceived as a challenge to basic identity and dignity.” In other words, if it’s understood as a conflict of “ultimate significance,” then it’s more likely to “be seen as a transcendent crisis with spiritual implications.” The second occurs if “losing a cultural identity and tradition to the crisis would be unthinkable,” meaning “the elimination of a whole culture and way of life that was thought to be immortal.” This could produce a

“ble,” meaning that literally hundreds of future generations will be affected, for up to ten thousand years. Yet another article in *Nature* argues that biodiversity loss could result in a permanent, catastrophic collapse of the global ecosystem on a timescale of decades. The fact is that human activity has already initiated the sixth mass extinction event in life’s 3.5 billion-year history, and the global population of vertebrates declined by a whopping 52 percent between 1970 and 2010. Readers are welcome to extrapolate this trend into the future.

It follows that climate change and biodiversity loss could significantly fuel terrorism in the future by pushing societies to the brink of collapse. In fact, multiple high-ranking U.S. officials such as John Brennan and Chuck Hagel explicitly agree with this prognosis, as does the Department of Defense.¹⁰ (And we haven’t even explored the possibility that environmental degradation could fuel ecoterrorism, as Frances Flannery argues.) Terrorism will likely become worse as human activity forces global-scale changes to the climate and biosphere.

2. Disruptive technologies.

Another way to satisfy Juergensmeyer’s conditions is to induce widespread societal changes through the introduction of new technologies. The fact is that numerous technological revolutions in the past have proven to have been highly disruptive, forcing the involuntary restructuring of society. Such changes have, consequently, threatened cultural identities and traditions, thereby creating the very conditions that fertilize apocalyptic thinking. According to

many observers, we’re in the early stages of a new technological revolution: the genetics, nanotechnology, and robotics (GNR) revolution. Unlike past revolutions, this one is expected to have far more profound effects than ever before. Indeed, it will be both world-transforming and person-transforming, meaning that it will radically change not only the technological milieu in which the human organism is embedded but the human organism itself.

The result will be completely new environmental conditions in which increasingly cyborgish humans will exist. Technology and biology are merging, and this will challenge our very notion of humanity, which stands at the center of many religious traditions. According to such beliefs, humans are metaphysically distinct from the rest of the animal kingdom by virtue of our unique possession of an immortal soul, which will survive death and eventually join God in a new heaven on Earth. But what is to become of this traditional “anthropology” if life-extension technologies enable humans to live indefinitely long lives? If we radically enhance the human mind? If we redesign our genomes to make us taller, faster, or smarter? If we manage to upload our con-

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sense that the struggle is “taking place on a transhistorical plane.” And the third occurs if “the crisis cannot be averted or relieved in real time or in real terms.” That is to say, “if the crisis is seen to be hopeless in human terms, beyond any human ability to control or contain it, it is likely that it may be reconceived on a sacred plane, where the possibilities of change and transformation are in God’s hands.” Each of these conditions could increase the probability of an apocalyptic worldview emerging within a group, and all three together “strongly suggest” that such an ideology will take shape.⁹

The point is that slow-motion catastrophes of climate change and biodiversity loss will very likely satisfy these conditions by resulting, for example, in decade-long mega-droughts, more extreme weather events, sea-level rise, desertification, the spread of infectious disease, species extinctions, dwindling populations, ecological collapse, mass migrations, social upheaval, economic disruptions, and political instability. According to the Intergovernmental Panel on Climate Change (IPCC), the consequences of climate change will be “severe,” “pervasive,” and “irrevers-

sciousness to a computer, perhaps through a “whole-brain emulation”? And what happens if we leave Earth and establish colonies on exoplanets throughout the galaxy, given that Earth is seen as the theological center of the universe? If we create a species of artificial intelligences—call them “spiritual machines”—that exhibit human-level intelligence and emotions? Or even if we find evidence of life in other solar systems?

Unless a “defeater” of progress such as an existential catastrophe prevents the enterprise of innovation from continuing, we can expect profound and pervasive changes to the social, political, and economic underpinnings of human civilization. What’s even more important to note, though, is the very same factor that makes climate change an environmental catastrophe: the rapidity of these transformations. Consider the different situations in which Christianity has existed. Imagine telling a first-century Christian that someday there will exist smartphones, computers, and jet planes. As Arthur C. Clarke once declared, “Any sufficiently advanced technology is indistinguishable from magic.” Thus, for this first-century believer, it may be impossible to imagine his or her faith existing in such a radically different world of inscrutable “magic.” Yet the Christian faith—with its dated allusions to geocentrism, shepherding, and the Emperor Nero (encoded by the numbers 666 and 616)—managed to adapt in piecemeal fashion. When changes are slow enough, single generations tend not to notice them, and ancient memes can survive within a population.

But the GNR revolution will almost certainly unfold at an exponential rate, according to something like a universal Moore’s law. The result will be immense changes to both our world and ourselves on increasingly short timescales. And this will make it far more difficult for rigid ideological systems to make sense of the human condition as it evolves into a *posthuman* condition marked by new forms of civilization populated by creatures who are more artifact than organism. Perhaps this will ultimately lead to the extinction of religious belief, but it seems more than likely that such changes will be met with spasms and seizures of apocalyptic resistance as the identity and dignity of thought-traditions collide with techno-cultural forces that threaten their very existence. As Rinehart writes, “the injection of a new order or hierarchy into a society . . . has frequently engendered millenarian expectations.”¹¹ Indeed, apocalyptic movements have, in the past, “found their most receptive audience in those areas that were undergoing rapid social and economic change. Such change brought cultural shock and disorientation, disrupted the existing socioeconomic order, and had a powerful impact on traditional life.”

Or to quote Juergensmeyer, “catastrophes have often

been the occasion for the rise of demagogues, strange sects and radical new religious movements,” some of which preferentially interpret current affairs through an active apocalyptic telescope.¹² And what is the GNR revolution if not a “catastrophe” in the relevant sense? What is the termination of the human era and the simultaneous inauguration of the posthuman era if not a “catastrophe” for long-standing conceptions of “man created in God’s image”? As the nanotechnology guru Eric Drexler puts it, we need to prepare for “catastrophic success,” as world- and person-transforming technologies emerge on the global market.

3. Destructive technologies.

So far, we’ve focused on the various *agents* who might have some motivation for engaging in acts of violence, given situational factors that could foment religious extremism. But agents are impotent without *tools* to serve as the means to their ends. This leads us to yet another trend relevant to whether terrorism will emerge as an existential threat, if it isn’t one already in the Atomic Age: namely that the *number* of destructive technologies is increasing over time, as is the potential destructiveness of these technologies. While every generation has identified itself as living in a “uniquely” dangerous moment in time, nearly all of them

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have been wrong. This is precisely what Pinker and Shermer show in their masterful books of “voluminous erudition,” namely *The Better Angels of Our Nature* and *The Moral Arc*, respectively.¹³ But what’s missing here is that our situation today really *is* dangerous in unprecedented ways, and it will only become more dangerous moving forward as science and technology become democratized and non-state actors acquire the same destructive capabilities once monopolized by states.

On the one hand, we live today with immensely dangerous chemical, biological, radiological, and nuclear (CBRN) weapons. We’ve already discussed nuclear weapons, a problem that the nuclear terrorism expert Joe Cirincione argues is, if anything, growing. As Cirincione puts it, “We [experts] are fearful. And you should be, too.”¹⁴ But there are also dangers stemming from chemical and biological weapons, both of which have been employed by apoca-

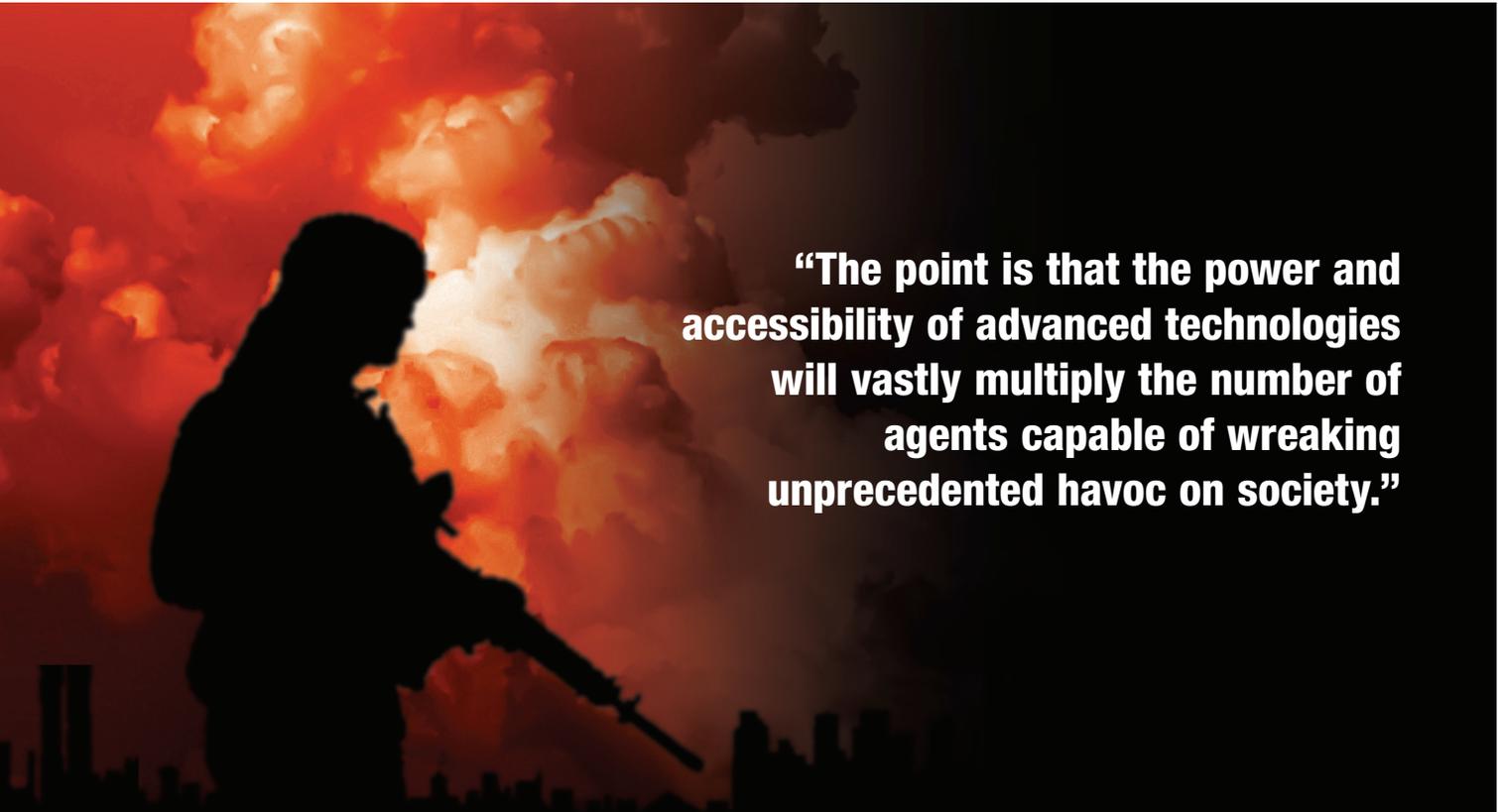
lyptic groups such as the Islamic State, Aum Shinrikyo (in Japan), and the Rajneesh movement (in the United States). Of particular concern here is the possibility of spreading pathogenic germs to sicken or kill people. As Kofi Annan once declared, bioterrorism is “the most important, under-addressed threat relating to terrorism.”¹⁵ Nonetheless, the weapons currently available are insufficient to destroy truly large populations, much less trip humanity into the eternal grave of extinction. But one could imagine them having the same global consequences as a single nuclear weapon exploding in Los Angeles. A terrorist attack involving CBRN weapons could precipitate an economic recession, new global conflicts, and other large-scale repercussions.

This being said, by the end of the twenty-first century, the CBRN dangers of today—including nuclear weapons—could be the *least* of our concerns. Future anticipated technologies associated with the fields of biotechnology,

synthetic biology, nanotechnology, and even artificial intelligence (AI) could empower terrorists in unprecedented ways.¹⁶ At the extreme, these technologies could selectively target specific groups of people, humanity as a whole, or even the entire biosphere. Whereas apocalyptic groups motivated by a conviction that “the world must be destroyed to be saved” could effect only so much destruction in the world of yesteryear, advanced technologies could enable groups of the future to bring about an event of *omnicidal* proportions. This is partly why Sir Martin Rees, an Astronomer Royal and cofounder of the Centre for the Study of Existential Risks at Cambridge University, gives human civilization a fifty-fifty chance of making it through the current century intact. The religious fanatics of the future won’t use a shovel but rather a bulldozer to dig mass graves for their enemies.

Even more, not only are the products of these fields becoming exponentially more powerful, but they’re also becoming increasingly accessible as well. This means that more and more *individuals* will gain more and more power to modify the macroscopic world (perhaps by changing the microscopic worlds that underlie it). The next-generation Ted Kaczynski won’t rely on cabin-made bombs to terrorize society; he or she will set up a five-hundred-dollar “biohacking” lab and synthesize a pathogen that, for example, combines the lethality of rabies, the incurability of Ebola, the contagiousness of the common cold, and the incubation period of HIV—a possibility discussed by a 2015 Global Challenges Foundation report. Or, he or she might

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design at weaponized nanoscale assassin—a self-replicating nanobot of some sort—that destroys every organism with the genetic signature of *Homo sapiens*, leaving only a pillar of dust behind. (This is related to the “gray goo” scenario.)

The point is that the power and accessibility of advanced technologies will vastly multiply the number of agents capable of wreaking unprecedented havoc on society. As of 2015, lone-wolf attacks in the West were on the rise, accounting for about 70 percent of terrorism-related deaths. And as Flannery points out, “the core membership of al-Qaeda was most likely only around 500–1,000 [in 2011]. Unfortunately, a very small number of people can do an enormous amount of damage.”¹⁷ This fact will be significantly amplified in the foreseeable future if our best current projections are even remotely accurate.

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Our present situation is genuinely unique. Not only are ancient superstitions still prevalent, but a 2015 Pew poll projects that they will become even more ubiquitous in the future as the global percentage of nonbelievers declines from 16.4 percent to 13.2 percent. By 2050, about 8.1 billion of the 9.3 billion people inhabiting our planetary spaceship will subscribe to *some* form of religion. As Alan Cooperman puts it, “You might think of this in shorthand as the secularizing West versus the rapidly growing rest.”¹⁸

Meanwhile, environmental degradation and rapid technological change will almost certainly contribute to precisely the sort of conditions in which terrorism thrives—including its most virulent manifestation, apocalyptic terrorism. Making matters worse, these agential risks could become coupled to various technological risks, resulting in attacks involving nuclear devices, engineered pathogens, nanoweaponry, self-replicating nanobots, and weaponized AI (a possibility not discussed above). Even if terrorists are not highly organized diabolical geniuses motivated by pure evil—to borrow Shermer’s phraseology—so what? In the

near future, it could take only a *single* individual or group under the spell of religious delusions to relocate humanity from the category of “extant” to “extinct.” And even if terrorism doesn’t work as a vehicle for political change, as Shermer correctly points out, so what? The relevant issue is whether the terrorists *believe* that violence works, and if they do, how lethal their attacks could become given the tools available.

Humanity has conducted many extraordinary experiments since Copernicus launched the scientific revolution in 1543. We’ve discovered the gas laws, confirmed Einstein’s general theory of relativity, and found the Higgs boson. But the greatest experiment of all is civilization itself. And we may not have to wait for long to find out whether this experiment succeeds or fails. **■**

Notes

1. “Remarks by the President at the UN Security Council Summit on Nuclear Non Proliferation and Nuclear Disarmament,” The White House, September 24, 2009.
2. Charles Meade and Roger Molander, “Considering the Effects of a Catastrophic Terrorist Attack.” RAND Corporation Technical Report, 2006.
3. Dan Farber, “Nuclear Attack a Ticking Time Bomb, Experts Warn,” CBS News, May 4, 2010.
4. “2015 Global Terrorism Index: Deaths From Terrorism Increased 80 percent Last Year to the Highest Level Ever; Global Economic Cost of Terrorism Reached All-Time High at US\$52.9 Billion,” London: Institute for Economics & Peace, November 17, 2015.
5. “Global Trends 2015: A Dialogue About the Future With Nongovernment Experts,” National Intelligence Council, 2000. Available at <https://goo.gl/W3a1WN>.
6. Frances Flannery, *Understanding Apocalyptic Terrorism* (New York: Routledge, 2016).
7. “Testimony of R. James Woolsey,” February 12, 1998. Available at <https://goo.gl/v2SLf1>.
8. James Rinehart, *Apocalyptic Faith and Political Violence: Prophets of Terror* (New York: Palgrave Macmillan, 2006).
9. Mark Juergensmeyer, “Radical Religious Responses to Global Catastrophe” (forthcoming). See also *Terror in the Mind of God* (Berkeley: University of California Press, 2003).
10. See Phil Torres, “We’re Speeding Toward a Climate Change Catastrophe—and That Makes 2016 the Most Important Election in a Generation,” *Salon*, April 10, 2016.
11. Rinehart, *Apocalyptic Faith*.
12. Juergensmeyer, “Radical Religious Responses.”
13. See John Gray, “John Gray: Steven Pinker Is Wrong about Violence and War,” *Guardian*, March 13, 2015.
14. Joe Cirincione, “Nuclear Terrorists Threat Bigger Than You Think,” CNN, April 1, 2016.
15. “In Lecture at Princeton University, Secretary-General Calls for Progress on Both Nuclear Disarmament, Non-Proliferation,” United Nations press release, November 28, 2016.
16. Indeed, a sufficiently advanced artificial intelligence could pose a terrorist threat *itself*.
17. Flannery, *Understanding Apocalyptic Terrorism*.
18. “Event: The Future of World Religions,” Pew Research Center, 2015. Available at <http://goo.gl/9aP6vO>.

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