

**THE TOWER OF BABEL REVISITED: GLOBAL GOVERNANCE AS A
PROBLEMATIC SOLUTION TO EXISTENTIAL THREATS**

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The Biblical story of the Tower of Babel illuminates contemporary efforts to secure ourselves from global catastrophic threats. Our advancing knowledge has allowed us to specify with greater clarity the Floods that we face (asteroids, supervolcanoes, gamma-ray bursts, etc.); our galloping powers of technology have spawned a new class of human-generated dangers (climate change, nuclear war, artificial intelligence, nanotechnology, etc.). Should any of these existential dangers actually come to pass, human beings, and even all life, could be imperiled. The claim that Man, and perhaps the Earth itself, hangs in the balance is said to imply the necessity of a global response. All well-meaning men and women should abandon a provincial attachment to the nation-states they contingently call home. What is needed is more global cooperation, or global governance, so that we can join together in the construction of a tower to the heavens, safe harbor from whatever terrors nature or God visit upon us.

This Article questions the conventional narrative. The Biblical account of the Tower of Babel is richly metaphorical in its suggestion that the division of mankind into separate spheres has salutary consequences. The fantasy of a common humanity, joined selflessly in a common enterprise, assumes away the tenacious passions and interests that divide us. This facile claim, based on little more than linguistic parallelism—global catastrophic threats require global governance solutions—breaks down as one reflects, at a more granular level, upon the diversity of those threats. Apart from questions of feasibility, global governance solutions overstate the benefits and understate the costs of collaboration. There are

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often substantial advantages to maintaining separate and even competing spheres of control. Nation-states, with more rigorous lines of political accountability than amorphous governance structures, are best able to respond to any existential threats. Finally, nation-states and territorially-localized sovereigns are less likely to threaten humanity's future than a global sovereign, empowered by modern technology and emboldened by a crusading faith to save Mankind.

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INTRODUCTION

And they said, Go to, let us build us a city and a tower, whose top may reach unto heaven; and let us make us a name, lest we be scattered abroad upon the face of the whole earth. And the Lord came down to see the city and the tower, which the children built. And the Lord said, Behold, the people is one, and they have all one language; and this they begin to do; and now nothing will be restrained from them, which they have imagined to do. Go to, let us go down, and there confound their language, that they may not understand one another's speech. So the Lord scattered them abroad from thence upon the face of all the earth: and they left off to build the city. Therefore is the name of it called Babel; because the Lord did there confound the language of all the earth: and from thence did the Lord scatter them abroad upon the face of all the earth.

Genesis 11:4–9

A twenty-first-century reader of the Biblical story of the Tower of Babel may be inclined to question the motives of the Old Testament God. The stage is set soon after the Flood: human beings have begun to prosper and repopulate the Earth. Driven in part by the pursuit of glory, but more fundamentally by the desire to preserve themselves from future dangers, they collaborate on a monumental task. The memory of the catastrophic Flood is still fresh. Their sensible goal—symbolized by the construction of the Tower to the heavens—is to achieve safe harbor should another global catastrophe be visited upon them. God's reaction, petty and jealous, is to divide mankind and frustrate the attainment of self-sufficiency. Through cruel divine intervention, mankind is kept in peril of His apocalyptic judgment and permanently needful of His grace.

There may be a deeper truth to the Tower of Babel story, more generous to the Old Testament God, but the story is a useful backdrop as we reflect on current efforts to secure ourselves in the face of global catastrophic—or existential—threats. Our advancing knowledge of both our Earth and the universe has allowed us to specify with greater clarity the floods, natural and cosmic, that we face (asteroids, super-volcanoes, gamma-ray bursts, etc.); our galloping powers of technology have spawned a new class of

human-generated dangers (global climate change, all-out nuclear war, scientific experiments gone awry, etc.). Should any of these events come to pass, at least in an extreme variant, all of the Earth's human inhabitants and even all life could be imperiled. How trivial must the differences between American and Russian, Hottentot and Eskimo,¹ appear in the face of a ten-kilometer-wide asteroid plummeting toward Earth?

This narrative—whether linked to killer asteroids, runaway global warming, or hostile artificial intelligence—has a descriptive and prescriptive dimension. The claim that Man and perhaps the Earth itself hang in the balance implies the necessity of a global response. Existential threats should stir all well-meaning souls to abandon a provincial attachment to the nation-state they contingently call home. Like the residents of Babel, we cannot cling to what separates us, but we must join together in the construction of a tower to the heavens that will enable us to ride out whatever terrors nature, the cosmos, or God throws our way. What is needed is more “global cooperation” or even “global governance,” a phrase enshrouded in imprecision but generally understood to mean the sacrifice by nation-states of some of the traditional badges of sovereignty.

This narrative is so often taken for granted, so imbued with apparent reasonableness, that it now qualifies as received wisdom. Experts have laid bare the dangers we face and overwhelmed us with fancy jargon and complicated models, and the legal and

¹ In the words of Tom Lehrer,
We will all go together when we go
Every Hottentot and every Eskimo
When the air becomes uraneous
We will all go simultaneous
Oh, we all will go together when we go.

Tom Lehrer, *We Will All Go Together When We Go*, in MORE OF TOM LEHRER (Lehrer Records 1959), as reprinted in Brian Martin, *The Global Health Effects of Nuclear War*, 59 CURRENT AFF. BULL. 14, 14 (Dec. 1982), <http://www.bmartin.cc/pubs/82cab/82cab.pdf>; see also ROBERT WRIGHT, NONZERO: THE LOGIC OF HUMAN DESTINY 216 (2000) (“Even if murderous extraterrestrials aren’t a strict prerequisite for global governance, they would be a big time saver.”).

political response—a surrender or dilution of national sovereignty and an embrace of global solutions—is simply common sense. In moments such as these, however, when scientific knowledge has migrated from its specific realms of competence and morphed into public policy recommendations, the skeptic can provide a public service.²

Part I of the Article explores the Babel story. The Biblical author intended the tale to cast doubt on the feasibility and, more fundamentally, the desirability of the Tower-building project. Pre-modern authors embraced the Biblical perspective and condemned the foolishness and impiety of the Tower builders, but modern authors have revisited this interpretation. Modern science, premised on the conquest of nature, regards the Tower's goal—security and self-preservation—as the ultimate and even feasible *summum bonum*. Political philosophers have imagined that humanity's future lies in greater cooperation, diminished nationalistic rivalry, and eventually perpetual peace.

The Article then deploys the metaphor of the Babel story to consider our modern condition. Part II sketches some of the potential Floods—or existential threats—that modern man faces. Part III then turns to contemporary Tower-building efforts to survive these threats through collaborative political structures. Scientists, whose experiments have unleashed many new and terrible dangers, have played a leading role in promoting “global governance” solutions. The outcome of “global governance” is indeterminate, but the animating idea is the need to subvert or circumvent national sovereignty. Only when human beings are acting outside the narrowing trammels of nation-states can they recognize a transcendent human good. And only through such structures can security from existential threats be pursued and, eventually, achieved.

² Cf. Matt Crawford, *The Limits of Neuro-Talk*, THE NEW ATLANTIS 65, 65 (Winter 2008), http://www.thenewatlantis.com/docLib/20080324_TNA19Crawford.pdf (“[When confronted] with the overextension of some mode of scientific explanation, or model, to domains in which it has little predictive or explanatory power . . . the heckler performs an important public service.”).

Part IV highlights the defects of global governance solutions to existential threats. The facile claim, based on little more than linguistic parallelism—global catastrophic threats require global governance solutions—breaks down as one reflects, at a more granular level, upon the diversity of those threats. Apart from questions of infeasibility, global governance solutions overstate the benefits and understate the costs of collaboration. There are often substantial advantages to maintaining separate and even competing spheres of control. Nation-states, with more rigorous lines of political accountability than amorphous “governance” structures, are best able to respond to any existential threats.

Finally, a note on terminology is in order. The phrase “existential risks” was coined in 2002 by the English philosopher Nick Bostrom. He defined “existential risks,” in contrast with “global endurable risks,” as those in which “an adverse outcome would either annihilate Earth-originating intelligent life or permanently and drastically curtail its potential.”³ Cambridge University now houses a center dedicated to the study of “existential risks,” and Bostrom has generated an insightful literature that has tried to define the term with greater precision.⁴ This Article elides these definitional issues; “existential threat” herein contemplates any event that, broadly understood, imperils life or civilization as we know it. The Article also replaces “risk” with “threat,” which, although less scientifically precise, is more psychologically accurate in conveying the terror such events evoke: there is a risk that it will rain tomorrow; the prospect of an asteroid striking Earth is threatening and even terrifying. In the face of such threats, what is to be done?

³ Nick Bostrom, *Existential Risks: Analyzing Human Extinction Scenarios and Related Hazards*, 9 J. EVOLUTION & TECH. 1, 1–2 (2001), <https://nickbostrom.com/existential/risks.pdf>.

⁴ CENTRE FOR THE STUDY OF EXISTENTIAL RISK, UNIVERSITY OF CAMBRIDGE, at <http://cser.org>. Bostrom subdivides “existential risks” into “bangs” (sudden extinction events), “crunches” (events that thwart humanity’s development into transhumanity), “shrieks” (events that reduce humanity’s ability to evolve into anything more than a “narrow band” of transhumanity), and “whimpers” (events that result in a “complete disappearance of the things we value”); see Bostrom, *supra* note 3, at 4–5.

I. THE BABEL STORY

The story of the Tower of Babel is, despite its brevity, one of the most famous in the Old Testament.⁵ After Adam and Eve were expelled from the Garden of Eden, their descendants multiplied and, with alarming speed, degenerated into wickedness.⁶ God, regretting His creation, initially resolved to destroy all mankind, but Noah found grace in His eyes and was spared.⁷ The survivors of the Flood settle on a plain in the land of Shinar, likely somewhere in Mesopotamia.⁸ This seems to reflect disobedience to God's command to scatter across the globe.⁹ But perhaps the men and women at the time, remembering the recent catastrophic event, thought it prudent to remain close together, finding security in numbers. They "mold bricks" by burning stones, presumably to build sturdy houses.¹⁰

Fire has always been the preeminent symbol of technology; described in myths from many cultures, its invention and uses provoke jealousy and anger among the gods. With fire, and therewith technology, men can rival gods in their creative powers. Men in the Biblical account, having first presumably deployed the bricks to pursue mundane goals, then use the bricks to construct a tower to the heavens. Their goal is to "make a name" for themselves and never be scattered again. The phrase "make a name" is evocative, but it is sufficient here to suggest that pride and fear are the tower builders' principal motivations. God is said to "c[o]me down" to see them, which may allude to the vast distance that separates man from the heavens, and thus the futility

⁵ *Genesis* 11:1–9. The treatment of the story in this section is derivative of the masterful discussion in LEON R. KASS, *THE BEGINNING OF WISDOM: READING GENESIS 217–43* (2003). It also draws on THOMAS L. PANGLE, *POLITICAL PHILOSOPHY AND THE GOD OF ABRAHAM* 122–26 (2003), and Robert Sacks, *The Lion and the Ass: A Commentary on the Book of Genesis*, 9 INTERPRETATION 1 (1980).

⁶ *Genesis* 6:5.

⁷ *Genesis* 6:8.

⁸ *Genesis* 11:2.

⁹ *Genesis* 8:17 (explaining that God commanded Noah to "multiply" across the earth).

¹⁰ *Genesis* 11:3.

of the human aspiration to god-like security.¹¹ God sees that men are united in “one language,” and muses that “now nothing will be restrained from them which they have imagined.”¹² He confounds them by disrupting the unity of language. The Old Testament never states that God destroyed the Tower, notwithstanding the common perception. We are left to conclude that men and women, no longer speaking a single language, and no longer unified in a single great task, abort the project, and the Tower is left to crumble.

Jewish, Christian, and Islamic commentators have drawn many lessons from the story, with myriad emphases, but a consistent theme is God’s just punishment of overweening human pride. The third-century Catholic writer, Eusebius Pamphili, observes that after the Fall, men had given “themselves over entirely to all manner of iniquity, so as at one time to corrupt one another, at another to kill one another, and again to eat human flesh, . . . [and] even to plan to fortify the earth against the heavens, and by the madness of a perverted mind to prepare war against the supreme God Himself.”¹³ The decision to “fortify the earth against the heavens,” which seems natural and even commendable from a modern perspective, is “madness.” In fact, the building of the Tower is depicted as the culminating evidence of man’s wickedness, more conclusive even than the impulse to murder or cannibalism.

The Biblical narrative does not provide the name of a human leader of the Tower-building effort, but many accounts have ascribed the effort to King Nimrod.¹⁴ The first century A.D.

¹¹ Milton draws attention to this vast distance, rendering man’s hubris comic:
 Forthwith a hideous gabble rises loud
 Among the builders; each to other calls
 Not understood, till hoarse, and all in rage,
 As mocked they stormy; great laughter was in Heaven.
 12 JOHN MILTON, *PARADISE LOST* 276, 277 (1674), <http://www.samizdat.qc.ca/arts/lit/paradiselost.pdf>.

¹² *Genesis* 11:6.

¹³ Anthony Low, *The Image of the Tower in Paradise Lost*, 10 *STUD. ENG. LITERATURE, 1500–1900* 171, 172 (Winter 1970) (citation omitted).

¹⁴ The Book of *Genesis* earlier mentions Nimrod as a “mighty one” and “a mighty hunter,” *Genesis* 10:8–9, but does not explicitly connect him to the Babel story.

Romano-Jewish philosopher Josephus wrote that Nimrod excited men to “such an affront and contempt of God,” that they imagined that happiness depended not upon God, but upon their own “courage.” Announcing that he would “avenge himself on God for destroying their forefathers,” Nimrod converted the government to tyranny and transformed man’s fear of God into a fear of him instead. According to Josephus, “[w]hen God saw that they acted so madly, he did not resolve to destroy them utterly, since they [had] not grown wiser by the destruction of the former sinners; but he caused a tumult among them, by producing in them diverse languages, and causing that, through the multitude of those languages, they should not be able to understand one another.”¹⁵ Confronted by the wickedness of the Tower, God does not destroy mankind, as he did when he sent the Flood.¹⁶ In disrupting the building of the Tower, God professes to be acting benevolently, curing men from their “mad[ness]” and embarking on a new strategy to promote human wisdom. The Flood failed to make men good and wise; perhaps disrupting the unity of language will be more fruitful.

And yet what was so “mad” about the effort to secure themselves from another flood? Furthermore, how could wisdom arise from the confusion of human tongues? Surely men are better

¹⁵ 1 Josephus, *Antiquities of the Jews* 116–19, <https://archive.org/details/L242JosephusVJewishAntiquities13>. Although *Paradise Lost* does not identify Nimrod as the Tower’s mastermind, it does suggest that an aspiring tyrant directed the construction of the Tower:

[T]ill one shall rise
 Of proud ambitious heart, who not content
 With fair equality, fraternal state,
 Will arrogate dominion undeserved
 Over his brethren, and quite dispossess
 Concord and law of nature from the Earth

 But this usurper his encroachment proud
 Stays not on Man; to God his Tower intends
 Siege and defiance: Wretched man!

¹⁶ As St. Jerome also observed, God is merciful towards the Tower builders: “Note that the prophet did not say: You will destroy them, but, You will scatter them It is for their own good that they be scattered.” Low, *supra* note 13, at 173 n.6.

suited to understand one another and transmit knowledge if they speak the same language. Another lingering question from the Tower of Babel story is whether, absent divine intervention, the project would have succeeded. The Biblical story is ambiguous on this point. As already suggested, the reference to God's "com[ing] down" may allude to the incomparable distance separating us from the heavens and the impossibility of bridging that divide. Pieter Bruegel's painting, *Tower of Babel*, gestures to this idea.¹⁷ As a confident King Nimrod, in flowing robes, discusses plans with architects in the foreground, the Tower itself is presented as already precarious and even crumbling: behold the futility of human striving, the painting seems to be saying. And yet the Biblical narrative itself also indicates that men might have triumphed in their plans, had God not intervened. The statement that "now nothing will be restrained from them" suggests that men might, in fact, have been successful.

Apart from the project's feasibility, there is the question of its desirability. On this point, pre-modern religious commentators have spoken with one voice, condemning the arrogance and impiety of the project and applauding God's intervention. Modern secular commentators have been, predictably, less kind to God and more skeptical of the story. Thomas Paine wrote that the story was "ridiculous" on its face; men would not be so "foolish as to think it possible to 'reach to heavens.'" ¹⁸ Paine goes on to ridicule God's "jealousy" in disrupting the venture: what possibly could He have to fear from such a venture? In presenting the Lord as silly and petty, the Freemason and Deist that Paine writes adds "profanation to folly" to the Tower of Babel.

Modern thinkers more thoughtful and radical than Paine have regarded the heavens, both literally and figuratively, as a plausible goal of human endeavor. Modern science is premised on the claim

¹⁷ Bruegel, *The Tower of Babel*, KUNSTHISTORISCHES MUSEUM, http://www.wga.hu/html_m/b/bruegel/pieter_e/06/01babel.html (last visited September 22, 2017).

¹⁸ Thomas Paine, *The Tower of Babel*, in *THE COMPLETE RELIGIOUS AND THEOLOGICAL WORKS OF THOMAS PAINE* 393, 394 (Peter Eckler ed., 1892).

that man can and should use his own powers to attain a god-like security from natural perils.¹⁹ Machiavelli's exhortation to overcome the "malignity of fortune"²⁰ would become a clarion cry for Francis Bacon and Rene Descartes, the great founders of modern science. Bacon argued that the proper aim of scientific inquiry was the conquest of nature for the "relief of man's estate."²¹ He exhorted scientists to "become the instruments and dispensers of God's power and mercy in prolonging and renewing the life of man."²² And Descartes, in the *Discourses on Method*, speculated that through the progress of medical science "we could be spared an infinity of diseases, of the body as well as of the mind, and even also perhaps the enfeeblement of old age."²³ The "perhaps" hedges his bets, but if Bacon and Descartes were circumspect in their goal of dethroning God in the heavens, contemporary writers have been open and unapologetic about the true goal of modern science. Absolute security from natural and divine threats (and what greater threat is there than death itself?) is taken as a realistic goal by transhumanist authors, such as Ray Kurzweil, who predicts that advances in artificial intelligence, nanotechnology, and biology will eventually vault human beings into the heavens.²⁴

The late eighteenth-century political philosopher Immanuel Kant seems, at first glance, to have been somewhat more sympathetic to the Biblical story than other modern thinkers. In his *Speculative Beginning of Human History*, Kant wrote, with reference to the Babel story, that "Holy Scripture is completely

¹⁹ See, e.g., Patrick Deneen, *The Science of Politics and the Conquest of Nature*, THE NEW ATLANTIS (Summer 2011), http://www.thenewatlantis.com/docLib/20111117_TNA32Deneen.pdf.

²⁰ NICCOLO MACHIAVELLI, THE PRINCE 4 (Harvey C. Mansfield trans., 2d ed. 1998).

²¹ FRANCIS BACON, THE ADVANCEMENT OF LEARNING 36 (Stephen J. Gould ed., 2011) (1605).

²² Natalie Elliot, *The Politics of Life Extension in Francis Bacon's Wisdom of the Ancients*, 77 REV. OF POL. 351, 351–52 (2015), quoting FRANCIS BACON, HISTORY OF THE LIFE AND DEATH (1623).

²³ RENE DESCARTES, THE DISCOURSE ON METHODS, part 6.

²⁴ See RAY KURZWEIL, THE SINGULARITY IS NEAR: WHEN HUMANS TRANSCEND BIOLOGY (2005).

correct in portraying the melding together of peoples into a society and the complete freedom from external danger [that results from it] as a hindrance to all further culture and as a fall to unredeemable corruption.”²⁵ Yet this apparent approval of God’s interference with the construction of the Tower is importantly qualified. The “threat of war” promotes political liberty, but perhaps only in our current condition. Political leaders now recognize the importance of wealth in waging war, and further recognize that only through commerce, and some measure of liberty, can nations generate wealth:

At the stage of culture where the human race still stands, war is an indispensable means to bringing it to a still higher stage; and only after a perfect culture exists (God knows when), would a peace that endures forever benefit us.²⁶

The division of mankind into separate nations is useful, paradoxically, precisely because this division promotes hostility and even war. The prospect of war is, for the time being, an invaluable motivator, driving the human race to higher and higher levels of liberty, commerce, and civilization. Implicit, however, in Kant’s qualification (“[this] stage of culture”) is the suggestion that at some point in our evolution the prospect of war, and even the division of mankind into competing nations, will no longer be necessary. As the contemporary scholar Thomas Pangle writes, “the ambition and the hope brought to light in the story of Babel remain[], for Kant and for the progressive Kantian outlook, the ultimate proper destiny of mankind.”²⁷

The story of the Tower of Babel has a timeless appeal. As individuals and as a species, we are ever in peril. And the experience of this common peril gives rise to a dream: a united mankind, joined together to defeat our common enemies. The Biblical account suggests that this dream is dubiously attainable and emphatically undesirable. Modern authors have challenged the Biblical account on both scores. The awareness of our common humanity has generated a greater openness to political structures

²⁵ IMMANUEL KANT, PERPETUAL PEACE AND OTHER ESSAYS 58 (Ted Humphrey trans., 1998) (1786).

²⁶ *Id.*

²⁷ Pangle, *supra* note 5, at 125.

that transcend arbitrary divisions of language and nation. And modern science, probing into the secrets of nature and the universe, has deepened our awareness of catastrophic threats, while also spawning a new category of terrors. Consequently, at least in the eyes of many observers, it has become both possible and necessary to unite in a collective effort to secure mankind from global catastrophe.

II. EXISTENTIAL THREATS

A car accident with a single fatality can be catastrophic for the family and friends of the deceased. On a larger scale, the terrorist attacks of September 11, 2001, were catastrophic for tens of thousands of people, with total direct costs estimated at \$27.2 billion.²⁸ Natural disasters have proven to be at least as devastating as catastrophes of human creation. Hurricane Katrina, for example, took over 1,000 lives and caused an estimated \$81 billion in damage.²⁹

And yet, to take a longer perspective in which the paramount question is the survival of the human race, all of these disasters are of comparably minor consequence. The human race has possibly already faced one disaster that imperiled its existence. According to a contested theory, a series of super-volcano explosions 75,000 years ago on the Indonesian island of Sumatra resulted in a sudden 5–10°C reduction in the Earth's climate; this reduced the human population to the dozens, causing a genetic choke point with scars still visible on our DNA.³⁰ More recently, the evidence is fairly conclusive that, as a species, the past five to ten millennia,

²⁸ Robert Looney, *Economic Costs to the United States Stemming from the 9/11 Attacks*, 1 STRATEGIC INSIGHTS 6 (August 2002).

²⁹ Kim Ann Zimmermann, *Hurricane Katrina: Facts, Damage & Aftermath*, LIVESCIENCE (Aug. 27, 2015, 12:47 PM), <http://www.livescience.com/22522-hurricane-katrina-facts.html>.

³⁰ Stanley H. Ambrose, *Late Pleistocene Human Population Bottlenecks, Volcanic Winter, and Differentiation of Modern Humans*, 34 J. HUM. EVOLUTION 623, 623–51 (1998). The theory is not without its skeptics, who suggest that the Toba Super-volcano caused minimal world-wide damage. See generally F.J. Gathorne-Hardy & W.E.H. Harcourt-Smith, *The Supereruption of Toba: Did It Cause a Human Bottleneck?*, 45 J. HUM. EVOLUTION 227 (2003).

coinciding with the origins of agriculture, have been ones of steady, unspectacular population growth.³¹ Then, the past two centuries, marked by rapid technological advances, have been ones of rip-roaring success, at least if the criterion is total population.³² Although the first half of the twentieth century is often portrayed as a period of carnage and pandemic, the total population, in fact, increased over those five decades by fifty percent.³³ In the more peaceful second half of that century, the population more than doubled.³⁴ The resilience of the human population in modern times can be captured in one arresting fact: on December 26, 2004, when a tsunami in the Indian Ocean claimed more than 230,000 lives in a single day, the Earth's human population remained almost constant.³⁵

So, we are obliged to exercise the imagination to contemplate catastrophes that jeopardize large swaths of humanity. If such an event were to occur, the recovery of current levels of civilization is at best theoretically possible at some distant date. At worst, human life, and perhaps all Earth life, will be extinguished forever. There are many possible typologies of apocalyptic risks, but perhaps the

³¹ See Lincoln Taiz, *Agriculture, Plant Physiology, and Human Population Growth: Past, Present, and Future*, 25 THEORETICAL & EXPERIMENTAL PLANT PHYSIOLOGY 167 (2013) (estimating that the human population increased from 10 million in 8000 BC to 250 million by the time of Christ). For an article questioning whether the agricultural revolution increased the population growth rate, see H. Jabran Zahid, Erick Robinson and Robert L. Kelly, *Agriculture, Population Growth, and Statistical Analysis of the Radiocarbon Record*, *Proceedings of the National Academy of Sciences of the United States of America*, Nov. 2015, at <http://www.pnas.org/content/113/4/931.full>.

³² See generally Michael Kremer, *Population Growth and Technological Change: One Million B.C. to 1990*, 108 Q. J. ECON. 681 (1993).

³³ *Id.*

³⁴ See Max Roser and Esteban Ortiz-Ospina, *World Population Growth* (Apr. 2017), <https://ourworldindata.org/world-population-growth/>.

³⁵ Alan Taylor, *Ten Years Since the 2004 Tsunami*, THE ATLANTIC (Dec. 26, 2004), <https://www.theatlantic.com/photo/2014/12/ten-years-since-the-2004-indian-ocean-tsunami/100878/>. Estimates are that, on a typical day, the human population has been growing by over 200,000. *Frequently Asked Questions*, WORLD POPULATION BALANCE, <http://www.worldpopulationbalance.org/faq> (last visited Sept. 22, 2017).

simplest division is between those arising from human activity and those arising from the nature of the Earth and cosmos.

A. Threats of Human Origin

1. Thermonuclear War

For over sixty years, the human race has lived under this particular sword of Damocles. Notwithstanding recent reductions, Russia and the United States still possess thousands of nuclear weapons of staggering lethality. The immediate result of a full-scale nuclear war would be well over 100 million deaths, and the ensuing clouds would blot out the light of the sun causing global temperatures to plummet, thereby multiplying the number of fatalities.³⁶ A regional nuclear war between India and Pakistan could cause tens of millions of deaths, and the resulting 1–2°C reduction in global temperatures would shorten the growing season in the world's grain-producing areas by 10–20 days.³⁷

2. Climate Change

Surely the temporarily triumphant meme in the apocalyptic mind is the claim that human-generated greenhouse gases will increase global temperature and radically transform the world's climate.³⁸ Most models forecast a roughly linear increase of 1.5 to 4.5°C over the course of the next century, a development that would surely be costly, although unlikely to imperil the human

³⁶ See JOSEPH CIRINCIONE, *The Continuing Threat of Nuclear War*, in GLOBAL CATASTROPHIC RISKS (Milan M. Cirkovic & Nick Bostrom eds. Oxford 2011).

³⁷ Rob Edwards, *Regional Nuclear War Could Trigger Mass Starvation*, NEW SCIENTIST, (Oct. 3, 2007), <https://www.newscientist.com/article/dn12728-regional-nuclear-war-could-trigger-mass-starvation/>.

³⁸ The literature on global warming is already vast. The dissenting voice usually cited is Bjorn Lomborg, author of *THE SKEPTICAL ENVIRONMENTALIST* (2001). In fact, Lomborg is as much a skeptic of claims that global warming is occurring as he is of the remedies proposed to address it. For a real “denier,” see THOMAS GALE MOORE, *CLIMATE OF FEAR: WHY WE SHOULDN'T WORRY ABOUT GLOBAL WARMING* (1998).

race.³⁹ More speculative hypotheses have sketched abrupt and steeper climate change that would be more calamitous.⁴⁰

3. *Runaway Science*

Human ingenuity in torturing Mother Nature into revealing her secrets has almost certainly outstripped our prudence about venturing into hitherto unknown regions of thought and action. Far-reaching experiments in the realms of biotechnology, nanotechnology, particle physics, and artificial intelligence each hold out the promise (and in some instances, already the reality) of improvements in the human condition.⁴¹ But where will these experiments culminate? Could genetically altered viruses and bacteria result in a predator for which we have evolved no defenses?⁴² Could self-assembling nanoparticles, metabolizing solar energy, consume the Earth's entire biomass?⁴³ Could a powerful cyclotron produce a miniature black hole that would devour the Earth?⁴⁴ Could we create computers or robots so intelligent that they then improve themselves, eventually eliminating the human species (or relegating us to zoos)?⁴⁵

³⁹ VACLAV SMIL, *GLOBAL CATASTROPHES AND TRENDS: THE NEXT FIFTY YEARS* 179 (2008).

⁴⁰ See Mary Christina Wood & Charles W. Woodward IV, *Atmospheric Trust Litigation and the Constitutional Right to a Healthy Climate System: Judicial Recognition at Last*, 6 WASH. J. ENVTL. L. & POL'Y 633, 640–41 (2016); see also RICHARD POSNER, *CATASTROPHE: RISK AND RESPONSE* 49–50 (2004) (“A more fundamental point is that no probabilities can be attached to the catastrophic global-warming scenarios, and without an estimate of probability an expected cost cannot be calculated.”).

⁴¹ Many have speculated on these and other “extreme risks,” associated with scientific experiments, as to which it is essentially impossible to assign probabilities. See, e.g., MARTIN REES, *OUR FINAL HOUR* 115–33 (2003).

⁴² See Edwin Dennis Kilbourne, *Plagues and Pandemics: Past, Present and Future*, in *GLOBAL CATASTROPHIC RISKS*, *supra* note 36, at 302 (discussing “man-made viruses”). See generally SMIL, *supra* note 39, at 38–49.

⁴³ See KURZWEIL, *supra* note 24, at 399.

⁴⁴ See POSNER, *supra* note 40.

⁴⁵ See Cary Coglianese & David Lehr, *Regulating by Robot: Administrative Decision Making in the Machine-learning Era*, 105 GEO. L.J. 1147, 1150–51 (2017) (collecting quotations from Stephen Hawking, Elon Musk, and others).

4. Responses to Advertised Catastrophes

Spurred by fears about the risks sketched above, perhaps the human race will mobilize into dramatic action. To combat global warming, some have suggested that we scatter billions of refractors to dim the sun.⁴⁶ Yet how will we retrieve all those refractors if, more effectively than planned, they cast the Earth in shadows? More generally, one worrisome possibility is that human efforts to prevent or mitigate global risks will generate even graver dangers, a possibility considered at length below.⁴⁷

B. Natural and Cosmic Threats

Then there are global catastrophic risks that are part and parcel of living in a fragile ecosystem on a planet prey to the gravest dangers.

1. Disease

The influenza of 1918-1919 killed more Americans (675,000) than World War I and was responsible for about 25 to 40 million deaths worldwide.⁴⁸ Proportionately, that would represent roughly 150 million deaths today. It is at least conceivable that a naturally arising pathogen, such as the avian flu, could prove even more deadly now, given our more urbanized world linked through air travel. Furthermore, a disease that directly kills only 5% of a population could easily prove more broadly calamitous as it unravels the cords of trust that hold society together.⁴⁹

⁴⁶ See Tingzhen Ming & Renaud de Richter, *Fighting Global Warming by Climate Engineering: Is the Earth Radiation Management and the Solar Radiation Management Any Option for Fighting Climate Change?*, SCIENCE DIRECT DAILY (Oct. 10, 2016), <http://www.sciencedirect.com/science/article/pii/S1364032113008460>.

⁴⁷ See *infra* text accompanying notes 162–172.

⁴⁸ K. David Patterson & Gerald F. Pyle, *The Geography and Mortality of the 1918 Influenza Pandemic*, 65 BULL. HIST. MED. 4, 17 (1991).

⁴⁹ In his *History of the Peloponnesian Wars* (Book II, ch. 48–54), Thucydides recounts how a spreading disease can unravel social bonds. This effect could be magnified in the modern world. See SMIL, *supra* note 39, at 48 (“[W]hat would the 24-hour news media, so adept at flogging a few accidental deaths in all-day marathons of despair, do with so many deaths that would just keep coming, day after day, week after week?”).

2. *Tectonic and Volcanic Activity*

The Toba super-volcano explosions 75,000 years ago perhaps brought the human race as close as it has ever been to extinction.⁵⁰ There is evidence of still-live super-volcanic hotspots scattered throughout the world, including Yellowstone National Park in North America.⁵¹ Even a lesser volcanic event could cause calamitous damage either through the release of toxic gasses upwind of a densely-populated region or by triggering a landslide and then a mega-tsunami. Under one such model, for example, an eruption of the Cumbre Vieja volcano in the Canary Islands would produce a tsunami that would flood the Eastern coast of the United States.⁵²

3. *Cosmic Threats*

As we are fragile vessels in an uncertain and dangerous world, so too is the Earth itself ever at risk from menacing forces in the universe. The collision of an asteroid with the Earth 65 million years ago is now believed to have caused the extinction of the dinosaurs and numerous other species. Roughly 900 near-Earth objects with diameters greater than one kilometer have been identified and tracked, none of which pose an immediate threat, but there are still many more yet to be discovered.⁵³ And comets and asteroids are only some of the threats confronting our planet; there are even more comprehensive dangers, such as solar flares, supernovae explosions, and gamma-ray bursts.⁵⁴

⁵⁰ See *supra* text accompanying note 30.

⁵¹ Joel Achenbach, *Scientists Find Missing Link in Yellowstone Plumbing: This Giant Volcano Is Very Much Alive*, WASH. POST: SPEAKING OF SCIENCE (Apr. 23, 2015), <https://www.washingtonpost.com/news/speaking-of-science/wp/2015/04/23/scientists-find-missing-link-in-yellowstone-plumbing-this-giant-volcano-is-very-much-alive/>.

⁵² See SMIL, *supra* note 39, at 37–38.

⁵³ NASA CENTER FOR NEAR EARTH OBJECT STUDIES, *Discovery Statistics*, <http://neo.jpl.nasa.gov/stats/> (last visited Sept. 22, 2017).

⁵⁴ See Aaron Dar, *Influence of Supernovae, Gamma-Ray Bursts, Solar Flares, and Cosmic Rays on the Terrestrial Environment*, in GLOBAL CATASTROPHIC RISKS, *supra* note 36, at 238–39.

4. Extraterrestrials

There are any numbers of scenarios by which human life will be extinguished, or confined to a condition that would make extinction desirable, through the operation of extraterrestrial life. The extraterrestrial threat has been grist for science fiction for generations, and it is not obvious that scientists have anything more useful to say about these scenarios than H.G. Wells and Arthur Clarke.⁵⁵

With respect to several of these possibilities, we can do nothing to prevent or even mitigate the threats. Should a type 1a supernova explode within 1,000 light years of Earth, we would all, Hottentot and Eskimo, promptly expire. If we are living in a computerized simulation, rigged by a post-human civilization, extinction will occur when the “end” button is pushed, for whatever reason, and it is hard to imagine what we could do to save ourselves.⁵⁶ If a supervolcano the size of Nevada erupted, most of humanity’s remaining days would be profitably spent saying goodbye to our loved ones.⁵⁷ We are at present powerless to defuse such an explosion, even if we could forecast it, which we cannot. These various existential threats are worthy of scientific study, but they carry with them no public policy recommendations, nor could a cent be meaningfully invested to prevent or practically address the risk.⁵⁸ Other global threats canvassed above do allow for some plausible containment or mitigation strategies. We now turn to the question: in the face of such global threats, why not a global response?

⁵⁵ ARTHUR C. CLARKE, *CHILDHOOD’S END* (1953); H.G. WELLS, *WAR OF THE WORLDS* (1898).

⁵⁶ Nick Bostrom, *Are You Living in a Computer Simulation?*, 53 *PHILOSOPHICAL QUARTERLY* 243 (2003).

⁵⁷ Some very few might survive, but the lives would be only questionably worth living. See CORMAC MCCARTHY, *THE ROAD* (2006).

⁵⁸ Perhaps we could construct space “lifeboats” that would enable at least a few human beings to ride out the worst of disasters. Robin Hanson, *Catastrophe, Social Collapse, and Human Extinction*, in *CATASTROPHIC RISKS* 372–75 (Nick Bostrom & Milan M. Cirkovic eds. 2008). The possibility is considered in WALTER M. MILLER, JR., *A CANTICLE FOR LEIBOWITZ* (1960).

III. THE PROMISE OF GLOBAL GOVERNANCE

This section tracks the origin of global, and specifically “global governance,” solutions to existential threats. Particular attention is paid to the role scientists have played in this development. Modern scientists are acutely aware of their own role in unleashing forces that threaten humanity. And accustomed to thinking in terms of universals, scientists are apt to be skeptical of, and even hostile to, such particularities as “nation-states.” So, the solution to global problems, such as nuclear weapons and climate change, seems to lie, in an almost inexorable scientific syllogism, in institutions that are global. What was originally framed, in Einstein’s words, as “world government,” has morphed into a preference for “global governance.” This term has many flavors, but all capture the idea that national sovereignty needs to be subverted, or at least circumvented. Human beings, acting outside the narrowing trammels of nation-states, can recognize and promote, the genuine good of humanity.

A. *The Role of Scientists*

The division of mankind into separate nations is a disappointment to those who emphasize our common humanity.⁵⁹ The ancient Stoics alluded to the possibility of a single government that would embrace all mankind,⁶⁰ and the idea became more widespread with the advent of Christianity.⁶¹ Jesus himself presumed that separate nations would exist until the Day of Judgment; however, his emphasis on a fundamental spiritual equality has seemed, to some, to carry political overtones.⁶²

⁵⁹ See, e.g., PETER SINGER, ONE WORLD (2004).

⁶⁰ See, e.g., SENECA, ON LEISURE 187–89, (John Basore ed. & trans., Harvard Univ. Press 1932), https://www.loebclassics.com/view/seneca_younger-de_otio/1932/pb_LCL254.189.xml (“Let us grasp the idea that there are two commonwealths—the one a vast and truly common state, which embraces alike gods and men, in which we look neither to this corner of earth nor to that, but measure the bounds of our citizenships by the path of the sun; the other, the one to which we have been assigned by the accident of birth.”).

⁶¹ See generally TOD LINDBERG, THE POLITICAL TEACHINGS OF JESUS (2008).

⁶² *Id.* For a critique of modern Chinese efforts to convert Jesus into a proletarian revolutionary, see Yan Liu, *The Rewriting of Jesus Christ: From the Saviour to the Proletarian a Comparative Study of Zhu Weizhi’s Jesus Christ*

Dante's suggestion of a global monarchy, though presented as a thought experiment, is touted in this regard.⁶³ Subsequent secular philosophers, notably Immanuel Kant, imagined and perhaps predicted the gradual drift toward a more peaceful future, in which cosmopolitanism supplanted provincialism; yet the eradication of nation-states, at least in the foreseeable future, was not seriously envisioned.⁶⁴ Even in the ethereal realm of ideas, world government, as a practical solution to humanity's ills, is of relatively recent vintage.

The horrors of the First World War spurred interest in an international organization that would promote the goals of disarmament and transparent diplomacy. The result was the League of Nations, which consisted of: a General Assembly, in which all countries were represented; an Executive Council, which was limited to major powers; and miscellaneous other organs.⁶⁵ The League of Nations proved ineffectual in stopping Italy's bombardment of Corfu, Japan's invasion of Manchuria, and Germany's remilitarization; it has consequently been classified in history textbooks under the heading of "catastrophic failure."⁶⁶ The horrors of the Second World War renewed interest in an international organization that would promote peace, the result being, among other institutions, the United Nations.

Many scientists were at the forefront in advocating the strengthening of such international organizations.⁶⁷ Scientists

and Jesus The Proletarian, 25 *ASIAN & AFRICAN STUD.* 173, 179 (2016), https://www.sav.sk/journals/uploads/1125152304_LIU%20YAN_kor6%20FINAL.pdf.

⁶³ DANTE ALIGHIERI, *ON MONARCHY* 21 (Aurelia Henry ed. & trans., Houghton, Mifflin & Co. 1904).

⁶⁴ See *supra* text accompanying notes 25–27.

⁶⁵ See generally Denys P. Myers, *Representation in the League of Nations Council*, 20 *AM. J. INT'L L.* 689 (1926).

⁶⁶ Michael D. Ramsey, *Reinventing the Security Council: The U.N. as a Lockean System*, 79 *NOTRE DAME L. REV.* 1529, 1547 (2004).

⁶⁷ In addition to Albert Einstein, discussed at length below, consider Linus Pauling. In 1958, he presented the United Nations with a petition, signed by over 10,000 scientists, protesting future testing of nuclear weapons. See TED GOERTZEL & BEN GOERTZEL, *LINUS PAULING: A LIFE IN SCIENCE AND POLITICS* 164 (1995).

regularly interact with counterparts from other nations and forge alliances and friendships without respect for the contingency of citizenship. In their work, scientists think in terms of atoms or numbers or animals, none of which take any notice of national borders. Consequently, scientists, like the “cosmopolitan spirits” in Rousseau’s *Second Discourse*,⁶⁸ are accustomed to regarding nation-states as arbitrary divisions that repudiate our common humanity.

The political views of the twentieth century’s most famous scientist, Albert Einstein, are illustrative of this perspective and worthy of scrutiny. In a 1931–1932 correspondence with Sigmund Freud, Einstein pronounced himself “immune from the nationalist bias.”⁶⁹ Yet as he surveyed the mass of mankind, he discerned a lamentable “lust for hatred and destructiveness.”⁷⁰ Given what Einstein recognized as the “advance of modern science,” war now imperils all of “[c]ivilization,” making ever more essential the fostering of institutions to secure peace.⁷¹ Einstein concluded that “[t]he quest [for] international security involves the unconditional surrender by every nation, in a certain measure, of its liberty of action—its sovereignty that is to say—and it is clear beyond all doubt that no other road can lead to such security.”⁷²

Einstein reiterated many of these themes in a 1947 open letter to the General Assembly of the United Nations. His immediate goal was the formulation of an international plan to address the existential threat posed by atomic weapons. Einstein wrote that “[t]here can never be complete agreement on international control and the administration of atomic energy or on general disarmament until there is a modification of the traditional concept of national

⁶⁸ JEAN-JACQUE ROUSSEAU, DISCOURSE ON INEQUALITY 30 (G.D.H. Cole, trans. 1755).

⁶⁹ Letter from Albert Einstein to Sigmund Freud (1931–1932), in *The Einstein-Freud Correspondence*, 1–2, <http://www.public.asu.edu/~jmlynch/273/documents/FreudEinstein.pdf>.

⁷⁰ *Id.* at 3.

⁷¹ *Id.* at 2.

⁷² *Id.* at 3.

sovereignty.”⁷³ Einstein claimed that he was “immune from the nationalist bias” and unattached to notions of “national sovereignty,” but the difficulty was in persuading others to share this perspective. In this respect, the potential horrors of nuclear war provided an opportunity. “If . . . every citizen realizes that the only guarantee for security and peace in this atomic age is the constant development of a supra-national government, then he will do everything in his power to strengthen the United Nations.”⁷⁴ Einstein offered several proposals, including the subordination of the Security Council to the General Assembly and the direct election of members of the General Assembly by people across the world.⁷⁵ He seemed to acknowledge that the Soviet Union set itself apart, at least at first, but he regarded “ideological differences” as of “no grave consequence,” and he held out the hope that “the United Nations now and world government eventually [would] serve one single goal: the guarantee of the security, tranquility, and welfare of mankind.”⁷⁶

Einstein was typical of the leading scientists of his day. *The Journal of Atomic Scientists*, of which Einstein was a founding member, was skeptical of politicians and sought to persuade Americans to entrust atomic weapons not to the military, but to scientists.⁷⁷ Einstein himself wrote that “[t]he secret of the [atomic]

⁷³ Albert Einstein, *On the Atomic Bomb*, ATL. MONTHLY, Nov. 1945, reprinted in DAVID E. ROWE & ROBERT SCHULMAN (EDS.), *EINSTEIN ON POLITICS* 389 (2007).

⁷⁴ *Id.* at 390.

⁷⁵ *Id.*

⁷⁶ *Id.* To be sure, other prominent scientists enthusiastically and unapologetically deployed their talents to help their nations. For example, Edward Teller contributed to America’s weapons programs for decades, starting with the Manhattan Project and continuing through to his support of the Strategic Defense Initiative in the 1980s. *Id.*

⁷⁷ In one of the first issues of the journal, four Soviet scientists attacked Einstein’s advocacy of world government as a front for American imperialism. Einstein persisted: “If we hold fast to the concept and practice of unlimited sovereignty of nations it only means that each country reserves the right for itself of pursuing its objectives through warlike means. Under the circumstances, every nation must be prepared for this possibility; this means it must try with all its might to be superior to anyone else. This objective will dominate more and more our public life and will poison our youth long before the catastrophe is

bomb should be committed to a world government.”⁷⁸ Although some of Einstein’s views on the Soviet Union may seem, in the fullness of time, at best naïve and perhaps even fatuous, he was, in his own mind, a hard-headed realist in his approach to the threat of nuclear weapons, and modern war more generally. Like Hobbes, his plea was to the desire for self-preservation that all men deeply harbor. For Hobbes, such a fundamental desire in the state of nature would lead men to sacrifice much of their liberty to a Leviathan.⁷⁹ For Einstein, that same desire in the modern age would lead citizens across the world to sacrifice a measure, and perhaps all, national sovereignty to the United Nations or even, “eventually,” a world government.

None of Einstein’s proposed changes to the United Nations were ever adopted, and the institution has not proven as successful, by any measure, as he and others had hoped. Perhaps the persistent failures of the U.N. have neutered interest in “world government.” Or perhaps the rivalries and even hostilities that arose during the Cold War revealed such implacable divisions that “world government” has come to be widely seen as implausible (and if plausible, undesirable). For whatever reason, the phrase “world government” has fallen out of favor as a promising goal.⁸⁰

And yet the idea of world government, or some other form of global cooperation, persists. Scientists have sought to rouse a slumbering humanity to the perils it faces and the need for collaboration that transcends national borders. Modern scientists, given their fabulous successes in “relieving Man’s estate,” enjoy a special status and even reputation for wisdom in the contemporary world. They can deploy their reputational advantages to obtain access to the dominant organs of opinion-formation, even, alas, when the scientists are straying from their particular areas of competence.

actually upon us. We must not tolerate this, however, as long as we still retain a tiny bit of calm reasoning and human feelings.” *Bulletin of the Atomic Scientists*, no. 2, Feb. 1948, at 37.

⁷⁸ Einstein, *supra* note 73.

⁷⁹ THOMAS HOBBS, *LEVIATHAN*, Book I, ch. 13 (1615).

⁸⁰ See JEREMY RABKIN, *LAW WITHOUT NATIONS* 19 (2005) (noting the decline in interest in the phrase “world government”).

Consider, for example, a 2005 New York Times op-ed by scientists Ray Kurzweil and Bill Joy, criticizing the federal government's decision to publish the DNA sequence of the 1918 influenza.⁸¹ Like the earlier suggestion that atomic weapons be entrusted to scientists, Kurzweil and Joy recommend "international agreements by scientific organizations to limit such publications and an international dialogue on the best approach to preventing recipes for weapons of mass destruction from falling into the wrong hands."⁸² Their thesis would seem to be that what might be regarded as political matters, involving national security and public health, should be removed from politicians' hands and brought under the control of scientists.

On a discordant note, Kurzweil and Joy then argue that "[w]e also need a new Manhattan Project to develop specific defenses against new biological viral threats, natural or human made."⁸³ The call for "international collaboration" on the one hand and a "Manhattan Project" on the other are not easily reconciled. The Manhattan Project was not the result of an "international" agreement or even dialogue. It would not even be accurate to describe the Manhattan Project as a multinational project among Allied powers. The United States and the United Kingdom, in fact, bickered over control of an atomic weapons project for years, and only late into the effort did the United States accept minimal and grudging assistance from its wartime ally.⁸⁴ If we take the Manhattan Project as our model, which, given its success, is not unreasonable, the lesson is the need for U.S. leadership, not international collaboration, in any effort to deal with existential threats.

Kurzweil and Joy do not confront this difficulty. The idea that internationalism is a solution to human ills appears to be deeply entrenched in the scientific mind. In an illustrative scientific paper,

⁸¹ Bill Joy & Ray Kurzweil, *Recipe for Destruction*, N.Y. TIMES (Oct. 17, 2005), http://www.nytimes.com/2005/10/17/opinion/recipe-for-destruction.html?_r=0.

⁸² *Id.* at 2.

⁸³ *Id.*

⁸⁴ See Barton J. Bernstein, *The Uneasy Alliance: Roosevelt, Churchill and the Atomic Bomb*, 29 W. POL. Q. 202 (1976).

co-authored by over a dozen scientists, internationalism of some kind is proffered as the inexorable solution to global warming:

Science assessments indicate that human activities are moving several of Earth's sub-systems outside the range of natural variability typical for the previous 500,000 years. Human societies must now change course and steer away from critical tipping points in the Earth system that might lead to rapid and irreversible change. This requires fundamental reorientation and restructuring of national and international institutions toward more effective Earth system governance and planetary stewardship.⁸⁵

These scientists seem to be restating the argument Einstein made over a half century ago. In order to address a problem unleashed by modern man himself (atomic weapons, climate change, etc.), they assure us that an international solution is needed.

It should be noted, however, that Einstein's advocacy of "world government" has morphed into an embrace of something called "Earth system governance." "World government" may be naïve and impractical, but one at least has some idea what is intended. The same cannot be said of "Earth system governance." The next section will sketch what this term might contemplate, and how it might serve the purposes scientists have identified.

B. Circumventing National Sovereignty

What is "governance" and how does it differ from "government?" The roots of both words, in Greek and Latin, are the same.⁸⁶ The two English words emerged, sometime around the 14th century, conveying the idea of steering or ruling. Yet "governance" seems to have petered out in general usage, with Fowler suggesting that the word has "now the dignity of incipient archaism."⁸⁷ Yet he adds that "governance" may continue to have

⁸⁵ F. Biermann et. al., *Navigating the Anthropocene: Improving Earth System Governance*, 335 SCI. 1306, 1306 (2012) (footnote omitted).

⁸⁶ Ralf Michaels, *The Mirage of Non-State Governance*, 2010 UTAH L. REV. 31, 34 (2010).

⁸⁷ H.W. FOWLER, A DICTIONARY OF MODERN ENGLISH USAGE 220 (1926, republished in 2009).

usefulness as “government comes to mean primarily ‘the governing power in a state.’”⁸⁸

So, the distinction that might provisionally be drawn is between those institutions that rule, i.e., enforce laws and exact penalties, on behalf of the state (government), and those that generate “norms” and enforce rules on behalf of non-state actors (governance).⁸⁹ Viewed thus, we are surrounded by governance. Not a minute of the day passes in which we are free of governance of some kind or another: household governance, school governance, church governance, corporate governance. The word “governance” seems to encompass so many concepts that it is impossible to say anything intelligent or interesting about it.

And when “global” precedes “governance,” the ambiguity is heightened.⁹⁰ Even those individuals most enthusiastic about “global governance” have conceded that the phrase is “wooly and imprecise.”⁹¹ Although many efforts at clarification have been attempted, the term possesses an irreducible “elasticity.”⁹² James Rosenau, co-editor of the path-breaking *Governance Without Government: Order and Change in World Politics* (1992), conceived the term “to include systems of rule at all levels of human activity—from the family to international organizations—in which the pursuit of goals through the exercise of control has transnational repercussions.”⁹³ “Governance,” Rosenau has written,

⁸⁸ *Id.*

⁸⁹ The distinction is plainly more complicated than that. The word “government” is often used in non-political contexts, such as the “government of children,” Michaels, *supra* note 86, at 34, while “governance” is sometimes used to refer to state actors. See HENRY G. RICHARDSON & GEORGE O. SAYLES, *THE GOVERNANCE OF MEDIEVAL ENGLAND: FROM THE CONQUEST TO MAGNA CARTA* (1963) (using governance to refer to both state and non-state actors).

⁹⁰ Lawrence S. Finkelstein, *What is Global Governance?*, 1 *GLOBAL GOVERNANCE* 367, 367 (1995) (observing that both words are open to a wide range of meanings).

⁹¹ See, e.g., Steven Bernstein, *When is Non-State Global Governance Really Governance?*, 1 *UTAH L. REV.* 91 (2010).

⁹² Timothy W. Waters, “*The Momentous Gravity of the State of Things Now Obtaining*”: *Annoying Westphalian Objections to the Idea of Global Governance*, 16 *IND. J. GLOBAL LEGAL STUD.* 25, 30 (2009).

⁹³ James N. Rosenau, *Governance in the Twenty-First Century*, 1 *GLOBAL GOVERNANCE* 13, 13 (1995).

extends beyond acts of government to include “other channels” through which “commands” are issued.⁹⁴ He cautions that the word “commands” should not be understood to imply “hierarchy,” which might limit “governance” to state actors.⁹⁵ That is, transnational institutions that issue “commands” of a less binding, more suggestive, nature could fall under the heading of “global governance.”

Rosenau’s broad and influential conception of global governance therefore encompasses both top-down and bottom-up approaches. Occupying the former end of the spectrum are institutions such as the World Trade Organization, the Nuclear Non-Proliferation Treaty, and the Kyoto and Paris Protocols. Through these agreements, nations have abdicated exclusive control over limited issues in favor of international organizations. Although criticized by some commentators,⁹⁶ voluntarily undertaken abdications of sovereignty are contemplated through the treaty ratification process of many nations.⁹⁷ The U.S. Constitution, for example, explicitly considers the possibility.⁹⁸ Apart from nations abdicating sovereignty in limited spheres, private actors can—again, in limited ways—circumvent the power of nation-states by opting for non-state frameworks of control. International corporations, for example, contractually agree to adjudicate disputes in the International Court of Arbitration.⁹⁹ Finally, there are many instances of private actors reaching across

⁹⁴ *Id.* at 14.

⁹⁵ *Id.*

⁹⁶ Jeremy Rabkin is the most notable critic. See JEREMY A. RABKIN, *THE CASE FOR SOVEREIGNTY* (2004); JEREMY A. RABKIN, *LAW WITHOUT NATIONS?* (2005); see also John R. Bolton, *Should We Take Global Governance Seriously?* 1 CHI. J. INT’L L. 205 (2000).

⁹⁷ See Paul L. Joffe, *The Dwindling Margin for Error: The Realist Perspective on Global Governance and Global Warming*, 5 RUTGERS J.L. & PUB. POL’Y 89, 103 (2007) (criticizing Rabkin).

⁹⁸ U.S. CONST. art. II, § 2, cl. 2 (“[The President] shall have Power, by and with the Advice and Consent of the Senate, to make Treaties . . .”).

⁹⁹ A. Claire Cutler, *Critical Reflections on the Westphalian Assumptions of International Law and Order: A Crisis of Legitimacy*, 27 REV. INT’L STUD. 133 (2001).

nation-states and entering into agreements, which are not binding in any formal sense but still regulate markets.

In response to global catastrophic threats, it is argued that global governance structures can and should play an important role. For example, as a consequence of the “unprecedented” dangers posed by global warming and pandemic disease, Paul Joffe of the National Wildlife Association has argued that “humanity’s margin for error [is] ‘dwindling.’”¹⁰⁰ Humanity’s solution, according to Joffe, lies in global governance structures: “Global warming and other global challenges of our time require a reinvention of sovereignty based on a renewed commitment to international cooperation and a new era of institution building.”¹⁰¹ Joffe frames his argument, as Einstein did, as a “realist” one—that is, one in which humanity recognizes that no other framework can ensure self-preservation and attend to global dangers than an international organization that, in limited respects, supplants sovereign nations.¹⁰²

As viewed by such observers, the dismal “reality” is that for many existential threats a solution can be achieved only if all nations are adopters.¹⁰³ Imagine that 194 countries recognize the danger created by human-generated carbon dioxide emissions, or by artificial intelligence or nanotechnology gone awry. But one significant nation does not recognize these dangers or chooses to go its own way in addressing them. Needless to say, there are limits to how successful such a non-unanimous approach will be. If China or the United States continues to produce carbon dioxide at current levels, or allow the unregulated experimentation with artificial intelligence and nanotechnology, then the most diligent efforts by all other nations of the world could prove inadequate. Anything less than complete agreement, this argument runs, offers no meaningful prospect of success.

¹⁰⁰ Joffe, *supra* note 97, at 91.

¹⁰¹ *Id.* at 119.

¹⁰² *See id.*

¹⁰³ *See* POSNER, *supra* note 40, at 131.

Substantial obstacles can be expected in realizing such a goal, as Joffe himself recognizes.¹⁰⁴ A more likely path to global governance is one that focuses on “soft law” solutions. “Soft law” contemplates “commands” (in Rosenau’s sense) operating outside government channels, i.e., industry codes of conduct, industry-government-NGO collaborations, international certification organizations, and informal collaborations among regulators across the globe.¹⁰⁵ For example, in 1975, biologists working in the new area of recombinant DNA met at the Asimolar Conference Center in California and drafted voluntary guidelines that have remained influential to this day.¹⁰⁶ And in the area of nanotechnology, private and government actors have collaborated to develop monitoring systems.¹⁰⁷ One might downplay the significance of such frameworks, but international alliances of this sort can “capture the imagination of the public in powerful states [and] can strategically influence the forum in which the global business regulation occurs.”¹⁰⁸ Industry-NGO collaborations can morph into governmental regulations, as elites influence other elites, or simply rotate through jobs.¹⁰⁹ As Gary Marchant and Kenneth Abbott write, “soft law programs may help to establish normative principles and criteria that set the stage for, and lead to, future hard law.”¹¹⁰

¹⁰⁴ Joffe, *supra* note 97, at 134–39.

¹⁰⁵ See, e.g., Gregory C. Shaffer & Mark A. Pollack, *Hard Versus Soft Law in International Security*, 52 B.C. L. REV. 1147, 1175 (2011) (“The initial instruments deployed [in dealing with ozone depletion] were of a soft-law nature, but the parties turned to hard-law agreements after EU members were convinced of the benefits of such an approach.”).

¹⁰⁶ See Andrew W. Torrance, *Planted Obsolescence: Synagriculture and the Law*, 48 IDAHO L. REV. 321, 328–29 (2012).

¹⁰⁷ See Kenneth W. Abbott, Gary E. Marchant, & Elizabeth A. Curley, *Soft Law Oversight for Nanotechnology*, 52 JURIMETRICS 279, 291 (2012).

¹⁰⁸ Reut Snir, *Trends in Global Nanotechnology Regulation: The Public-Private Interplay*, 17 VAND. J. ENT. & TECH. L. 107, 119 (2014).

¹⁰⁹ See Anne-Marie Slaughter, *Everyday Global Governance*, 132 DAEDALUS 83, 84 (2003) (“The logs of embassies around the world are perhaps the best evidence for the growing importance of the networks of national regulators.”).

¹¹⁰ Gary E. Marchant & Kenneth W. Abbott, *International Harmonization of Nanotechnology Governance Through “Soft Law” Approaches*, 9 NANOTECH. L. & BUS. 393, 398 (2013); see also JOHN BRAITHWAITE & PETER DRAHOS,

In sum, and to state the case most polemically: Westphalian sovereignty is defined by the division of human beings into separate entities, which pursue distinct and, inevitably, rivalrous goals. The underpinnings of this framework for human existence persist, but they have been eroded. Despite unrepresentative impressions created by the local nightly news, human beings are more peaceful and generally cooperative than ever before in human history.¹¹¹ The past century has witnessed widening circles of empathy, with human beings increasingly prepared to accord outsiders recognition and even “rights.”¹¹² Well-meaning men and women—and more and more are in fact well-meaning—recognize in particular that, in the face of global, existential risks, the solution cannot lie in an antiquated attachment to a provincial, national interest. “Global governance” may be an imprecise term, but it reflects a congeries of institutions that are a vital supplement to, and even improvement upon, Westphalian sovereignty. However much it may offend God, the dream of Babel is alive. Imperiled by existential threats, many of which human beings have created themselves, men and women have sensibly joined forces to pursue the common good of self-preservation.

IV. THE DEFECTS OF GLOBAL GOVERNANCE

Many authors have critiqued “global governance” in general terms. This section will highlight difficulties in a specific context: the defects of global governance as a response to global catastrophic threats. The goal of a united Mankind, linking arms against a common foe, is plausible only if one neglects the stubborn passions and interests that continue to divide us. Even apart from doubts about the feasibility of global governance institutions, advocates often overstate the benefits and understate

GLOBAL BUSINESS REGULATION 32 (2000) (NGOs can define “issues as a concern, . . . induc[ing] cooperation, constituting normative commitments, nurturing habits of compliance that are then institutionalized into bureaucratic routines.”).

¹¹¹ See generally STEVEN PINKER, THE BETTER ANGELS OF OUR NATURE: WHY VIOLENCE HAS DECLINED (2012).

¹¹² See *id.* at 689–96. See generally PETER SINGER, ONE WORLD: THE ETHICS OF GLOBALIZATION (2002).

the costs of collaboration. Critical and creative thinking is enhanced when individuals work alone or in small groups, competitively pursuing the same goal. A decentralized response also promotes a greater degree of experimentation, which is particularly important in an era of accelerating artificial intelligence, and it ensures meaningful—and beneficial—redundancy in any solutions. Finally, nation-states, with more rigorous lines of political accountability, are better able to respond to existential threats than amorphous global governance structures.

A. Infeasibility

The first critique of global governance as a solution to catastrophic threats is one of feasibility. The claim that global governance is necessary to address existential threats is framed at a level of abstraction: global problems require global solutions. But those problems are quite varied and in many instances pose almost intractable obstacles to the formulation of a global response.

For starters, it is worth recalling that although some of the catastrophes sketched in Part II imperil the entire human race, others do not; therefore, some nations have less to gain from risk prevention policies. Consider global warming: there are historical examples of abrupt climate changes altogether unrelated to human activities. If the Earth experienced a rapid four-degree temperature increase, as some have predicted, the consequences would be catastrophic for much of the world, but not all. Climate changes over the centuries have created losers—and winners. Climate change (and drought) exacerbated the decline of the Mayan empire, but European warming from 1000 to 1400 A.D. contributed to the rise of England, France, and Spain, by expanding agricultural production.¹¹³ Global warming, if it occurs, could make regions of Russia and Canada more hospitable to human life. Indeed, at least one analysis has suggested that Russia, Canada, and even the United States would, on balance, expect increased agricultural production as the result of small to moderate

¹¹³ Gregg Easterbrook, *Global Warming—Who Loses and Who Wins?*, THE ATLANTIC (Boston), Apr. 2007.

climate change.¹¹⁴ In any event, it is unlikely that residents of the Siberian city of Yakutsk (with an average January temperature of -38°C) regard global warming as a problem requiring immediate attention and justifying taxes and other impositions on individual liberty.

Consider next the threat posed by near-Earth objects. If the Earth were struck by an asteroid greater than ten kilometers in diameter, the resulting explosion would likely extinguish humanity; but if an undetected object is on a collision course, it is more likely to be one kilometer or less in diameter.¹¹⁵ Like sudden global warming, such an object would inflict catastrophic loss, but the effect would be allocated heterogeneously across the globe. One might think that the ex ante randomness of the collision location places us all in a similar position, behind a veil of ignorance, and therefore making it possible to forge a genuine agreement and commitment to precautions, but this is not necessarily true. Consider that the Earth's surface is 197 million square miles. Germany, with an area of only 138,000 thousand square miles, confronts only a .07% of a direct hit.¹¹⁶ An asteroid is far more likely to land in the Pacific Ocean, which covers more than 60 million square miles or more than one-third of the Earth's

¹¹⁴ See Robert Mendelsohn, William D. Nordhaus, & Daigee Shaw, *The Impact of Global Warming on Agriculture: A Ricardian Analysis*, 84 AM. ECON. REV. 753 (1994). More recent studies have concluded that the effects of global warming within the United States will be unequally distributed, with costs in the south and benefits in the Pacific Northwest and New England. See generally Solomon Hsiang et. al., *Estimating Economic Damage from Climate Change in the United States*, 356 SCI. 1362 (2017).

¹¹⁵ See William Napier, *Hazards from Comets and Asteroids*, in GLOBAL CATASTROPHIC RISKS, *supra* note 36, at 226 ("The population of sub-kilometre bodies is almost entirely unexplored; but it is this population which may give damaging tsunamis and possible short-lived climatic cooling on timescales of historical interest.") For a table cataloging the effects of collisions with near-earth objects, from 75 meters in diameters to 17 kilometers, see POSNER, *supra* note 40, at 27.

¹¹⁶ *The World Factbook*, CENT. INTELLIGENCE AGENCY, <https://www.cia.gov/library/publications/the-world-factbook/fields/2147.html> (last visited Oct. 4, 2017).

surface.¹¹⁷ If an asteroid plunges into any ocean, it could generate a tsunami devastating to nations with significant coastline populations. The upshot, as sketched in a recent scientific study, is that certain nations, such as China, Indonesia, India, Japan, and the United States, face much greater risks from asteroids than others.¹¹⁸

By contrast, some threats are inextricably and comprehensively global in nature. As already suggested,¹¹⁹ for example, the explosion of a nearby type Ia supernova or the eruption of a super-volcano the size of Nevada would promptly mean the end of civilization and possibly the entire human race. Here, we might think, are existential threats that could prompt a rejection of provincialism and a willingness to form truly global bonds. Yet these dangers, however terrible and worthy of study, give rise to no actionable intelligence. We are powerless to mitigate these risks, and, as such, it is hard to see how they can galvanize a response, global or otherwise.

There are other, potentially existential threats, to which human beings could respond in an attempt to mitigate the associated risks. Noteworthy examples are the threats posed by artificial intelligence, nanotechnology, and more broadly science gone amok. Here we confront the theoretical possibility of existential threats that could unify the human race in a global response. And yet, here again, as with global warming, the different nation-states will assess the risks and benefits quite differently. Certain nations have much to gain from experiments in these fields, either in the military or private sector. It seems inevitable, then, that forging global cooperation through existing nation-states is unlikely.¹²⁰

Advocates of “global governance” are apt to respond that even without formal legal regulation, there are opportunities for “soft

¹¹⁷ *Ocean Explorer*, NAT’L OCEANIC AND ATMOSPHERIC ADMIN., <http://oceanexplorer.noaa.gov/facts/pacific-size.html> (last visited Oct. 5, 2017).

¹¹⁸ Fraser Cain, *The Countries Most at Risk to Asteroid Impacts*, UNIVERSE TODAY (Mar. 24, 2012), <http://www.universetoday.com/1476/the-countries-most-at-risk-to-asteroid-impacts/> (citing study of the University of Southampton).

¹¹⁹ See *supra* text accompanying note 30.

¹²⁰ See, e.g., Haiyan Dong et. al., *The Nanotechnology Race Between China and USA*, 11 NANOTODAY 7 (2016).

law” global solutions. Scientists and members of industry could settle on codes of conduct and agree to forego certain kinds of experiments.¹²¹ Martin Rees, an astronomer who has written extensively about existential threats, has pointed to what he calls “scientific self-restraint,” when scientists across nations have agreed to “formal guidelines and licensing requirements” for certain kinds of experiments.¹²² Through such soft global governance, steps can be taken to reduce the risks created by cutting-edge technologies.

Yet is it plausible that scientists throughout the world will abstain from pioneering experiments, when confronted with no government prohibition, and when the potential rewards, financial and reputational, are enormous? Rees himself acknowledges how easily scientific agendas can be skewed by the relatively minor incentives provided by private individuals.¹²³ Thus, given the ease with which “soft law” structures could be evaded or ignored, the only way to curb dangerous scientific experimentation lies in governance structures that deploy the enforcement arms of nation-states, or reflect the surrender of sovereignty over these matters to an international body charged with enforcing uniform regulations. For reasons already sketched, this seems unlikely: certain nation-states—that is, those with much to gain in these fields—will not be inclined to surrender control over such matters. But even if such an international agreement was reached, there are nonetheless reasons to doubt the ability of governmental actors to constrain scientific experiments in fields such as artificial intelligence and perhaps nanotechnology. These are not, we should recall, experiments that require significant capital investments; to the contrary, they can be conducted at low cost, under the radar, and by individuals or in small groups. Accordingly, unless government monitors possess investigative powers to ensure compliance, which raises its own concerns,¹²⁴ it is hard to see how any governance structure could so

¹²¹ See *Global Future Councils*, WORLD ECONOMIC FORUM, <https://www.weforum.org/communities/global-agenda-council-on-nanotechnology> (last visited Oct. 4, 2017).

¹²² REES, *supra* note 41, at 75–76.

¹²³ *Id.* at 81.

¹²⁴ See *infra* text accompanying notes 164–165.

comprehensively stifle human curiosity and ambition as to frustrate scientific experimentation in these areas.

B. The Peril of Group Think

Even if we assume away the practical difficulties that frustrate the formation of “global governance” structures, are such institutions likely to help preserve humanity from existential threats? The challenges posed by these threats, both in quantifying them and in designing solutions, are extraordinarily complex. There is a substantial cost to “global” institutions—that is, a diminution in the kind of independent and truly creative thinking that is most likely to generate accurate estimates and plausible solutions.

In exploring the perils of group think,¹²⁵ we should recognize how varied and indeterminate the already identified catastrophic threats are. It is a source of embarrassment to contemporary scientists that as recently as the 1970s many climatologists expressed concerns about global cooling, not warming. Skeptics of global warming today are prone to cite a 1975 *Newsweek* magazine cover story, which speculated on the imminence of a global ice age.¹²⁶ It should be acknowledged that although some respected scientists at the time predicted a significant global cooling, others were more tentative than popular press reports suggested.¹²⁷ For example, the National Research Council of the National Academy of Sciences wrote in 1975:

There seems little doubt that the present period of unusual warmth will eventually give way to a time of colder climate, but there is no

¹²⁵ The term “group think” was coined in 1970 by psychologist Irving Janis to describe “a process in which a group can make bad or irrational decisions as each member of the group attempts to conform their opinions to what they believe to be the consensus of the group.” Robert Bejesky, *The SSCI Investigation of the Iraq War: Part I, A Split Decision*, 40 S.U. L. REV. 1, 28 (2012).

¹²⁶ Gary Sutton, *The Fiction of Climate Science*, FORBES (Dec. 4, 2009, 10:00 AM), <http://www.forbes.com/2009/12/03/climate-science-gore-intelligent-technology-sutton.html>.

¹²⁷ S.I. Rasool & R.H. Schneider, *Atmospheric Carbon Dioxide and Aerosols: Effects of Large Increases on Global Climate*, SCI., July 9, 1971, <http://science.sciencemag.org/content/173/3992/138>.

consensus with regard to either the magnitude or rapidity of the transition. The onset of this climatic decline could be several thousand years in the future, although there is a finite probability that a serious worldwide cooling could befall the earth within the next hundred years.¹²⁸

The conclusion is somewhat hedged, and its concession of ignorance, or at least uncertainty, as to short-term trends is a notable contrast with more confident predictions, albeit in the opposite direction, today. Nonetheless, the 1975 Report was casually apocalyptic, predicting “the advance of major ice sheets over our farms and cities.”¹²⁹ Many climatologists in the 1970s forecasted cooling, rather than warming, as the consequence of human-created emissions, particularly aerosol.¹³⁰ Today, most climatologists think that carbon dioxide will dominate other human effects, pushing temperatures higher; but there are still questions as to other effects, such as diminished solar activity, which might swamp any warming attributable to carbon dioxide.¹³¹

Especially in the modern world, with its sudden technological ruptures, predicting the future seems like an almost hopeless undertaking. Perhaps the one prediction that has been durably borne out in recent decades is Moore’s “law,” articulated around 1970, that the number of transistors per square inch on an integrated circuit would double every two years.¹³² Compared to “global warming” or “climate change,” this is a narrow prediction, with relatively few variables in play. Furthermore, calling Moore’s law a prediction is in part a misnomer: it is a benchmark in the computer industry and thus has proven true because of consistent efforts to realize it.¹³³ The only man who consistently predicted

¹²⁸ NAT’L ACAD. OF SCIS., UNDERSTANDING CLIMATIC CHANGE: A PROGRAM FOR ACTION 189 (digitized in 2013), https://archive.org/stream/understandingcli00unit/understandingcli00unit_djvu.txt.

¹²⁹ *Id.* at 1.

¹³⁰ See Rasool & Schneider, *supra* note 127.

¹³¹ *Does Air Pollution—Specifically Tiny Atmospheric Particles (Aerosols)—Affect Global Warming?*, UNION OF CONCERNED SCIENTISTS (Aug. 23, 2016), http://www.ucsusa.org/global_warming/science_and_impacts/science/aerosols-and-global-warming-faq.html#.V8BIxv2bvI.

¹³² M. Mitchell Waldrop, *The Chips Are Down for Moore’s Law*, 530 NATURE 144, 145 (Feb. 9, 2016).

¹³³ *Id.*

deep and varied trends over the past four decades was the optimistic—and renegade—economist Julian Simon, who won bet after bet with environmentalists and others, correctly forecasting declining commodity prices and rising crop yields.¹³⁴ And Simon himself was a skeptic about global warming and climate change.¹³⁵

The past four decades are festooned with radical and almost completely unforeseeable discontinuities, not just in the area of technology. Who would have predicted in 1986 that the Soviet Union, the world's second most powerful nation and a grave threat, given its nuclear arsenal, to all of humanity, would simply cease to exist in 5 years? The Bulletin of Atomic Scientists has charted the risk of atomic war since the Second World War, using a clock that metaphorically demarcates “minutes to midnight,” i.e., Doomsday.¹³⁶ In 1984, the clock ticked down to a perilous three minutes, with the Bulletin noting that “U.S.-Soviet relations reach their iciest point in decades.”¹³⁷ Just seven years later, humanity—the Bulletin announced—was a relatively safe 17 minutes from oblivion.¹³⁸ The scientists observed that the Cold War was “officially over,” and “the illusion that tens of thousands of nuclear weapons are a guarantor of national security has been stripped away.”¹³⁹

A few observers in the 1980s did recognize the precarious nature of the Soviet Union's position. Although the Central Intelligence Agency was castigated for its failure to predict the fall of the Berlin Wall, there were prescient voices within that institution.¹⁴⁰ One analyst, Herb Myers, wrote an internal eight-page memo in 1983, *Why is the World So Dangerous*, that provides

¹³⁴ RONALD BAILEY, *ECO-SCAM: THE FALSE PROPHETS OF ECOLOGICAL APOCALYPSE* 53–54 (1993).

¹³⁵ *Obituary: Julian Simon*, *ECONOMIST*, Feb. 19, 1998, at 117, <http://www.economist.com/node/604696>.

¹³⁶ Bruce D. Berkowitz & Jeffrey T. Richelson, *The CIA Vindicated: The Soviet Collapse Was Predicted*, 41 *NAT'L INT.* 29, 36 (1995).

¹³⁷ Sci. & Security Board, *It Is Still 3 Minutes to Midnight*, *BULL. ATOMIC SCIENTISTS*, <http://thebulletin.org/clock/1984> (last visited Oct. 5, 2017).

¹³⁸ *Timeline*, *BULL. ATOMIC SCIENTISTS*, <http://thebulletin.org/timeline> (last visited Sept. 22, 2017).

¹³⁹ *Id.*

¹⁴⁰ Berkowitz & Richelson, *supra* note 136, at 36.

a comprehensive list of the Soviet Union's intractable problems, including a paltry birth rate, crumbling economy, decaying environment, and diminished control over satellite nations and regions.¹⁴¹ Myers's prediction that the Soviet Union's demise could be near-at-hand seems obvious today, but only in retrospect: he was in the tiny minority.

If most people failed to see that a threat (the Soviet Union) was about to vanish, many other scenarios prove the opposite point: people, even "the experts," fail to recognize a threat that, after the fact, seems blindingly obvious. The 9/11 attacks present a case study. It seems incredible that almost no analyst imagined that commercial airplanes could be deployed as instruments of terror; or that the World Trade Center, the target of an unsuccessful attack a decade earlier, would be targeted again. The 9/11 attacks are only a recent example of this phenomenon. An even more striking case is the Israeli failure to foresee the imminent attack of Egypt, Jordan, and Lebanon in 1973, notwithstanding the fact that enemy tanks and soldiers were literally assembling at the nations' borders.¹⁴²

The persistence of errors of this kind points an intractable flaw in human cognition. It is hard enough for an individual, working alone, to discern the "known unknowns" and the "unknown unknowns" that cloud the future and render predictions perilous. It is even harder when operating in a group, which inevitably gravitates towards certain ideas and theories.¹⁴³ The perennial concern in any institutional threat assessment is that group think prevails. The 2004 Intelligence Reform Act tried to ensure alternative or "red team" analysis within the CIA.¹⁴⁴ Yet it is

¹⁴¹ Paul Kengor, *Predicting the Soviet Collapse*, NAT'L REV. (July 14, 2011, 4:00 AM), <http://www.nationalreview.com/article/271828/predicting-soviet-collapse-paul-kengor>.

¹⁴² See Luis Garicano & Richard A. Posner, *Intelligence Failures: An Organizational International Perspective*, 19 J. ECON. PERSPS. 151, 157–58 (2005).

¹⁴³ See Geoffrey Parsons Miller, *Compliance: Past, Present, and Future*, 48 U. TOL. L. REV. 437, 448 (2017) ("The fact that many people are working on risk assessments isn't necessarily a protection against this problem. The issue is that there is an enormous amount of group think in risk assessments.")

¹⁴⁴ See David E. Pozen, *Deep Secrecy*, 62 STAN. L. REV. 257, 335 (2010).

difficult to preserve such independence within a single institution. Analysts tend to be rewarded for saying what superiors want to hear, which tends to be what others are saying. Dissenters are annoying and, even if proven correct years later, often are no longer in a position to reap any individual benefits.¹⁴⁵

Vague gesturing at “existential threats” obscures the need for prioritization among those threats, and even the problem of defining what such a threat is. The catastrophic threat that dominates the mind today may prove to be overstated and replaced by another concern a decade from now. Likewise, the strategy conceived today to combat a threat may prove misguided in light of more information and deeper reflection. To the extent that any response to the panoply of existential threats is “global” or entrusted to a single institution, there is the danger that dissenting voices will be silenced or simply never heard. The variety of global threats—coupled with the uncertainty which surrounds them—suggests caution about a unified or “global” response, especially when there are questions about the magnitude of any single threat; focusing on one threat necessarily means the failure to consider, or the minimization of, other dangers.

C. The Benefits of Decentralization

The previous section has sketched the cost to a unified response to the panoply of existential threats we face. This section restates the argument in a positive light: there are indeed benefits to a decentralized response.

The tradeoff between centralization and decentralization is an enduring political issue and is salient in the context of responses to existential threats. The case for centralization is clear: some nations, by failing to address climate change or regulate science, are imposing risks on other nations. These nations are said to create negative externalities that are borne, unfairly, by others.¹⁴⁶

¹⁴⁵ On the risk-aversion, and therewith inclination to conformism, of bureaucrats, see DENNIS C. MUELLER, PUBLIC CHOICE 370–71 (2003).

¹⁴⁶ See generally Mark W. Zacher, *The Decaying Pillars of the Westphalian Temple: Implications for International Order and Governance*, in GOVERNANCE WITHOUT GOVERNMENT: ORDER AND CHANGE IN WORLD POLITICS 58 (James N. Rosenau and Ernst Otto Czempiel eds. 1992).

But this is simply a new presentation of a common problem. Whenever one jurisdiction engages in activities that create externalities that jeopardize the welfare of others, the situation arguably calls for centralization and the harmonization of regulation across jurisdictions.¹⁴⁷

However, the counter-argument must be addressed: centralization and harmonization mean not only the stifling of local preferences but also reduced experimentation. Within the constitutional framework of the United States, it is generally considered to be advantageous that states preserve a sphere of autonomy and can act as “laboratories,” testing which regulations work and which do not.¹⁴⁸ With respect to some matters, it is preferable that a single rule applies to all states, but in other respects, regulatory differences are beneficial. When capital moves freely among jurisdictions, better regulatory approaches can be tested and rewarded.¹⁴⁹

In assessing the tradeoff between centralization and its opposite, the costs and benefits must be analyzed in each circumstance. The context in which the tradeoff is considered here is that of the problem posed by catastrophic threats to humanity. As set forth elaborately above,¹⁵⁰ these threats are varied and complex, seemingly defying our poor human powers to resolve. And furthermore, responding to one threat can exacerbate other threats, thereby multiplying the complexity. In light of these monumental difficulties, there are compelling, if often underappreciated, advantages to a decentralized response.

¹⁴⁷ JOHN O. MCGINNIS, *ACCELERATING DEMOCRACY: TRANSFORMING DEMOCRACY THROUGH TECHNOLOGY* 49 (2013).

¹⁴⁸ *See* *United States v. Lopez*, 514 U.S. 549, 581 (1995) (Kennedy, J., concurring) (“[Under] the theory and utility of our federalism . . . the States may perform their role as laboratories for experimentation to devise various solutions when the best solution is far from clear.”). Some are skeptical of this argument. *See* Erwin Chemerinsky, *The Assumptions of Federalism*, 58 *STAN. L. REV.* 1763, 1789 (2006) (“Congress—and even federal agencies—can design experiments and try differing approaches in varying parts of the country.”).

¹⁴⁹ Michael S. Greve, *Speech at Boise State University: The State of Our Federalism* (Sept. 16, 2011) (transcript available at <https://www.aei.org/wp-content/uploads/2011/10/State-of-Federalism-Greve.pdf>).

¹⁵⁰ *See supra* Part II.

Professor John McGinnis's work highlights many of these benefits.¹⁵¹ First, there are the information-eliciting consequences to a decentralized response: More people working on more solutions will mean more data to be crunched about what works and what does not. As McGinnis puts it, "the possibility of sustained empiricism adds an important weight to the decentralization side of the scale: decentralization facilitates the empirical investigation of the differing consequences of social policy."¹⁵² In an era of accelerating artificial intelligence, there are particular benefits to this sort of information-eliciting decentralization. The reams of data generated by multiple solutions will eventually be grist for supercomputers operating at computational speeds multiples of current abilities.¹⁵³ Finally, consider that advances in one area of research, such as nanotechnology, can provide solutions in other areas, such as climate change. The interweaving layers of complexity strongly suggest advantages to multiple groups working separately, rather than subject to a unified, "global" hierarchy.

People frequently assume that a centralized or top-down response, overseen by "experts," is necessarily optimal in response to a catastrophic threat. The television series *The Walking Dead*, although of course wildly unrealistic, stimulates reflections of a different kind. In the aftermath of an infectious disease that has swept mankind, all hope is invested in a central body, the Center for Disease Control and Prevention (CDC) in Atlanta. People flock there in search of a cure. Yet the CDC proves to be of no help; indeed, it is a menacing institution that not only fails to aid, but also kills survivors and destroys the one specimen that might aid in the discovery of a cure. At least as depicted in that show, any hope of human survival will come not from experts, but in decentralized bands of human beings.¹⁵⁴

¹⁵¹ See generally John O. McGinnis, *In Praise of the Efficiency of Decentralized Traditions and Their Preconditions*, 77 N.C. L. REV. 523 (1999).

¹⁵² MCGINNIS, *supra* note 151, at 49.

¹⁵³ *Id.* at 106; see also IAN AYRES, SUPER CRUNCHERS: WHY THINKING-BY-NUMBERS IS THE NEW WAY TO BE SMART, 13 (2008).

¹⁵⁴ This analysis of *The Walking Dead* is presented in Paul A. Cantor, *The Walking Dead and a Refuge from the Modern State*, MISES INSTITUTE (Sept. 26,

If the species is confronted by an apocalyptic health crisis, a decisive cure is most likely to come through centralized government planning. And yet if such a crisis goes unchecked and spins out of control, it would soon be difficult for any top-down approach to succeed.¹⁵⁵ None of these considerations are offered to resolve the issue; the point is simply to emphasize the meaningful benefits to maintaining a decentralized response. In short, the variety and indeterminacy of humanity's catastrophic threats highlight the advantages of decentralized and varied responses.

D. The Value of Redundancy

A skeptic could respond, however, that decentralization will result in a costly duplication of efforts. Surely, it would be more efficient to consolidate forces.

Yet redundancy is a “design paradigm” in engineering projects.¹⁵⁶ The critical idea behind the concept of redundancy is that independent systems can exponentially reduce the likelihood of error.¹⁵⁷ The idea, however simple, is difficult to operationalize. Genuine redundancies—that is, multiple systems that are not

2013), <https://mises.org/library/walking-dead-and-refuge-modern-state>; see also Paul A. Cantor, *The Economics of Apocalypse*, MISES INSTITUTE (Oct. 9, 2013), <https://mises.org/library/economics-apocalypse-tale-two-cdc%E2%80%99s>.

¹⁵⁵ Cantor, *supra* note 147.

¹⁵⁶ See, e.g., CHARLES PERROW, *NORMAL ACCIDENTS: LIVING WITH HIGH-RISK TECHNOLOGIES* 196 (1984).

¹⁵⁷ The specific insight is credited to John von Neumann, but in a broader sense, it long predates him: Theodore Roosevelt carried twelve pairs of glasses when on a military campaign. PEGGY SAMUELS & HAROLD SAMUELS, *TEDDY ROOSEVELT AT SAN JUAN: THE MAKING OF A PRESIDENT* 160 (1997). The critical idea that von Neumann contributed is the exponential benefit of redundant systems—that is, if three *independent* systems each have a .01 chance of error, and any one of the three is sufficient, then a system failure will occur only one in a million times (.01 x .01 x .01). One might frame the problem another way, perhaps more appropriate to the problem posed in this Article. If ten independent teams (each with five people) try to design the solution to a problem, and each has a 10% chance of success, then the likelihood that one of the ten teams will arrive at the correct answer is 65%. (The calculation is $1 - (.9)^{10}$.) The conclusion of Part IV.B on the perils of group think is that this is a considerably higher probability than would arise if all fifty were working together.

interdependent—are not easily conceived or designed.¹⁵⁸ NASA thought it had embedded redundancies in the space shuttle, which had, for example, multiple seals on the solid rocket boosters. Engineers—working in a group—failed to recognize that all of the multiple O-rings were potentially defective and would respond identically to the same exogenous shock of freezing temperatures.¹⁵⁹ The Challenger disaster is another reminder of the necessity of “red team” analysis, and the benefit of, in the old adage, two sets of eyes (at least) looking at the same problem.

To reduce the risk of group think, manufacturers often assign design elements to separate teams, anticipating that in so doing the teams will adopt “divergent approaches.”¹⁶⁰ Yet the solution is imperfect: “[W]here designers come from similar professional cultures, and where they have problems specified for them in similar ways, their designs will likely converge.”¹⁶¹ Dispersing assignments to groups with different cultures and harboring different assumptions is a precondition for the kind of independence that gives resilience to redundant systems. The implications for existential threats is clear. A global governance structure is less likely to generate salutary redundancy than dispersed groups operating independently.

E. Political Accountability

Intellectuals are prone to lament their inability to mobilize mankind to respond to global catastrophic threats. Political actors are said to be delinquent in failing to regulate artificial intelligence, nanotechnology, and bioengineering, all of which threaten the extinction of humanity. And the slow, and often non-existent,

¹⁵⁸ See Peter Popov, *Estimating Bounds on the Reliability of Diverse Systems*, 29 IEEE TRANSACTIONS ON SOFTWARE ENGINEERING 345 (2003).

¹⁵⁹ See Richard Feynman, *Personal Observations on the Reliability of the Shuttle*, <http://www2.lns.mit.edu/fisherp/Appendix-F.txt>.

¹⁶⁰ John Downer, *When Failure is an Option: Redundancy, Reliability and the Regulation of Complex Technical Systems* 9, (ESCRC Ctr. for Analysis of Risk and Reg., Discussion Paper No. 53, 2009), <http://eprints.lse.ac.uk/36537/1/Disspaper53.pdf>.

¹⁶¹ *Id.*

efforts to reduce carbon emissions could result in sudden and catastrophic climate change.

In light of the foregoing, some observers have expressed misgivings with the all-too-deliberate political processes of modern liberal democracies. So many constituencies must be appeased and so many procedural obstacles surmounted before action is taken. Perhaps the world's most famous climate change researcher, James Hansen of NASA, has been quoted as saying that "the democratic process doesn't quite seem to be working."¹⁶² Others have been more explicit in their criticisms. According to Mark Beeson, the American democratic values of "liberalism, individualism, freedom of choice and personal advancement," have proven to be "profoundly inimical to environmental sustainability." "[G]ood authoritarianism," he has argued, is needed to address the urgent threat of climate change.¹⁶³ Other authors have written that "humanity will have to trade its liberty to live as it wishes in favor of a system where survival is paramount."¹⁶⁴

Whatever the merits of undemocratic solutions to climate change or the other catastrophic risks we face, the arguments are rhetorically dreadful. In the modern Western world, "democracy" generally carries positive connotations. One is, consequently, unlikely to rally the masses by promoting an agenda that is transparently undemocratic. And here is where the move from "government" to "governance" proves invaluable. What is intended by "democracy" or "democratic government" is relatively straightforward: majority rules. The basic idea of "democratic governance" is harder to grasp. Consider a posting for a United Nations job that travels by the moniker of "Climate Change

¹⁶² David Adam, *Leading Climate Scientist: Democratic Process Isn't Working*, THE GUARDIAN, (Mar. 18, 2009, 2:31 PM), <https://www.theguardian.com/science/2009/mar/18/nasa-climate-change-james-hansen>.

¹⁶³ Mark Beeson, *The Coming of Environmental Authoritarianism*, 19 ENVTL. POL. 276, 289 (2010).

¹⁶⁴ DAVID SHEARMAN & JOSEPH SMITH, THE CLIMATE CHANGE CHALLENGE AND THE FAILURE OF DEMOCRACY 4 (2007).

Governance and Development Effectiveness Advisor.”¹⁶⁵ The advertisement associates “democratic governance” with “fostering inclusive participation, strengthening responsive governing institutions, and promoting democratic principles.” One might assume that democratic *government* is designed to “foster inclusive participation,” but the claim, or often the insinuation, is that democracy, as it exists in practice, is not democratic. Hence, there is the need to “strengthen responsive governing institutions,” or in other words, the need for democratic governance.

The move from democratic government to democratic governance is rhetorically ingenious in that it can preserve the claim that one is remaining faithful to democratic principles, even if one’s goal is to disregard the results of the ballot box. If a democratic government fails to enact a carbon emissions regulation, one can claim that democratic government has failed to reflect the majority’s wishes. Even when support for this claim is doubtful, losers in the democratic political process can wrap themselves in the mantle of democracy.

The fuzziness of democratic governance thus emerges not as a bug, but as a feature, at least on the rhetorical level. Yet one practical consequence—and potential cost—is an erosion of constitutional government. Constitutional government presumes a clear definition of the relevant population unit, as well as agreed-to rules as to how votes are to be counted: such procedural frameworks are essential to any claim to legitimacy. Yet these procedural matters are left ambiguous in a regime of democratic governance.¹⁶⁶ Who is to be counted and how? Rather than answering these questions, we revert to phrases such as “fostering inclusive participation.” It is instructive to contrast the hard-headed focus on practicalities, even unpleasant ones (e.g., the method of election to the Senate, how to deal with rebellions in a single state) that defined the American constitutional convention of 1787 with

¹⁶⁵ *Climate Change Governance and Development Effectiveness Advisor*, UNITED NATIONS DEV. PROGRAMME, https://jobs.undp.org/cj_view_job.cfm?cur_job_id=30250 (last visited Aug. 26, 2017).

¹⁶⁶ See FRANK BIERMANN, *EARTH SYSTEM GOVERNANCE: WORLD POLITICS IN THE ANTHROPOCENE* 212 (2014).

the airy generalities that often characterize contemporary discussions of “global governance.”

To take one illustrative example: One scholar writes that “what is needed now is a new constitutional moment to strengthen the overall institutional framework for effective governance of the interaction of human societies with the planetary system.”¹⁶⁷ It is not easy to say what this means, but as a practical matter, such grandiose language serves to untether political and economic elites from the results of the ballot box and afford them a freedom of action—to address catastrophic threats, among other matters. There is, inevitably, a reduction in political accountability. It is no longer clear what the majority is, and therefore what it means for the majority to prevail. Conversely, it becomes difficult to say to whom the elites are accountable, or whether they have strayed from the majority’s wishes.

Moreover, what is being promoted is not simply democratic governance, but global democratic governance, which multiplies the layers of imprecision. Jeremy Rabkin has written eloquently on the way in which clearly demarcated national sovereignty is a precondition for political accountability.¹⁶⁸ Without a clear sense of who is inside and who is outside the sovereign group, without, in other words, a clear definition of whose vote matters, it quickly becomes impossible to take a meaningful vote at all. In the absence of such a vote, what will exist instead is the assurance that the elite that has claimed authority does so on behalf of the majority. If that elite aspires to enforce compliance with a worldwide regulation, it is then necessary to imagine a single governance structure sufficiently powerful either to issue its commands directly or with the moral authority or political clout to conscript nation-states to act on its behalf. Such an institution would presumably profess a noble mission (“preserve humanity,” “save the Earth,” etc.) but it would be staffed with human beings prone to all-to-human vices and foibles. The nobility of the mission could fuel an excessive

¹⁶⁷ *Id.*

¹⁶⁸ See RABKIN, LAW WITHOUT NATIONS, *supra* note 80, at 69–70.

confidence in those charged with pursuing it and a willingness to run roughshod over dissenters.¹⁶⁹

One should not overstate concerns about tyrannous and unaccountable global structures, but surely it is a potential risk—even a global catastrophic risk—that should be weighed in the balance. The possibility that technology might be deployed to empower such a Leviathan must also be considered.¹⁷⁰ At a minimum, the elites that assume control of these global governance structures will be immune, or at least to some extent insulated, from effective political control.¹⁷¹ The consequent diminution of political accountability is not an insubstantial cost, but it could be said that the countervailing cost, in failing to address global catastrophic threats, is greater. Perhaps this is correct, but there is still the question of whether less accountable global governance structures will address catastrophic threats more effectively than the sovereign nation-states that have supposedly proven delinquent. It is to this practical question that we now turn.

The most obvious difficulty with any global governance structure is its size. Decisive action could never be expected of an institution that purported to span the globe.¹⁷² But the deeper difficulty arises from a global institution's inherent lack of accountability. The experienced history of the world suggests that, when confronted with grave threats, clear lines of accountability are indispensable. It was noted above that the race to build atomic weapons—before the Nazis did so—was not a global or even Allied operation. It was fundamentally an American operation.¹⁷³ With stunning speed, the Manhattan Project sprung from a theoretical possibility to a detonated bomb; and success was

¹⁶⁹ See RABKIN, *THE CASE FOR SOVEREIGNTY*, *supra* note 96, at 20.

¹⁷⁰ See Bryan Caplan, *The Totalitarian Threat*, in *GLOBAL CATASTROPHIC RISKS*, *supra* note 36, at 504–19.

¹⁷¹ Cf. John O. McGinnis, *The Political Economy of International Antitrust Harmonization*, 45 WM. & MARY L. REV. 549, 560 (2003) (“[I]nternational harmonization can become the song of oligarchs. Agency costs are likely to be higher at an international level and thus bureaucrats will have more ability to fashion rules in their own interests.”).

¹⁷² See RABKIN, *LAW WITHOUT NATIONS*, *supra* note 80.

¹⁷³ See *supra* text accompanying note 84.

engineered not through a global governance structure, but by scientists overseen and managed along lines of political accountability.

The Manhattan Project can serve as a model, as some have suggested,¹⁷⁴ but the lesson it teaches is not what others have learned. Politically accountable bodies are better adapted to respond to existential threats than unaccountable governance structures. Consider, for example, how best to respond to the threat posed by near-earth objects. As an initial matter, the objects need to be identified in the skies. Notable success has been made in this endeavor, and not as the result of global cooperation. It is largely the result of efforts by NASA, an organization that is funded and overseen by the United States Congress.¹⁷⁵ Other space agencies, overseen by individual nations or small groups of nations, have also contributed to the effort. If an enormous, but previously undetected, asteroid is identified, hurtling toward Earth, few would think it prudent to entrust its diversion to the United Nations Committee on the Peaceful Uses of Outer Space.¹⁷⁶

Global governance structures might promote cooperation and enhance the flow of ideas in certain settings, but they are inexorably amorphous and unaccountable, and as such are unlikely to prove capable of decisive action when that is what is most needed. Politically accountable structures tend to be more effective in general, and in particular, more decisive, when confronted with imminent threats.

¹⁷⁴ See *supra* text accompanying notes 81–83.

¹⁷⁵ The NASA Authorization Act of 2005 implemented a program to catalog all near earth objects. It is now budgeted at \$40 million per year. See NASA Office to Coordinate Asteroid Detection, Hazard Mitigation, *Jet Propulsion Laboratory California Institute of Technology* (Jan. 7, 2016), <http://www.jpl.nasa.gov/news/news.php?feature=4816>.

¹⁷⁶ Many authors have canvassed the United Nations' inability to cope successfully with discrete, regional difficulties. For a recent critical article by a long-time employee of the United Nations, see Anthony Banbury, *I Love the U.N., But It Is Failing*, N.Y. TIMES (Mar. 20, 2016), <https://www.nytimes.com/2016/03/20/opinion/sunday/i-love-the-un-but-it-is-failing.html>.

F. The Competitive Pursuit of Glory

The first section argued that the infeasibility of global governance is rooted in the intractable parochialism of human beings. This concluding section brings us full circle and sketches how human nature's group-orientation can be harnessed to help confront catastrophic threats.

We easily forget the depth of human parochialism and the way in which it continues to shape our lives, even in a so-called post-modern age. Scientists, in particular, are often lacking in self-awareness on the drivers of human action, including their own. In this respect, let us return to Einstein's claim in 1931 that he was "immune from nationalist bias."¹⁷⁷ This claim did not survive the creation of the state of Israel twenty-five years later.¹⁷⁸ Einstein's embrace of world government cannot be reconciled with his later sympathies for the nation of Israel, an attachment so robust that he was offered the Presidency of that nation in 1950.¹⁷⁹ Einstein may have regarded the Jews, at least in the immediate aftermath of the Second World War, as particularly worthy of protection; but other peoples and religions have suffered great misfortunes and are also invested in their own heritage. If Einstein failed to cure himself of "nationalist bias," is there any reason to expect other human beings to do so?¹⁸⁰ Nationalist pride seems so deeply entrenched in the human breast—as Einstein's own case illustrates—that there is little or no prospect of a worldwide surrender of national sovereignty.

¹⁷⁷ See *supra* text accompanying note 69.

¹⁷⁸ See, e.g., Albert Einstein, *How I Became a Zionist*, June 21, 1921.

¹⁷⁹ Various authors have tried to reconcile Einstein's positions. See, e.g., EINSTEIN ON POLITICS, *supra* note 73, at 31. It is certainly true, for example, he did not oppose Arab immigration into the State of Israel, and he declined the invitation to be President of Israel. However, many writings reflect his deep and particular attachment to his fellow Jews, even though he did not himself believe in the Jewish faith. See, e.g., Albert Einstein, *How I Became a Zionist*, June 21, 1921, *reprinted in id.* at 152.

¹⁸⁰ The more general point is that individuals who tell others to look for the good of humanity are inevitably self-regarding in their own lives. For a telling case-study, see Peter Berkowitz, *Other People's Mothers*, NEW REPUBLIC, Jan. 10, 2000.

One might think that the “fate of humanity” would be a motivational rallying cry, but this abstracts from the reality of men and women as they exist today. Legal systems need to account for the passions and interests of flesh-and-blood human beings, not imagined projections. Likewise, solutions to the existential threats need to make allowances for the reality of human life. With respect to global warming, for example, the path to persuading Americans to reduce carbon dioxide emissions may not be by badgering them about the fate of “humanity.” An appeal to self-interest, e.g., that a reduction of photochemical smog can improve health outcomes at a local level, is more likely to achieve success.¹⁸¹ With respect to the possibility of artificial intelligence going rogue, hectoring people to abandon technology is a losing proposition. A more promising approach, alert to the tremendous benefits that can flow from friendly artificial intelligence, is to encourage scientists to adopt voluntary guidelines, such as those adopted in 1975 at the Asilomar Conference to govern biotechnology.¹⁸² Computer scientists might be persuaded that it is in their interest to agree to such accords to ward off more draconian government regulations.

It is not simply that provincial human passions rhetorically determine how solutions can be rendered most palatable to those who will be obliged to pay the price, either with dollars or their lives. Those passions can fuel the scientific search for solutions. The desire to advance oneself, and one’s group, is a powerful motivation, and it has propelled many scientific advances.¹⁸³ As David Hume argued, “[t]he emulation which naturally arises among neighboring states, is an obvious source of improvement.”¹⁸⁴ We can stipulate that terrible crimes have been committed in the name of national interest and that patriotism is a

¹⁸¹ See SMIL, *supra* note 39, at 241–42.

¹⁸² See Ray Kurzweil, *Don’t Fear Artificial Intelligence*, TIME, Dec. 19, 2014.

¹⁸³ For example, Darwin hastily published his article on natural selection to ensure that he, not Alfred Wallace, secured credit for the idea. The intense competition to discover the structure of DNA is recounted in JAMES WATSON, *THE DOUBLE HELIX* (1968).

¹⁸⁴ David Hume, *The Progress of the Arts and Sciences* (1758), reprinted in *ESSAYS, MORAL, POLITICAL, AND LITERARY* I.XIV.1, I.XIV.16 (Eugene F. Miller ed., 1987).

scoundrel's refuge; nonetheless, many wondrous human accomplishments have been inspired by a love of nation (or city or religion or other communities that see themselves apart from mankind at large). There are benefits to cooperation in many instances, but there are also benefits in dispersed authority, narrow lines of trust, and even national rivalry in dealing with global threats.

The moon landing is one of humanity's greatest accomplishments, but this triumph, although lauded as a "giant leap for mankind," only occurred because of an intense nationalistic rivalry. In a 1962 speech at Rice University that marked the formal start of the U.S.-Soviet space race, President Kennedy famously said: "We choose to go to the moon."¹⁸⁵ The "we" in that line is emphatically not mankind. True, the speech ingeniously begins by sketching the history of the species, highlighting its accomplishments, and identifying the "vistas of space" as now holding forth "high rewards." But the speech then turns away from mankind as an abstraction:

So it is not surprising that some would have us stay where we are a little longer to rest, to wait. But this city of Houston, this State of Texas, this country of the United States was not built by those who waited and rested and wished to look behind them. This country was conquered by those who moved forward—and so will space.

Kennedy then sketches American history, starting with the Puritans and highlighting this country's "courage" and "honorable action."¹⁸⁶ The remainder of the speech makes clear that the "we" who "choose to go to the moon" are we Americans: "[T]he vows of this Nation can only be fulfilled if we in this Nation are first, and, therefore, we intend to be first . . ."¹⁸⁷ Nor is Kennedy above identifying a particular rival to propel American action. He proudly observes that the United States has already sent the vast majority of satellites into space and that ours "were far more sophisticated and supplied far more knowledge to the people of the world than

¹⁸⁵ President John F. Kennedy, Address at Rice University on the Nation's Space Effort (Sept. 12, 1962).

¹⁸⁶ *Id.*

¹⁸⁷ *Id.*

those of the Soviet Union.”¹⁸⁸ Kennedy does not shrink from telling Americans that they will bear the brunt of the cost, but the unmistakable implication is that they will, thereby, enjoy the lion’s share of the glory: “Whether [space] will become a force for good or ill depends on man, and only if the United States occupies a position of pre-eminence can we help decide whether this new ocean will be a sea of peace or a new terrifying theater of war.”¹⁸⁹

Pride in a community and a passion for promoting that community, in opposition to other communities, have inspired men and women throughout history. At many times, human beings have confronted grave and even existential threats. Herodotus recounts the first instance of such a crisis when Persian despotism threatened the Greeks and the very cause of human liberty. The Greek cities consulted the Oracle at Delphi for guidance; the original answer was perceived by many cities to counsel headlong flight. Fortunately, the Greeks were not linked in a “global governance” structure, and one city demurred. Athens, led by Themistocles, secured a second opinion from the Oracle, which he artfully construed to command naval preparations. At least in Herodotus’s account, Athens would take the leading role in organizing the Greeks against the Persian threat, winning glory for itself, and thereby securing Greek—and human—liberty.¹⁹⁰

V. CONCLUSION

Existential threats have always existed. Human beings live now, as they have always lived, on the razor’s edge of extinction. The story of the Tower of Babel reflects Mankind’s timeless awareness of this reality.

It could be said that today we face more, and qualitatively different, threats than ever before. This argument proceeds as follows: Human beings in all times have faced certain threats originating from unfriendly Nature or vengeful gods; today,

¹⁸⁸ *Id.*

¹⁸⁹ *Id.*

¹⁹⁰ HERODOTUS, HISTORIES VII.138–144; *see also* RABKIN, LAW WITHOUT NATIONS, *supra* note 80, at 8 (“Herodotus emphasizes the paradoxical way the Greeks drew strength from their divisions.”).

however, human beings face new threats of our own invention. The technology we have spawned to relieve our estate has also jeopardized our existence. Yet the truth to this argument is at best partial: it is an open question how much we have multiplied the odds of our destruction. It is virtually impossible to assign a probability to a super-volcano explosion, for example; it is likewise impossible to assign a probability to runaway global warming. Conversely, we are unable to canvass all the ways that technological advances have afforded mankind security from certain threats, such as pandemics or even, possibly, a plummeting asteroid. Are we, consequently, more at risk today than 5,000 years ago? About the same? Less? No final judgment is possible.

The Biblical account of the Tower of Babel remains, therefore, instructive. As an initial matter, the story is skeptical as to the feasibility of the project. God's observation that "now nothing will be restrained from them," seems to be a concession of the logical possibility of a mankind wholly unified in "one language." To this day, scholars debate whether there is a "universal grammar" transcending the apparent divisions in speech, such that "one language" could, in a sense, be a human destiny.¹⁹¹ The realization of this theoretical possibility nonetheless lies at most in the distant, barely glimpsed future.

The deeper question concerns the desirability of the project—that is, whether human beings united in "one language" is, as suggested by Immanuel Kant and others, an aspirational goal. The modern trend has been to regard with approval movements in this direction, often clumped together under the imprecise heading of "global governance." The problem of existential threats posed in this Article is a test case on the desirability of global governance: if ever such institutions are justified, it is in response to threats that imperil the entire human race.

¹⁹¹ Compare STEVEN PINKER, *THE LANGUAGE INSTINCT* 232 (1994) ("According to Chomsky, a visiting Martian would surely conclude that aside from their mutually unintelligible vocabularies, Earthlings speak a single language.") with Nicholas C. Levinson, *The Myth of Language Universals: Language Diversity and its Importance for Cognitive Science*, 32 *BEHAVIORAL AND BRAIN SCIENCE* 429 (2009) (criticizing Chomsky's theory of universal grammar).

Yet as sketched in this Article, the case for global governance is not self-evident, even in the face of existential threats: from a modern and secular perspective, there are reasons to be grateful for the frustration of the unifying humanist dream symbolized by the Tower of Babel. As we contemplate responses to the gravest dangers, there is a benefit to ensuring the possibility of true independence of thought. The horror inspired by existential threats is apt to provoke paralysis, making ever more dangerous institutions that retard critical thinking. Decentralized planning seems costly and redundant, but it can also bring forth novel insights. Given, moreover, the multiplicity of threats that we face, it is useful to maintain separate spheres of authority, so as to avoid a tunnel-vision focus on one particular threat to the exclusion of others. Finally, global governance structures overseen by unaccountable elites impose a potential cost to human liberty; and surely this is a cost that cannot be wholly discounted, even when confronted by existential threats. Nation-states and territorially localized sovereigns are less likely to threaten human liberty than a global sovereign, empowered by modern technology and emboldened by a crusading faith to save Mankind.