

THE IMMANENT APOCALYPSE: HUMANITY AND THE ENDS OF THE
WORLD

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THE IMMANENT APOCALYPSE: HUMAITY AND THE ENDS OF THE WORLD

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For several millennia, many thinkers in the Western tradition took for granted that the transcendent being that had created the world would one day intervene from outside to end it. This dissertation takes as its point of departure the relatively recent notion that human beings could themselves create the capacity to end the world *within* the world—unleashing an entirely immanent apocalypse. This study examines the theoretical challenges that the arrival of anthropogenic existential risk poses for several longstanding cornerstones of Western political thought, paying particular attention to how questions concerning humankind as a whole came to be reconceived between the 1950s and the 1980s. At its core, the dissertation asks: What changes when earthly human existence ceases to be a necessary prerequisite *for* politics and instead becomes a contingent outcome *of* politics? The first chapter offers a history of how humankind as a whole first came to be understood as humanly killable. Here it argues that it was the catastrophe of the First World War that first convinced a generation that human beings might someday acquire the ability to destroy themselves without remainder, and the advent of the hydrogen bomb in the 1950s that first convinced them that this day had arrived. Here I contrast three different political approaches that contemporaries developed to cope with the immanentization of the apocalypse using existing political categories: (1) siding with the philosopher Bertrand Russell in arguing that human freedom must be sacrificed for the preservation of bare biological

existence, (2) siding with existentialist Karl Jaspers in declaring that mere biological survival must be risked in the defense of human freedom, or (3) joining the vast majority in conspicuously ignoring these dilemmas entirely. The second chapter compares the previously overlooked role that the immanentization of the apocalypse played in shaping the political thinking of Hannah Arendt and Michel Foucault between the 1950s and the 1970s. Here I illustrate how both traversed parallel but opposite paths: Arendt beginning by addressing the hydrogen bomb and discovering the role that the ‘human life process’ had come to play in modern politics; Foucault beginning with the study of ‘biopolitics’ and encountering an insuperable hurdle in the form of what he called “the atomic power to kill life itself.” The third chapter traces how the fallout scare of the 1950s helped to catalyze the scientific developments that would begin to constitute the Earth System as a new object of knowledge over the course of three subsequent decades and, in so doing, transform the context in which anthropogenic existential risks are understood. Here the dissertation engages with the political thought of essayist Jonathan Schell, making the case that Schell stands out as both one of the few people to build on Arendt’s apocalyptic innovations and one of the premier political theorists of human extinction. The chapter demonstrates how Schell’s 1982 study *The Fate of the Earth* takes shape as one of the first political inquiries to approach the immanent apocalypse as a primarily ecological concern in the context of the newly discovered Earth System. It further follows how Schell’s close encounter with the nascent Earth System provides him with new resources for reconsidering the political place of sovereignty, natality, and love—theoretical innovations that carry direct relevance for those seeking to make sense of the cascade of mounting ecological crises that define today’s ‘Anthropocene.’

BIOGRAPHICAL SKETCH

Daniel Zimmer was born in Seattle, Washington and grew up in various places as the child of an American diplomat. He received his bachelor's degree in historical studies from The New School and a master's degree in social science from the University of Chicago. He took up a postdoctoral position at the Stanford University Existential Risk Initiative after receiving his doctorate in the study of political thought from the Government Department of Cornell University.

For the one that I held in my arms while writing this, and those that held me in theirs.

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INTRODUCTION

In 1968 Michel Foucault published a highly erudite, occasionally opaque examination of the history of the knowledge of Man as a modern subject of study titled *Les mots et les choses* (*The Order of Things*). To both Foucault's and his publisher's great surprise the tome shattered sales records to quickly become a fixture on the bookshelves of those in the know, establishing the academic fame that Foucault would enjoy for the rest of his life.¹ While some of the arguments advanced in this volume have already receded into the intellectual history of French structuralism, the force of its most iconic image has only grown with time. Foucault concluded his tome by reiterating its central contention that the modern conception of Man "is an invention of recent date. And one perhaps nearing its end."² This formation of Man had taken shape, he contended, as "the effect of a change in the fundamental arrangements of knowledge" that the study had sought to track, famously speculating: "If those arrangements were to disappear as they appeared, if some event of which we can at the moment do no more than sense the possibility...were to cause them to crumble...then one can certainly wager that man would be erased, like a face drawn in sand at the edge of the sea."³ This image of "Man" as a "face drawn in sand at the edge of the sea" was already iconic before global warming became a cause for public alarm, but by now the guaranteed prospects of several meters of sea level rise have made this image all but irresistible for those who are trying to make sense of today's rapidly escalating ecological crises. Will humankind as a whole be erased by the burning forests, parching bread

¹ For an account of the difficulty Foucault had writing this masterwork and its stunningly enthusiastic reception, see David Macey, *Michel Foucault* (London: Reaktion Books, 2004), 64.

² Michel Foucault, *The Order of Things* (New York: Vintage Books, 1994), 422.

³ *Ibid.*

baskets, melting corals, and rising seas, or is it only a particular conception of the human that will not survive the ongoing reckoning? At the same time, might new ways of understanding the planet and its processes that undergird the mounting awareness of today's dangers also transform how the connections between human beings are understood and the totality of humankind is addressed?

For roughly fifty years, mainstream scholars in the humanities and social sciences treated ecological concerns as a specialist field and fringe interest. Matters began to change markedly in the 2010s as the early tolls of global warming began to mount and scholars from all fields started to take stock of the science informing the increasingly dire warnings. This proved to be a fraught and sometimes disorienting undertaking. For many of the scholars that came of age from the 1980s through the 2000s, one of the chief lessons osmosed from Foucault and many of his similarly skeptical contemporaries had been that the tide was coming in on the face of Man and that “the modern discourse of humanity, of its truth and its ultimate liberation, must be left behind” (as one commentator on Foucault prominently put the matter in 1990).⁴ And yet, over the course of the 2010s, the planet-encompassing scope of today's ecological disruptions seemed to have engulfed humanity as a whole. After decades of unlearning Enlightenment universalism and discovering the inherently totalitarian implications of all totalizing concepts, the worsening pace of global warming seemed to place all human beings in jeopardy and warrant that they be addressed in their totality. Might it even be warranted to speak of a new epoch taking shape under the inescapably planet-wide impact of human beings? Did those who began to speak increasingly of having entered the ‘Anthropocene’ era occupy the leading edge of attempts to theorize this new condition or yet another dubious attempt to reinscribe the face of Man?

⁴ Leslie Paul Thiel, “The Agony of Politics: The Nietzschean Roots of Foucault’s Thought,” *American Political Science Review* Vol. 84 No. 3 (September 1990): 907-923, 907.

Looking back, the 2009 United Nations Climate Change Conference in Denmark stands out as a watershed moment. The hopes going in had been that, after a decade of dithering and delay following the signing of the 1997 Kyoto Protocol, this meeting would mark the moment that all of the chief actors finally ‘got serious’ and began sitting down to the hard work of figuring out how exactly to make good on their promises of greenhouse gas (GHG) emission reductions.⁵ When the Copenhagen talks unceremoniously collapsed without reaching an agreement, some who had previously assumed that global warming was dire but more or less under control discovered that there really was no one ‘steering the ship’ and no guarantee that the peoples of the world would arrive at a commensurate response for avoiding the worst of the mounting emergencies in the time remaining.⁶ For others, that year’s wakeup call took the form of Dipesh Chakrabarty’s instantly classic essay “The Climate of History: Four Theses.”⁷ Already famous as a leading scholar of globalization and luminary in the Postcolonial Studies movement, Chakrabarty’s pivot to climate helped to open the subject for discussion in the humanities over the next decade and establish some of the terms of the ensuing debate. In 2019, the sociologist of science Bruno Latour remarked how, in retrospect, “Ever since Dipesh Chakrabarty opened the Pandora’s box on the definition of humanity during the Anthropocene, the question of establishing a new continuity between the domain of necessity (nature) and the domain of

⁵ Naomi Kline movingly writes of her own awakening to global warming following her experience at Copenhagen in 2009 in her first major work on this subject—a book that has aged conspicuously better than many of its contemporaries. Naomi Kline, *This Changes Everything: Capitalism versus the Climate* (New York: Simon and Schuster, 2015), 5-19.

⁶ Using ‘emergency’ to mean an acute combination of risk and urgency (where ‘risk’ is a function of probability of an event multiplied by the degree of harm done, and ‘urgency’ constitutes the time it takes to react divided by the intervention time left to avoid the event). See: Timothy Lenton, Johan Rockström, Owen Gaffney, et al, “Climate Tipping Points – Too Risky to Bet Against” in *Nature*, Vol. 575 (2019), 592-595.

⁷ A version of the essay had already been published in Bangla the year before. Dipesh Chakrabarty, “The Climate of History: Four Theses” in *Critical Inquiry*, No. 35 (2009), pp.197-222.

freedom (society) has been raised.”⁸ Given the fame of its author, the depth of the questions it raised, and the serendipity of its timing, Chakrabarty’s “The Climate of History” helped to establish some of the terms for the early debates surrounding the return of human totality and the epistemic status of those who would attempt to speak in its name.

Chakrabarty proves to have been particularly struck by the way in which anthropogenic global warming suggests that human beings are causing changes within the short-term span of human history that carry potentially permanent reverberations across geological timespans. Now, collective human agency seemed to be affecting not just the usual affairs of human history unfolding over weeks, decades, or centuries, but the course of entire planetary cycles that had typically been assumed to provide the static backdrop for this evolving human drama. A historian by training, Chakrabarty stressed: “It is no longer a question simply of man having an interactive relation with nature. This humans have always had, or at least that is how man has been imagined in a large part of what is generally called the Western tradition. Now it is being claimed that humans are a force of nature in the geological sense. A fundamental assumption of Western (and now universal) political thought has come undone in this crisis.”⁹ While recognizing that the standard “critique that sees humanity as an effect of power” remains indispensable for the pursuit of justice, Chakrabarty argued that the ongoing ‘crisis’ threatens to erase not just a historically transient definition of ‘humanity,’ but the far more solid substance of the ‘species’ itself: not the normatively laden vision of ‘Man’ inscribed by those particular groups with the power to impose their ersatz universalism on others,¹⁰ but the abiding human material into which this face had

⁸ Bruno Latour, “Extending the Domain of Freedom, or Why Is Life on Earth so Hard to Spot?” in *Critical Inquiry*, Vol. 45, No. 3 (Spring 2019), pp.659-680; 659.

⁹ Dipesh Chakrabarty, “The Climate of History: Four Theses” in *Critical Inquiry*, Vol. 35, No. 2 (Winter 2009), pp.197-212; 207.

¹⁰ In *Provincializing Europe*, Chakrabarty had himself offered an influential account of how particular groups arrogate the power to make universal proclamations by drawing a distinction between what he

been scratched. Perceptively, Chakrabarty recognized at once that both the ‘species’ was a problematic term and that his was not the first generation to face this problem, noting how,

The anxiety global warming gives rise to is reminiscent of the days when many feared a global nuclear war. But there is a very important difference. A nuclear war would have been a conscious decision on the part of the powers that be. Climate change is an unintended consequence of human actions and shows, only through scientific analysis, the effects of our actions as a species. Species may indeed be the name of a placeholder for an emergent, new universal history of humans that flashes up in a moment of danger that is climate change. But we can never *understand* this universal....Yet climate change poses for us a question of a human collectivity, an us, pointing to a figure of the universal that escapes our capacity to experience the world. It is more like a universal that arises from a shared sense of a catastrophe.¹¹

These are *profound* observations in the very literal sense that, while there may be many questions that are more complicated, none can be deeper—for here political thought scrapes the bedrock of the ontology that supports it and poses anew the question of what human beings are and can be collectively.

Chakrabarty’s willingness to entertain the human *species* as a potential placeholder for discussing human beings in their totality quickly set off alarm bells. His work drew particularly sharp criticism from those who had already rejected the term ‘Anthropocene’ based on the suspicion that the universal *Anthropos* it implies offers either the attempt to falsely implicate all human beings as equal culprits in an ecological emergency precipitated by a relatively few rich countries or to ‘naturalize’ the emergency by identifying it as the tragic but necessary result of some inescapable tendency lodged in the essential nature of Man. But where does this historically

termed History 1 and History 2, so that “The universal...can only exist as a place holder, its place always usurped by a historical particular seeking to present itself as the universal.” Dipesh Chakrabarty, *Provincializing Europe* (Princeton: Princeton University Press, 2000), 70, 62-71.

¹¹ Chakrabarty, “The Climate of History,” 221-222.

well-justified skepticism of Western claims to universalism leave contemporaries when the developments in question do seem to genuinely implicate every living human being without exception or remainder? It seems that Chakrabarty might have had something along these lines when noting back in 2009 how the “anxiety global warming gives rise to is reminiscent of the days when many feared a global nuclear war.” This disturbing echo of existential anxiety provided the context for his immediately preceding claim that, while “Climate change, refracted through global capital, will no doubt accentuate the logic of inequality that runs through the rule of capital....But the whole crisis cannot be reduced to a story of capitalism. Unlike in the crises of capitalism, there are no lifeboats here for the rich and the privileged.”¹² It was this last line that seems to have aroused the most ire among Chakrabarty’s readers in general, and ‘Anthropocene’ skeptics in particular.

In a much-cited early “critique of the Anthropocene narrative,” Andreas Malm and Alf Hornborg accused Chakrabarty of “blatantly overlooking the realities of differentiated vulnerability on all scales of human society.” Instead, they argued, “For the foreseeable future—indeed, as long as there are human societies on Earth—there *will* be lifeboats for the rich and privileged. If climate change represents a form of apocalypse, it is not universal, but uneven and combined: the species is as much an abstraction at the end of the line as at the source.”¹³ Another commentator seemed to put his finger on precisely the logic of Chakrabarty’s rhetorical move by noting how, in claiming there were ‘no lifeboats,’ “The *shared* nature of the threat generates a new species—We; to backstop this argument, Chakrabarty claims that ‘there are no lifeboats here for the rich and the privileged.’ If the Anthropocene in the long run indiscriminately threatens all

¹² *Ibid.*, 221.

¹³ Andreas Malm and Max Hornborg, “The Geology of Mankind? A Critique of the Anthropocene Narrative” in *The Anthropocene Review*, Vol. 1, No. 1 (2014), pp.62-69; 66-67.

people, then the only logical response is one that universalizes responsibility for action. This requires dislodging the politics of difference.”¹⁴ For many, to claim that someone proposes ‘dislodging the politics of difference’ is tantamount to suggesting that they would dispose of politics *tout court* and regress to the bad old days of believing that some could conceivably speak on behalf of all, and that particular groups that might beg to differ on these universal pronouncements would need to be corrected.

And yet, one of the consistent lessons that I hope to impress in this study is that not everything that proves to be incompatible with traditional political precepts or even long cherished political ideals is wrong or should be rejected on these grounds. It may be that Foucault’s ‘fundamental arrangements of knowledge’ have shifted dramatically and, in doing so, displaced the foundations on which much of the most venerable political wisdom in the Western tradition had been based. The critics quoted above overlook the key fact that, for Chakrabarty, it was *precisely* the possibility that the ecological crises that constitute the ‘Anthropocene’ could pose an *indiscriminate threat to all people* that first gave rise to “the urgency of creating a sense of politics based on [the] understanding of ourselves as a species.”¹⁵ Clarifying this point, he later noted, “It is possible that the lifeboat metaphor was too cryptic (and it clearly misfired for some readers) but my point was that climate change, potentially, has to do with changes in the boundary conditions needed for the sustenance of human and many other forms of life. Climate scientists have pointed out that there is a temperature zone within which humans find it easy to survive. Runaway global warming could, theoretically, warm up the planet to a point where humans would find survival difficult. The rich, for all their money, for example, would not find it

¹⁴ Original emphasis. Matthew Lepori, “There Is No Anthropocene: Climate Change, Species-Talk, and Political Economy” in *Telos*, No. 172 (Fall 2015), pp.103-124; 112.

¹⁵ Dipesh Chakrabarty, “Planetary Crises and the Difficulty of Being Modern” in *Millennium*, Vol. 45, No. 3 (June 2018), pp.259-282; 281.

easy to live in a world whose supply of oxygen had dried up; even they are subject to biological processes!”¹⁶ It would seem that one of the biggest point of confusion on this issue between Chakrabarty and his critics is that he takes for granted that the ongoing ecological emergency poses a potentially existential risk to the biological processes that sustain life on this planet—rich or poor; plant, human or protozoa.

With the benefit of growing hindsight, the Anthropocene debates of the 2010s reveal a prominent disconnect between those who, on the one hand, emphasize the different degrees of severity and immediacy that the dangers raised by today’s ecological emergencies pose for different groups and those who, on the other, view the planet-scale disruptions as jeopardizing the human habitability of the planet and thereby raising a universally existential risk to all human beings equally. A decade after first broaching the subject, Chakrabarty returned to the topic, reflecting how,

We knew that humans, apart from being an arithmetic sum of the total number of humans on the planet, were also a biological species, *homo sapiens*, but the knowledge was of no special political import. But when the planet faces, for the first time in its entire history, the bleak prospect of a ‘great extinction’ driven by the activities of one biological species, us, the urgency of creating a sense of politics based on this...understanding of ourselves as a species dawns on us. But we don’t know yet how to do that....The chasm exists as the awareness of a deep abyss that acts as the limit to human sense of politics so focused on individual humans as bearers of rights or as recipients of welfare, but never on humans as a totality—one species among many in the larger history of life.¹⁷

As we will see in Chapter Two, Chakrabarty is far from the first to wonder what difference may exist between belonging to the totality of a biological species and simply tallying the sum total of

¹⁶ Dipesh Chakrabarty, “The Politics of Climate Change Is More Than the Politics of Capitalism” in *Theory, Culture, and Society*, Vol. 34, No. 2-3 (May 2017), pp.25-37; 31.

¹⁷ Chakrabarty, “Planetary Crises and the Difficulty of Being Modern,” 281.

all biologically human beings. What resources might the confrontation with these mounting challenges provide for rethinking the terms of human totality? Does this new scale of planetary agency require that questions concerning what human beings are collectively be reposed in a new way? Might there be ways to approach “humans as a totality” when facing potentially total threats to human survival that are not inherently totalizing (that is, falsely claiming some particular group’s partial perspective as universally valid for all)¹⁸ or even totalitarian?

Chakrabarty’s ongoing difficulties in this area and the confusion that has arisen surrounding these points opens onto a much longer history of struggling to make sense of what it might mean to belong to a category of being that has acquired the capacity to place its continued existence in jeopardy.¹⁹ What I would like to suggest here is that Chakrabarty’s proposal to use the human ‘species’ as a placeholder for a new universal that flashes up in a moment of existential danger represents just the latest in a long line of similar reflexes and does indeed suggest the extent to which the “anxiety global warming gives rise to is reminiscent of the days when many feared a global nuclear war.” As science writer Oliver Morton perceptively notes on this subject, anyone who claims that the scale of ecological challenges such as climate change is “completely unprecedented” risks merely “flattering the importance of the present in a way that demeans the past.” Rather, as Morton further observes, “Nuclear risk did not merely predate today’s concerns about climate change; it shaped them politically, scientifically and emotionally. One can worry about climate change without appreciating this prefiguring. But if you want a full appreciation of

¹⁸ That is, someone’s particular History 2 masquerading as universal History 1, in Chakrabarty’s earlier terms. Chakrabarty, *Provincializing Europe*, 62-71.

¹⁹ On this point, Chakrabarty has himself recently ventured a few provisional answers to some of these questions. In his long awaited 2021 volume *The Climate of History in a Planetary Age*, Chakrabarty finally proposes that “humans in their internally differentiated plurality, humans as a species, and humans as the makers of the Anthropocene constitute three connected but analytically distinct categories.” Dipesh Chakrabarty, *The Climate of History in a Planetary Age* (Chicago: University of Chicago Press, 2021), 15.

the origins of climate [change] and how it is imagined, such an appreciation is vital.”²⁰ The study that follows seeks to demonstrate just how correct he was in this assessment, particularly when it comes to the political questions that come to be pitched at the level of human beings in their totality.

In his 1961 address to the General Assembly of the United Nations, John F. Kennedy declared, “Today, every inhabitant of this planet must contemplate the day when this planet may no longer be habitable. Every man, woman and child lives under a nuclear sword of Damocles, hanging by the slenderest of threads, capable of being cut at any moment by accident or miscalculation or by madness.”²¹ The Anthropocene debates of the 2010s arose as the latest in a long—but highly discontinuous—line of disputes over how to parse the political implications of discovering that all human lives have come to depend on the outcomes of human actions. There turn out to be important implications that stem from how the sum total of “every man, woman, and child” comes to be conceived, whether assembled under the figure of universal Man, or as a natural kind of biological species, or as a continuous but contingent life process, or a collective agent whose actions carry reverberations for every inhabitant of the planet. This study turns to examine how the terms in which political questions concerning human survival first came to be posed and subsequently transformed over the course of the twentieth century. It argues that the hydrogen bomb tests of the 1950s introduced an awareness of anthropogenic existential risk that first raised fundamental questions about the political implications of addressing human beings in their totality. From here, it proceeds to follow a half century of attempts to rethink the place of

²⁰ Morton is specifically referencing ‘geoengineering’ in that last line, but his point stands for climate change more broadly. We will broach the specific set of concerns introduced by geoengineering in the conclusion. Oliver Morton, *The Planet Remade* (Princeton: Princeton University Press, 2016), 308.

²¹ John F. Kennedy, “Address Before the General Assembly of the United Nations, September 25, 1961.” The John F. Kennedy Presidential Library. <https://www.jfklibrary.org/archives/other-resources/john-f-kennedy-speeches/united-nations-19610925>. Accessed 20 March 2022.

‘Man’ in Western politics from the advent of anthropogenic existential risk during the fallout scare of the 1950s through to the coining the term ‘Anthropocene’ in the 2000s, with many stops along the way.

Anyone seeking to come to grips with the political implications of anthropogenic existential risk quickly discovers that the Western legacy of apocalyptic thinking offers both a rich reservoir of theoretical resources and many potential snares. To date, over two millennia worth of millenarian expectations have been continuously disappointed. Worse, they have also prompted some of the most egregious paroxysms of political violence in history—particularly among disappointed millenarians who have sought to find this-worldly means to realize the promises of revealed religion and “immanentize the eschaton” (as political philosopher Eric Voegelin notably put the matter).²² What, if anything, differentiates the kind of apocalypticism that will be the object of this study? In her sweeping treatment of the topic, political theorist Allison McQueen’s *Political Realism in Apocalyptic Times* lucidly illustrates both the continuous importance of the apocalypse in the tradition of Western political thought and the prominent points of both continuity and rupture that this underwent in the course of the twentieth century. McQueen highlights how difficult it becomes to make sense of the history of Western political thought without taking into account the fact that many people in many times and places believed themselves to be living in the last days of human life on earth. Distilling several salient generalities across three thousand years of both theological and secular use, she constructively typifies the ‘apocalypse’ as “*an imminent and catastrophic end to the known world, along with its attendant ‘evils.’ It is a rupture in the apparent temporal continuity of history, a revelatory*

²² Eric Voegelin, *The New Sciences of Politics: An Introduction* (Chicago: University of Chicago Press, 1952), 121-125.

moment around which the past is given meaning and a radically new future is announced."²³ In the closing chapter of her study, McQueen turns to the writings of international relations scholar Hans Morgenthau in order to bring the 3,000-year saga of Western apocalypticism up to the early 1960s. Here she illustrates how the arrival of the possibility for this-worldly thermonuclear annihilation creates a rupture in the continuity of Western apocalyptic thinking. Where previously the apocalypse had revealed the final meaning of the world, now it threatened to drown meaning itself. On the subject, she notes how, "in contrast to the Judeo-Christian apocalypse, there is no system of belief that renders nuclear annihilation meaningful, no theodicy that endows it with ultimate justification, and no promissory narrative that consoles the terrified and trembling. It is instead an apocalypse without redemption—an end that can only be confronted as a naked absurdity."²⁴ What changed?

For millennia, Westerners had been directly taking the apocalypse into political account, whether this meant supporting the Emperor as the *katechon* and restrainer of the coming of the Antichrist or seizing control of Münster in order to hasten the arrival of the Millennium. What all these apocalyptic expectations had in common, however, was the knowledge that, while the continuation of the world might hinge on human actions, the agency that would be responsible for bringing about the end would come from outside the world itself. Only the transcendent power that had created the world could end it. In the 1950s, the creation of massed thermonuclear arsenals seemed for the first time to introduce the means to end the world into the world itself. Suddenly, an apocalypse that had for millennia been *imminent* for the first time became *immanent* as well. This distinction, so slight as to pass for a slip of the tongue in spoken English, makes all

²³ Original italics. Alison McQueen, *Political Realism in Apocalyptic Times* (Cambridge: Cambridge University Press, 2018), 56.

²⁴ *Ibid.*, 154.

the difference. For from this moment forward, responsibility for the continuation of earthly human life passed from the transcendent hands of God or Providence and entered immanently onto the plane of human decision making. Up until this now, the exercise of politics had always assumed the existence of human beings as its precondition. From this moment forward, the continued existence of human beings becomes subject to the outcome of politics.

The study that follows picks up where McQueen's leaves off, taking the grim, this-worldly prospect of an immanent "apocalypse without redemption" as its point of departure and tracing the points of both continuity and rupture that ensued for those mid-20th century contemporaries who joined Morgenthau in facing the unprecedented prospect of 'death in the nuclear age.' What this study terms the 'immanentization of the apocalypse' introduces a new category of political question that directly implicates every living human being and, by doing so, introduces a new kind of political universalism that bears little resemblance to the traditional ways in which Western thinkers had previously approached the subject of human beings in their totality. Over the course of the twentieth century, scholars developed a well-earned mistrust of, among other things: the political hazards of universalism, the dehumanizing dark sides that dogs those who seek to act on behalf of Man, and the ease with which a professed concern for the plight of the species in general can lead to the exculpation of some and the scapegoating of others. This work sets out to illustrate how developments that have transformed the terms in which the immanentization of the apocalypse is understood also provide a new set of resources for rethinking how to approach the sum total of all human beings in ways that open new avenues for political solidarity without automatically repeating the familiar forms of exclusion, exploitation, and even extermination that have attended previous Western approaches to political universalism. As this study proceeds, we will see how "a change in the fundamental

arrangements of knowledge”—as Foucault might have put it—gradually converted the radiological anxieties of the 1950s into the awareness of ecological dangers such as nuclear winter, ozone depletion, and global warming that redefined the immanent apocalypse in the 1980s and, in so doing, generated a new set of resources for making sense of how the sum total of all human beings might relate to both one another, the rest of earthly life, and the system of terrestrial processes that connect them as part of a whole that must actively work to sustain its conditions of planetary habitability.

Chapter One opens the study by examining the difficulties that arose for the first generation of immanent apocalypics as they sought to make sense of the political consequences of hydrogen weapons and their implications for humankind as a whole. It is divided into two sections. The first begins at the beginning by asking why it may have been that, after three millennia of embroidering the remarkably rich and varied tapestry of the transcendent apocalyptic imaginary documented by McQueen,²⁵ it proved to only be in the twentieth century that Westerners began to posit the possibility that human beings could themselves be the entirely this-worldly agents responsible for bringing about a catastrophic end to all earthly human life. Here I highlight how the longstanding belief in a Great Chain of Being and a harmonious order of Nature-as-cosmos made it almost impossible to imagine that Man might come to be expunged from Nature absent the direct intervention of Nature’s author. In doing so, we see how the traditional categories furnished by this schema led to two distinct—but ostensibly compatible—ways of discussing human beings in their totality as either, on the one hand, a natural kind possessing a specific difference that made them essentially unique within the order of Nature or, on the other, as the substance of an immortal biological species that sustained itself through the

²⁵ For how McQueen develops of the ‘apocalyptic imaginary’ into a versatile theoretical tool for parsing these subjects, see: *Ibid.*, 51-54.

continuous reproduction of its mortal members. The chapter then traces how this schema helped to engender a form of humanist political universalism that looked forward to the day when all members of the human species would be reunited in a cosmopolitan order that would resolve their merely artificial differences and permit the humanity of Man to find its fullest expression. We follow how intellectual developments in the nineteenth century upset Western confidence of the necessary place that Man occupied in the cosmic order, while the trauma of the First World War convinced a shellshocked generation that advancing technology might be on the cusp of providing the means to permanently curtail the life of the species. The second section explores how the political thinkers of the 1950s grappled with this legacy when confronting the implications of the hydrogen bomb. It first examines how the political theorist Hannah Arendt immediately registered the magnitude of the problem, concluding that “mankind, which for all preceding generations was no more than a concept or an ideal, has become something of an urgent reality.”²⁶ The remainder of the section follows how three different positions developed during the 1950s to deploy existing theoretical resources to address this urgent reality. We will see how some—such as the existentialist philosopher Karl Jaspers—urged contemporaries to be prepared to defend human freedom and the essence of Man even at the risk of biological annihilation, while others—such as the logician-turned-public-intellectual Bertrand Russell—asked contemporaries to think of themselves foremost as members of a species and accept the loss of some of their freedoms for the sake of biological survival, while still others—the vast majority—opted to ignore these questions entirely. The chapter concludes by considering the unfortunate confluence of factors that led many highly influential antihumanist thinkers to conspicuously ignore the immanentization of the apocalypse and its attendant political

²⁶ Hannah Arendt, *Men in Dark Times* (New York: Harcourt Brace & Company, 1983), 83.

challenges.

Chapter Two turns to address several attempts to confront the ‘urgent reality of mankind’ and the politics of the immanent apocalypse outside the traditional categories of Western universalism. Here we trace the congruent paths that Arendt and Foucault came to pursue from the late 1950s through the 1970s as political thinkers of the immanent apocalypse. I argue that what Arendt calls the “politically modern world that was born with the first atomic explosions” proves to be directly analogous to the territory that unfolds on the far side of what Foucault will come to term the “biological threshold of modernity.” This chapter illustrates how both thinkers broke with the traditional terms in which the essence of Man, attempting instead take on board the discoveries of the last century that had transformed the fixed order of Nature-as-cosmos into a newly dynamic realm of Nature-as-process. It comprises three sections. In the first, we see how Arendt attempts to come to grips with the ‘urgent reality of mankind’ by developing a distinction between the immortal life of the human species as handed down from antiquity, the all-too-mortal life process of the species as encountered during the nineteenth century, and what she terms the ‘sum total of all human beings.’ Having seen how Arendt begin with the immanentization of the apocalypse and develop an appreciation for the important role that the human life process plays in contemporary politics, the second section illustrates how Foucault proceeds in the opposite direction: beginning by developing a theory of what he calls ‘biopolitics’ to explain how the life processes of populations entered into political purview and finding himself confronted by the theoretical consequences of atomic weapons and what he terms “the power to kill life itself” as he attempts to apply this theory to the contemporary present. Here I use the case of both Arendt and Foucault to illustrate how their break with the traditional tenets of Western humanism—or, in Foucault’s case, his avowed antihumanism—in no way precludes either thinker from recognizing

the need for a new form of political universalism better calibrated to address questions that place the life process of the human species in jeopardy. The third section illustrates how, as immanent apocalyptic thinkers of the human life process, Arendt and Foucault arrive at analogous conclusions regarding the functional obsolescence of sovereignty and the insights to be gained by drawing a sharp distinction between violence and political power.

Chapter Three illustrates how the innovations that Arendt and Foucault developed as immanent apocalypics can be productively developed by recontextualizing them within a broader shift that transpired between the 1950s and the 1980s that saw the century-old order of Nature-as-process replaced with a growing awareness of Nature-as-system. The first section begins by circling back to the 1950s to follow how the global fallout that first convinced Arendt's generation that the apocalypse was immanent came to serve as the radioisotope tracers that permitted the first systems ecologists to begin to map a previously unimaginable degree of systemic interconnection linking organisms within ecosystems and ecosystems with one another. The section proceeds to examine how the development of these insights over the course of the 1960s and 1970s gradually consolidated into a new integrative approach to understanding planetary phenomena that came to be called Earth system science by the mid-1980s. I show how the appearance of the Earth system as a new object of knowledge transformed the terms in which anthropogenic existential risk had been understood, transforming thermonuclear weapons into a primarily ecological peril defined by the prospect of nuclear winter and inspiring new concerns such as ozone depletion and global warming. The second section turns to consider the contributions of political essayist Jonathan Schell, who turns out to have been one of the first political theorists of the immanent apocalypse to reconsider the former questions concerning human totality, the life of the species, and human freedom that had derailed thinking in the 1950s

in the new context of the emerging planetary system. Here I show how Schell deftly built on Arendt's earlier innovations, recasting them in an explicitly ecological register that remains immediately applicable today while also adding his own reflections about the new possibilities for human solidarity in the face of species extinction.

The conclusion of this study presents a case for embarking on the delicate task of reintroducing human totality into contemporary politics while trying to avoid the well-documented dangers that have long attended Western political universalism. Here I argue that the figure of human totality furnished by Earth system science, the *Anthropos* of the Anthropocene, offers one potential way of doing so. I argue that the *Anthropos* of the Earth system Anthropocene shifts the focus from the ultimate 'what' of Man to the 'how' of the collective human activities that bypasses traditional antihumanist concerns about 'essentializing' or 'naturalizing' human beings while introducing different challenges regarding how the collective force that human beings now have at their disposal will be used for or against the continuation of all earthly life.

“This earth will grow cold,
a star among stars
 and one of the smallest,
a gilded mote on blue velvet—
 I mean *this*, our great earth.
This earth will grow cold one day,
not like a block of ice
or a dead cloud even
but like an empty walnut it will roll along
 in pitch-black space . . .
You must grieve for this right now
—you have to feel this sorrow now—
for the world must be loved this much
 if you're going to say ‘I lived’ . . .”
—Nazım Hikmet, excerpt from “On Living” (1947)¹

CHAPTER ONE: ESSENCE

This chapter sets out to address two questions: “Why did the immanentization of the apocalypse take place when it did?” and “What impact did this have on the political thinking of the time?” The first section, “The Beginning of the End of the World,” offers a synoptic overview of the place human beings occupied in the natural order of things from antiquity to 1953. It begins by highlighting several salient features of the Western tradition that may have contributed to preventing most of its adherents across two millennia from conceiving of the possibility that humans as a whole could ever permanently cease to exist, let alone bring this about through their own doing. This section also calls attention to two distinct—but ostensibly complementary—ways of conceiving of humans in their totality that would play an important role during the 1950s: the category Man defined by its essence and the biologically human species defined by the continual reproduction of its substance. As our survey approaches the present, we will see that it was not the atomic bombings of 1945 that first immanentized the apocalypse, but the trauma of

¹ Nazım Hikmet, *Poems of Nazım Hikmet*, Trans. Randy Blasing and Mutlu Konuk (New York: Persea Books, 2002), 128.

the First World War that initially made the prospect thinkable and the hydrogen bomb that made it practicable. The second section, “The Origins of All or Nothing in Politics,” tightens the focus to examine several of the initial challenges that the new ability to destroy all earthly human life posed for traditional Western political categories during the 1950s. Here it takes as its initial guide the political theorist Hannah Arendt, who emerges as one of the first immanent apocalypticists to begin to rethink several foundational political categories in light of this sudden hypertrophy in human killing power. It pays particular attention to how the Cold War context of these developments helped to engender an epochal sense of final confrontation between ‘freedom and life’ forcing a choice between ‘liberty or death’ and ‘one world or none,’ following how Arendt navigated these new tensions in her own work. From here, the chapter proceeds to illustrate three prominent political responses to the immanentization of the apocalypse that unfolded over the course of the 1950s. The first sees Karl Jaspers build on Arendt’s study of totalitarianism to develop a call to defend the essence of Man and political freedom from total dehumanization under totalitarianism even at the cost of potentially destroying all earthly human life. The second sees Bertrand Russell adopt a reverse course, inviting the peoples of the world to set aside all of their artificial differences for the sake of establishing a world government strong enough to guarantee the biological survival of the species at the cost of some of their freedoms. Lastly, we consider the third and far and away most popular response to the appearance of the hydrogen bomb: ignoring these questions entirely. Here I call particular attention to the influential legacy of Western antihumanists whose historically well justified anti-universalism appears to have carried the unfortunate side effect of causing them to overlook the new kinds of political challenge introduced by the prospect of what Russell came to term ‘universal death.’

“It was not until the dawn of the twentieth century of the Christian era that War really began to enter into its kingdom as the potential destroyer of the human race.”
 —Winston Churchill, “Shall We All Commit Suicide?” (1924)²

I. THE BEGINNING OF THE END OF THE WORLD

For a very long time, the prospect that human beings might themselves directly precipitate the end of all earthly human life appears to have been almost unthinkable before—in the span of just a few decades—coming to seem almost unavoidable. What was it that convinced so many generations that the earthly survival of humankind was a matter outside the influence of human hands? In its broadest outlines, the clearest impediment standing in the way of envisioning an immanent apocalypse was the confidence that Christian eschatology placed in the near-term prospect of a transcendent apocalypse. It had been promised that “the day of the Lord so cometh as a thief in the night,” and for roughly two millennia the prevailing expectation had been that the imminent end to the known world could conceivably arrive at any moment.³ Under such circumstances, it could be safely taken for granted that the transcendent God that had established human existence would sustain the order of things until the due time had come to conclude the cosmic drama. But this is only part of the answer for, as we will see shortly, even those Westerners who ceased to believe in the guarantees of revealed religions nevertheless took the endurance of earthly human existence for granted.⁴ What I would like to suggest here is that two very basic but abiding ideas about why things are what they are and how they remain that way may have played an outsized role in placing questions concerning collective human survival

² Winston Churchill, “Shall We All Commit Suicide” in *Nashe’s Pall Mall Magazine* (September 1924), pp 12-13, 80; 13.

³ 1 Thessalonians 5:2 (King James Version).

⁴ There are, by contrast, plenty of other traditions such as those of Egypt and Mesoamerica that made responsibility for ensuring the continuation of the existing world a basic feature of political rule. For further discussion, see: Phil Torres, *A History of Human Extinction* (New York: Routledge, forthcoming).

outside human powers to control. These were the belief in what was poetically termed a Great Chain of Being whose universal categories formed a series of necessary links suffusing existence and, allied to it, the belief in a crease in existence between the necessary, universal, and timeless things sustained by this natural order and contingent, particular, and transient things that owed their existence to human beings.

As detailed by the philosopher A.O. Lovejoy in his classic study of the subject, the Great Chain of Being designated a harmonious order of Nature whose goodness was synonymous with its fullness and within which every kind of living thing could be assigned its necessary place. The links of this chain comprised an unbroken series of beings arranged in a hierarchy running from the lowest kinds of terrestrial life to the highest celestial.⁵ This vision of a well-ordered cosmos had been advanced in Plato's *Timaeus*, extensively elaborated by Aristotle, and then taken more or less for granted with remarkable consistency down through the end of the eighteenth century.⁶ Each link in the chain comprised a different category of being. Although many of these categories shared generic traits (such as the wings of birds or the shells of mollusks), every link also possessed its own 'specific difference' in the form of at least one essential trait or capacity that universally belonged to its members alone and made their category of being ontologically unique. Within this hierarchy, humankind occupied the singular position of being, depending on how you looked at it, either the highest of the low or the lowest of the high. With their feet in the mud and their minds in the heavens, this category formed the crucial link in the chain spanning the divide between the earthly realm of flux, growth, and decay and the superlunary realm of timeless, rational perfection. While Plato and Aristotle remained much more subtle and

⁵ Arthur O. Lovejoy, *The Great Chain of Being* (Cambridge, MA: Harvard University Press, 1933), 58-66.

⁶ As the zoological survey of the planet began to reveal not all the links posited in the Great Chain were to be found on Earth, Emmanuel Kant attempted to salvage it by positing that the missing links existed on other inhabited planets elsewhere in the solar system or universe. *Ibid.*, 265-268.

circumspect on the subject than their later interpreters, it came to be understood that the categories that constituted natural kinds comprised what philosopher John Dewey aptly termed “a metaphysical or existential whole including and characterizing all particulars” that “as a class was ungenerated and indestructible, perfect and complete.”⁷

The categories of being handed down from antiquity offered two distinct but compatible ways to approach humans in their totality. One was to identify the category of human being as a natural kind according to the specific difference that belonged to them alone and set them apart as ontologically unique. Because every link in the Great Chain of Being must differ from every other in at least one trait or capacity, this meant that, as a natural kind, the human category of being possesses a ‘specific difference’ that sets all its members apart. Correctly define the specific difference of Man and you have a convenient shorthand for designating the set of all those beings that share this essence. Complementing the metaphysical category Man, human beings were also considered to universally share in the same physical substance that, as biologically sexed beings, they continually reproduced generation to generation. In this sense, Aristotle posited that one could speak of a kind biologically “if there is a continuous generation of things that have the same form, in the sense that ‘as long as there is a human kind’ means ‘as long as there is a continuous generation of human beings.’”⁸ For ‘kind’ he used the term ‘*eidōs*,’ meaning the look of a thing, which was translated into Latin as ‘*specere*’ before becoming

⁷ As he further notes on the subject, formerly “a species immutable in time and having form was the true individual. What moderns call individuals were particulars, transient, partial, and imperfect specimens of the true individual. Mankind as species is more truly an individual than was this or that man.” John Dewey, *Experience and Nature* (New York: Dover Publications Inc., 1958), 209-210. For a critical discussion of how the conclusion that “in a sense a species is a substance...led to endless bad metaphysics about unity,” see: Bertrand Russell, *A History of Western Philosophy* (New York: Simon and Schuster, Inc., 1945), 198.

⁸ Aristotle, *Metaphysics*, Trans. Joe Sachs (Santa Fe, NM: Green Lion Press, 2002), 105; 1024a30.

‘species’ in English.⁹ As various kinds of living thing, each biological species was understood to be endowed with a ‘specific nature’ that ensured that its members automatically did those things required to sustain the existence of the current generation and ensure the arrival of the next.¹⁰

So long as the Great Chain of Being remained in place, the harmonious order of terrestrial Nature guaranteed the continuous regeneration of all the kinds of biological life and the earthly survival of the human species. Aristotle had asserted that by bringing “male and female” together, “Nature thus periodically provides for the perpetuation of mankind as a species, since she cannot do so individually.”¹¹ This aspect of Aristotle’s thinking proved a particularly easy fit when Western thinkers later set about trying to fuse Aristotelian philosophy and Latin Christian theology in the thirteenth century, permitting the *Doctor Universalis* Thomas Aquinas to posit matter-of-factly that “since in things corruptible none is everlasting and permanent except the species, it follows that the chief purpose of nature is the good of the species; for the preservation of which natural generation is ordained.”¹² A few centuries later, this same synthesis allowed John Locke to pronounce confidently: “God having made Man, and planted in him, as in all other Animals, a strong desire of Self-preservation, and furnished the World with things fit for Food

⁹ Ernst Mayr, *Animal Species and Evolution* (Cambridge, MA: Harvard University Press, 1963), 16. Richard Richards, *The Species Problem: A Philosophical Analysis* (Cambridge: Cambridge University Press, 2010), 104.

¹⁰ Regarding ‘specific natures,’ the great historian of science Loraine Daston further illuminates: “Specific natures embrace the characteristic form of things, be they chestnut trees or copper or foxes, their properties (flowering, reddish, cunning), and their tendencies (to grow from seeds, to take a polish, to breed in the winter). Specific natures determine how a certain kind of thing— animal, vegetable, mineral— looks and behaves. It is possible to alter both appearance and conduct, but only by constraining or “doing violence to” specific nature....Specific natures define the dramatis personae and plots of the universe. Loraine Daston, *Against Nature* (Cambridge, MA: MIT Press, 2019), 7-8.

¹¹ Or, in the case of this particular quote, probably one of his pupils. *Oeconimica*, Trans. E.S. Forster (Oxford: Oxford University Press, 1920), 3-4; 1343b10-25. For what are much more likely to be Aristotle’s own words on the subject, see also: Aristotle, *Politics*, Trans. Joe Sachs (Newburyport, MA: Focus Publishing, 2012), 2; 1252a25. Aristotle, *Nicomachean Ethics* Newburyport, MA: Focus Publishing, 2002), 159, 1162a15.

¹² Thomas Aquinas, *Summa Theologica*, Part I (London: Burns Oates & Washbourne Ltd, 1922), 345 (Q. 98, Art. 1).

and Rayment and other Necessaries of Life, Subservient to his design, that Man should live and abide for some time upon the Face of the Earth, and not that so curious and wonderful a piece of Workmanship by its own Negligence, or want of Necessaries, should perish again, presently after a few moments continuance.”¹³ In this vein, Charles Louis de Secondat, Baron de Montesquieu could reference “the law of nature, which makes everything tend toward the preservation of species.”¹⁴ Montesquieu’s contemporary, the philosopher of history Giambattista Vico, could likewise marvel at how “this world without doubt has issued from a mind often diverse, at times quite contrary, and always superior to the particular ends that men had proposed to themselves; which narrow ends, made means to serve wider ends, it has always employed to preserve the human race upon this earth.”¹⁵ Even after skepticism towards the claims of revealed religion took root during the eighteenth century, faith in Nature could continue to anchor belief in the earthly immortality of the human species. Even avowedly anti-Christian encyclopedists such as Étienne Noël Damilaville could still affirm: “Nature has only two great goals, the preservation of the individual and the propagation of the species;” meaning that “one may conclude that the total number of men who inhabit the surface of the earth has been, is, and forever will be about the same in all times.”¹⁶ A few decades later, at the turn of the nineteenth century Emmanuel Kant could still matter-of-factly posit that “the first foresight of nature was that the human being as an

¹³ Continuing, “God, I say, having made Man and the World thus, spoke to him, (that is) directed him by his Senses and Reason, as he did the inferior Animals by their Sense, and Instinct, which he had placed in them to that purpose, so the use of those things, which are serviceable for his Subsistence, and given him as a means of his *Preservation*.” John Locke, *Two Treatises on Government*, Ed. Peter Laslett (Cambridge: Cambridge University Press, 1988), 205.

¹⁴ Montesquieu, *The Spirit of the Laws*, Trans. and Ed. Anne M. Cohler, Basia Carolyn Miller, Harold Samuel Stone (Cambridge: Cambridge University Press, 1989), 139.

¹⁵ Giambattista Vico, *The New Science*, Trans. Thomas Goddard Bergin and Max Harold Fisch (Ithaca, NY: Cornell University Press, 1970), 382-383.

¹⁶ Étienne Noël Damilaville, “Population” in *Encyclopedia Liberty: Political Articles in the Dictionary of Diderot and D’Alembert*, Ed. Henry Clark, Trans. Henry Clark and Christine Henderson (Indianapolis: Liberty Fund, 2016), 511, 528.

animal be preserved *for himself and his kind*.”¹⁷ A well-ordered Nature would see to the survival of her constituent kinds—human kind very much included.

At the same time, however, while it was believed that the order of terrestrial Nature bent towards ensuring the continuous generation of human beings,¹⁸ the Great Chain of Being provided a metaphysical safeguard that ensured the ultimate survival of humankind as an enduring category of being. This meant that, even as the naturalists of the early modern period began to accumulate evidence that Nature might not be as orderly as previously believed, it was still assumed that the essential categories of being would restock existence should calamity ever befall. And so, while study of the irregular orbit of comets by Edmund Halley in the early eighteenth century could inspire the idea that one might one day strike the Earth and kill all the human beings then-living, it could be equally taken for granted that the cosmic order would not suffer any of its links to be broken: members of the *animal rationale* could be trusted to spring up again on Earth like mushrooms after rain.¹⁹

To sum up, from antiquity through to the eighteenth century, the totality of all human beings could be addressed either metaphysically as an essential category comprising all those who possessed the specific difference of ‘humanity’ (however defined) *or* biologically as the self-perpetuating substance of the species whose members renewed the physical existence of their kind through continuous reproduction.²⁰ Crucially, these were taken to be two different ways of

¹⁷ Original italics. Emmanuel Kant, “Review of Moscati’s work *Of the Corporeal Essential Differences Between the Structure of Animals and Humans*,” in *Anthropology, History, and Education*, Ed. Günther Zöllner (Cambridge: Cambridge University Press, 2007), 79. See also: Emmanuel Kant, “Anthropology from a Pragmatic Point of View,” in *Ibid.*, 402.

¹⁸ David Stamos, *The Species Problem: Biological Species, Ontology, and the Metaphysics of Biology* (Lanham, MD: Lexington Books, 2003), 67.

¹⁹ For a discussion of this expectation in Halley and his contemporaries, see: Thomas Moynihan, *X-Risk: How Humanity Discovered Its Own Extinction* (Falmouth, UK: Ubranomic Media Ltd., 2020), 55-56.

²⁰ On the question of how human beings identify human beings, the conservative political philosopher Leo Strauss points out (in one of his characteristic observations straddling the fence between banality and

describing the same collection of beings, so that all members of the biologically reproducing species in Nature universally shared the same specific difference that defined the humanity of Man as a category of being. It was in this sense that the influential eighteenth century naturalist Georges-Louis Leclerc, Comte de Buffon, could write of both “the chain of successive individuals, which constitutes the real existence of the species” and “speech, which is a sign common to the whole human species.”²¹ In a similar vein, in his anthropological works Kant could endorse what he called “Buffon’s rule” that “the natural division into species and kinds in the animal kingdom is grounded on the common law of propagation.” This meant that “all human beings on the wide earth belong to one and the same natural species because they consistently beget fertile children with one another, no matter what great differences may otherwise be encountered in their shape. One can adduce only a single natural cause for this unity of the natural species, which unity is tantamount to the unity of the generative power that they have in common.”²² At the same time, Kant could write without contradiction of how the self-reproducing population of the species could also be understood in terms of “the characteristic property (*proprietas*) by which they differ” and that is “used as a basis for distinguishing them,” singling out the members of the category Man as “an animal endowed with the *capacity of reason*” that can make of itself a “rational animal.”²³

profundity), “All studies in social science presuppose that its devotees can tell human beings from other beings; this most fundamental knowledge was not acquired by them in classrooms; and this knowledge is not transformed by social science into scientific knowledge, but retains its initial status without any modification throughout.” Leo Strauss, *An Introduction to Political Philosophy*, Ed. Hilal Gildin (Wayne State University Press, 1989), 20.

²¹ Respectively: Georges-Louis Leclerc, Comte de Buffon, *Natural History*, Volume 2, Trans. James Smith Barr (London: H.D. Symonds, 1797), 273; *Ibid.*, Volume 3, 328. For further discussion, see: Siep Stuurman, *The Invention of Humanity* (Cambridge, MA: Harvard University Press, 2017), 305-309.

²² Emmanuel Kant, “Of the Differing Races of Human Beings” in *Anthropology, History, and Education*, 84-85.

²³ Emmanuel Kant, “Anthropology from a Pragmatic Point of View,” in *Ibid.*, 416.

Within the schema I have been describing, any definition of Man had to account for his seemingly unique capacity to alter specific natures and create local deviations from the otherwise universal patterns established by the encompassing order of Nature. These artificial, human-caused deviations from the natural order lacked the inherent power to sustain themselves that belonged to natural kinds. As such, it was held that human-generated things would only persist for as long as human beings continued to renew them. If left to their own devices, the products of human artifice would all return to their natural course—the piled stones tumbling back to earth, the forests retaking the fields, the domesticated animals turning feral, and a people’s once-cherished customs forgotten as if they had never been. Aptly summing up this longstanding Western schema, the philosopher Hans Jonas observes, “The immunity of the whole, untroubled in its depth by the importunities of man, that is, the essential immutability of Nature as the cosmic order, was indeed the backdrop to all of mortal man’s enterprises, including his intrusion into that order itself. Man’s life was played out between the abiding and the changing: the abiding was Nature, the changing his own works.”²⁴ It was in deference to this natural order of things that Vico asserted that “things do not settle or endure out of their natural state” and Thomas Hobbes could confidently declare that “nothing can be immortal which mortals make.”²⁵

In addition to their capacity to create human-made artifacts, human beings were further held to possess the power to work on their own specific natures. By doing so, groups of human beings could establish shared habits and customs that gradually accreted to form distinct cultures that bound and separated particular subsets of the broader biological species into discrete peoples. Within this schema, the differences between peoples were understood to be artificial, secondary,

²⁴ Hans Jonas, *The Imperative of Responsibility: In Search of an Ethics for the Technological Age* (Chicago: University of Chicago Press, 1984), 3.

²⁵ Vico, *The New Science*, 20. Thomas Hobbes, *Leviathan*, Ed. Edwin Curley (Indianapolis: Hackett Publishing Company, Inc, 1994), 210.

and malleable, while the essential similarities of kind were natural, primary, and unchangeable. Accordingly, all the incredible degree of differences between peoples could almost always be attributed to the contingent, particular, and transient results of human artifice.²⁶ Observers could accordingly differentiate between members of the species who had used their human capacities to develop highly artificial enclaves for themselves—the apex being the *polis* or *civitas*, whose inhabitants were correspondingly ‘civilized’—and those who developed their essentially human capacities to a lesser degree and remained closer to the universal life of the species in Nature, remaining ‘savage’ in the sense of ‘wild’ rather than ‘domesticated.’²⁷ At the same time, as classicist W.K.C. Guthrie points out, “An attractive aspect of the *nomos-physis* [convention-nature] antithesis is that it sponsored the first steps towards cosmopolitanism and the idea of the unity of mankind,”²⁸ with thinkers in antiquity already lamenting the artificiality of the division between civilized and barbarian.²⁹ At the same time, believing that all members of the human species differ only artificially and possess the same inherent capacities by Nature made it possible to imagine the eventual political reconciliation of all human beings. Following the medieval rediscovery of Aristotle in the West, it became increasingly common for political thinkers to begin with a philosophical definition of the category Man as he essentially is by

²⁶ The remainder being the effects of diet and climate, particularly the relative temperature that came from inhabiting spaces too close or too far from the equator. Stuurman, *The Invention of Humanity*, 117-123.

²⁷ Or more specifically, of the woods. See: Phillippe Descola, *Beyond Nature and Culture*, Trans. Janet Lloyd (Chicago: University of Chicago Press, 2013), 48-51.

²⁸ W.K.C. Guthrie, *The Sophists* (Cambridge: Cambridge University Press, 1971), 24.

²⁹ It is in this sense that the sophist Antiphon writes in a famous fragment: “We have thereby become barbarous toward each other, when by nature (*phusis*) we are all at birth in all respects equally capable of being both barbarians and Greeks. We can examine those attributes of nature that are necessarily in all men and are provided to all to the same degree, and in these respects none of us is distinguished as foreign or Greek. For we all breathe the air through our mouth and through our nostrils, and we laugh when we are pleased in our mind or we weep when we are pained, and we take in sounds with our hearing, and we see by the light with our sight, and we work with our hands and we walk with our feet. Antiphon, “On Truth,” in *Early Greek Political Thought from Homer to the Sophists*, Ed. Michael Gagarin and Paul Woodruff (Cambridge: Cambridge University Press, 1995), 244-245.

Nature and then proceed via deduction to arrive at an argument for the kind of political arrangements that would permit whatever was most human in Man to flourish to its fullest possible extent.³⁰ It was only in the mid-nineteenth century as the Great Chain of Being was becoming unstuck—and the belief in a fixed essence of Man increasingly implausible—that anyone thought to give this practice of deriving political prescriptions from a definition of Man a name.³¹ It aptly came to be termed ‘humanism.’³²

Western humanists took for granted that all human beings belonged to a fixed category with a definable specific difference, and that whatever unique trait or capacity might comprise the specific ‘humanity’ of the human was shared universally among the internally undifferentiated substance of the biologically human species. Accordingly, while humanists held that all human beings equally belong to the biological unity of the human species—proven anew every generation via procreation—they accepted being biologically human as a necessary but not

³⁰ In his *De Monarchia*, Dante begins by suggesting, “I say then that no quality which is shared by different species of things is the distinguishing capacity of anyone of them. For were it so, since this capacity is that which makes each species what it is, it would follow that one essence would be specifically distributed to many species, which is impossible. Therefore the ultimate quality of men is not existence, taken simply; for the elements share therein. Nor is it existence under certain conditions; for we find this in minerals too. Nor is it existence with life; for plants too have life. Nor is it percipient existence; for brutes share in this power. It is to be percipient with the possibility of understanding, for this quality falls to the lot of none but man, either above or below him.” Armed with this definition of the essence of Man, he proceeds to deduce the need for establishing a “universal civil order of mankind” that would guarantee “eternal peace” under a planetary monarch. Dante Alighieri, *De Monarchia*, Trans. F.J. Church (London: MacMillan & Co., 1879), 5.

³¹ Already by the 1840s, a young John Stuart Mill could point out how metaphysically antiquated this talk of ‘essence’ sounded, observing how, from antiquity until quite recently, it had been believed: “If *man* was a substance individual man, it was natural to conclude that the *essence* of man was something inherent in *man*, and by necessary consequence inherent in all individual men and forming their common essence....But this expression has no meaning when severed from the metaphysical theory out of which it grew. John Stuart Mill, *A System of Logic* in *The Collected Works of John Stuart Mill* Vol. 7 (Toronto: University of Toronto Press, 1974), 114.

³² Coined initially in Germany in the early nineteenth century as *Humanismus*. A large share of the credit for popularizing the term goes to the Swiss Renaissance scholar Jacob Burckhardt (who, incidentally, also played an outsized role in popularized ‘Renaissance’ as well). See: Tony Davies, *Humanism, Second Edition* (New York: Routledge, 2008), 11, 15-19.

sufficient condition when it came to political considerations. Where matters that pertained to the biological life of the species—such as birth, death, and the daily routines required to remain living—had been established by Nature and fell outside human powers to change, politics concerned not those areas in which all human beings are always substantially alike, but the ways in which particular groups used their distinctly human capacities to develop the kinds of artificial customs, culture, and laws that permitted them to distinguish themselves as different peoples and establish distinct political communities. Aristotle had helped to define ‘politics’ in these terms by claiming that, while all members of the human species found various ways to support their biological life, it was only in a well constituted city or *polis* that human beings were able to develop their distinctly human capacities and enjoy a particular form of ‘good life’ unique to this context. Having defined Man as a *zoon logon echon* or ‘an animal capable of reasoned speech,’ Aristotle offered his famous secondary definition of Man as a *zoon politikon*, meaning a ‘political animal’ or more literally that “a human being is by nature an animal meant for a city,” for it was only within the communicative intensity of a citizen body that the *zoon logon echon* could develop its characteristic humanity to its fullest.³³ Different thinkers from antiquity to high modernity have offered alternative definitions of Man and derived very different political prescriptions based on these definitions—whether Dante’s “power of percipient understanding,”³⁴ Rousseau’s “property of being a free agent,”³⁵ or the young Marx’s labor conceived as “conscious

³³ Aristotle, *Politics*, 4; 1253a1.

³⁴ “The ultimate quality of men...is to be percipient with the possibility of understanding.” Dante, *De Monarchia*, 5.

³⁵ “It is not so much the understanding that constitutes the specific difference between man and the other animals, as it is his property of being a free agent.” Jean Jacques Rousseau, *Rousseau: The Discourses and Other Early Political Writings*, Ed. and Trans Victor Gourevitch (Cambridge: Cambridge University Press, 1997), 141.

life-activity.”³⁶ However, while their preferred definitions might differ, Western humanists all shared the conviction that the human species is one by Nature, that as members of the category Man all human beings share a specific difference that is humanly definable, and that much of politics concerns the ways in which groups of human beings work to develop their distinctly human capacities together to enjoy a particularly good form of life distinct from the universal features of biological life shared by all without distinction.³⁷ In light of this, it is crucial to note: because Western humanists such as Aquinas, Locke, Montesquieu and Kant all held that the earthly survival of the human species had been guaranteed by the cosmic order of Nature, they took for granted that the worst political mistakes could only ever jeopardize the survival of the particular political communities in question or, at worst, that of the broader civilization to which they belonged. Political misadventures might get an entire people killed or enslaved, but the result would only be a ripple on the surface of the deep, abiding current that was the universal life of the biologically human species flowing on forever in Nature.

All the developments I have so far described came to a head in the eighteenth century. Ironically, hindsight reveals that right around the time that natural scientists were beginning to realize that the cosmic order of Nature may be far less fixed than previously believed, a new movement was striking out to use a new level of precision to at last definitively identify the essence of Man and then derive a correspondingly universal set of political rights and

³⁶ “The animal is immediately identical with its life-activity...Conscious life-activity directly distinguishes man from animal life-activity.” Karl Marx, *The Marx-Engels Reader*, Second Edition, Ed. Robert C. Tucker (New York: W.W. Norton & Co., 1978), 76.

³⁷ On this point, philosopher Martin Heidegger notes, “If one understands humanism in general as a concern that man become free for his humanity and find his worth in it, then humanism differs according to one’s conception of the ‘freedom’ and ‘nature’ of man. So too are there various paths toward the realization of such conceptions. The humanism of Marx does not need to return to antiquity any more than the humanism which Sartre conceives existentialism to be.” Martin Heidegger, “Letter on Humanism” (1946) in *Basic Writings*, Ed. David Farrell Krell (New York: Harper Perennial, 2008), 225.

institutional prescriptions. Often calling itself the ‘Enlightenment,’ this movement’s adherents drew an analogy with the ongoing successes of the Scientific Revolution to propose that the laws of political communities should not be based on the artificial—and therefore local and more or less arbitrary—customs, culture, and tradition of a given people, but instead on the nature of Man and the essential capacities that all members of the species share universally.³⁸ By establishing a set of institutions and political prescriptions valid for Man as he essentially is in all times and places, Enlightenment theorists hopes to establish a political order that both could and *should* be extended to all peoples.³⁹ This widely held view came to be epitomized at the end of the eighteenth century by the Marquis de Condorcet. Looking back at the benightedness of previous eras, the philosopher and mathematician reflected on how previously, “politics, in deciding what was just, always respected whatever was consecrated by habit, ancient customs and convention. It was not suspected that the rights of man were written in the book of nature and that to look for them in any other was to misunderstand and out-age them.”⁴⁰ It was only in his own era, he contended, that “after long periods of error, after being led astray by vague or incomplete theories, publicists have at last discovered the true rights of man and how they can all be deduced from the single truth: that *man is a sentient being, capable of reasoning and of acquiring moral ideas.*” Accordingly, Condorcet concluded that “the dissemination of enlightenment” held out “a

³⁸ Bruno Latour, *We Have Never Been Modern*, Trans. Catherine Porter (Cambridge, MA: Harvard University Press, 1993), 35-36.

³⁹ As Lovejoy puts the matter, “In nearly all the provinces of thought in the Enlightenment the ruling assumption was that Reason—usually conceived as summed up in the knowledge of a few simple and self-evident truths—is the same in all men and equally possessed by all; that this common reason should be the guide of life; and therefore that universal and equal intelligibility, universal acceptability, and even universal familiarity, to all normal members of the human species, regardless of differences of time, place, race, and individual propensities and endowments, constitute the decisive criterion of validity or of worth in all matters of vital human concernment.” Lovejoy, *The Great Chain of Being*, 288. See also: Stuurman, *The Invention of Humanity*, 263.

⁴⁰ Condorcet, “The Sketch” (1795) in *Condorcet: Political Writings* (Cambridge: Cambridge University Press, 2012), 69.

certain promise of the revolution that must one day include in its scope the whole of the human race.”⁴¹

Few of Condorcet’s enlightened contemporaries went further in considering the proper definition of the category Man and the political reconciliation of the species than Emmanuel Kant. “Nature makes nothing incomplete and nothing useless,” Aristotle had claimed.⁴² Two millennia later, Kant hazarded a guess as to what Nature might have had in store for Man, proposing: “A philosophical attempt to work out universal world history according to a plan of nature that aims at the perfect civil union of the human species, must be regarded as possible and even as furthering this aim of nature.”⁴³ He proceeded to suggest that the human species was by nature not merely rational, but irritable, evincing an “unsocial sociability” that drove its members to form conflicting communities.⁴⁴ Because “each people seeks to strengthen itself through the subjugation of neighboring peoples, either from the desire to expand or the fear of being swallowed up by the other unless one beats him to it,” and because the more rationally ordered peoples could generally be expected to triumph, Kant concluded that “war is like a mechanical device of Providence” helping to drive Man towards his eventual reunion.⁴⁵ Kant allowed that the resulting “salutary but harsh and stern” education offered by war could be expected to “extend through great hardship and almost to the extinction of the entire race,”⁴⁶ but nevertheless still

⁴¹ Ibid., 92.

⁴² From which he famously concluded that, accordingly, “nature has made them all for the sake of human beings.” Aristotle, *Politics*, 15; 1256b20.

⁴³ Kant, “Idea for a Universal History with Cosmopolitan Aim” in *Anthropology, History, and Education*, 118.

⁴⁴ “Here I understand by ‘antagonism’ the unsociable sociability of human beings,” Kant writes, “i.e. their propensity to enter into society, which, however, is combined with a thoroughgoing resistance that constantly threatens to break up this society. The predisposition for this obviously lies in human nature.” Ibid., 111.

⁴⁵ Kant, “Anthropology from a Pragmatic Point of View,” 425.

⁴⁶ Ibid., 423.

took for granted that “the species is immortal” and that ultimately “nature knows what is best for the species,” meaning that “*the perfect civil union of the human species, must be regarded as possible and even as furthering the aim of nature.*”⁴⁷ Accordingly, Kant famously concluded, “The character of the species, as it is known from the experience of all ages and by all peoples, is this: that, taken collectively (the human race as one whole), it is a multitude of persons, existing successively and side by side, who cannot *do without* being together peacefully and yet cannot *avoid* constantly being objectionable to one another. Consequently, they feel destined by nature to develop, through mutual compulsion under laws that come from themselves, into a *cosmopolitan society (cosmopolitismus)* that is constantly threatened by disunion but generally progresses toward a coalition.”⁴⁸ Someday, the pre-political unity of the species in Nature would come to be matched by an equally universal artificial order within which all of Man’s essential capacities could flourish and all disagreements be peaceably resolved. Although Kant believed that it would take many centuries of violent but salutary conflict before this sort of rational reunion could be achieved, he nevertheless suggested adopting this goal as what he termed “a regulative principle: to pursue this diligently as the destiny of the human race, not without grounded supposition of a natural tendency toward it.”⁴⁹

To a casual observer, the course of the nineteenth century might have seemed to confirm Kant’s expectations. As it unfolded, the more enlightened ‘civilized’ peoples militarily defeated the less enlightened, ‘savage’ or ‘barbarous’ members of their species and subjected the survivors to their tutelage. While wars between civilized peoples were becoming more terrible, they were also becoming rarer. Enlightening peoples were increasingly coming to resemble one another as

⁴⁷ Original italics. Kant, “Idea for a Universal History with Cosmopolitan Aim,” in *Ibid.*, 111-112, 118.

⁴⁸ Kant, “Anthropology from a Pragmatic Point of View,” 427.

⁴⁹ *Ibid.* For succinct discussion of the cultural imperialism underlying Enlightenment universalism, see: Chakrabarty, *Provincializing Europe*, 1-21. Stuurman, *The Invention of Humanity*, 342-345.

they dispensed with their idiosyncratic local customs and parochial traditions in favor of adopting rationalized patterns of behavior that fit the universal needs of all humans everywhere. And yet, at the same time that nineteenth century developments seemed to be proving Enlightenment political expectations correct in fact, they were undermining them in theory. Belief in the Great Chain of Being was rapidly waning (for reasons that will be addressed further in the following chapter). By the middle of the century, theories of biological evolution had begun to challenge the ancient idea that the continuously generating human species belongs to an essentially fixed of being, suggesting instead that all human traits had arisen through a contingent process of natural selection and calling into question whether humankind possessed any singularly defining trait at all.⁵⁰ The four thousand year history narrated by biblical cosmology was coming to be replaced by the discovery of geologically deep time stretching back millions or even billions of years into the past. Elsewhere, the physicists busy codifying the laws of heat distribution could point to their newly formulated Second Law of Thermodynamics and posit, as Lord Kelvin did, that “although mechanical energy is indestructible, there is a universal tendency to its dissipation, which produces gradual augmentation and diffusion of heat, cessation of motion, and exhaustion of potential energy through the material universe. The result would inevitably be a state of universal rest and death, if the universe were finite and left to obey existing laws.”⁵¹ Nature, it was becoming clear, might not harbor a permanent place for anything—least of all a biologically human species that had drifted in on the indifferent tides of evolution and now possessed nothing

⁵⁰ For an informative discussion of both the nineteenth century crisis in species essentialism and the ways this has been overstated, see: Richards, *The Species Problem*, 17.

⁵¹ However, himself a pious man, Kelvin hastened to add: “It is impossible to conceive either the beginning or the continuance of life, without an overruling creative power; and, therefore, no conclusions of dynamical science regarding the future condition of the earth can be held to give dispiriting views as to the destiny of the race of intelligent beings by which it is at present inhabited. Thank you to Phil Torres for bringing this work to my attention. Lord Kelvin, “On the Age of the Sun’s Heat,” *Macmillan’s Magazine*, vol. 5 (March 5, 1862), pp. 388-393.

to anchor it.

The philosopher Friedrich Nietzsche captured the dismal picture of human existence that resulted from the discovery of the laws of biological evolution and thermodynamics with a thumbnail sketch penned in 1873. Here he proposed: “In some remote corner of the universe, flickering in the light of the countless solar systems into which it had been poured, there was once a planet on which clever animals invented cognition. It was the most arrogant and most mendacious minute in the ‘history of the world’; but a minute was all that it was. After nature had drawn just a few more breaths the planet froze and the clever animals had to die. Someone could invent a fable like this and yet they would still not have given a satisfactory illustration of just how pitiful, how insubstantial and transitory, how purposeless and arbitrary the human intellect looks within nature.”⁵² Witnessing the transition taking place around him, Nietzsche had declared his famous “death of God” less out of a sense of pugnacious atheism, than in an effort to rouse his contemporaries to face up to the consequences of their own growing disbelief in a fixed, harmonious, and ultimately knowable cosmos established by some transcendent being. Although few put this point explicitly at the time, one of the most decisive consequences of this development is that the putative “death of God” canceled the apocalypse. As faith in Christian eschatology ebbed, the discovery of the deep past opened a parallel vista onto the newly unfurling deep future of a human species that could no longer live in daily expectation that the transcendent author of Nature would return to radically alter this order.

No longer linked to a Great Chain of Being or biding its time till the Second Coming, new questions concerning the long-term future of the human species entered into political

⁵² Friedrich Nietzsche, *The Birth of Tragedy and Other Writings*, Trans. Ronald Speirs (Cambridge: Cambridge University Press, 1999), 141.

consideration.⁵³ Nietzsche proceeded to anticipate where political thought would turn for those who maintained an Enlightenment concern with the ultimate fate of the species but lost the Enlightenment faith in a harmonious order of Nature. In the 1880s he presciently observed,

Since the belief has ceased that a God broadly directs the destinies of the world and that, all the apparent twists and turns in its path notwithstanding, is leading mankind gloriously upward, man has to set himself ecumenical goals embracing the whole earth. The former morality, namely Kant's, demanded of the individual actions which one desired of all men: that was a very naive thing; as if everyone knew without further ado what mode of action would benefit the whole of mankind, that is, what actions at all are desirable; it is a theory like that of free trade, presupposing that universal harmony must result of itself in accordance with innate laws of progress. Perhaps some future survey of the requirements of mankind will show that it is absolutely not desirable that all men should act in the same way, but rather that in the interest of ecumenical goals whole tracts of mankind ought to have special, perhaps under certain circumstances even evil tasks imposed upon them. In any event, if mankind is not to destroy itself through such conscious universal rule, it must first of all attain to a hitherto altogether unprecedented knowledge of the preconditions of culture as a scientific standard for ecumenical goals. Herein lies the tremendous task facing the great spirits of the coming century.⁵⁴

The century in question dawned to growing disbelief in the kind of fixed, essential categories of being that might undergird something like an essential human nature shared by all peoples. And yet, early twentieth century politics remained resolutely humanist, with the broad range of the political spectrum—from arch conservatives to liberals to socialists to communists to anarchists—professing to base their political prescriptions on a true definition of Man and his

⁵³ Capturing this sense of the disorientingly infinite horizon facing his generation, Nietzsche has his madman wonder, after declaring the death of God, “Whither are we moving? Away from all suns? Backward, sideward, forward in all directions? Is there still any up or down? Are we not straying as through an infinite nothing?” Friedrich Nietzsche, *The Gay Science*, Trans. Walter Kaufmann (New York: Vintage Books, 1974), 181.

⁵⁴ Friedrich Nietzsche, *Human, All Too Human* (Cambridge: Cambridge University Press, 1986), 25.

needs free of the fallacies that afflicted their rivals.⁵⁵ Where the first scions of the Enlightenment had posited that a true definition of Man would be the first step towards the universal reconciliation of the species and perpetual peace, now many different competing definitions of Man each claimed universal validity and placed their adherents sharply at odds. Free trading liberals, Marxist communists, and organismic fascists all shared equally universal but incompatible visions for the future of Man and the ultimate reconciliation of the human species. All could equally claim to be humanists intervening on behalf of the ultimate flourishing of the human species.⁵⁶ If it were true that the fate of the human species could no longer be guaranteed by a Great Chain of Being or providentially appointed order of Nature, then ‘evil tasks’ might well be necessary to ensure that the true servants of humanity prevailed. As one of the most consequential figures of this period chillingly put the matter: “I would prefer not to see anyone suffer, not to do harm to anyone. But when I realize the species is in danger, then in my case sentiment gives way to the coldest reason.”⁵⁷ The first half of the twentieth century would see many tens of millions killed in wars waged in the name of the ultimate flourishing of Man or the health of the human species.

It is one of history’s more conspicuous ironies that, after the ostensible death of God canceled the imminence of a transcendent apocalypse for many Westerners, the ensuing reprieve lasted less than the span of a single human lifetime. No longer expecting “a rupture in the apparent temporal continuity of history, a revelatory moment around which the past is given

⁵⁵ Stefanos Geroulanos, *An Atheism that Is not Humanist Emerges in France* (Stanford: Stanford University Press, 2010), 4-5.

⁵⁶ As Foucault wryly notes on this point, “Marxism has been a humanism; so have existentialism and personalism; there was a time when people supported the humanistic values represented by National Socialism, and when the Stalinists themselves said they were humanists.” Michel Foucault, “What Is Enlightenment?” in *The Essential Foucault*, Ed. Paul Rabinow (New York: The New Press, 2003), 52.

⁵⁷ Adolf Hitler quoted in Jonathan Schell, *The Fate of the Earth* and *The Abolition* (Stanford: Stanford University Press, 2000), xxi.

meaning and a radically new future is announced” (as McQueen aptly put it), Nietzsche envisioned the prospect of myriad eons of gray, vegetating satiety as what he termed the “last men”—who had “invented happiness” at the cost of eliminating human greatness—ran down the clock on existence.⁵⁸ In his *Thus Spoke Zarathustra*, Nietzsche had his titular prophet warn an assembled crowd:

Alas, the time is coming when man will no longer shoot the arrow of his longing beyond man, and the string of his bow will have forgotten how to whirl! I say unto you: one must still have chaos in oneself to be able to give birth to a dancing star. I say unto you: you still have chaos in yourselves. Alas, the time is coming when man will no longer give birth to a star...Behold, I show you the *last man*. “What is love? What is creation? What is longing? What is a star?” thus asks the last man, and he blinks. The earth has become small, and on it hops the last man, who makes everything small. His race is as ineradicable as the flea-beetle; the last man lives longest.⁵⁹

No longer dogged by the prospect of an apocalyptic end to the present order, Nietzsche and his *fin de siècle* contemporaries foresaw the prospect of a deep future that at once both guaranteed eventual human extinction while at the same time holding out the menacing prospect that the human species might outlive its reasons for living.

Reprising Nietzsche’s pathos two decades later, in 1904 the logician Bertrand Russell could point to the ultimate fate of the ‘clever animals who invented cognition’ in an entropic universe and lament how “all that we love is waning, waning from the dying world” and “the past, ever devouring the transient offspring of the present, lives by the universal death.”⁶⁰ For his

⁵⁸ “‘We have invented happiness,’ say the last men, and they blink. They have left the regions where it was hard to live, for one needs warmth...A little poison now and then: that makes for agreeable dreams. And much poison in the end, for an agreeable death.” Friedrich Nietzsche, *Thus Spoke Zarathustra*, Trans. Walter Koffman (New York: Penguin, 1966), 17.

⁵⁹ Ibid.

⁶⁰ Bertrand Russell, “On History” in *The Basic Writings of Bertrand Russell* (New York: Routledge, 2009), 505.

generation, it had become clear that, as Russell later elaborated, “the second law of thermodynamics makes it scarcely possible to doubt that the universe is running down, and that ultimately nothing of the slightest interest will be possible anywhere....The universe has crawled by slow stages to a somewhat pitiful result on this earth, and is going to crawl by still more pitiful stages to a condition of universal death.”⁶¹ Born the godson of John Stuart Mill in 1872, Russell would live long enough to give the phrase “universal death” new meaning exactly fifty years after first coining it. In 1904 the ‘death of God’ and the rise of thermodynamics had replaced the transcendent apocalypse with the guarantee of “universal rest and death” in the cosmically far future. In 1954 Russell took to the airwaves to declare the imminent near-term prospect of what he now called “universal death, sudden only for a minority, but for the majority a slow torture of disease and disintegration.”⁶² What was it that transformed universal death from a distant eventuality to a near term danger? In 1952 human beings found enough chaos within themselves to give birth to a star, bringing hydrogen fusion to Earth and transforming themselves into potentially “last men” in a far more literal sense than Nietzsche ever imagined.

As we will see shortly, it was ultimately the astral energies of the hydrogen bomb that reintroduced the prospect of an apocalyptic end to all earthly human life as an entirely immanent, this-worldly phenomenon. However, while what many believed to be the means to end the world only arrived in the 1950s, the prospect of this possibility turns out to have loomed increasingly large since the 1920s. It appears to have been the trauma of the First World War that first convinced some Westerners that not only was the biological life of the species no longer immortal, but that it might soon become killable. Stumbling out the far side of four years of

⁶¹ Bertrand Russell, “Has Religion Made Useful Contributions to Civilization” (1930) in *Why I Am Not a Christian* (New York: Simon and Schuster, Inc, 1957), 32.

⁶² Bertrand Russell, “Man’s Peril” in *The Collected Papers of Bertrand Russell*, Volume 28, Ed. Andrew G. Bone (New York: Routledge, 2003), 86.

industrialized slaughter, some observers could not help but notice that, while the Great War had profoundly accelerated the technical development of killing power, it had generated very little corresponding growth in political wisdom or progress towards perpetual peace. In 1924, the polymath biologist (and ardent eugenicist) J.B.S. Haldane summed up the new mood with his famous observation: “Man armed with science is like a baby armed with a box of matches.”⁶³ That same year, Winston Churchill (then known primarily as the disgraced author of Britain’s Gallipoli debacle) cut to the point with a provocatively titled pamphlet, “Shall We All Commit Suicide?” In it he warned readers that the next world war would fully dissolve any remaining distinction between civilian and soldier, pitting whole nations against one another in a battle to the death. “It is established,” he warned, “that nations who believe their life is at stake will not be restrained from using any means to secure their existence. It is probable—nay, certain—that among the means which will next time be at their disposal will be agencies and processes of destruction wholesale, unlimited, and perhaps, once launched, uncontrollable. Mankind has never been in this position before. Without having improved appreciably in virtue or enjoying wiser guidance, it has got into its hands for the first time the tools by which it can unfailingly accomplish its own extermination.”⁶⁴ In light of the incredible technological advancement witnessed during the Great War, he invited readers to speculate, “Might not a bomb no bigger than an orange be found to possess a secret power to destroy a whole block of buildings—nay, to concentrate the force of a thousand tons of cordite and blast a township at a stroke?”⁶⁵

Churchill did not suggest how such bombs might be built, but a decade earlier the futurist H.G. Wells had published a remarkably prescient novel in 1913 that envisioned a World War

⁶³ J.B.S. Haldane, *Daedalus, or, Science and the Future* (New York: E.P. Dutton & Company, 1924), 82.

⁶⁴ Churchill, “Shall We All Commit Suicide,” 13.

⁶⁵ *Ibid.*

being waged with ‘atomic bombs’ that combined Earnest Rutherford’s work on radioactive decay with Albert Einstein’s newly discovered equation that matter can be converted to energy at a rate proportional to the speed of light squared.⁶⁶ In 1923, Russell—having begun his second act as a public intellectual—sought to introduce the ongoing revolution in physics to a popular audience with his *The ABC of Atoms*. In the course of doing so, he offhandedly observed, “It is probable that the recent work on the structure of the atom will ultimately be used for making more deadly explosives and projectiles than any yet invented.”⁶⁷ In 1929, the Ford Foundation administrator (and surprisingly influential mid-twentieth century *eminence grise*) Raymond Fosdick summed up some of this growing disquiet with his *The Old Savage in the New Civilization*. Here he warned readers: “We now know that in atoms of matter there exists a store of energy incomparably more abundant and powerful than any over which we have thus far obtained control,” meaning that enough energy “to blow a modern city into oblivion [could be] compressed to a pound weight which might be held in the hand!”⁶⁸ Given this possibility, Fosdick concluded, “Humanity stands today in a position of unique peril. An unanswered question is written across the future: Is man to be the master of the civilization he has created, or is he to be its victim? Can he control the forces which he himself has let loose? Will this intricate machinery which he has built up and this vast body of knowledge which he has appropriated be the servant of the race, or will it be a Frankenstein monster that will slay its own maker?”⁶⁹

The following year, Sigmund Freud likewise posed the question of whether ‘man’ was to

⁶⁶ With the latter two thirds of the novel devoted to how the survivors of the atomic world war established a durable form of world government. H.G. Wells, *The World Set Free* (Leipzig: Bernhard Tauchnitz, 1914).

⁶⁷ Quoted in Ray Monk, *Bertrand Russell: The Ghosts of Madness* (New York: Free Press, 2001), 22.

⁶⁸ Raymond Fosdick, *The Old Savage in the New Civilization* (Garden City, NY: Doubleday, Doran & Company, Inc., 1929), 23.

⁶⁹ *Ibid.*, 21.

be the ‘master of civilization or its victim,’ summing up the anxieties of the previous decade with his famous 1930 essay *Civilization and Its Discontents*. While acknowledging the purely speculative character of applying his theories of the individual psyche to the psychodynamics of mass society,⁷⁰ he summed up the disquiet of the previous decade by positing that humankind might collectively be torn between a drive to draw together and reproduce that he termed ‘Eros’ and an alternative drive to divide and destroy that he termed ‘Death.’ Approached in these terms, Freud argued that “civilization” could best be understood as “a process in the service of Eros, whose purpose is to combine single human individuals, and after that families, then races, peoples and nations, into one great unity, the unity of mankind.”⁷¹ Caught between Eros and Death, he concluded,

The fateful question for the human species seems to me to be whether and to what extent their cultural development will succeed in mastering the disturbance of their communal life by the human instinct of aggression and self-destruction. It may be that in this respect precisely the present time deserves special interest. Men have gained control over the forces of nature to such an extent that with their help they would have no difficulty in exterminating one another to the last man. They know this, and hence comes a large part of their current unrest, their unhappiness and their mood of anxiety.⁷²

How then to save civilization and the human species? Freud was himself fairly pessimistic,⁷³ but

⁷⁰ In his 1927 *The Future of an Illusion*, Freud compares religious attachment to childhood disorders, claiming that “in just the same way, one might assume, humanity as a whole, in its development through the ages, fell into states analogous to the neuroses.” Sigmund Freud, *The Future of an Illusion*, Ed. James Strachey (New York: W.W. Norton & Co., 1989), 55. Several years later in *Civilization and Its Discontents*, Freud would acknowledge that, when diagnosing these social neuroses, “We should have to be very cautious and not forget that, after all, we are only dealing with analogies and that it is dangerous, not only with men but also with concepts, to tear them from the sphere in which they have originated and been evolved.” Sigmund Freud, *Civilization and Its Discontents*, Ed. James Strachey (New York: W.W. Norton & Co., 1989), 91.

⁷¹ *Ibid.*, 69.

⁷² *Ibid.*, 92.

⁷³ Sigmund Freud and Albert Einstein, *Why War?* Trans. Stuart Gilbert (Paris: International Institute of Intellectual Cooperation of the League of Nations, 1933).

for those of his contemporaries who believed a definitive solution to be possible, the answer lay in achieving the political unity of mankind under the aegis of a single sovereign world government able to prevent the outbreak of another Great War.⁷⁴

As Freud was writing *Civilization and Its Discontents*, H.G. Wells attempted to channel this mood of unrest, unhappiness, and anxiety into what he termed an “open conspiracy” to found a world government and save the species from self-annihilation. In his published invitation, Wells declared to prospective co-conspirators: “It is impossible to think of the world as secure and satisfactory until there exists a single world commonweal, preventing war and controlling those moral, biological and ecological forces that otherwise lead to wars.”⁷⁵ Announcing that it had now fallen to human beings to decide “whether our species...is to live or die,”⁷⁶ he grandly concluded his invitation to work towards world government by arguing: “Here and there chance may correct and supplement the efforts of our race and save us from the full penalties of our mistakes and negligencies, but saving the impact of some unimagined disaster from outer space, the ultimate decision of the fate of life on this planet lies now in the will of man.”⁷⁷ Having first imagined the possibility of atomic warfare in 1913, Wells would live just long enough to see the first actual atomic bombs dropped four decades later.

In the span of four decades, atomic chain reactions passed from being a source of science fiction in the 1910s to a locus of abstract dread in the 1920s to a hotbed of scientific research in the 1930s to becoming merely an engineering problem by the 1940s. Anyone interested in

⁷⁴ For a nuanced account of how longstanding expectations surrounding the advent of world government intersected with post-Versailles realpolitik to give rise to the League of Nations and its Comintern alternative, see Section I of Mark Mazower’s *Governing the World: The History of an Idea* (New York: Penguin Books, 2013).

⁷⁵ H.G. Wells, *The Open Conspiracy* (Garden City, NY: Doubleday and Doran, 1928), 131-132.

⁷⁶ *Ibid.*, 9.

⁷⁷ *Ibid.*, 156.

learning more about these developments can find many exemplary works on the subject elsewhere.⁷⁸ In the context of this study, I would like to call attention instead to the initial response that atomic weapons elicited when first revealed in August of 1945. For my purposes, it is important to note that the dawn of the ‘Atomic Era’ did not automatically immanentize the apocalypse for most observers. Instead, the first atomic weapons turn out to have been at once more *and* less devastating than the doomsayers of the 1920s had predicted: more devastating, because where someone like Fosdick had shuddered at the prospect of an atomic bomb equivalent to “150 tons of dynamite,”⁷⁹ the uranium bomb detonated over Hiroshima generated a yield of 15,000 tons of TNT equivalent; less devastating, because these weapons clearly threatened only regional destruction and could not jeopardize all human—let alone organic—life on Earth.

The scale of destruction that the first fission weapons offered was breathtakingly horrible, but not entirely unprecedented. The preceding phases of the Second World War had witnessed the British and the Americans wage methodical campaigns to destroy enemy population centers from the air. In the case of Japan, this meant that over half of the nation’s urban space had already been leveled before the Enola Gay ever took flight for Hiroshima.⁸⁰ In 1945, the new atomic weapons introduced a roughly thousand-fold quantitative increase in the efficiency with which population and industrial centers could be erased, but few perceived a qualitative break in

⁷⁸ In terms of breadth, nuance, and elegance, few books in this genre surpass Richard Rhode’s justly classic *The Making of the Atomic Bomb* (New York: Simon and Schuster, 1986). For a fascinating account of this history as seen over the shoulder of J. Robert Oppenheimer, see Ray Monk, *Robert Oppenheimer: A Life Inside the Center* (New York: Anchor Books, 2014).

⁷⁹ Fosdick, *The Old Savage in the New Civilization*, 23.

⁸⁰ At least sixty percent of Japanese urban space had already been destroyed by ‘conventional’ means before the atomic bombs were ever deployed. Curtis LeMay, the American general leading the undertaking, could boast grimly but truly, “We scorched and boiled and baked to death more people in Tokyo on that night of March 9-10 than went up in vapor at Hiroshima and Nagasaki combined.” Quoted in Daniel Ellsberg, *The Doomsday Machine: Confessions of a Nuclear War Planner* (New York: Bloomsbury, 2017), 262.

the kind of destruction offered. A US Army survey of the aftermath had little trouble tallying the number of ‘conventional’ weapons that would have been required to achieve the same result.⁸¹

In one of the first pieces of writing to be published in the wake of the atomic bombings, Russell returned to warn that, unless politics caught up to science quickly, “In the next war, if atomic bombs are used on both sides, it is to be expected that all large cities on both sides will be completely wiped out; so will all scientific laboratories and all governmental centres. Communications will be disrupted, and the world will be reduced to a number of small independent agricultural communities living on local produce, as they did in the Dark Ages.... Either war or civilization must end, and if it is to be war that ends, there must be an international authority with the sole power to make the new bombs.”⁸² Only a world government wielding a monopoly on atomic weapons could impose perpetual peace and save scientific civilization from self-destruction.⁸³ In his own oft-cited contribution from the atomic aftermath, Fosdick warned in the weeks following the bombings that the time had come for “one world or none.” If civilization were going to have any chance of surviving, he cautioned, the centuries-long learning curve that Kant had believed would mark the march towards world federation and perpetual peace would have to be dramatically compacted. Now, contemporaries had been

⁸¹ Hiroshima and Nagasaki had been left off previous lists of bomb targets to preserve them as pristine testing grounds for gauging the effectiveness of the new fission bombs. American military surveyors ultimately “estimated that the damage and casualties caused at Hiroshima by the one atomic bomb dropped from a single plane would have required 220 B-29s carrying 1,200 tons of incendiary bombs, 400 tons of high-explosive bombs, and 500 tons of anti-personnel fragmentation bombs, if conventional weapons, rather than an atomic bomb, had been used.” *The United States Strategic Bombing Survey: Summary Report* (Washington DC: Government Printing Office, 1945), 24.

⁸² Bertrand Russell, “The Atom Bomb” in *The Collected Papers of Bertrand Russell*, Vol. 24 (New York: Routledge, Forthcoming), 307-311; 310.

⁸³ Russell struck an even more grim tone in his correspondence, telling a friend in June of 1946, “I go about with the feeling that within 20 years England will have ceased to exist. It makes everything hectic, like the approach of closing time at a party in a hotel— ‘We are for the night.’ A few bombs will destroy all our cities, & the rest will slowly die of hunger.” Bertrand Russell, *The Autobiography of Bertrand Russell*, Volume 3 (London: Allen and Unwin, 1969), 44.

“summoned to accomplish in perhaps two or three decades, or even less, what we have failed to do in the long history of the race.”⁸⁴ In November of 1945 the generally conservative and nationalist *Reader’s Digest* saw fit to inform its millions of subscribers: “The atomic bomb has made political and economic nationalism meaningless....No longer merely a vision held by a few idealists, *world government has now become a hard-boiled, practical and urgent necessity.*”⁸⁵ Historian Paul Boyer highlights how the first several years of the atomic era witnessed “a remarkably diverse group of post-Hiroshima opinion-molders endorse world government as the answer to atomic threat,” with everyone from Manhattan Project alumni James Frank and Eugene Rabinowitch to the public intellectual Walter Lippmann to essayist and children’s author E.B. White all prominently joining the call.⁸⁶

While the atomic bombings had rattled the world, what ultimately kept Russell up at night was less the threat of existing atomic bombs than the even more devastating class of weapons this technology portended. Taking advantage of his peerage to address the British House of Lords in November of 1945, the Third Earl Russell proceeded to explain,

There are in theory two ways of tapping nuclear energy. One is the way which has now been made practicable, by breaking up a heavy nucleus into nuclei of medium weight. The other is the way which has not yet been made practicable, but which, I think, will be in time, namely, the synthesizing of hydrogen atoms to make heavier helium atoms....At present, this process has never been observed but it is held that it occurs in the sun and in the interior of other stars. It only occurs in nature at temperatures comparable to those you get in the inside of the sun. The present atomic bomb in exploding produces temperatures which are thought to be about

⁸⁴ Raymond Fosdick, “The Challenge: One World or None” in *The New York Times Sunday Edition* (September 2, 1945).

⁸⁵ Original italics. Stephen King Hall, “World Government or World Destruction” quoted in Paul Boyer, *By the Bomb’s Early Light* (New York: Pantheon, 1985), 35.

⁸⁶ *Ibid.*, 34-37.

those in the inside of the sun. It is therefore possible that some mechanism analogous to the present atomic bomb could be used to set off this much more violent explosion which would be obtained if one could synthesize heavier elements out of hydrogen.⁸⁷

Eager to give birth to a star, Edward Teller—the putative ‘father’ of the hydrogen bomb—began working on fusion designs well before the first fission devices had been successfully tested.⁸⁸ (It is because the resulting weapon uses the heat released by atomic fission to produce additional energy by igniting hydrogen fusion that the resulting class of weapon is alternatively called a ‘hydrogen,’ ‘fusion,’ or ‘thermonuclear’ bomb.) When the Soviet Union surprised the world—and stunned many Americans—by shattering America’s atomic monopoly with their own fission bomb in 1949, the Truman Administration greenlit a new crash program to produce the hydrogen or ‘super’ bomb. While it had been clear that fission was simply the first step towards fusion, it was less obvious, what—if any—military purpose this new scale of weapon would serve. Too big to be used for tactically against enemy combatants, the only obvious advantage that multi-megaton hydrogen weapons posed was as city-killers, justly earning them the moniker “weapons of genocide” by a minority faction within the American Atomic Energy Commission (AEC) opposed to their creation.⁸⁹

It turns out to have been the controversy surrounding the creation of the hydrogen bomb that reignited public discussion about whether or not humankind stood on the cusp of creating “tools by which it can unfailingly accomplish its own extermination” (as Churchill put it earlier). Fission bombs had first been accepted as merely civilization-threatening wonders of modern

⁸⁷ Bertrand Russell, *Has Man a Future?* (New York: Simon and Schuster, 1961), 20.

⁸⁸ For an account of “Teller’s baby” and the fantasies of male birth surrounding nuclear weapons development, see Carol Cohn’s classic essay, “Sex and Death in the Rational World of Defense Intellectuals” in *Signs*, Vol. 12, No. 4 (Summer, 1987), pp. 687-718; 700.

⁸⁹ Monk, *A Life Inside the Center*, 572.

military efficiency in part because of the impressive work that the United States military had done in keeping the new kinds of radiological damage these weapons caused a state secret.⁹⁰ One of the first people to prominently discuss the novel kinds of radiological harms that atomic weapons caused was Albert Einstein. Although a purely theoretical physicist himself, Einstein took advantage of his world fame to voice some of his colleagues' anxieties about the hydrogen bomb in a televised message in February of 1950, during which he suggested, "The H-bomb appears on the public horizon as a probably attainable goal...If successful, radioactive poisoning of the atmosphere, and hence annihilation of any life on earth, has been brought within the range of technical possibilities."⁹¹ A few weeks later, the brilliant physicist (and, ironically, the person who had convinced Einstein to pen the letter to Roosevelt that helped launch the Manhattan Project)⁹² Leo Szilard shocked both his fellow panelists and the viewing public when he interrupted a nationally televised round table on the feasibility of the 'super' bomb by interjecting (seemingly apropos of nothing): "I have asked myself: How many neutrons or how much heavy hydrogen do we have to detonate to kill everybody on earth by this particular method? I come up with about fifty tons of neutrons as being plenty to kill everybody, which means about five hundred tons of heavy hydrogen."⁹³ These back-of-the-envelope calculations prompted debate among the assembled experts about the conditions required to create "a radioactive dust layer on

⁹⁰ Photographs and testimonies of radiation victims were systematically confiscated and censored in American occupied postwar Japan and US authorities embarked on a series of active disinformation campaigns to downplay radiation dangers. See: Janet Farrell Brodie, "Radiation Secrecy and Censorship after Hiroshima and Nagasaki" in *Journal of Social History*, Vol. 48 No. 4 (2015), pp. 842-864.

⁹¹ He continued, "The ghostlike character of this development lies in its apparently compulsory trend. Every step appears as the unavoidable consequence of the preceding one. In the end there beckons more and more clearly general annihilation." Reproduced in Albert Einstein, "Arms Can Bring No Security" in *The Bulletin of the Atomic Scientists*, Vol. 6 No. 3 (March 1950), 71.

⁹² Rhodes, *The Making of the Atomic Bomb*, 306-308.

⁹³ This conversation was originally broadcast on NBC's University of Chicago Round Table of February 26, 1950. The transcript comes from Hans Bethe, Harrison Brown, Frederick Seitz, and Leo Szilard, "The Facts About the Hydrogen Bomb" in *The Bulletin of the Atomic Scientists*, Vol. 6, No. 4 (1950), pp.106-109; 107.

the surface of the earth” under which “everyone would be killed.” Ultimately, the moderator—nuclear chemist Harrison Brown—grimly concluded: “We are in agreement that if the hydrogen bomb works, world-wide destruction on an unprecedented scale will be possible. First, entire cities of the size of New York, Chicago, and London could be destroyed by the blast effect. But, far more important, radioactivity could be produced and could be scattered over the countryside in such a way that all life on earth, or at least most life on earth, could be destroyed.”⁹⁴ Where the direct ‘blast effects’ had threatened cities and civilization, discussions surrounding the hydrogen bomb introduced the public to the idea that nuclear devices risked irradiating every inch of the planet and, with it, directly poisoning every living human being.⁹⁵

The United States military brought the radioactive poisoning of the atmosphere into the range of technical possibilities on November 1, 1952, when it initiated the first hydrogen fusion reaction to have taken place outside the center of the sun in the history of our solar system. The Ivy Mike test shot detonated with 700 times the explosive yield of the device the leveled Hiroshima. Painting a vivid picture of the immediate aftermath of Ivy Mike, historian Richard Rhodes writes, “Swirling and boiling, glowing purplish with gamma-ionized light, the expanding fireball began to rise, becoming a burning mushroom cloud balanced on a wide, dirty stem with a curtain of water around its base that slowly fell back into the sea. In a minute and a half, the enlarging fireball cloud reached 57,000 feet; in two and a half minutes...the cloud passed 100,000 feet. After five minutes, the cloud splashed against the stratopause and began to spread

⁹⁴ Ibid., 109.

⁹⁵ This is not to say, however, that everyone agreed either with this conclusion or the way it had been presented. The Cornell physicist and eventual Nobel Laureate Hans Bethe believed that Szilard had unduly overstated the universal killing power of hydrogen weapons and, in doing so, needlessly devalued the far less speculative horrors these weapons held in store. See: William Lanouette and Bela Silard, *Genius in the Shadows: A Biography of Leo Szilard* (Chicago: University of Chicago Press, 1994), 373. For Bethe’s own more qualified take on “how we can save humanity from this last disaster,” see Hans Bethe, “The Hydrogen Bomb” in the *Bulletin of the Atomic Scientists* April Vol. 6, No. 4 (1950), 103.

out, its top cresting at twenty-seven miles, its stem eight miles across.”⁹⁶ Where the kiloton blasts of earlier fission weapons had devastated the local area and cast a plume of irradiated fallout over a range of several dozen miles depending on that day’s wind, the blast of Ivy Mike punched a hole into the upper atmosphere, creating a convection current that sucked large volumes of radioactive material above the clouds to the height where permanent gale force winds could whip it around the planet.⁹⁷ Ivy Mike excised the island of Elugelab from the Enewetak Atoll, leaving behind a lagoon two hundred feet deep and a mile across and lofting roughly eighty million tons of solid material—some of which reached the stratosphere to form the first plume of ‘global fallout’ to be powdered across the face of the Earth.⁹⁸ (Figures 1.1 and 1.2) The resulting “mindboggling increase in the explosive force that hydrogen bombs represented” has aptly been termed “a thermonuclear revolution on top of the atomic revolution.”⁹⁹

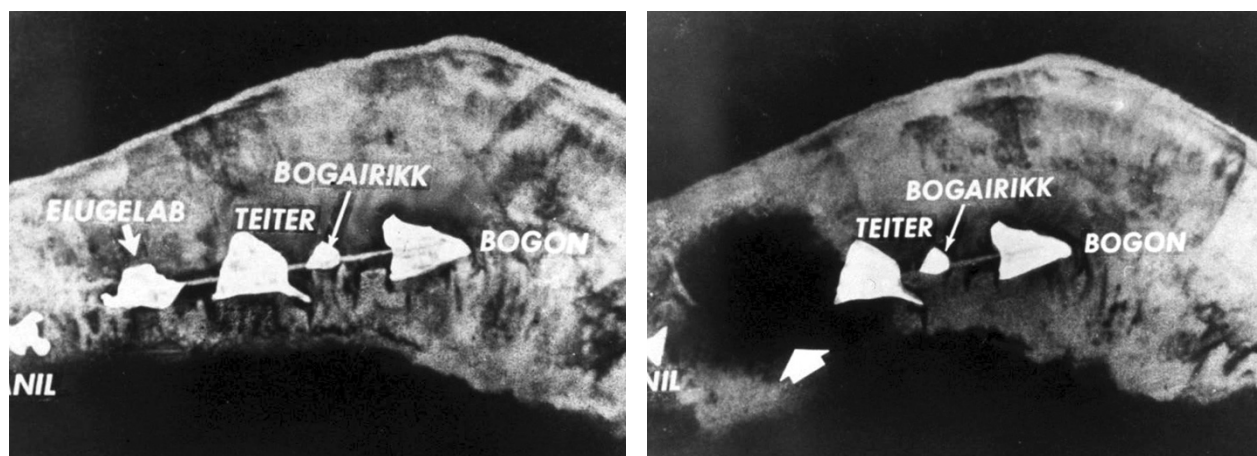


Figure 1.1
The excision of Elugelab.¹⁰⁰

⁹⁶ Richard Rhodes, *Dark Sun* (New York: Simon and Schuster, 1996), 509.

⁹⁷ This being a mix of irradiated material from the surrounding area and unfissioned uranium and plutonium from the bomb itself, only a fraction of which goes supercritical in the instant before the release of energy pushes the molecules apart and curtails the fission chain reaction.

⁹⁸ *Ibid.*, 509-510.

⁹⁹ Rens van Munster and Casper Sylvest, *Nuclear Realism: Global Political Thought During the Thermonuclear Revolution* (New York: Routledge, 2016), 39.

¹⁰⁰ Digital image from Wikimedia Commons. Accessed 1 June 2022.

https://commons.wikimedia.org/wiki/Category:Ivy_Mike#/media/File:Ivy_Mike_-_Elugelab_pt1.jpg



Figure 1.2
The cloud produced by the ten megaton Ivy Mike fusion test, November 1952.¹⁰¹

¹⁰¹ Digital image from Wikimedia Commons. Accessed 1 June 2022.
https://commons.wikimedia.org/wiki/File:Ivy_explosion.JPG

Dwight D. Eisenhower won the United States presidential election the same day as the covert Ivy Mike test in November of 1952. The former five star general was reportedly “disturbed” to discover the new scale of weapon being handed to his administration.¹⁰² With whispers of the still officially secret test circulating among awed servicemen and radiation sensitive devices spiking across the Northern Hemisphere, Eisenhower took the opportunity of his Inaugural Address on January 20, 1953 to obliquely register the magnitude of these developments. “How far have we come in man's long pilgrimage from darkness toward the light?” he asked with apparent earnestness, continuing,

Are we nearing the light—a day of freedom and of peace for all mankind? Or are the shadows of another night closing in upon us? Great as are the preoccupations absorbing us at home, concerned as we are with matters that deeply affect our livelihood today and our vision of the future, each of these domestic problems is dwarfed by, and often even created by, this question that involves all humankind. This trial comes at a moment when man's power to achieve good or to inflict evil surpasses the brightest hopes and the sharpest fears of all ages. We can turn rivers in their courses, level mountains to the plains. Oceans and land and sky are avenues for our colossal commerce. Disease diminishes and life lengthens. Yet the promise of this life is imperiled by the very genius that has made it possible. Nations amass wealth. Labor sweats to create—and turns out devices to level not only mountains but also cities. Science seems ready to confer upon us, as its final gift, the power to erase human life from this planet.¹⁰³

No one halfway aware of ongoing developments would have had any doubt what Eisenhower had in mind with that last line. It was time for political thinkers to begin to come to grips with how the power to erase all human life from the planet had just introduced a new set of questions that

¹⁰² Spencer Weart, *The Rise of Nuclear Fear* (Cambridge, MA: Harvard University Press, 2012), 80.

¹⁰³ Dwight Eisenhower, “Inaugural Address,” 20 January 1953. The American Presidency Project, University of California Santa Barbara. <https://www.presidency.ucsb.edu/documents/inaugural-address-3>. Accessed 20 March 2022.

involved all humankind in a far more concrete way than previous generations of humanists could have ever imagined.

“The atom bomb, as the problem of mankind’s very existence, is equaled by only one other problem: the threat of totalitarian rule, with its terroristic structure that obliterates all liberty and human dignity. By one, we lose life; by the other, a life that is worth living. Both extreme possibilities bring us today to an awareness of what we want, how we would wish to live, what we must be prepared for.”

—Karl Jaspers, *The Atom Bomb and the Future of Man* (1958)¹⁰⁴

II. THE ORIGINS OF ALL OR NOTHING IN POLITICS

A month after Eisenhower’s ominous Inaugural Address, the German émigré political theorist Hannah Arendt wrote to her dear friend and former doctoral advisor, the existentialist philosopher Karl Jaspers, to tell him in a letter dated February 19, 1953, “I’m picturing to myself that it’s Monday and that I’m in your house, which is so dear and familial to me, and that I have a few minutes alone with you and feel free to say to you in the spoken word what in the written one sounds stupid and pompous.”¹⁰⁵ Arendt understandably declined to specify what it was she would have liked to discuss. Instead, she turned to her thought journal (or *Denktagebuch*) midway through that same February to pen a remarkable series of reflections about some of the political consequences that might arise now that atomic war threatened to ‘erase human life from this planet.’ Some of Arendt’s friends once declared her to be “catastrophe-minded,” and perhaps nothing better earns her this sobriquet than the speed with she began to extrapolate the potential

¹⁰⁴ Karl Jaspers, *The Atom Bomb and the Future of Man*, Trans. E.B. Ashton (Chicago: University of Chicago Press, 1961), 4.

¹⁰⁵ Hannah Arendt to Karl Jaspers, February 19, 1953, in Hannah Arendt and Karl Jaspers, *The Arendt-Jaspers Correspondence*, Ed. Lotte Kohler and Hans Saner, Trans. Robert and Rita Kimber (New York: Harcourt Brace Jovanovich, 1992), 206.

implications of hydrogen weapons.¹⁰⁶

The *Denktagebuch* entry in question marks one of the first pieces of political reflection to be composed in the aftermath of the Ivy Mike test. It sets the tone for much of Arendt's subsequent thinking on the subject and rewards being read at length. With the planet's first plume of global fallout still swirling, she writes,

On the war question: One can risk one's life for something because one knows that one has to die; that in the worst case you give up something that will be taken from you anyway. If we were immortal (not like the gods, who are doomed to exist and for whom there is no freedom at all) in such a way that we could die—but did not need to—then we could conceive of no use [*Einsatz*] for the sake of which life could be risked: life would have become absolute as such, outside of which there would be absolutely nothing. One can only sacrifice one's life for freedom because beyond one's own life there is the life of the human race going on beyond it. In the case of a possible immortality of one's life, life as such becomes absolute in the sense that all so-called “values” can only take their place within it. Every people, and ultimately the human race, finds itself in exactly this case of potential—but not guaranteed—immortality. National politicians can hence arguably risk the political power and even the political freedom of their peoples, but never their physical existence itself, because this is precisely the foundation on which such a policy can exist at all. Because a people is potentially immortal, it can never be put at stake for anything else. All politics finds its limit in the fact that it has to respect, support, guarantee, etc. this possibility. All of this applies to a far greater extent to humankind [*Menschheit*]. There is no war that could put the very existence of humankind [*Menschheit*] at play. And precisely this has become a possibility; a possible and dreaded risk. Freedom, justice, etc. become empty words when the physical survival of humankind [*Menschheit*] or the earthly survival of its habitation, the Earth, are affected. The moment the destruction of all life on the Earth or the destruction of the Earth itself is even thinkable as a kind of “*surprise*

¹⁰⁶ Elizabeth Young-Bruehl, *For the Love of the World* (New Haven: Yale University Press, 2004), 299.

de technique,” no people can be expected to risk war...Until now, peace at any price was either the watchword of slave-souls or a fundamentally non-political rejection of all violence. Today, however, peace at any price only means: living on at any price—and not for individuals, who cannot anyway because they are mortal, but for the human race. Freedom, justice etc. can only exist as long as there are people. The existence of all human beings can therefore never be jeopardized for human affairs and ideals. When the means of violence have been developed to the point that their collective manipulation may result in absolute destruction, the moment has come to remove them from politics altogether.¹⁰⁷

Here we see Arendt begin to extrapolate the political consequences that arise when what had previously been conceived as the immortal life of the human species for the first time enters into political consideration as something that can now conceivably be jeopardized by war. This novel prospect in turn calls into question the validity of all “so-called values” that depend on continued human existence for their relevance. If political goods such as freedom and justice only endure for as long as there are people, then might it not be the case that these ideals risk becoming ‘empty words’ when war threatens the earthly survival of humankind? If the advent of thermonuclear weapons make war an existentially risky prospect, then what becomes of the political freedoms whose ultimate guarantee rests on the willingness of a sovereign political community to use the means of violence available to them in their defense? To understand how Arendt initially set about answering these questions and the consequences that the immanentization of the apocalypse had for her and other contemporaries’ political thinking, it will be helpful to first backtrack slightly to consider where Arendt’s previous studies of politics had left her on the eve of the hydrogen bomb.

Arendt had fled Germany for Paris shortly after the Nazi takeover and narrowly escaped

¹⁰⁷ Here as elsewhere, this is my translation unless otherwise noted. Hannah Arendt, *Denktagebuch* (Munich: Piper, 2002), 306-307.

deportation to a concentration camp following the fall of France before arriving in the United States in 1941.¹⁰⁸ She published her study *The Origins of Totalitarianism (Origins)* a decade later in 1951. This was the same year that she herself received what she called “the most beautiful book I know, namely a passport.”¹⁰⁹ Some in her newly adoptive country might have found *Origins* fitting repayment. To the incipient cold warrior, Arendt’s study offered an important theoretical contribution to the cause. Not only did *Origins* diagnose totalitarianism as a unique form of political pathology, but it also established a direct equivalence between Stalin’s Soviet Union and Hitler’s Germany as equal exemplars of a new disease of power that differed only in the ideological fig leaves they wore. While the Nazis borrowed from Darwinian biology and the Soviets twisted Marx, Arendt asserted that both regimes departed from time-honored tyranny into new territory based on a drive to not merely suppress human freedom, but to target “human nature itself.”¹¹⁰

In *Origins*, totalitarianism takes shape as a kind of Enlightenment universalism gone mad. Rather than slowly work towards a political order fit for the fully developed humanity of Man that could be extended to the entire species, totalitarians worked backwards. They seek, first, to achieve global conquest and subordinate the entire human species to their rule and, second, to then render that rule permanent by refashioning the human nature of their victims to conform to the requirements of their system. “What totalitarian ideologies aim at is not the transformation of the outside world or the revolutionizing transmutation of society,” Arendt cautioned, “but the transformation of human nature itself. The concentration camps are the laboratories where

¹⁰⁸ Young-Bruehl, *For the Love of the World*, 155-160.

¹⁰⁹ Letter to Günther Anders. Hannah Arendt and Günther Anders, *Schreib doch mal hard facts über dich: Briefe 1939 bis 1975*. Ed. Kerstin Putz (Munich: Piper & Co, 2018), 82.

¹¹⁰ Hannah Arendt, *The Origins of Totalitarianism* (New York: Schocken Books, 2004), 235, 576. Arendt places greater emphasis on this point in the 1953 essay “Ideology and Terror” appended to the second edition. See: *Ibid.*, 596-597.

changes in human nature are tested, and their shamefulness therefore is not just the business of their inmates and those who run them according to strictly 'scientific' standards; it is the concern of all men... Human nature as such is at stake, and even though it seems that these experiments succeed not in changing man but only in destroying him, by creating a society in which the nihilistic banality of *homo homini lupus* is consistently realized, one should bear in mind the necessary limitations to an experiment which requires global control in order to show conclusive results."¹¹¹ Because totalitarianism seeks to refashion human nature to suit its needs rather than the reverse, Arendt argued, "theoretically total domination is possible only under the conditions of world rule."¹¹² In *Origins*, totalitarian aspirations for total domination, the mutilation of human nature, and global rule all coincided in the conspicuously privileged place that totalitarian systems afforded to the police, where, "The emphasis on the police as the sole organ of power, and the corresponding neglect of the seemingly greater power arsenal of the army, which is characteristic of all totalitarian regimes can still be partially explained by the totalitarian aspiration to world rule and its conscious abolition of the distinction between a foreign country and a home country" under conditions where "the totalitarian ruler conducts his policies on the assumption of an eventual world government."¹¹³ To any cold warrior advocating a policy of 'containment' towards the Soviet Union, this conviction that the logic of totalitarianism demands world conquest would have been a welcome confirmation. In sum, where Kant and other Enlightenment thinkers had looked forward to the advent of perpetual peace under a cosmopolitan order that would eventually develop the full humanity of Man and come to be rationally accepted by the entire human species, Arendt's totalitarians instead sought to impose

¹¹¹ Ibid., 591.

¹¹² Ibid., 545.

¹¹³ Ibid., 543.

the perpetual peace of a global police state that maintained its domination through total dehumanization.

Having conjured this nightmare vision of totalitarianism over the course of the 1940s and published it in 1951, it may now be a bit clearer why the appearance of the hydrogen bomb struck Arendt so acutely and so quickly. Picking up where the section of the *Denktagebuch* entry quoted earlier left off, she concludes this initial reflection on the immanentization of the apocalypse by observing how,

When the means of violence have been developed to the point that their collective manipulation may result in absolute destruction, the moment has come to remove them from politics altogether. This means, however, that violence may only be used against individuals and within the framework of a community [*Gemeinwesen*]. The result of this is that only the police are allowed to own violent means and that armies and the military necessarily lose their importance with the further development of technology. In other words: the same shift of emphasis from the army to the police as is realized in the totalitarian forms of government! This fateful development seems inevitable when one looks at humankind [*Menschheit*] as a whole.¹¹⁴

Having just diagnosed a fixation on humankind as a whole, the drive to establish world government, and the shift from army to police as telltale symptoms of totalitarianism, Arendt abruptly finds herself confronted by the prospect that the newly ‘absolute’ form of total destruction introduced by hydrogen weapons calls for precisely the kind of world government she had just denounced. Quite abruptly, war had become incompatible with earthly human survival and would have to be removed from the political arena as soon as possible. Human beings would no longer have the luxury of centuries to develop the better angels of their essential nature and establish perpetual peace through a gradually refined, rationally agreed upon cosmopolitan order.

¹¹⁴ Arendt, *Denktagebuch*, 307

In the final pages of *Origins*, Arendt had argued, “Only the claim to global rule has made us aware that mankind is no longer a beautiful dream of unity or a dreadful nightmare of strangeness, but a hard inescapable reality.”¹¹⁵ The fact that totalitarian movements wanted to subordinate the human species to their total rule had given the whole of ‘mankind’ a common cause in resisting totalitarianism that had transformed this totality into a ‘hard inescapable reality.’ Now, it was no longer the menace of total global rule but also total global annihilation that required that political thinkers take humankind as a whole into consideration. But were there ways of addressing the immediate challenges facing the totality of all human beings that were not themselves ‘totalitarian’ almost by definition? Arendt would return to explore this question from several different angles over the course of the next three years.

Building on the initial reflections jotted in her February 1953 *Denktagebuch* entry, Arendt offered her first public thoughts on this radically new prospect in a 1954 essay titled “Europe and the Atom Bomb.” Earlier, she had mused how “freedom, justice, etc. become empty words when the physical survival of humankind or the earthly survival of its habitation, the Earth, are affected.” Now, she returned to the topic to consider what—if anything—freedom might mean under these transformed circumstances, calling particular attention to what she terms the “unpredictability inherent in the very concept of freedom.” In this case, she argued, the exercise of political freedom differs from rote administration because its outcomes cannot be determined in advance, meaning that free peoples can make no ultimate guarantees—least of all that they will remain free, for the “attempt to ensure permanence of freedom would not only kill all political life, but would abolish even that margin of unpredictability without which freedom cannot

¹¹⁵ *Ibid.*, 625.

exist.”¹¹⁶ The unpredictability inherent in political freedom takes on a newly disturbing edge when combined with the prospect that a politically free people might under some circumstances decide to defend their sovereign freedom by resorting to war, which might become nuclear war, and thereby jeopardize the earthly survival of all human life. The problem as Arendt now saw it was that the traditional Western notion of a political community’s sovereign freedoms had been based on what she terms “the conviction that it is better to be dead than to be a slave.”¹¹⁷ Those who enjoyed political freedom had to be prepared either to defend the political community whose artificial confines made their freedom possible or, if they were unwilling to risk their lives in defense of their freedom, to accept life as slaves under whatever conditions their conquerors might impose. As she had noted earlier in her journal, previously “peace at any price was either the watchword of slave-souls or a fundamentally non-political rejection of all violence.” Unforeseeable in its outcome, the exercise of political freedom might require that a citizen be willing to kill or die in its defense, placing political freedom in tension with biological life and leading to what Arendt calls “a political philosophy that, since the ancients, has considered courage to be the political virtue *par excellence*, the one without which political freedom is wholly impossible.” Courage had enjoyed its privileged place based on a “pre-Christian philosophy which deemed that life is not the most sacred good and that there are conditions on which it is not worth having.” These conditions arose, she further notes, “whenever the individual man was utterly delivered to the necessities of preserving sheer animal life, and therefore was judged incapable of freedom.”¹¹⁸

Three years earlier, Arendt had decried totalitarianism as a totally dehumanizing form of

¹¹⁶ Hannah Arendt, “Europe and the Atom Bomb” in *Essays in Understanding*, Ed. Jerome Kohn (New York: Schocken Books, 1994), 420.

¹¹⁷ *Ibid.*

¹¹⁸ *Ibid.*

rule capable of reducing its victims to undifferentiated instances of the sheer animal life of the species and urged her readers to summon the courage to resist totalitarian encroachment by whatever means necessary. By the time of “Europe and the Atom Bomb,” however, she realizes that the traditional injunction to live free or die in the defense of freedom runs into trouble, for “no human courage would be conceivable if the condition of individual life were the same as that of the species.”¹¹⁹ No previous generation of Western political thinkers had ever had to consider the possibility that in courageously risking their biological lives to protect the good life enjoyed by the free members of their particular political community they might jeopardize the universal, formerly immortal life of the species itself. Instead, Arendt cautions,

By putting in jeopardy the survival of mankind and not only individual life or at most the life of a whole people, modern warfare is about to transform the individual mortal man into a conscious member of the human race, of whose immortality he needs to be sure in order to be courageous at all and for whose survival he must care more than for anything else. Or, to put it another way, while there certainly are conditions under which individual life is not worth having, the same cannot be true for mankind. The moment a war can even conceivably threaten the continued existence of man on earth, the alternative between liberty and death has lost its old plausibility.¹²⁰

It was obvious that nothing in the history of Western political thinking had prepared the tradition for grappling with the possibility that the ‘existence of man on earth’ might come to depend directly on political outcomes or hinge precariously on that ‘margin of unpredictability’ that defines true freedom. What might it mean to become a “conscious member of the human race” and cease to take the immortality of the species for granted in political decisions? She concludes the essay without venturing an answer.

¹¹⁹ Ibid., 421.

¹²⁰ Ibid., 422.

Arendt further probes the new political terrain opened by the immanentization of the apocalypse in another essay titled “Karl Jaspers: Citizen of the World.” Published in 1957 but with the first draft completed by as early as the spring of 1953, this essay was intended to be an account of Jaspers’ cosmopolitan political philosophy.¹²¹ However, in appraising his former pupil’s work, Jaspers declared, “Hannah Arendt seems to me to have written such an excellent report on the present world-situation and on the idea of a world-citizen that, in the form of reporting my thoughts, she has often presented me with her own.”¹²² What were these thoughts? In “Karl Jaspers: Citizen of the World” Arendt offered her friend several suggestions, one of which he took, another of which he flagrantly ignored. Both are ultimately related. The first contained a gentle critique of some suggestions that Jaspers had put forward in his 1949 volume *The Origin and Goal of History*. This classic study had opened by introducing the philosopher’s still-influential Axial Age Thesis and concluded by adopting a broadly Kantian suggestion that

¹²¹ Arendt first agreed to write “Karl Jaspers: Citizen of the World” in 1951 as a contribution to the Karl Jaspers entry into the compendious Library of Living Philosophers series (Hannah Arendt to Karl Jaspers, September 28, 1951, in *The Arendt-Jaspers Correspondence*, 173). Arendt was initially granted a six-month extension to complete the essay by February of 1953 but does not seem to have met her deadline, with Jaspers only getting his hands on the initial draft of her essay by August of 1953 (Paul Arthur Schilpp to Hannah Arendt, December 3, 1952. MMS11056, Box 30, Hannah Arendt Papers: Correspondence, 1938-1976. Library of Congress, Washington DC.; Karl Jaspers to Hannah Arendt, August 25, 1953, in *The Arendt-Jaspers Correspondence*, 224). It is possible that Arendt may have subsequently revised her essay slightly following the “long conversations about the atom bomb” with Jaspers in November of 1955, adding the nuclear provisos addressed below (Hannah Arendt to Karl Jaspers, February 17, 1956 in *Ibid.*, 281). If so, this would help explain why Jaspers does not address nuclear questions in his published response to Arendt’s essay, which appears to have been based on the drafts he received in 1953 (Karl Jaspers to Hannah Arendt, August 25, 1953 in *Ibid.*, 224). In any case, most crucially for my argument, the writing of “Karl Jaspers: Citizen of the World” appears to postdate Arendt’s February 1953 encounter with the immanentization of the apocalypse. In what follows, I cite the more widely available version of the essay later reprinted in *Men in Dark Times*, which differs only in the addition of a question mark to the title and a revised footnote. My thanks to Patchen Markell for correcting my oversights regarding this chronology.

¹²² Karl Jaspers, “Reply to My Critics” in *The Philosophy of Karl Jaspers*, Ed. Paul Arthur Schilpp (New York: Tudor Publishing, 1957), 751.

the ultimate goal of history would be reuniting the human species.¹²³ In it, Jaspers proposed establishing “the inclusive sovereignty of a federated world-order,” suggesting that this “could be limited to matters of elementary powers—e.g., police and the making of laws—and in this sovereignty all of humanity could participate by way of elections.”¹²⁴ Arendt thought this a mistake. We have already seen the disquiet Arendt felt towards the prospect of global totalitarian rule and planetary police, but here Arendt spells out her thinking on the subject in more general terms, asserting,

No matter what form a world government with centralized power over the whole globe might assume, the very notion of one sovereign force ruling the whole earth, holding the monopoly of all means of violence, unchecked and uncontrolled by other sovereign powers, is not only a forbidding nightmare of tyranny, it would be the end of all political life as we know it. Political concepts are based on plurality, diversity, and mutual limitations. A citizen is by definition a citizen among citizens of a country among countries. His rights and duties must be defined and limited, not only by those of his fellow citizens, but also by the boundaries of a territory. Philosophy may conceive of the earth as the homeland of mankind and of one unwritten law, eternal and valid for all. Politics deals with men, nationals of many countries and heirs to many pasts....The establishment of one sovereign world state, far from being the prerequisite for world citizenship, would be the end of all citizenship. It would not be the climax of world politics, but quite literally its end.¹²⁵

Arendt had first expressed some of these ideas to Jaspers in a letter back in 1951, in which she

¹²³ Among other things, Jaspers’ *The Origin and Goal of History* attempted to salvage Western humanism out of the wreckage of the Nazi period by reformulating it in more inclusive terms. Examining writings from Greece, China, and India, the philosopher concluded that all three regions had experienced a simultaneous but independent discovery of the true depths of the human being during a period spanning 800-200 BCE. In contrast to the traditional chauvinism of European humanism, Jaspers proposed that the traditions of West, South, and East Asia all participated as co-equal partners in this endeavor, having each complemented one another in their discoveries. Karl Jaspers, *The Origin and Goal of History*, Trans. Michael Bullock (New York: Routledge & Kegan Paul Ltd, 1953), 1-60.

¹²⁴ Jaspers, “Reply to My Critics,” 571. See also, Jaspers, *The Origin and Goal of History*, 195-198.

¹²⁵ Arendt, *Men in Dark Times*, 82.

had proposed that “Western philosophy has never had a clear concept of what constitutes the political, and couldn’t have one, because, by necessity, it spoke of man the individual and dealt with the fact of plurality tangentially.”¹²⁶ Several years later, however, she is much more confident in asserting that the traditional philosophical approach that derives political prescriptions from a grounding definition of Man in the singular may have been a mistake. Now, Arendt suggests that political thinking ought to begin not with a presumption of uniformity—which sees all members of the species as more or less well-developed instances of the humanist ideal—but with the fact of human differences. Where philosophers might dream of legislating according to the essential nature of Man as he exists everywhere and at all times, political theorists begin with the plurality of ‘men’ in their myriad individual and collective differences and seek to establish some measure of unity as the outcome rather than the precondition of politics. As we will see later, this emphasis on the place of plurality in politics will come to be a defining aspect of Arendt’s approach to politics and has rightly been identified as one of her more important contributions to twentieth century political thought.¹²⁷

And yet, while “Karl Jaspers: Citizen of the World” marks one of Arendt’s first full-throated endorsements of ‘men’ over ‘Man’ and the primacy of plurality in politics, it foregrounds the fact that questions concerning human totality are no longer merely theoretical and must be faced directly. “To say that a world state conceived in the image of sovereign nation states or of a world empire...is dangerous,” she concedes, “is no solution for our present political problem. Mankind, which for all preceding generations was no more than a concept or an ideal,

¹²⁶ These remarks were followed by an immediate apology and the disclaimer that “none of this is thought through at all.” Hannah Arendt to Karl Jaspers, March 4, 1951 in *The Arendt-Jaspers Correspondence*, 166.

¹²⁷ For a discussion of the importance of Arendt’s contributions in this area, see: Margaret Canovan, *Hannah Arendt: A Reinterpretation of Her Political Thought* (Cambridge: Cambridge University Press, 1992), 27, passim.

has become something of an urgent reality.”¹²⁸ As for why this is, she proceeds to explain that, ready or not, Kant’s vision for the “unification of mankind in the far distant future” has broken upon the existing generation, but without having experienced the protracted period of enlightenment that was supposed to “in the end bring about mankind as a politically united community together with the full humanity of man.”¹²⁹ Instead, she now contends, “Mankind owes its existence not to the dreams of the humanists nor to the reasoning of the philosopher and not even, at least not primarily, to political events, but almost exclusively to the technical development of the Western world.”¹³⁰ Rapid developments in global transportation and communication had made “every country...the almost immediate neighbor of every other country.” But this was no paean to globalization on Arendt’s part for, as she proceeded to observe, “Technology, having provided the unity of the world, can just as easily destroy it and the means of global communication were designed side by side with the means of possible global destruction. It is difficult to deny that at this moment the most potent symbol of the unity of mankind is the remote possibility that atomic weapons used by one country according to the political wisdom of a few might ultimately come to be the end of all human life on earth. The solidarity of mankind in this respect is entirely negative.”¹³¹ The possibility of ending all human life on earth had transformed ‘mankind’ from an object of humanist speculation into an urgent and all-too-empirical reality that could for the first time be targeted in its totality as an object of direct human intervention—albeit only in the form of its total erasure.

This was not the first time Arendt had raised the subject of ‘negative solidarity.’ In *Origins*, she had written of what she termed the “new terrifying negative solidarity” that came to

¹²⁸ Arendt, *Men in Dark Times*, 83

¹²⁹ *Ibid.*, 91.

¹³⁰ *Ibid.*, 82.

¹³¹ *Ibid.*, 83.

unite the déclassé “mass of generally dissatisfied and desperate men” that arose in the social turmoil following the First World War and that would prove to be a fertile seedbed for totalitarian movements. There had been a negative solidarity built of individual “self-centered bitterness” and a desire to tear down the status quo that had wronged them, which, she claims, “went hand in hand with a decisive weakening of the instinct for self-preservation.”¹³² But these people had had only their individual lives to lose. Now, the new negative solidarity that had made ‘mankind’ an urgent reality’ arose on the basis of some presumed instinct for self-preservation that lodged precisely in the animal existence of the human species that had traditionally been the preserve of slaves, laborers, and women and beneath the dignity of political attention. This was the negative solidarity of biological beings who desired to continue living and whose ‘sheer animal life’ had traditionally been assumed to be guaranteed by Nature and therefore outside of political interest. Now, however, this newly concrete collectivity of ‘mankind’ had been conjured through the universal exposure to an arbitrary form of violence that threatened to kill anyone and everyone at any moment. In effect, the new negative solidarity in question arose as a form of perverse equality created in the face of universal killability—an equality that in practice resembled nothing so much as the conditions of those relegated to the human liquidation centers that she had earlier identified as the tell-tale hallmarks of totalitarian rule.

In *Origins* Arendt had written of how, “The extermination camps—where everything was an incident beyond the control of the victim as well as the oppressors, where those who were oppressors today were to become the victims tomorrow—created a monstrous equality without fraternity and without humanity, and equality in which dogs and cats could have equally partaken, and in which we see as in a mirror the horrid image of human superfluousness.”¹³³

¹³² Arendt, *Origins*, 419.

¹³³ *Ibid.*, 620-621.

Taken in these terms, it was precisely the “monstrous equality without fraternity and without humanity” that all human beings now appeared to share as the members of a biological species, each having become “a conscious member of the human race, of whose immortality he needs to be sure in order to be courageous at all and for whose survival he must care more than for anything else” (as she put the matter earlier). Previously, Enlightenment political universalism had been predicated on hopes for what all members of the human species might become if given the opportunity to fully develop their characteristic humanity. Now, the immanentization of the apocalypse converted the generic animal life of the human species and its biological survival from the taken for granted precondition of politics into the newly existential stakes of politics. Could the negative solidarity of the merely living—a solidarity in which cats, dogs, trees, protists, and peat moss could equally partake—do political work?

In *Origins*, Arendt posited that “our political life rests on the assumption that we can produce equality through organization” and that “the limitations of human activity are identical with the limitations of human equality.”¹³⁴ Just a handful of years later, however, hydrogen weapons had removed any terrestrial checks on the limits of human activity by conferring the power to erase human life from this planet and, in so doing, imposing a perverse form of universal equality as universal killability. Under these circumstances, Arendt now observes, “this negative solidarity, based on the fear of global destruction, has its correspondence in a less articulate, but no less potent, apprehension that the solidarity of mankind can be meaningful in a positive sense only if it is coupled with political responsibility.” Unfortunately, she also sees that, because traditional conceptions of political responsibility hold the citizens responsible for the things that their political community might accomplish in their name, this newly unlimited killing

¹³⁴ Ibid., 382.

power could well create what she terms “an intolerable situation of global responsibility.” Rather, she warns, “The solidarity of mankind may well turn out to be an unbearable burden, and it is not surprising that the common reactions to it are political apathy, isolationist nationalism, or desperate rebellion against all powers that be rather than enthusiasm or a desire for a revival of humanism. The idealism of the humanist tradition of enlightenment and its concept of mankind look like reckless optimism in the light of present realities.”¹³⁵ Ultimately, Arendt argues that what is needed is the sort of “new concept of mankind” that she sees as existing latently in Jaspers’ philosophy, which took as its core feature the power of continuous human communication across difference.¹³⁶

One of Arendt’s chief contributions in “Karl Jaspers: Citizen of the World” is to argue that the ‘humanist tradition of enlightenment and its concept of mankind’ remains too bound to what she terms “dogmatic metaphysical claims” to do the work of positively uniting all human beings without simply reinscribing different kinds of divisions.¹³⁷ In light of new realities, it would be equally mistaken to either attempt to unify mankind according to a new philosophical definition of singular Man and his essential needs or, conversely, to try to achieve the ‘unity of mankind’ subtractively. This latter course would start from the plurality of human “cultures, civilizations, races, and nations” and proceed to “level down” their differences until arriving at what she terms “a horridly shallow unity” that emerges as “the lowest common denominator” — “a denominator of which we have hardly any notion today.”¹³⁸ The latter procedure resembles the unity in dehumanization that Arendt described in *Origins*, and she closes her discussion by

¹³⁵ Arendt, *Men in Dark Times*, 83-84.

¹³⁶ Karl Jaspers, *The Perennial Scope of Philosophy*, Trans. Ralph Manheim (New York: Philosophical Library, 1949), 156-183.

¹³⁷ Arendt, *Men in Dark Times*, 90.

¹³⁸ *Ibid.*, 87.

warning that, to the extent that the world government of mankind appears to be the only way to preclude “the possibility of an atomic war [that] may endanger the existence of all mankind,” there are no easy solutions.¹³⁹ For, “The abolition of war, like the abolishment of sovereign states, would harbor its own peculiar dangers; the various armies...would be replaced by federated police forces, and our experiences with modern police states and totalitarian governments, where the old power of the army is eclipsed by the rising omnipotence of the police, are not apt to make us overoptimistic about this prospect. All this, however, still lies in a far-distant future.”¹⁴⁰

Writing at a moment when the hydrogen bomb was about to enter mass production, it is unclear why Arendt would have suggested that the prospect of the abolition of war and the question of what might succeed the plurality of sovereign states was a problem for “the far-distant future.”

Perhaps Arendt saw that if she were correct and, “politically, the new fragile unity brought about by technical mastery over the earth can be guaranteed only in a framework of universal mutual agreements which eventually would lead into a world-wide federated structure,”¹⁴¹ then she recognized that there was indeed little chance of this taking place in a foreseeable future dominated by Cold War stalemate.¹⁴² As we will see shortly, Jaspers took Arendt’s warnings about the totalitarian dangers of world government to heart while disregarding her misgivings about what might become of “the idealism of the humanist tradition of enlightenment and its

¹³⁹ Ibid., 93.

¹⁴⁰ Ibid., 94.

¹⁴¹ Ibid., 93.

¹⁴² Philosopher Paul Arthur Schilpp, the editor of the volume in which “Karl Jaspers: Citizen of the World” first appeared, himself took issue with this line, writing to Arendt: “Personally I am a bit sorry about—at the very least—the word ‘far’ in the last sentence of your essay. But I am, after all, only the editor (who should never even so much as mention matters of disagreement on content, let alone tamper with it). Don’t worry, the sentence will be set in type as it stands. I merely wanted to give vent to my reaction to its gloomy pessimism; that’s all.” Paul Arthur Schilpp to Hannah Arendt, October 12, 1955. MMS11056, Box 30, Hannah Arendt Papers: Correspondence, 1938-1976. Library of Congress, Washington DC. My thanks to Patchen Markell for bringing this correspondence to my attention.

concept of mankind” under these circumstances.

In the more immediate term, around the same time that she was penning “Europe and the Atom Bomb” and “Karl Jaspers: Citizen of the World,” Arendt had also set to work translating *Origins* into German as what would become the 1955 volume *Elemente und Ursprünge Totaler Herrschaft*. As with most of the translations that Arendt undertook herself, she used the opportunity to occasionally clarify and in places expand on what she had previously written, introducing a series of revisions in the German that she would once again translate back to form the second English edition of 1958. The changes she made were relatively few, but some turn out to have been directly inspired by her confrontation with the hydrogen bomb and the immanentization of the apocalypse. Let us take a closer look at a series of alterations that Arendt wove into her 1955 translation of the book’s penultimate section on “Total Domination.” This revised section sees her advance several new claims about the nature of totalitarianism and the relative danger it poses compared to hydrogen weapons that both seem to depart from the insights already discussed and would prove to have an outsized impact on at least one avid reader of her work. One of the first of these new enigmas comes in the form of the following claim. “Total domination, which strives to organize the infinite plurality and differentiation of human beings as if all of humanity [*alle Menschen*] were just one individual,” she now writes, “is possible only if each and every person can be reduced to a never-changing identity of reactions, so that each of these bundles of reactions can be exchanged at random for any other. The problem is to fabricate something that does not exist, namely, a kind of human species resembling other animal species whose only ‘freedom’ would consist in ‘preserving the species.’”¹⁴³ This stands out as a particularly interesting assertion in light of her argument in “Europe and the Atom Bomb” that

¹⁴³ Arendt, *Origins*, 565. Hannah Arendt, *Elemente und Ursprünge Totaler Herrschaft* (Frankfurt: Europäische Verlagsanstalt GmbH, 2009), 1090.

true freedom—the kind that does not need to be put in quotation marks—involves that irreducible ‘margin of unpredictability’ that she sees totalitarians as aiming to expunge. And yet, having argued that “no human courage would be conceivable if the condition of individual life were the same as that of the species,” it is unclear why a “freedom” that consists in *at least* “preserving the species” might not be worthy of political consideration under conditions where it can no longer be taken for granted that it is better to be dead than a slave and “the survival of mankind” has come to be staked on political outcomes.¹⁴⁴

New questions concerning “preserving the species” come even more prominently to the fore several pages later. In one particularly rousing passage, Arendt now suggests to her readers that “the only standard for a necessary war is the fight against conditions under which people no longer wish to live—and our experience with the tormenting hell of the totalitarian camps have enlightened us only too well about the possibility of such conditions. Thus the fear of concentration camps and the resulting insight into the nature of total domination might serve to invalidate all obsolete political differentiations from right to left and to introduce beside and above them the politically most important yardstick for judging events in our time, namely: whether they serve total domination or not.”¹⁴⁵ Arendt had first floated a version of this claim in an article on the concentration camps published back in 1948 and it seems surprising that she would have chosen to reiterate it now; for as rhetorically appealing as this proposition may be, its call proves to be as courageous as it is out of date.¹⁴⁶ The idea of using the question of whether proposals serve or combat total domination could still have conceivably served as a political yardstick and justification for war back when *Origins* was first published in 1951, for at that time

¹⁴⁴ Arendt, “Europe and the Atom Bomb,” 421.

¹⁴⁵ Arendt, *Origins*, 570.

¹⁴⁶ Hannah Arendt, “The Concentration Camps” in *The Partisan Review*, Vol. XV No. 7 (July 1948), pp.743-763; 747. I once again owe my awareness of this important essay to Patchen Markell.

the ‘free’ and ‘totalitarian’ worlds possessed around 400 and 25 fission bombs respectively and war between them might only have killed tens or the low hundreds of millions.¹⁴⁷ However, what makes proposal for a new political polarity so surprising is that by the time Arendt offers it in 1955, she already *knows* that matters are no longer so simple. In a footnote to the passage just quoted, she now feels compelled to further specify that, when it comes to “conditions under which people no longer wish to live,” “In order to avoid misunderstandings it may be appropriate to add that with the invention of the hydrogen bomb the whole war question has undergone another decisive change. A discussion of this question is of course beyond the theme of this book.”¹⁴⁸ This may well have been, but if so, then this makes it doubly surprising to see Arendt bellicosely redouble her assertions that totalitarianism represents a potentially irrecoverable human disaster that must absolutely be resisted.

As already noted, Arendt had warned in the first edition of *Origins* that totalitarians seek world conquest in order to pervert human nature. In the 1951 preface she had gone so far as to assert that “the totalitarian attempt at global conquest and total domination...may coincide with the destruction of humanity; wherever it has ruled, it has begun to destroy the essence of man.” In its final stages totalitarianism had revealed “an absolute evil” that “can no longer be deduced from humanly comprehensible motives” and reveals “the truly radical nature of evil.”¹⁴⁹ Having subsequently become convinced that war between the United States and Soviet totalitarianism could mean the end of all human life on Earth, one might expect to see Arendt ratchet down her rhetoric when revising this work in 1955. Instead, she goes in the opposite direction, revising the conclusion of “Total Domination” to express a dire warning, writing: “We actually have nothing

¹⁴⁷ Hans Kristensen and Robert Norris, “Global Nuclear Weapons Inventories, 1945-2013” in *The Bulletin of the Atomic Sciences*, No. 69, Vol. 5 (2013), 75-81; 78.

¹⁴⁸ Arendt, *Origins*, 570 fn. 133.

¹⁴⁹ *Ibid.*, xxvii.

to fall back on in order to understand a phenomenon that nevertheless confronts us with its overpowering reality and breaks down all standards we know. There is only one thing that seems to be discernible: we may say that radical evil has emerged in connection with a system in which all men have become equally superfluous.”¹⁵⁰ Clearly there can be no accommodation with radical, incomprehensible evil. If it were true that “human nature as such is at stake” in a totalitarian bid for “global control” that, if successful, would create totally dehumanized conditions under which mere biological survival would be morally meaningless,¹⁵¹ then was there any reason not to hazard the survival of the human species in a war against radical evil waged for the preservation of freedom and the possibility of a life worth living?

When writing about the concentration camps back in 1948, Arendt had raised the issue of “the fear of absolute Evil which permits of no escape” and suggested that, in light of this, “modern politics revolves around a question which, strictly speaking, should never enter into politics, the question of all or nothing: of all, that is, a human society rich with infinite possibilities; or exactly nothing, that is, the end of mankind.”¹⁵² Now, she revises this warning to take into account the new threat of total thermonuclear annihilation that must be balanced against the menace of total domination. In her revised version of *Origins*, she declares,

It is the appearance of some radical evil, previously unknown to us, that puts an end to the notion of developments and transformations of qualities. Here, there are neither political nor historical nor simply moral standards but, at the most, the realization that something seems to be involved in modern politics that actually should never be involved in politics as we used to understand it, namely all or nothing—all, and that is an undetermined infinity of forms of human living-

¹⁵⁰ Here blending new material with some of the more provocative claims originally expressed in her “Concluding Remarks” from the first edition. *Ibid.*, 592.

¹⁵¹ *Ibid.*, 591.

¹⁵² Arendt, “The Concentration Camps,” 748.

together, or nothing, for a victory of the concentration-camp system would mean the same inexorable doom for human beings as the use of the hydrogen bomb would mean the doom of the human race.¹⁵³

Suffice it to say, drawing this direct equivalent between the inexorable doom that global victory of totalitarianism would pose for human beings and the doom that the hydrogen bomb would pose for the human race was not the most constructive contribution that Arendt could have made to the highly charged atmosphere of the mid-1950s. Her attempt to shoehorn the implications of the hydrogen bomb into her earlier claims about the dangers of total rule makes for an exquisitely awkward fit and a highly dubious equivalence. This all-or-nothing choice that Arendt introduce between the undetermined infinity of free forms of living together and the living death of totalitarianism falls well short of the degree of nuance and circumspection with which we saw her approach these questions elsewhere at this time and offers a prominent example of the risks that arise when attempting to retrofit established political conclusions to accommodate the immanentization of the apocalypse. The ‘nothing’ of completely dehumanized, ‘sheer animal life’ in the concentration camps that Arendt addressed in 1948 differed fundamentally from the ‘nothing’ that would arise in the wake of ‘the end of all human life on earth.’ To link total domination with total annihilation as part of the same all-or-nothing equation was not only to draw of false equivalence, but one that would have a marked impact on at least one of Arendt’s most avid readers.

When taking an inventory of the “rhetorical war propaganda” flying back and forth around this time, Russell wryly suggested that, while anti-communist Americans proudly declared “Liberty or Death,” “There is an opposite slogan invented by West German friends of peace: ‘Better Red than dead.’ One may guess that in some sections of Russian public opinion

¹⁵³ Ibid., 572.

there is an opposite slogan: ‘Better capitalists than corpses.’”¹⁵⁴ By the time Arendt published her German edition of *Origins* in 1955, the United States had tested its second thermonuclear device and the Soviets their first, prompting far more observers to begin to take notice. As suggested above, Arendt may have revealed herself to be somewhat ‘catastrophe minded’ in the speed with which she accepted the prospect that the hydrogen bomb might threaten all earthly human life. For many more, in the words of one contemporary, “The hydrogen bomb shot of March 1, 1954—much more so than its predecessor of November 1952—was a shot heard ‘round the world.’”¹⁵⁵ This was for at least two reasons: first, the fact that the ‘Castle Bravo’ shot of 1954 tested a potentially deliverable bomb; second, Castle Bravo proved to be one of the worst nuclear disasters in American history. Where the Ivy Mike test had required the presence of a small factory to maintain its hydrogen fuel in a supercooled state, the Castle Bravo device dispensed with the need for this apparatus by including a layer of partially enriched lithium that would ‘breed’ the required hydrogen isotope when bombarded by the astronomic energies of the initial fission explosion. When tested, both the enriched and the unenriched lithium contributed hydrogen to the fusion stage, causing the weapon to detonate with as much as twice the expected yield. This in turn subjected both military observers and American colonial subjects on nearby islands to far greater levels of local fallout than expected. At the time, the United States military had been in the midst of a major public relations campaign contrasting the supposedly ‘clean’ design of its fusion weapons with the highly irradiative ‘dirty’ design of earlier fission bombs.¹⁵⁶ While the military temporarily succeeded in silencing the soldiers and nearby islanders, the same

¹⁵⁴ Russell, *Has Man a Future*, 89.

¹⁵⁵ Emanuel Margolis, “The Hydrogen Bomb and International Law,” *The Yale Law Journal* Vol. 64 No. 5 (April 1955), pp. 629-647; 629.

¹⁵⁶ Toshihiro Higuchi, “‘Clean’ bombs: Nuclear technology and nuclear strategy in the 1950s,” *Journal of Strategic Studies*, Vol. 29, No. 1 (2006), pp.83-116.

did not hold for the crew of the *Daigo Fukuryū Maru*, a Japanese tuna trawler that was supposed to have been operating well outside the preplanned “Danger Area” surrounding the test. The crew quickly fell ill as a blanket of irradiated coral sand settled on the vessel like snow, returning to port in Japan with acute radiation sickness.¹⁵⁷ Forensic analysis of the fallout by Japanese physicists revealed the weapon to have not one but *two* fission stages, not simply using a Nagasaki-style implosion plutonium bomb as its trigger, but taking advantage of the ensuing hydrogen fusion stage to generate the boost of energy required to send a surrounding shell of what would otherwise be inert uranium slag super critical.¹⁵⁸ It quickly became apparent that this fission-fusion-fission design (the same one used in most subsequent thermonuclear weapons in the American arsenal) generated drastically *more* radioactive fallout than its predecessors cast over a hemisphere-spanning area.¹⁵⁹

It was ultimately the fear of global fallout inspired by the awesome new scale of the hydrogen bomb in general—and the object-lesson in the dangers of radiation demonstrated by Castle Bravo in particular—that convinced many during the 1950s that for the first time in human history the means to end the world had entered into the world itself. No document at the time conveyed the new mortality of the human species with more force to more people than the “Russell-Einstein Manifesto,” which, although written by Russell, was endorsed by Einstein three

¹⁵⁷ With its radio operator, Kuboyama Aikichi, eventually dying from ensuing complications on September 23, 1954, making him the only known person to date to have been killed in the immediate aftermath of a hydrogen bomb explosion. Oishi Matashichi, *The Day the Sun Rose in the West: Bikini, the Lucky Dragon, and I*, Trans. Richard H. Minear (Honolulu: University of Hawai’i Press, 2011), 18-48.

¹⁵⁸ That is, the ‘depleted’ uranium-238 leftover after the fissionable uranium-235 has been extracted.

¹⁵⁹ Some of the most important of this forensic work had been conducted by Joseph Rotblat, the only physicist to resign from the Manhattan project for moral reasons and the only non-Nobel Laureate signatory of the “Russell-Einstein Manifesto (although Russell had received *his* for literature and Rotblat would eventually be honored with the Nobel Peace Prize in 1995 for his decades of work with the Pugwash Conferences that the manifesto helped to launch). See Rotblat’s remarks in “Press Conference by the Earl Russell at Caxton Hall” in *The Collected Papers of Bertrand Russell* Vol. 28, 321-334.

days before the latter's death and seemed to publicly carry the added weight of the towering scientist's last testament.¹⁶⁰ Released to the world media at a well-orchestrated press briefing and backed by the signatures of ten famous scientists from both sides of the Iron Curtain, the Manifesto caused a global stir as it was read aloud over radios and translated and reprinted in newspapers the planet over.¹⁶¹ Summing up the new kind of mortality that had crept into the human condition, it warned,

The general public, and even many men in positions of authority, have not realized what would be involved in a war with nuclear bombs. The general public still thinks in terms of the obliteration of cities. It is understood that the new bombs are more powerful than the old, and that, while one A-bomb could obliterate Hiroshima, one H-bomb could obliterate the largest cities, such as London, New York, and Moscow. No doubt in an H-bomb war great cities would be obliterated. But this is one of the minor disasters that would have to be faced. If everybody in London, New York, and Moscow were exterminated, the world might, in the course of a few centuries, recover from the blow. But we now know, especially since the Bikini test, that nuclear bombs can gradually spread destruction over a very much wider area than had been supposed. It is stated on very good authority that a bomb can now be manufactured which will be 2,500 times as powerful as that which destroyed Hiroshima. Such a bomb, if exploded near the ground or under water, sends radioactive particles into the upper air. They sink gradually and reach the surface of the earth in the form of a deadly dust or rain. It was this dust which infected the Japanese fishermen and their catch of fish. No one knows how widely such lethal radio-active particles might be diffused, but the best authorities are unanimous in saying that a war with H-bombs might possibly put an end to the human race. It is feared that if

¹⁶⁰ Russell sent Einstein a draft of "Man's Peril" for review and revisions and found himself temporarily "shattered" when he heard news of the great physicist's death in April, only to discover to his elation a week later a letter in the mail from Einstein written three days before his death approving the essay. Russell, *Autobiography*, Vol. 3, 74.

¹⁶¹ It even aroused an annoyed response from Pope Pius XII, who seems to have been annoyed at the way it overshadowed his own similar remarks on the subject. "The Vatican's Viewpoint: Special to the New York Times" in *The New York Times* (July 11, 1955).

many H-bombs are used there will be universal death, sudden only for a minority, but for the majority a slow torture of disease and disintegration.¹⁶²

A year later, the self-styled ‘metaphysical journalist’ Günther Anders would sum up the matter much more succinctly with his observation that, now, “Humankind as a whole is killable.”¹⁶³

In November of 1955, Arendt visited Jaspers at his home in Basel for the first time since her confrontation with the immanentization of the apocalypse in February 1953. Given the chance to finally “say in the spoken word what in the written one sounds stupid and pompous,” it should perhaps come as no surprise to see her write home from the midst of her visit: “Right now we are immersed in long conversations about the atom bomb.”¹⁶⁴ Unlike Arendt, Jaspers had speculated briefly about the prospect that atomic weapons might blow up the planet back in 1949,¹⁶⁵ but these long conversations with his former pupil appear to have inspired plans for a new book project. Jaspers had overseen Arendt’s doctoral dissertation on the topic of love in Saint Augustine back in the 1920s and later been retrospectively impressed by the prescience with which his former student anticipated the worst of what the Nazis might have in store.¹⁶⁶ Overjoyed to discover that Arendt had survived the war, Jaspers had been even more impressed with some of her initial writings on the subject of totalitarianism penned in the late 1940s.¹⁶⁷ He even made a good faith effort to read *Origins* when it was first published—presumably balancing

¹⁶² Bertrand Russell, “The Russell-Einstein Manifesto” in *The Collected Papers of Bertrand Russell*, Vol. 28, 318-319.

¹⁶³ Günther Anders, *Die Antiquiertheit des Menschen* (Munich: C.H. Beck, 1961), 243.

¹⁶⁴ Hannah Arendt to Heinrich Blücher, November 6, 1955 in Hannah Arendt and Heinrich Blücher, *Within Four Walls: The Correspondence Between Hannah Arendt and Heinrich Blücher, 1936-1968* (New York: Harcourt Brace, 2000), 287.

¹⁶⁵ Reinventing his own version of the Fermi Paradox in the process. Jaspers, *The Origins and Goal of History*, 209.

¹⁶⁶ “Years before 1933,” he wrote in his preface to the German edition of *The Origins of Totalitarianism*, “Hannah Arendt saw coming what I thought was impossible in Germany at the time. When it commenced in 1933, she was aware that it meant an unprecedentedly profound turning point.” Karl Jaspers, “Geleitwort” in *Elemente und Ursprünge Totaler Herrschaft*, 10.

¹⁶⁷ Jaspers, *The Origin and Goal of History*, 309 fn. 10.

his former pupil's first book on one knee and a German-English dictionary on the other. When the German edition appeared in 1955, however, he devoured it, seeming to take many of its arguments to heart. In his first letter to Arendt following her visit that November, Jaspers wrote to express his conviction that *Origins* “represents a major breakthrough for our political world, the first of its kind amid all the current talk about totalitarianism” and something that “every politician active today ought to read and understand.”¹⁶⁸ For him, Arendt had brought to light “the hidden system underlying the whole” in much the same way “a clinician discovers step by step all the elements of a new disease.”¹⁶⁹ Following his “long conversations about the atom bomb” with Arendt and her convincing diagnosis of the disease of totalitarianism, Jaspers would spend the next three years immersed in a new work of political philosophy that took as its premise the prospect that “a victory of the concentration-camp system would mean the same inexorable doom for human beings as the use of the hydrogen bomb would mean the doom of the human race.”

Jaspers first delivered a series of twenty minute radio lectures on the political implications of the hydrogen bomb in the summer of 1956, which he then planned to quickly publish as a short tract.¹⁷⁰ In 1957, he regretfully informed a curious Arendt—who repeatedly wrote to check in on how his ‘atom bomb’ was coming along—that the tract had not only become a book, but “unfortunately, a whole philosophy *in nuce*.”¹⁷¹ That same year, he foreshadowed the arguments that were to come when publicly replying to some of Arendt's assertions in “Karl Jaspers: Citizen of the World,” which, as we saw above, had questioned his earlier calls for a sovereign world government. Here he conceded Arendt's point and agreed that “if the police were to receive their orders from a single authority, the rise of a terroristic dictatorship would be almost certain.”

¹⁶⁸ Karl Jaspers to Hannah Arendt, January 31, 1956, in *Arendt-Jaspers Correspondence*, 273.

¹⁶⁹ *Ibid.*, 274.

¹⁷⁰ Karl Jaspers to Hannah Arendt, August 1, 1956, in *Ibid.*, 293.

¹⁷¹ Karl Jaspers to Hannah Arendt, September 24, 1957, in *Ibid.*, 325.

However, Jaspers may also have gone a step further than she had been prepared to when concluding from this that the only way to ensure political freedom would be to maintain multiple sources of sovereign violence able to check one another. “Rather the danger of a war,” he wrote, “than the danger of a totalitarianism of the entire world. Rather the danger of war so long as the situation—regardless of what may happen—leaves open the struggle for human freedom. Rather such hazard than the quietude of dictatorship, which, in view of the fact that it would be a world dictatorship, could no longer be broken up from without and therefore not at all, since there would no longer be an outside.”¹⁷² Published in 1958, he used *Die Atombombe und die Zukunft des Menschen* or *The Atom Bomb and the Future of Man* as an opportunity to explore the relative dangers of global totalitarian rule and total thermonuclear annihilation and the political consequences that result.

Jaspers opens his five hundred page study by resolutely declaring: “The atom bomb of today is a fact novel in essence, for it leads mankind to the brink of self-destruction.”^{173, 174} Having taken the warnings such as those leveled by the “Russell-Einstein Manifesto” seriously, he accepts that “the radioactive poisoning of the atmosphere would suffice to end life on this planet,” and that it was only a matter of time until enough hydrogen bombs would be created to accomplish this.¹⁷⁵ For the great existentialist philosopher, the radical shock that attends the immanentization of the apocalypse—promising for the first time “no world’s end at all, but the

¹⁷² Jaspers, “Reply to My Critics” in *The Philosophy of Karl Jaspers*, 752.

¹⁷³ Karl Jaspers, *The Atom Bomb and the Future of Man*, Trans. E.B. Ashton (Chicago: University of Chicago Press, 1961), 1.

¹⁷⁴ Like Arendt and many other contemporaries, Jaspers will often refer generally to the ‘atom bomb’ as a catch all term, while elsewhere specifying that it is the lately developed hydrogen bomb that places the whole of earthly survival newly at stake, noting for instance, how, “Within itself, the evolution of weapons technology has taken the further, fundamentally new, step to the potential destruction of all mankind. Even the Hiroshima bomb and the hydrogen bomb differ not only quantitatively but qualitatively in destructive power.” *Ibid.*, 47.

¹⁷⁵ *Ibid.*, 1.

extinction of life on the surface of the planet”—becomes an opportunity for profound reflection on the nature of human existence. Jaspers invites his readers to immerse themselves in the prospect of universal death and simply to ponder, soaking in the implications “until we feel the brutal new fact push our thinking to the very roots of human existence, where the question arises what man is and can be....The possibility of total self-destruction makes us newly, differently conscious of this situation; it shows us a side of which no one has thought before.”¹⁷⁶ Having plumbed these depths himself, Jaspers returns to declare (in terms immediately reminiscent of Arendt’s remarks about all-or-nothing in the German edition of *Origins*):

The atom bomb, as the problem of mankind’s very existence, is equaled by only one other problem: the threat of totalitarian rule (not simply dictatorship, Marxism, or racial theory), with its terroristic structure that obliterates all liberty and human dignity. By one, we lose life; by the other, a life that is worth living. Both extreme possibilities bring us today to an awareness of what we want, how we would wish to live, and what we must be prepared for. The two problems seem fatefully linked. In practice, at least, they are inseparable. Neither one can be solved without the other, and the solution of both calls for forces in man to well up from such depths as to transform him in his moral, rational, political aspects—a transformation so extensive that it would become the turning point of history.”¹⁷⁷

For Jaspers, this brush with universal death becomes an opportunity to rediscover the essence of the human and the human qualities that humankind as a whole must manifest not only if it is to survive the encounter, but prove itself worthy of existing. In so doing, he hopes, humankind might discover within itself the resources required to resist succumbing to global totalitarian rule.

Jaspers winds the argument of *The Atom Bomb and the Future of Man* around a central assertion that “the issue of political freedom and totalitarian rule” represents “a deep,

¹⁷⁶ Ibid., 4.

¹⁷⁷ Ibid.

comprehensive, and historically decisive division” within which all questions of how to escape universal death by thermonuclear weapons must be posed. When he turns to highlight the defining features of the totalitarian menace—its penchant for pathological homogenization and human liquidation, its psychotic drive to make its own warped reality real, its targeting of the human essence—he gives credit where it is due, noting simply, “The nature of total rule has been brilliantly analyzed by Hannah Arendt, and I am following her exposition in these pages.”¹⁷⁸

Accordingly, while some of the finer details might differ slightly, Jaspers’ broad brush strokes faithfully reproduce the more dire aspects of Arendt’s analysis that prompt her to conclude that “human nature as such is at stake” in the fight against totalitarianism. In light of this, Jaspers warns, “Before insisting on the survival of mankind at any price, one must know the totalitarianism we have experienced and described: a transformation of human existence to the point where men cease to be human. The peace of totalitarianism is a desert constantly laid waste again by force against rebellious human claims. A totalitarian world state would use the atom bomb—which it alone would control—in limited doses and without endangering the life of mankind as a whole.”¹⁷⁹ In the face of totally triumphant totalitarianism “that dehumanizes all of existence, every hour in the lives of all,” Jaspers contends, “Whoever thinks that life may be worth living in a world that has been turned into a concentration camp must consider that confidence in man is justified only insofar as scope remains for freedom...Mere life as such, under consummate total rule, would not be the life of animals in the abundance of nature; it would be an artificial horror of being totally consumed by man’s technological genius.”¹⁸⁰ Here, traditional political categories collapse under the weight of the all-or-nothing choices imposed by

¹⁷⁸ Ibid., 104. See also his further praise of *Origins* on Ibid., 34.

¹⁷⁹ Ibid., 167.

¹⁸⁰ Ibid.

the novel alternatives introduced between “the total extinction of mankind by the superbombs or the total corruption of humanity under total rule”—or, in other words, “final destruction of human existence by the atom bomb, and final destruction of the human essence by totalitarianism.”¹⁸¹ A true existentialist, Jaspers stresses that neither of these extreme possibilities can be accepted as a certainty while also steadfastly asserting that this uncertainty regarding the ultimate fate of freedom and life in no way absolves contemporaries of their duty to choose between them.¹⁸²

Jaspers makes it clear that it is his unflinchingly humanist faith in Man that permits him to make the decisive choice he does. “If mankind’s existence is in question, man’s total essence must be summoned to provide the answer,” he writes, and finds that the confrontation with universal death has indeed revealed a facet of Man’s essence that had previously escaped due notice.¹⁸³ Here Jaspers takes a starkly opposite tack from the one that Arendt pursued in “Europe and the Atom Bomb,” placing courage at the center of what he believes will be needed. In the face of the hydrogen bomb, he writes, “If the task of politics is the securing of life, this task calls at the crucial moment for the sacrifice of life. Unlimited self-sacrificing courage is a political reality.”¹⁸⁴ It is in the courage to sacrifice, Jaspers becomes convinced, that the true humanity of Man resides. So long as Man remains qualitatively human, he comes to argue, “Man will always

¹⁸¹ *Ibid.*, 167-168.

¹⁸² He stresses the ultimately uncertain conditions under which these decisions must be made on many occasions. In one particularly striking reiteration of this theme, he stresses: “Today the human task is to examine possibilities and probabilities without mistaking even the greatest probability for certainty. It is to do what we can to find ways of existing under unfathomable conditions. It is to realize that our intellect can conceive of negative possibilities, can predict death and destruction even as probabilities, but cannot forecast the great human impulses—and that, in incalculable fashion, everything done here and now by every individual may become a factor in shaping the future. Only in awareness of our ignorance can discussions of the possible choice between the atom bomb and totalitarianism be properly understood.” *Ibid.*, 285.

¹⁸³ *Ibid.*, 187.

¹⁸⁴ *Ibid.*, 29.

prefer instability with its danger of war and its chance of destruction—a condition appropriate to human nature in its interminable flux. If he should ever prefer the absolute calm of an endlessly peaceful existence, he would cease to be human and would pass into a functionalized, unexistential reiteration of life.”¹⁸⁵ Keeping the humanist faith that the merely self-reproducing animal existence of the human species is simply the precondition and should never be the end of politics, he asserts, “The foundation of everything sublime in man is sacrifice. Even in failure, the sacrifice as such is a fulfilment of infinite significance. Man does not know his humanity until he proves it by courage and by contempt of death. These have a different basis from mere life. There is more to man than life.”¹⁸⁶ Jaspers asserts that even when sacrifices might seem “useless,” they are never “senseless,” for “sacrifice reveals the secret at the frontiers of all human affairs.”¹⁸⁷ As it proceeds, *The Atom Bomb and the Future of Man* develops into a neohumanist argument for the central place that the human capacity for sacrifice occupies as the foundation of political freedom and the one characteristically human trait that creates the conditions required for all the others to flourish.¹⁸⁸ Ultimately, Jaspers frames his confrontation between the totalitarian annihilation of human essence and the total nuclear annihilation of biological existence in light of the assertion that “sacrifice is the inescapable foundation of true humanity,” in light of which, “Only this much is certain: without sacrifice we are not truly human....Sacrifice would not only make peace possible; it would fulfill it.”¹⁸⁹ Unfortunately, there turns out to be an alarmingly short distance separating the claim that the capacity for sacrifice underwrites all that is truly

¹⁸⁵ Ibid., 103.

¹⁸⁶ Ibid., 42.

¹⁸⁷ Ibid., 43.

¹⁸⁸ On the connection between the humanity of human and the possibility of politics, Jaspers contends; “If man shall not only stay human but become better and more human, the possibility of politics must be preserved.” Ibid., 161

¹⁸⁹ Ibid., 55-56.

human from finding oneself prepared to accept human sacrifice on a previously unimaginable scale.

Early on in *The Atom Bomb and the Future of Man*, Jaspers broaches the prospect of “what we should be, to be worthy of life.”¹⁹⁰ As his argument develops, the capacity for sacrifice becomes at once both the foundation of freedom and all that is truly human and the metric by which to judge the worth of human existence. “Lest we lose human freedom,” he warns his readers, “we must not conceal the possibility that at some moment to come a choice may have to be made between totalitarian rule and the atom bomb—between the destruction of a life worthy of man and the possible destruction of all men. A refusal to envision this possible alternative implies the loss of the courage of sacrifice. But sacrifice remains the foundation of true humanity....Only sacrifice can keep that choice from ever becoming reality.”¹⁹¹ It is only the willingness of the present generation to reaffirm their humanity by sacrificing whatever may be required in defense of freedom that can avert the global victory of totalitarianism and with it the creation of a single concentration camp whose borders are coterminous with the planet itself—a vision of earthly hell defined by a form of endless mass murder whose only consolation comes in the form of the totally dehumanized nullity of the beings being liquidated.¹⁹² Extrapolating Arendt’s claims about the all-or-nothing political stakes that arise at the intersection of total rule and total atomic annihilation, Jaspers himself seems fairly confident in asserting: “The grim, increasingly anonymous will to power of erupting totalitarianism has a single, not clearly conscious aim: to change man himself, by a total planning that includes world conquest—for nothing else would block all escape....Fed by biological fertility, this existence could go on

¹⁹⁰ Ibid., 5.

¹⁹¹ Ibid., 66.

¹⁹² In his trenchant critique of *The Atom Bomb and the Future of Man*, Anders aptly dubs Jaspers’ position the “Two Hells Axiom.” Günther Anders, *Die Atomare Drohung* (Munich: C.H. Beck, 1983), 41.

destroying itself by functionalizing or mass murder, indifferent to all individuals and nations. History would end, though existence would continue. The atom bomb and total rule are the two terminal forms of destruction.”¹⁹³ This menacing cloud carries a comforting silver lining, however, for while Jaspers accepts that there is no guarantee that human beings will prove human enough to summon sufficient willingness to sacrifice whatever may be required to avert these two terminal forms of destruction, he finds it just that failure *should* result in destruction. “Man either grows in freedom, and maintains the tension of this growth,” Jaspers writes, “or he forfeits his right to live. If he is not worthy of life, he will destroy himself.”¹⁹⁴ When it comes to Man: “He will either change or he is unworthy of life and will, against his will, destroy himself by his technology....If we want to be ourselves, we must want to take the greatest chance, along with science and technology, and if it turns out badly, man will have proved unworthy of existence.”¹⁹⁵ Man will either finally achieve his potential or be annihilated—and if the latter, then deservedly so.

Jaspers takes the confrontation with totalitarianism and total nuclear annihilation as an opportunity to finally realize the highest humanist hopes for Man or see the human species perish in the attempt (and in so doing proving it was unworthy of this faith and has earned its fate). Having identified the capacity for sacrifice with the essence of all that is meaningfully human, Jaspers ultimately decides in favor of freedom over life, declaring that it would be better for the free world to risk all by defending its distinctly human ways of life through thermonuclear means if necessary rather than voluntarily acquiesce to converting the planet into a single totalitarian hive for the sake of securing mere species survival. Having become convinced that the global

¹⁹³ Jaspers, *The Atom Bomb and the Future of Man*, 287.

¹⁹⁴ *Ibid.*, 183.

¹⁹⁵ *Ibid.*, 194.

victory of totalitarianism represents the permanent erasure of any possibility for a humanly meaningful life, Jaspers turns the humanist conviction that the purpose of human life is more than the mere repetition of species existence into a kind of universal death cult that will either see all of Western humanism's highest hopes realized or leave no survivors left to wallow in the disappointment of a species that had proven itself not to be worthy of life. Faced with two terminal forms of destruction, Jaspers makes his decision, pondering,

Should the present situation have brought man to his deepest fall, to the surrender of his freedom? Should that be what he considers the fulfilment of his task? If so, he would no longer be what we used to call human. Or should the ultimate yardstick now, as ever before, be not a respect for life as such, but respect for a life that is worth living insofar as human freedom can make it so. Man is born free, and the free life that he tries to save by all possible means is more than mere life. Hence, life in the sense of existence—individual life as well as all life—can be staked and sacrificed for the sake of the life that is worth living.¹⁹⁶

Jaspers is nothing if not courageous himself in making these claims and, to his immense credit, in faithfully laying out both sides of the antithesis between freedom and life and the irreducible uncertainties involved, inviting readers to make their own free decision. While there is much to admire in *The Atom Bomb and the Future of Man*, it also offers an object lesson in the risks that arise from adopting a neohumanist political response to the immanentization of the apocalypse that ties the value of human existence to a characteristically human capacity that, if it fails, renders the resulting universal death a matter of relative ethical indifference.

What did Arendt make of Jaspers' arguments? His former pupil received a copy of *The Atom Bomb and the Future of Man* hot off the press when she went to visit him again in the summer of 1958. In a series of letters sent over the next several weeks, Arendt writes to her

¹⁹⁶ Ibid., 169.

husband first, “I’ll read it quickly, it seems very sensible”; then, “Many parts of the book are quite outstanding; if he would only refrain from all the moralizing; but he can’t that’s precisely what is most important to him”; and finally: “His nuclear book is an incredible success in Germany. And I must say it is an exceptional book.”¹⁹⁷ Arendt was prepared to repeat as much in public as well. That fall, Arendt took the opportunity of an essay on the attempted Hungarian Revolution of two years prior to remark how, “the most important political issue of the nuclear age—the war question—cannot be sensibly raised, let alone solved. As far as the nontotalitarian world is concerned, it is a matter of fact that a war fought with nuclear weapons will harbor a threat of destruction to the existence of mankind, even to the existence of organic life on earth. This, obviously, makes all our traditional ideas about the role of war in politics, its possible justification for the sake of freedom, its role as an *ultima ratio* in foreign affairs, perfectly obsolete. In practice, this puts politics ‘in a different state of aggregation,’ the various sides of which Karl Jaspers elucidates in his brilliant book *The Atom Bomb and the Future of Man*.”¹⁹⁸ Others agreed with her assessment. The book sold astonishingly well for an occasionally dense, always unflinching work of philosophy on such a grim subject and became the winner of that year’s prestigious Peace Prize of the German Book Trade. Jaspers gave Arendt the honor of delivering the traditional laudation at the awards ceremony.¹⁹⁹ Interestingly, she took the

¹⁹⁷ Tantalizingly, Arendt never finishes this last thought, beginning the next sentence with “A German critic wrote that Jaspers...” and then switching topics when she finished the letter the following morning. Hannah Arendt to Heinrich Blücher, June 17, June 24, and July 9, 1958 respectively in *Within Four Walls*, 329, 331, 335.

¹⁹⁸ Hannah Arendt, “The Hungarian Revolution and Totalitarian Imperialism” in *Thinking Without a Banister*, Ed. Jerome Kohn (New York: Schocken Books, 2018), 124.

¹⁹⁹ Which she only accepted hesitantly for a range of reasons unrelated to the content of Jaspers’ book, including her own relative prestige compared to the other names that were being floated for the job (such as Albert Camus and Reinhold Niebuhr), the fact that she had fled Germany for her life a quarter century prior and felt highly ambivalent returning, and not wanting to appear to publicly side with Jaspers over Martin Heidegger (the two formerly close acquaintances having never succeeded in patching up their relationship following the latter’s prominent engagement with the Nazi regime). Hannah Arendt to Heinrich Blücher, May 25, 1958, in *Within Four Walls*, 321.

opportunity to exclusively praise the man, not the book, highlighting Jaspers' exemplary humaneness, his maintenance of "the secret trust in man, in the *humanitas* of the human race" and the way that he kept the fire of "what was left of *humanitas* in Germany" during its darkest years.²⁰⁰ She conspicuously refrained from saying anything for or against his plea to be prepared to sacrifice the whole of human life on Earth for the sake of Man's humanity. Whatever misgiving Arendt might have harbored about how "idealism of the humanist tradition of enlightenment and its concept of mankind look like reckless optimism in the light of present realities," she nevertheless diligently oversaw the English translation of Jaspers' book, firing the first translator and eventually securing E.B. Ashton, whose work she deemed to be "excellent and without a single error" but also agonizingly slow, with *The Atom Bomb and the Future of Man* only appearing in 1961.²⁰¹ When it did, Arendt was able to secure a prominent, highly favorable review by Hans Morgenthau in *The Saturday Review*.²⁰² After enjoying some initial buzz in the United States, Jaspers' study quickly sank into obscurity. "The great initial success of the 'Atombombe' quickly subsided," he noted in 1962, and "the second wave of interest that follows only after the initial response to a book has presumably not come to pass."²⁰³ The book remains out of print in both German and English today.

As Arendt clearly saw in her first flash of insight on the subject, the traditional terms for addressing human totality as either some humanist definition of Man or the immortal life of the

²⁰⁰ Hannah Arendt, "Karl Jaspers: A Laudatio" in *Men in Dark Times*, 75-77.

²⁰¹ Arendt to Jaspers, February 29, 1960 in *The Arendt-Jaspers Correspondence*, 387. See also *Ibid.*, 367. One of the main reasons for Jaspers' disregard as a serious philosopher in the Anglophone world has to do with the many poor, terminologically inconsistent translations of his work that bury the consistency of his philosophical vocabulary. Ashton is far and away the best and went on to devote similar care to his three-volume study *Philosophy*.

²⁰² For an eye-opening account of Morgenthau's transformative encounter with the immanent apocalypse, see McQueen, *Political Realism in Apocalyptic Times*, 178-191. For the impact that Arendt and Jaspers may have had on Morgenthau, see *Ibid.*, 182 fn. 158.

²⁰³ Jaspers to Arendt, March 18, 1962, in *The Arendt-Jaspers Correspondence*, 471.

biological species both appeared to be inadequate when faced with the urgent and all-too-empirical reality of a ‘mankind’ whose continued existence now depended on the outcome of human politics. Here I have tried to follow how Jaspers’ heroic attempt to develop a new strain of humanism adequate to the needs of the thermonuclear era quickly turned from defining Man in terms of his capacity for sacrifice to preparing to endorse hecatombs of human sacrifice. Jaspers ultimately sided with the humanity of Man and advocated “better dead than red” in the face of what he had become convinced (with Arendt’s help) would be total, potentially permanent dehumanization under planetary totalitarianism. But for thinkers of the 1950s there also remained the immediately intuitive possibility of adopting the reverse approach and instead declaring all artificial differences between peoples and their political communities to be secondary and advocating the bare biological survival of the species above all. Few championed this reversal more prominently than Russell, who in his eighties emerged as one of the most influential anti-nuclear public intellectuals and a leading organizer and activist.²⁰⁴ Shortly after Jaspers received the Peace Prize of the German Book Trade, Russell wrote in his 1959 *Common Sense and Nuclear Warfare*, “There are many people in the West, and I suppose also in the East, who consider that the extermination of the human race would be preferable to the victory of the ideology that they dislike. They maintain that the evils inflicted by the Kremlin or by Wall Street, as the case may be, are so great that, in a world dominated by either, life would not be worth living and it would be a kindness to future generations to prevent them from being born. On this ground it is argued that, if nothing short of a nuclear war can prevent the victory of the other side, a nuclear war should be waged even should it involve a risk of universal death.”²⁰⁵ For Russell,

²⁰⁴ Monk, *The Ghosts of Madness*, 387-413.

²⁰⁵ Bertrand Russell, *Common Sense and Nuclear Warfare* (London: George Allen & Unwin Ltd, 1959), 54-55.

this smacked of the most “ferocious fanaticism.” Where there is life, there is hope, and no imaginable tyranny—however total—could ever match the permanence of extinction. “Anybody who supposes that the tyranny of the Kremlin or the tyranny of Wall Street, as the case may be, would last for ever if for a moment it achieved world-victory, is being totally unhistorical,” he claimed, concluding, “The pessimism of those who believe that under this sort of system nothing good can ever emerge is to me incomprehensible.”²⁰⁶ Russell turns out to have instead harbored his own very different form of pessimism.

For Russell, the only solution to the prospect of universal death was, as it ever had been, to finally establish the same kind of sovereign world government that he, Wells, and others had been advocating since the disaster of the Great War first roused them from their late Victorian political slumber. As far back as 1945, the logician-turned-public-intellectual had been aware that the creation of atomic weapons was by that point primarily an engineering problem, and one that the Soviets would not be long in solving.²⁰⁷ Over the course of the next four years, Russell publicly urged the United States to use its nuclear monopoly to establish a world government under American hegemony on at least twelve occasions, conducting an atomic blitzkrieg against a recalcitrant Soviet Union if necessary.²⁰⁸ His mania eventually broke along with the American monopoly in 1949, leaving him to foresee one final juncture at which the creation of world government might be possible now that both Cold War antagonists possessed atomic weapons. “Perhaps, though I scarcely dare to hope it,” Russell wrote in 1950, “the hydrogen bomb will terrify mankind into sanity and tolerance. If this should happen we shall have reason to bless its

²⁰⁶ Ibid., 56-57.

²⁰⁷ For some characteristically brilliant insights into why Russell abandoned professional philosophy for the life of a journalist and political commentator (and the role that his *Wunderkind* pupil Wittgenstein played in this decision), see Ray Monk, *Bertrand Russell: The Ghosts of Madness*, 5-7.

²⁰⁸ Ibid., 302.

inventors.”²⁰⁹ Shortly after the Castle Bravo debacle, he once again warned: “I do not venture to prophesy that a world government...will in fact be created. What I do say, and what I wish to say with all possible emphasis, is that the creation of such a government is the only long-run alternative to the extinction of the human race.”²¹⁰ In the months that followed, he did all that he could to terrify mankind into sanity.

Russell’s efforts to make mankind see some minimum modicum of reason culminated in what he termed a “new dirge for the human race” that he delivered on December 23, 1954 under the title “Man’s Peril” (which would be rereleased in slightly condensed form six months later as the “Russell-Einstein Manifesto” quoted earlier).²¹¹ Where Jaspers had advocated placing the cause of political freedom before bare species survival, here Russell’s goal was “to avoid politics” by appealing not to a tendentious definition of Man and his needs, but the pre-political interest that all living human beings ought to share as members of a single biological species.²¹² Russell opened this famous address by declaring, “I am speaking on this occasion not as a Briton, not as a European, not as a member of a Western democracy, but as a human being, a member of the species Man, whose continued existence is in doubt. The world is full of conflicts: Jews and Arabs; Indians and Pakistanis; White men and Negroes in Africa; and, overshadowing all minor conflicts, the titanic struggle between Communism and anti-Communism.” After acknowledging that “almost everybody who is politically conscious has strong feelings about one or more of these issues” he asked his listeners, “if you can, to set aside such feelings for the moment and

²⁰⁹ Bertrand Russell, *Unpopular Essays* (London: George Allen & Unwin Ltd, 1950), 165.

²¹⁰ Bertrand Russell, “The Hydrogen Bomb and World Government (1954)” in *The Collected Papers of Bertrand Russell*, Vol. 28, 36.

²¹¹ He later claimed that this short address on the novel peril of the hydrogen bomb “was so tight packed that anything that I have since said on the subject can be found in it at least in essence.” Russell, *The Autobiography of Bertrand Russell*, Vol. 3, 73.

²¹² *Ibid.*, 99.

consider yourself only as a member of a biological species which has had a remarkable history and whose disappearance none of us can desire.”²¹³ Anyone who succeeded in overcoming their fanatical loyalty to some artificial locus of political identity and came instead to think of themselves primarily as members of the biological species would realize in a moment of sanity and tolerance that life must come first and that “the only long-term cure for this situation is the creation of a World Government strong enough to defeat any hostile combination and able to substitute law for lawless force in deciding disputes among nations.”²¹⁴

Much like Arendt, Russell saw that “the establishment of one sovereign world state... would not be the climax of world politics,” as the former had put it, “but quite literally its end.” If politics required dividing the species into disparate peoples separated by merely secondary, human-made distinctions of religion, race, and ideology, and the resulting sovereign political communities were prepared to resort to war to protect their people’s particular way of life even at the risk of unleashing universal death, then perhaps it *was* time to put an end to politics once and for all. However, while Russell may have been well justified in balking at Jaspers’ and others’ declaration in favor of freedom over life, his own advocacy of species survival over all carried its own sinister edge. For his part, Russell had always been an ambivalent advocate of sovereign world government, framing it as the better of two evils and a kind of emergency tourniquet required to stop the species from bleeding itself to death in ever more scientifically advanced wars. Like any tourniquet, it would pinch, and he saw no reason to “deny that the loss of liberty involved will be painful,” claiming only that it would be preferable

²¹³ Russel, “Man’s Peril” in *The Collected Papers of Bertrand Russell*, Vol. 28, 86.

²¹⁴ “This is, at present, a distant prospect,” he continued. “I do not know whether man has sufficient wisdom to bring it about before his quarrels have brought him to extinction.” Bertrand Russell, “The Duty of a Philosopher in this Age” in *The Collected Papers of Bertrand Russell*, Vol. 11, pp.457-463; 460-461. For the place of world government in “Man’s Peril,” see: Monk, *The Ghosts of Madness*, 377.

to the loss of all else.²¹⁵ He remained quite upfront about the fact that he did “not believe the human race has sufficient statesmanship or capacity for mutual forbearance to establish a world Government on a basis of consent alone” and held that “force will be needed in its establishment and in its preservation through the early years of its existence.”²¹⁶ Ironically, in reading Russell’s remarks about world government, it quickly becomes clear that he remains no less beholden to the idea of a broadly Kantian vision of perpetual peace and federated species reconciliation than Jaspers. The primary difference is that, while Jaspers called for immediately making a morally transformative, existentially risky leap into this new order that will either realize the full potential of Man or end him forever, Russell knowingly decides to put the cart before the horse and impose a sovereign world government on the still-divided peoples of the world before they were prepared to rationally accept a measure that was clearly in their collective interest as members of the species.

Ever since the Great War first derailed the long march towards perpetual peace, it had been clear to Russell that “owing to men's folly, a world-government will only be established by force, and therefore be at first cruel and despotic.” But it would also be better than nothing in the literal sense of warding off universal death at a moment when advancing science had made further war an increasingly existentially risky prospect. Under world government “life at first might be unpleasant, but it would at least be possible” and, he hoped, “gradually give rise to the other conditions of a tolerable existence.”²¹⁷ Citing the example of how various despotic regimes

²¹⁵ Bertrand Russell, “The Hydrogen Bomb and World Government” in *The Collected Papers of Bertrand Russell*, Vol. 28, pp.33-37; 37.

²¹⁶ Bertrand Russell, *New Hopes for a Changing World* (London: George Allen & Unwin Ltd, 1951), 94.

²¹⁷ These remarks were initially published in 1924 as *The Future of Science: Icarus*—a wry rejoinder to Haldane’s 1924 *Daedalus, or, Science and the Future*. Bertrand Russell, *The Future of Science* (New York: The Philosophical Library, Inc., 1959), 34. For a reformulation of this point, see also: Bertrand Russell, *Power: A New Social Analysis* (London: George Allen & Unwin Ltd, 1938), 15.

had mellowed over time, Russell urged contemporaries to consider how, “In the history of social evolution it will be found that almost invariably the establishment of some sort of government has come first and attempts to make government compatible with personal liberty have come later.”²¹⁸ Life would have to come first. Freedom second. “Either we must allow the human race to exterminate itself,” Russell declared circa 1950, “or we must forgo certain liberties which are very dear to us....We are perhaps living in the last age of man, and, if so, it is to science that he will owe his extinction. If, however, the human race decides to let itself go on living, it will have to make very drastic changes in its ways of thinking, feeling, and behaving.”²¹⁹ The early days of living under world government would require some adjustment while the long-entrenched ways of thinking, feeling, and behaving were reformed. “There would still be an excess of competitive feeling, and the older generation, at least, would not readily adapt their minds to the new world that would be in process of being created,” he allowed, meaning that “some limitation of freedom” would be required “while the work of reorientation was going on...to bring about the necessary adaptation.”²²⁰ Fortunately, the experience of recent decades had demonstrated that human beings were far more adaptable than previous generations would have imagined possible. “Human nature is at least nine-tenths nurture, and only the remaining tenth is genetic,” Russell had remarked back in the 1920s and, fortunately, “The part which is due to nurture can be dealt with by education. Probably, in time, even the part that is genetic will prove amenable to science.”²²¹ Human nature would not stand in the way of creating the kind of permanent world government that he believed to be necessary to secure species survival. Rather, Russell contended that immediately establishing a sovereign world government to safeguard the survival of the

²¹⁸ Russell, *Unpopular Essays*, 142.

²¹⁹ Bertrand Russell, *The Impact of Science on Society* (New York: AMS Press, 1952), 50.

²²⁰ Bertrand Russell, *Has Man a Future?*, 125.

²²¹ *Ibid*,

species might not only be preferable, but also scientifically feasible—imposed on many by force at first but gradually mellowing as it massaged human nature into forms that might prove permanently compatible with this kind of post-political existence.

Russell was highly aware that these new capacities could be used for both good and ill, declaring to an audience in 1950, “I do not see how any internal movement of revolt can ever bring freedom to the oppressed in a modern scientific dictatorship.”²²² Fortunately, this risk came with the consolation that this kind of dictatorship could only ever be rendered permanently unassailable “if it can become worldwide.”²²³ For once in his life, the great ironist seems not to have noticed the irony. In calling for the immediate establishment of world government and hoping that such a government can render its rule permanent by rearranging human nature to fit its confines, Russell’s vision for the future species could easily qualify as ‘totalitarian’ by Arendt’s definition. But then again, Arendt had formulated her definition of totalitarianism at a time when the *summum malum* of all politics appeared to be the dehumanization of all human beings, never appearing to consider that the ‘sheer animal life’ of the human species might also come to be jeopardized. Did Russell’s radical decision to side with the bare biological survival of the species at the cost of political freedom embody the essence of totalitarianism or further illustrate the extent to which the framework that Arendt developed in *Origins* had been outpaced by events? We will return to consider this question further in the following chapter.

Despite adopting starkly differing approaches, Russell and Jaspers stand out as occupying two sides of the same Enlightenment coin, each trying in his own way to reach at the eleventh hour the perpetual peace that it no longer looked like humankind would survive long enough to realize. Like so many of their contemporaries, both philosophers had entered the twentieth

²²² Russell, *The Impact of Science on Society*, 40.

²²³ *Ibid.*, 41.

century politically complacent.²²⁴ Up to the outbreak of the Great War, a continuously upward trend towards social enlightenment and scientific progress seemed to be safely steering the world's peoples towards the regulative idea of humankind's ultimate political reconciliation. Some liberals at the time had dreamed of the species brought together as shoppers in a giant world market, while communists looked forward to eventual classless abundance for all, and anarchists anticipated the organismic unity that would arise once the shackles of state violence were removed. However, as the order that Western political humanists had established began to resolutely tear itself apart in 1914, there was another lesson to be drawn. For some observers, the ensuing decades of relentless world war, revolution, pogroms, and dehumanizations of all kinds indicated that the time had not come to at last realize the political ambitions of Enlightenment humanism, but rather to radically question its premises. The legacy of Western philosophy and its approaches to human totality in fact presented not two but *three* highly intuitive responses to the new challenge of facing the 'urgent reality of mankind' as it manifested in the face of universal death. One, as we have seen, was to follow Jaspers in turning to a new humanist definition of the essence of Man for guidance. Another involved following Russell in his appeal to "consider yourself only as a member of a biological species." The third approach involved radically questioning the philosophical validity of Western universalism and the political consequences of Western humanism, rejecting as inherently pernicious any attempts to address human beings in

²²⁴ "Until 1914 my basic attitude was strictly non-political. Everything seemed to be definitive. Our anguish concerned a much later future, which we did not believe we would see," Jaspers reminisced in 1957. Russell for his part looked back in 1949 at how, "When I first became politically conscious Gladstone and Disraeli still confronted each other amid Victorian solidities, the British Empire seemed eternal, a threat to British naval supremacy was unthinkable, the country was aristocratic and rich and growing richer, and Socialism was regarded as the fad of a few disgruntled and disreputable foreigners. For an old man, with such a background, it is difficult to feel at home in a world of atomic bombs, communism and American supremacy. Karl Jaspers, "Philosophical Autobiography" in *The Philosophy of Karl Jaspers* (1957), 55; Bertrand Russell, *The Impact of Science on Society*, 69.

their universality and, by extension, remaining silent on the subject of universal death. Of all the positions that developed during the immanentization of the apocalypse in the 1950s, I believe that this final approach may have had a more lasting impact in academic circles than either Jaspers' champions of 'liberty or death' or Russell's advocates of species survival. Having begun this chapter by taking a brief look at the theoretical origins of Western humanism, let us conclude by taking a quick survey of those who sought to help hasten its end.

As noted earlier, by the turn of the twentieth century, virtually every point on the Western political spectrum identified itself as some form of humanism, its adherents each claiming to be operating either from a truer definition of Man's nature and needs or a better contrived program for serving them. The first Westerners to actively speak out against the political implications of Western humanism were a group of conservative Germans who could not help but notice that their French, English, and American opponents during the Great War had been quick to seize the humanist high ground. The philosopher Henri Bergson had asserted at the outset of the conflict that France "can count on the ever more active sympathy of the civilized world because her cause is that of humanity itself."²²⁵ One can almost feel the incandescent indignation of the German novelist Thomas Mann when expressing his own contemporary astonishment in being told that "Germany—Germany of all countries!—was the moral shame of humanity."²²⁶ He proceeded to castigate the hypocrisy of those self-styled humanists who claimed to champion the "beauty and dignity of Man' and "what makes the human being human" while at the same time converting "humanism and humanitarianism in general" into "a scholastic literary formula, into a murderous

²²⁵ Henri Bergson, *The Meaning of the War: Life and Matter in Conflict* (London: T. Fisher Unwin Ltd, 1915), 44. See also: Nicoletta F. Gullace "Barbaric Anti-Modernisms: Representations of the 'Hun' in Britain, North America, Australia, and Beyond" in *Picture This: World War I Posters and Visual Culture* Ed. Pearl James (Lincoln: University of Nebraska Press, 2009), pp. 61-78; 62.

²²⁶ Thomas Mann, *Reflections of a Non-Political Man*, Trans. Walter D. Morris (New York: Frederick Ungar Publishing Co., 1983), 109.

doctrine, a tyrannical, schoolmasterly pedantry.”²²⁷ A few years later, the stormtrooper-turned-novelist Ernst Jünger could only marvel at how Germany’s opponents had promptly ensured that their “own interests are given the rank of a humanitarian postulate—of an issue with universal implications for humanity.”²²⁸ Meanwhile, in the late 1920s the legal theorist Carl Schmitt proposed, “To confiscate the word humanity, to invoke and monopolize such a term probably has certain incalculable effects, such as denying the enemy the quality of being human and declaring him to be an outlaw of humanity; and a war can thereby be driven to the most extreme inhumanity.”²²⁹ In a 1939 lecture series on Nietzsche, the philosopher Martin Heidegger called attention to the fact that “the question ‘Who is man?’ is not as harmless as it may seem,” for “the question remains as to whether the essential definition of human being humanizes or dehumanizes it.”²³⁰ For some observers, the events of the next six years would argue for the latter several tens of millions of times over.

Heidegger and Schmitt both played prominent roles in the consolidation of Nazi power in Germany (while Mann felt the Nazis were too extreme and Jünger that they were not extreme enough). As part of his attempted post-war rehabilitation, Heidegger addressed an open “Letter

²²⁷ Ibid., 32-33.

²²⁸ Ernst Jünger, “Total Mobilization” in *The Heidegger Controversy: A Critical Reader*, Trans. Joel Golb and Richard Wolin (Cambridge, MA: MIT University Press, 1993), pp. 119-39; 135.

²²⁹ Lest he leave anyone in doubt about the fact that he had the plight of Germany in mind here, Schmitt adds in a footnote how first the “Indians of North America” had been outlawed “because they eat human flesh...and were then exterminated. As civilization progresses and morality rises, even less harmless things than devouring human flesh could perhaps qualify as deserving to be outlawed in such a manner. Maybe one day it will be enough if a people were unable to pay its debts.” Carl Schmitt, *The Concept of the Political*, Trans. George Schwab (Chicago: The University of Chicago Press, 2007), 54. See also: Ibid., fn. 23.

²³⁰ Further foreshadowing what was to come, he continued ominously, “If the capacities for questioning are to survive in Dasein, this question is to be Europe’s task for the future, for this century and the century to come. It can find its answer only in the exemplary and authoritative way in which particular nations, in competition with others, shape their history.” It should never be forgotten that Heidegger was, quite literally, a card-carrying Nazi during this period. Martin Heidegger, *Nietzsche*, Volume II, Trans. David Farrell Krell (New York: Harper Collins, 1991), 101.

on Humanism” to a French audience in 1946 as a sort of *mea minima culpa*, stressing that his own opposition to humanism “does not align itself against the human and advocate the inhuman” or “promote the inhumane and deprecate the dignity of man.” Rather, Heidegger claimed, “Humanism is opposed because it does not set the *humanitas* of man high enough.”²³¹ Heidegger, Schmitt, Mann, and Jünger all appear to have first encountered the dehumanizing dark side of Western humanism during their brief period of banishment from ‘humanity’ as barbarian German ‘Huns’ during the First World War. To be clear, nothing that they experienced as fleetingly dehumanized outsiders and “enemies of humanity” would have come as a surprised to countless women, workers, ethnic and religious minorities, or colonial subjects. Those consigned to these categories had centuries of intimate experience in being judged less than fully human according to prevailing definitions of Man, but also of finding their testimonies against humanism silenced in advanced by the very dehumanization it imposed.²³² For the literary and philosophical elite that spearheaded the German revolt against humanism, by contrast, the exile from humanity was temporary. When they returned to the fold following the Armistice they received a wide hearing regarding the harms that humanism harbored for those it excluded. This proved to be particularly true in France.²³³

In 1946, Jean-Paul Sartre declared that, while he remained *some kind* of humanist, it was not “acceptable that a man should pronounce judgment on mankind” and clear that “the cult of humanity leads ultimately to...Fascism.”²³⁴ A year later phenomenologist Maurice Merleau-

²³¹ Heidegger, “Letter on Humanism,” 233-234.

²³² For a classic account of this dynamic, see Giyatri Spivak, “Can the Subaltern Speak?” in *Can the Subaltern Speak: Reflections on the History of an Idea*, Ed. Rosalind C. Morris (New York: Columbia University Press, 2010), 21-66.

²³³ Stephanos Geroulanos, *An Atheism that Is not Humanist Emerges in French Thought* (Stanford: Stanford University Press, 2010), 173-250.

²³⁴ Jean Paul Sartre, *Existentialism is a Humanism*, Trans. Carol Macomber (New Haven: Yale University Press, 2007), 52.

Ponty pointed out how in his study *Humanism and Terror*, “Once humanism attempts to fulfill itself with any consistency it becomes transformed into its opposite, namely, into violence.”²³⁵ A people would always define Man in their own image and, in doing so, dehumanize those fellow members of the species whose ways of life did not conform with this ersatz universalism. “In its own eyes Western humanism appears as the love of humanity,” he cautioned, “but for the rest of men it is only the custom and institution of a group of men, their password and occasionally their battle cry.”²³⁶ Having fled Nazi Germany for the United States a decade earlier, the social theorist Max Horkheimer also added his voice to the chorus in 1947, lamenting how, “The hopes of mankind seem to be farther from fulfillment today than they were even in the groping epochs when they were first formulated by humanists....Advance in technical facilities for enlightenment is accompanied by a process of dehumanization. Thus progress threatens to nullify the very goal it is supposed to realize—the idea of man.”²³⁷

Having determined the tenets of Western humanism to not only be metaphysically dubious but politically dangerous, this chorus of anti-essentialist anti-universalists found its growing voice eloquently distilled in a short essay penned by the philosopher Roland Barthes when critiquing the famous photography exhibition *The Family of Man* during its pass through Paris in 1956. Made up almost exclusively of several hundred pictures of human beings assembled from 68 countries, *The Family of Man* remains the most famous and widely viewed photography exhibition ever assembled (Figure 1.3). Barthes set about debunking the way the exhibition fostered what he declared to be “that ambiguous myth of the human community, whose alibi nourishes a large swath of our humanism,” which suggests that “there is deep inside

²³⁵ Maurice Merleau-Ponty, *Humanism and Terror*, Trans. John O’Neill (Boston: Beacon Press, 2001), 24.

²³⁶ *Ibid.*, 176.

²³⁷ Max Horkheimer, *Eclipse of Reason* (New York: Continuum, 2004), v.



Figure 1.3

A collage of images informally dubbed 'Faces of War' from the initial installation of *The Family of Man* during its opening week at the New York MOMA in January of 1955. © Wayne Miller/Magnum Photos.

each one of us an identical ‘nature,’ that their diversity is merely formal and does not belie the existence of a common matrix” and “evidently comes down to postulating a human essence.”²³⁸ Setting the tone for several generations to follow, Barthes declared, “Any classical humanism postulates that if we scratch the surface of human history, the relativity of men's institutions, or the superficial diversity of their skins (...), we soon reach the bedrock of a universal human nature. A progressive humanism, to the contrary, must always consider inverting the terms of this old imposture, constantly scouring nature, its ‘laws’ and its ‘limits,’ to discover History there and finally to posit Nature as itself historical.”²³⁹ What Barthes termed a ‘progressive humanism’ was more aptly rechristened ‘antihumanism’ by Louis Althusser a decade later.²⁴⁰

It stands out as a matter of stark—but potentially quite telling—irony that Barthes’ essay, which for decades served as what one admirer termed “a touchstone for anti-humanist demystifications of humanist discourses,”²⁴¹ should have conspicuously ignored one prominent feature of the exhibition it was critiquing. In the midst of *The Family of Man* stood a wall stenciled with the words “...the best authorities are unanimous in saying that a war with hydrogen bombs is quite likely to put an end to the human race. ...there will be universal death—sudden only for a fortunate minority, but for the majority a slow torture of disease and disintegration.” Next to this excerpt from Russell’s “Man’s Peril” towered an enormous image of the cloud generated by the Ivy Mike detonation that dwarfed all other photographs in the exhibition (save one).²⁴² And yet, in the “small masterpiece of discursive deflation” with which,

²³⁸ Roland Barthes, *Mythologies* (New York: Hill and Wang, 2013), 196.

²³⁹ *Ibid.*, 196-197.

²⁴⁰ Louis Althusser, *For Marx* Trans. Ben Brewster (New York: The Penguin Press, 1969), 229.

²⁴¹ Bob Chase, quoted in Gerd Herm, “Reassessing Roland Barthes’ Myth of *The Family of Man*” in *The Family of Man Revisited: Photography in a Global Age*, Ed. Gerd Herm, Anke Reitz, and Shamoan Zamir (New York: I.B. Tauris, 2018), 26.

²⁴² An image of the United Nations General Assembly in session, suggesting once again that the alternatives were world government or universal death.

in the words of another admirer, “Barthes gracefully dispatched the pious humanism exemplified by the exhibition,”²⁴³ he never once gave any indication of having noticed the towering image of the hydrogen bomb whose enormous gravity held the constellation of disparate photographs together, serving as what many recognized then and since to be the clear ‘climax’ of the exhibition.²⁴⁴ (Figure 1.4.) The physical layout of the exhibition would have made it impossible for Barthes to have ended his visit without having had to physically squeeze around this literally arresting image on his way to the exit. Visited by nine million people during its decade long world tour,²⁴⁵ *The Family of Man* remains one of the earliest, most innovative, and certainly the



Figure 1.4

The image of the Ivy Mike cloud as displayed during the installation of *The Family of Man* in Paris in February 1956. Note the path to the exit leading behind the hydrogen bomb image in the right of the frame.

²⁴³ The art critic Abigail Solomon-Godeau continues, explaining how, “For those of us who intellectually came of age as postmodernists, poststructuralists, feminists, Marxists, antihumanists, or, for that matter, atheists, this little essay of Barthes’s efficiently demonstrated the problem—indeed the bad faith—of sentimental humanism.” Abigail Solomon-Godeau, “The Family of Man: Refurbishing Humanism for a Postmodern Age” in *Photography after Photography: Gender, Genre, History* (Durham, NC: Duke University Press, 2017), 44-45.

²⁴⁴ Jacob Deschin, “The Family of Man” in *The New York Times* (Sunday Jan. 30, 1955). Eric Sandeen, *Picturing an Exhibition: The Family of Man and 1950s America* (Albuquerque: University of New Mexico Press, 1995), 48. Miles Orvell, “Et in Arcadia Ego: The Family of Man as Cold War Pastoral” in *The Family of Man Revisited*, 193.

²⁴⁵ Sandeen, *Picturing an Exhibition*, 4.

most widely viewed attempts to aesthetically represent the ‘urgent reality of mankind’ as gathered in its newly concrete totality beneath the shadow of the hydrogen bomb. (The collage of portraits featured in Figure 1.3 were positioned in a way that suggested they were staring at the bomb image, with the photograph of the child with the rice ball positioned in the upper middle having been taken in the first hours following the Hiroshima bombing.)²⁴⁶

Rather than engage with the novel challenge of universal death, Barthes opts to entirely elide any mention of the hydrogen bomb and instead critiques the exhibition what he perceives to be its humanist sleight of hand in favoring Nature over History. As examples of this tendency, he offers: “But those in our exhibition. Birth, death? Yes, they are facts of nature, universal facts. But if we take History away from them, there is nothing more to say about them... Doubtless the child is *always* born, but in the general volume of the human problem, what does the ‘essence’ of that action mean to us compared to the child’s modes of being, which indeed are perfectly historical?”²⁴⁷ Here Barthes signals his own quite conservative allegiance to the ancient Western tradition of believing that matters that pertain to the universal biological life of the human species in Nature are unchangeable and therefore have no bearing on politics, which concerns how well or poorly certain lives are lived in the historically contingent confines of a particular political community. I find it difficult to believe that anyone could assert that “doubtless the child is *always* born” when critiquing a photography exhibition centered on the hydrogen bomb, but this inability or unwillingness to confront universal death stands out in retrospect as a distinctive feature of anti-humanist anti-universalism Barthes helped promulgate.

²⁴⁶ Edward Steichen, the famed modernist photographer turned MOMA curator behind *The Family of Man* described this collage as featuring “faces that are thinking of the horrible, multiplying factor, the incredible multiplying factor of the atomic weapon. Will this be? Must this be? That is written on the faces of these three women, three children, and three men.” Steichen quoted in *Ibid.*, 57.

²⁴⁷ Original italics. Barthes, *Mythologies*, 198.

Barthes' elision of the image of the hydrogen bomb would in itself be strange enough if it were not for the fact that Horkheimer too prepared an essay on *The Family of Man* when the traveling exhibition appeared in Frankfurt two years later. Although Horkheimer cryptically suggested that the exhibition contained at least two images depicting things that were "completely and utterly evil," he declined to specify what these might be.²⁴⁸ In conspicuously ignoring the presence of the hydrogen bomb in the midst of *The Family of Man*, Barthes and Horkheimer manifested a particularly literal version of an affliction that Günther Anders had begun diagnosing in 1956 as "apocalypse-blindness."²⁴⁹ It is highly ironic, unfortunate, and perhaps on reflection unsurprising that those who adopted a resolutely anti-humanist, anti-universalist stance following the second world war themselves almost uniformly refrained from acknowledging the existence of hydrogen weapons or considered the potential political implications introduced by the prospect of universal death.²⁵⁰ The immanentization of the apocalypse had transformed 'mankind' into an 'urgent reality' at precisely the same moment that thinkers such as Horkheimer were declaring the need to forego "the endless quest for an image of man that will provide orientation and guidance,"²⁵¹ while his long-time friend and close

²⁴⁸ If one were to guess, he likely had in mind a photograph of the survivors of the Warsaw Ghetto Uprising being marched out at gun point and the hydrogen bomb image. Max Horkheimer, 'Opening of the Photo-Exhibition *The Family of Man – All of Us*' in *The Family of Man Revisited*, 52.

²⁴⁹ Anders, *Die Antiquiertheit des Menschen*, 267-271.

²⁵⁰ Always a bit of an outlier, in his 1962 study *Theory of the Partisan*, Schmitt acknowledges the changes that thermonuclear weapons have brought to warfare. Nevertheless, he speculates, "It is still technically possible that a few people would survive the night of bombs and missiles. Given this eventuality, it would be practical and even rationally purposeful to plan for the post-nuclear situation by training men today who would inhabit the bomb craters in the aftermath, occupying the devastated area. A new sort of partisan could then add a new chapter to world history with a new form of space-appropriation." Perhaps because of his unflagging faith in the katechon, Schmitt remained a transcendent rather than an immanent apocalyptic, ever accepting the possibility of absolute human self-annihilation. Carl Schmitt, *Theory of the Partisan*, Trans. A. C. Goodson (Ann Arbor: Michigan University Press, 2004), 56. See also: Carl Schmitt, *Glossarium: Aufzeichnungen der Jahre 1947-1951* (Berlin: Dunker & Humblot, 2015), 63.

²⁵¹ Max Horkheimer, "The Concept of Man" in Max Horkheimer, *The Critique of Instrumental Reason*, Trans. Matthew J. O'Connell (London: Verso, 2012), 4.

collaborator Theodore Adorno more pointedly declared, that “man is the ideology of dehumanization” within which “the undisputed, childlike sense of universal humanity taints itself with that which it opposes.”²⁵² For the antihumanists of the 1950s, denunciations of Man seemed to go hand in hand with resolutely ignoring the existence—let alone the philosophical and political implications—of existential risks to biological human survival. Those who had foresworn discussing human beings in universal terms found themselves confronted with the prospect of universal death and seemed to follow Horkheimer, who confided to Adorno in 1956 (around the same time that Barthes was touring *The Family of Man*): “My instinct is to say nothing if there is nothing I can do.”²⁵³

Its center of gravity migrating westward, by the 1960s antihumanism secured its position as what intellectual historian Stefanos Geroulanos aptly terms “an almost official face of French thought.”²⁵⁴ In 1966 Foucault prominently declared that the political task of the day was to “definitively liberate ourselves from humanism,”²⁵⁵ while in 1968 philosopher Jacques Derrida sought to dismantle the “metaphysical familiarity that so naturally links the *we* of the philosophers to ‘we men,’ to the *we* in the horizon of humanity,”²⁵⁶ and philosophical essayist and critic Maurice Blanchot advocated relinquishing “humanity itself” and “what they call humanism” and embracing instead “the destruction of the category of the universal.”²⁵⁷ By the

²⁵² Theodore Adorno, *The Jargon of Authenticity*, Trans. Knut Tarnowski and Frederic Will (Evanston: Northwestern University Press, 1973), 60-61.

²⁵³ Max Horkheimer in dialogue with Theodore Adorno, *Towards a New Manifesto*, Trans. Rodney Livingston (New York: Verso, 2019), 42.

²⁵⁴ Geroulanos, *An Atheism that Is not Humanist Emerges in French Thought*, 2.

²⁵⁵ Michel Foucault, “Entretien avec Madeleine Chapsal «Entretien avec Madeleine Chapsal», La Quinzaine littéraire, no 5, 16 mai 1966, pp. 14-15,” *Dits et écrits*, Tome 1 (Paris: Gallimard, 1994), 516.

²⁵⁶ Jacques Derrida, “The Ends of Man” in *Philosophy and Phenomenological Research*, Vol. 30, No. 1 (Sep. 1969), pp. 31-57; 35.

²⁵⁷ Maurice Blanchot, *Political Writings: 1953-1993*, Trans. Zakir Paul (New York: Fordham University Press, 2010), 88.

late 1960s, however, the avowed antihumanist refusal to address universal man and the implicit disavowal universal death began to intersect with a broader societal turn away from the unremitting glare of the hydrogen bomb. In his survey of magazines, indexes of newspaper articles, catalogs of nonfiction books and novels, and lists of films, the historian Spencer Weart documents a worldwide drop in mentions of nuclear weapons from a peak around the Cuban Missile Crisis of 1962 to a quarter or less by the end of the decade, with even “comic books with ‘Atom’ in the title vanishing from newsstands.”²⁵⁸ The Partial Test Ban Treaty of 1963 helped to drive nuclear weapons out of sight,²⁵⁹ but not out of mind, opening onto nearly two decades of spooky silence as a whole generation learned to live with the awareness that both they and the whole of human existence could be annihilated at any moment for any or no reason.²⁶⁰ Already by 1963, the United States had mass produced some 28,000 nuclear weapons, while the Soviet Union possessed around 4,000 (heading for an eventual all-time peak of 31,000 by 1966 for the former and 40,000 in 1986 for the latter).²⁶¹ Although the exact figures were a military secret at the time, large portions of the public had come to take for granted that thermonuclear war between the superpowers would mean the end of all human life.²⁶² To the extent that all traditional areas of political and ethical concern take as their implicit premise the earthly existence of human beings, the immanentization of the apocalypse seems like it should have been

²⁵⁸ Weart, *The Rise of Nuclear Fear*, 152. A cursory google N-gram search for any term pertaining to nuclear weapons reveals a similarly precipitous drop beginning in the early sixties and bottoming out by the end of the decade, albeit not to quite the same degree noted by Weart for most terms.

²⁵⁹ All of the iconic still images and film of tower mushroom clouds dates to before 1963. For a brilliant account of the aesthetics of this encounter, see Peter Hales, “The Atomic Sublime” in *American Studies*, Vol. 32, No. 1 (Spring, 1991), pp. 5-31.

²⁶⁰ Weart, *The Rise of Nuclear Fear*, 155, 267, 232. Sibylle K. Escalona, “Growing up with the Threat of Nuclear War: Some Indirect Effects on Personality Development” in *American Journal of Orthopsychiatry* (October 1, 1982), 602. Robert Jay Lifton, *The Future of Immortality and Other Essays* (New York: Basic Books, 1987), 23.

²⁶¹ Kristensen and Norris, “Global Nuclear Weapons Inventories, 1945-2013,” 78.

²⁶² Weart, *The Rise of Nuclear Fear*, 114-118.

a matter of overriding importance. Instead, an entire generation appears to have quickly learned to, if not ignore, then at least refrain from discussing the omnipresent glint of Kennedy's 'nuclear sword of Damocles' menacing every moment of their lives with the possibility of sudden, arbitrary, and universal death.

Blanchot may have summed up the feelings of many (and echoed Arendt's own earlier concerns about appearing "stupid and pompous") in his 1963 review of the French translation of *The Atom Bomb and the Future of Man*, which praised Jaspers' unflinching willingness to face the scale of the atomic problem while criticizing his unwillingness to entertain correspondingly radical solutions. Instead, Blanchot observed, "If thinking falls back into its traditional affirmations, it is because it wants to risk nothing of itself in the presence of an ambiguous event about which it is not able to decide what it means, with its horrible face, with its appearance as absolute—an event of enormous size but enormously empty, about which it can say nothing save this banality: that it would be better to prevent it."²⁶³ What more, after all, was there really to add? In a letter penned in 1965, Arendt herself noted how both the possibility of nuclear war *and* the creation of another Auschwitz remained possible, "even if people everywhere cease to talk about nuclear death."²⁶⁴ Even she, who as we have already seen, felt the political consequences of the hydrogen bomb to be of paramount significance, never seemed to quite surmount her initial reticence to discuss a matters that so easily risk sounding 'stupid and pompous' when stated in writing, with her short article "Europe and the Atom Bomb" remaining the only dedicated treatment of the subject she would publish during her lifetime.²⁶⁵

²⁶³ Maurice Blanchot, "The Apocalypse Is Disappointing" in *Friendship*, Trans. Elizabeth Rottenberg (Stanford: Stanford University Press, 1997), 104.

²⁶⁴ My italics. Hannah Arendt to Hans Magnus Enzensberger, January 30, 1965, reproduced in *Thinking without a Bannister*, 313-314.

²⁶⁵ The 1954 essay "Europe and the Atom Bomb" discussed above.

The philosopher Jean-François Lyotard may have inadvertently captured some of the basic immiscibility between antihumanism and immanent apocalypticism a little over a decade later in his 1982 “Answering the Question: What Is Postmodernism?” At the outset of this highly influential essay, Lyotard offered a representative sample of those who had yet to register the significance of ‘postmodernism,’ citing among them the instance of “a talented teatrologist for whom postmodernism, with its games and fantasies, carries very little weight in front of political authority, especially when a worried public opinion encourages authority to a politics of totalitarian surveillance in the face of nuclear warfare threats.”²⁶⁶ Himself on guard against “entertaining excessively humanistic notions,” Lyotard memorably concludes this essay by declaring, “The nineteenth and twentieth centuries have given us as much terror as we can take....Let us wage a war on totality; let us be witnesses to the unrepresentable; let us activate the differences and save the honor of the name.”²⁶⁷ However, by the time Lyotard made these comments the spooky silence that had set in beneath the nuclear sword of Damocles had given way to a brief but intense flurry of discussion surrounding nuclear annihilation that came to deeply mark the early 1980s before ebbing again by mid-decade.²⁶⁸ During this brief furor, Derrida was asked to weigh in on the topic of nuclear weapons for the first time in his career and, in answering, offered a potential object lesson regarding why antihumanist anti-universalists at war with totality might have generally opted to avoid the subject. In his 1984 address “No Apocalypse, Not Now”—which was supposed to have helped launch the fledgling ‘nuclear studies’ movement—by declaring, “We are speaking of stakes that are apparently limitless for

²⁶⁶ Jean-François Lyotard, *The Postmodern Condition: A Report on Knowledge*, Trans. Geoff Bennington and Brian Massumi (Minneapolis: University of Minnesota Press, 1984), 72.

²⁶⁷ *Ibid.*, 76, 82.

²⁶⁸ There will be much more to be said on the timing and significance of this fleeting 1980s reignition of interest in the immanent apocalypse in Chapter Three.

what is still now and then called humanity. People find it easy to say that in nuclear war ‘humanity’ runs the risk of its self-destruction, with nothing left over, no remainder.”²⁶⁹

Gradually conceding in the course of his presentation that the prospect of thermonuclear war did indeed render the “remainderless destruction” of “what is still now and then called humanity” a source of serious concern,²⁷⁰ he nevertheless asserted that there was no metric for establishing why this prospect might in itself be any worse than the personal end of the world that attends every individual death. Of the death of the self, Derrida declared, “even if I live this anticipation in anguish, terror, despair, as a catastrophe that I have no reason not to equate with the annihilation of humanity as a whole: this catastrophe occurs with every individual death; there is no common measure adequate to persuade me that a personal mourning is less serious than a nuclear war.”²⁷¹ For my part, I find this last claim to be as philosophically fascinating as it is politically disqualifying. If their resolute rejection of political universalism led other antihumanists to similar conclusions, it is not surprising that they might have chosen to keep them to themselves.

While apocalypse blindness has been a surprisingly consistent condition among many leading antihumanists, not everyone who came to harbor serious questions about the political implications of Western humanism or its traditional approaches to universalism avoided the topic of universal death. In the next chapter, we will see how both Arendt and Foucault turned their respective encounters with the immanent apocalypse into an opportunity to rethink what the politics of biological life might look like in the face of universal death.

²⁶⁹ Jacques Derrida, “No Apocalypse, Not Now: Full Speed Ahead, Seven Missiles, Seven Missives” in *Diacritics*, Vol. 14, No. 2, Nuclear Criticism (Summer, 1984), pp. 20-31; 20.

²⁷⁰ *Ibid.*, 21-24.

²⁷¹ *Ibid.*, 28.

“Living is no laughing matter:
you must take it seriously,
so much so and to such a degree
that, for example, your hands tied behind your back,
your back to the wall,
or else in a laboratory
in your white coat and safety glasses,
you can die for people—
even for people whose faces you've never seen,
even though you know living
is the most real, the most beautiful thing.”
—Nazım Hikmet, excerpt from “On Living” (1947)¹

CHAPTER 2: PROCESS

In the early 1990s, philosopher Giorgio Agamben penned the following reflection in his diary, musing, “Classical politics used to distinguish clearly between *zōē* and *bios*, between natural life and political life, between human beings as simply living beings, whose place was in the home, and human beings as political subjects, whose place was in the polis. Well, we no longer have any idea of any of this. We can no longer distinguish between *zōē* and *bios*, between our biological life as living beings and our political existence, between what is incommunicable and speechless and what is speakable and communicable. As Foucault once wrote, we are animals in whose politics our very life as living beings is at stake.”² The passage in question had appeared in Michel Foucault’s 1976 *The History of Sexuality*. Here, Foucault had fleetingly introduced a theory for addressing how the biological life of the human species had entered into the realm of political calculation, dubbing the result ‘biopolitics.’³ Over the course of the mid-

¹ Nazım Hikmet, *Poems of Nazım Hikmet*, Trans. Randy Blasing and Mutlu Konuk (New York: Persea Books, 2002), 128.

² Giorgio Agamben, *Means without End: Notes on Politics*, Trans. Vincenzo Binetti and Cesare Casarino (Minneapolis: Minnesota University Press, 2000), 138.

³ Michel Foucault, *The History of Sexuality, Volume 1: An Introduction*, Trans. Robert Hurley (New York: Vintage Books, 1990), 135-145.

1990s, Agamben would emerge as the most prominent of several figures all seeming to rediscover this aspect of Foucault's legacy at once.⁴ In the course of introducing Foucault's theory of biopolitics to a contemporary audience with his highly influential 1995 study *Homo Sacer*, Agamben paused at the outset to call attention to an odd congruence that he had noted on the subject, observing how,

Almost twenty years before *The History of Sexuality*, Hannah Arendt had already analyzed the process that brings...biological life as such gradually to occupy the very center of modernity. In *The Human Condition*, Arendt attributes the transformation and decadence of the political realm in modern societies to this very primacy of natural life over political action. That Foucault was able to begin his study of biopolitics with no reference to Arendt's work (which remains even today, practically without continuation) bears witness to the difficulties and resistances that thinking had to encounter in this area. And it is most likely these very difficulties that account for the curious fact that Arendt establishes no connection between her research in *The Human Condition* and the penetrating analysis she had previously devoted to totalitarian power (in which a biopolitical perspective is altogether lacking)...⁵

There are indeed many salient similarities between Arendt and Foucault on this subject, leaving political theorist Kathrin Braun well justified in suggest that: "Although the term 'biopolitics' does not appear in Arendt...we can read Arendt as a theorist of biopolitics *avant la lettre*."⁶

In this chapter, I argue that the connection between Arendt and Foucault on the subject of biopolitics runs far deeper than has yet been appreciated, touching directly on what Foucault will

⁴ Paul Gilroy, "'After the Love Has Gone': Bio-Politics and Etho-Poetics in the Black Public Sphere" *Public Culture* (1994), 49–76. Ann Stoler, *Race and the Education of Desire: Foucault's History of Sexuality and the Colonial Order of Things* (Durham, NC: Duke University Press, 1995).

⁵ Giorgio Agamben, *Homo Sacer in The Homo Sacer Omnibus* (Stanford: Stanford University Press, 2017), 7.

⁶ Kathrin Braun, "Biopolitics and Temporality in Arendt and Foucault," *Time and Society* Vol. 16 No. 1 (2007), pp. 5–23; 7.

come to call “the power to kill life itself.” After being reintroduced in the 1990s, Foucault’s theory of biopolitics became an area of wide ranging research in the 2000s before sparking what some ventured to term a ‘biopolitical turn’ in the early 2010s,⁷ while at the same time helping to inspire many other hyphenate ‘-politics’ that drew on biopolitics for inspiration.⁸ And yet, remarkably, despite all the attention that has been lavished on Arendt and Foucault as highly influential political thinkers in general—and theorists of the intersection of political power and biological life in particular—no one has yet addressed the extent to which their politics of life came to be shaped in analogous ways by their respective encounters with universal death. The fact that this deeper connection could have so far been overlooked suggests that Agamben may have been far more correct than he knew when first pointing out “the difficulties and resistances that thinking had to encounter in this area.” What follows will see both Arendt and Foucault traverse parallel but opposite paths: Arendt inquiring into the political consequences of the new power to kill life itself and discovering the nineteenth century rise of biopolitics, Foucault beginning with the study of biopolitics as the solution to the relation between sovereignty and discipline and stumbling upon the power to kill life itself when he tries to apply his historical schema to the contemporary present.

⁷ As, in the words of Campbell and Sitze, “a proliferation of studies, claiming Foucault as an inspiration, on the relations between ‘life’ and ‘politics’” witnessed longstanding areas of inquiry such as bioethics and biotechnology joined by a slew of ‘bio’ fields such as “bioculture, biomedica, biolegitimacy, bioart, biocapital, biolabor, bioscience, biohorror, bioeconomics, biovalue, biodesire, biocomputing, biotheology, biosociety, and biocentrism, among others.” Timothy Campbell and Adam Sitze, “Introduction” in *Biopolitics: A Reader* (Durham, NC: Duke University Press, 2013), 4.

⁸ Such as William Connolly’s ‘neuropolitics,’ Achille Mbembe’s ‘necropolitics,’ Roberto Esposito’s attempt to recuperate a ‘positive’ biopolitics, Banu Bargu’s ‘biosovereignty and necroresistance,’ Elizabeth Povinelli’s ‘geontopolitics,’ and Colin Koopman’s ‘infopolitics.’ William Connolly, *Neuropolitics: Thinking, Culture, Speed* (Minneapolis: University of Minnesota Press, 2002), Achille Mbembe, *Necropolitics* (Durham, NC: Duke University Press, 2019); Roberto Esposito, *Bios: Biopolitics and Philosophy*, Trans. Timothy Campbell (Minneapolis: University of Minnesota Press, 2008); Banu Bargu, *Starve and Immolate* (New York: Columbia University Press, 2013); Elizabeth Povinelli, *Geontologies* (Durham, NC: Duke University Press, 2016); Colin Koopman, *How We Became Our Data* (Chicago: University of Chicago Press, 2019).

This chapter proceeds in three parts. The first, “The Politics of the Life Process and the Birth of the Politically Modern World,” examines how Arendt begins to break with the traditional political concepts and categories that she deployed when writing *The Origins of Totalitarianism*. Here we will see how her encounter with the hydrogen bomb intersects and reinforces her own misgivings about the traditional tenets of Western humanism, prompting her to begin to explore the extent to which the former fixity of all that had been held in place by the Great Chain of Being had come to be increasingly replaced by a dynamic flux of continuous processes. We will see how Arendt uses her classic 1958 study *The Human Condition* to explore how the biological life of the human ‘species’ passed from being a pre-political fixture in the cosmic order of Nature to become the ‘highest good’ and a process whose insatiable needs oriented much of modern political thinking. We will conclude by taking a brief look at the unfinished companion volume to *The Human Condition*, which explicitly addresses the place that the hydrogen bomb occupies in the political theoretical innovations Arendt is developing. The second section, “Biopolitics and the Biological Threshold of Modernity,” follows Foucault as he postulates his theory of ‘biopolitics’ to resolve a few theoretical issues left over from *Discipline and Punish* only to discover as he extrapolates this politics of the life process forward to the present that “the workings of contemporary political power are such that atomic power represents a paradox that is difficult, if not impossible, to get around.”⁹ We follow Foucault through the immediate aftermath of this realization as he attempts to come to grips with the theoretical consequences that this may hold for theories of sovereignty and the presumed continuum between politics and war. The third section, “Power in the Politically Modern

⁹ Michel Foucault, *Society Must Be Defended: Lectures at the Collège de France, 1975-1976*, Ed. Mauro Bertani and Alessandro Fontana, Trans. David Macey (New York: Picador, 2003), 253.

World,” follows how Arendt and Foucault’s parallel but reverse paths from the immanentization of the apocalypse to the politics of the life process—and vice versa—leads both towards analogous insights into the importance of distinguishing between political power and violence. I argue that both experienced the appearance of the power to kill life itself as “the decisive event of modernity that signals a radical transformation of the political-philosophical categories of classical thought,” to repurpose a claim by Agamben,¹⁰ and try to show how both drew on the ambient influence of what has alternatively been called the ‘cybernetics moment’ or the ‘cybernetics craze’ of the 1950s through the 1970s when reformulating a new approach to political power that has only become more relevant in the decades since.¹¹ Here we will see how the implications of the immanent apocalypse continued to lurk at the margins of political vision despite the public quiet that prevailed on the subject throughout the 1960s and 1970s.

“There is in fact hardly a single political category or a single political concept that has been passed down to us that, when measured against the possibility of putting an end both to humankind and to all organic life, does not prove to be theoretically obsolete and practically inapplicable, precisely because in a certain sense what is now at issue for the first time in foreign policy is life itself, the survival of humankind.”
—Hannah Arendt, “Introduction into Politics” (circa 1958-1960)¹²

I. THE POLITICS OF THE LIFE PROCESS AND THE BIRTH OF THE POLITICALLY MODERN WORLD

By the time Hannah Arendt sat down to reflect on the political implications of the hydrogen bomb in February of 1953, she seems to have already come to harbor serious questions

¹⁰ Agamben, *The Homo Sacer Omnibus*, 11.

¹¹ The first term is historian Ronald Kline’s. The latter was James Baldwin’s, quoted in Ronald Kline, *The Cybernetics Moment: Or Why We Call Our Age the Information Age* (Baltimore: Johns Hopkins University Press, 2015), 7.

¹² I have lightly edited this passage slightly for translational consistency and readability. More on the provenance of this work to follow. Hannah Arendt, *The Promise of Politics*, Ed. and Trans. Jerome Kohn (New York: Schocken Books, 2005), 145. Hannah Arendt, *Was ist Politik?*, Ed. Ursula Ludz (Munich: Piper & Co, 1993), 70-71.

about the limitations of a political tradition that takes as its point of departure some singular definition of Man. In a prominent 1951 review of *The Origins of Totalitarianism (Origins)*, the political philosopher Eric Voegelin expressed his deep disquiet at some of the claims that the author had featured in her concluding section. Initially, Voegelin had felt that Arendt hit the nail on the head when proposing: “What totalitarian ideologies aim at is not the transformation of the outside world or the revolutionizing transmutation of society, but the transformation of human nature itself.”¹³ For him, this assertion captured what he believed to be “the essence of totalitarianism as an immanentist creed movement.”^{14, 15} However, he saw Arendt as having also immediately taken an additional step too far when concluding this point by declaring: “Human nature as such *is at stake*, and even though it seems that these experiments succeed not in changing man but only in destroying him...one should bear in mind the necessary limitations to an experiment which requires global control in order to show conclusive results.”¹⁶ To identify this as the logic subtending totalitarianism was one thing, but for Arendt to herself concede that such a thing could indeed be *possible* struck Voegelin as trafficking in the same dangerous delusions as the totalitarians. “When I read this sentence,” he writes, “I could hardly believe my eyes. ‘Nature’ is a philosophical concept; it denotes that which identifies a thing as a thing of this kind and not another one. A ‘nature’ cannot be changed or transformed; a ‘change of nature’ is a contradiction in terms; tampering with the ‘nature’ of a thing means destroying the thing. To

¹³ Arendt, *Origins*, 623

¹⁴ Eric Voegelin, “The Origins of Totalitarianism” in *The Review of Politics*, Vol. 15, No. 1 (Jan. 1953), pp. 68-76; 74.

¹⁵ Voegelin’s own definition of totalitarianism was that it represented the political culmination of a longstanding gnostic heresy that had been growing in Europe since the thirteenth century aimed at “immanentizing the eschaton”—which is to say, realizing the millenarian promises of revealed religion via this-worldly political means. For Voegelin, totalitarianism could best be explained as a particularly acute case of misguided political theology. Eric Voegelin, *The New Science of Politics* (Chicago: University of Chicago Press, 1952), 119-132.

¹⁶ My italics. Arendt, *Origins*, 623.

conceive the idea of ‘changing the nature’ of man (or of anything) is a symptom of the intellectual breakdown of Western civilization.”¹⁷ These were heavy accusations to level, and the journal that published them afforded Arendt the chance to respond in the same volume.

In her public reply to Voegelin, Arendt effectively chose to bypass the issue of whether or not ‘human nature as such’ was indeed at stake by pointing out that the global victory of totalitarianism would render the matter functionally irrelevant in any case. “In other words,” she wrote, “the success of totalitarianism is identical with a much more radical liquidation of freedom as a political and as a human reality than anything we have ever witnessed before. Under these conditions, it will hardly be consoling to cling to an unchangeable nature of man and conclude that either man himself is being destroyed or that freedom does not belong to man’s essential capabilities. Historically we know of man’s nature only insofar as it has existence, and no realm of eternal essences will ever console us if man loses his essential capabilities.”¹⁸ This was a politique way of placating political humanists who still afforded the essential nature of Man pride of place in their reasoning. Serendipitously, however, it just so happens that Arendt left posterity with some of her private thoughts on the matter in the form of an initial reply that she had written to Voegelin but never sent. Here, she wondered, “How is it that in our tradition we were not able to answer the political questions posed by our time?...I suspect that from a purely political viewpoint there is something wrong with our philosophical tradition. I don’t know what it is, but it seems to me to be connected with the plurality of human beings and with the fact that philosophy has been principally concerned with *the* human being.” In light of this, she further suggested, “totalitarianism’s power to destroy humans and the world lies not only in

¹⁷ Voegelin, “The Origins of Totalitarianism,” 74.

¹⁸ Hannah Arendt, “A Reply to Eric Voegelin” reproduced in *Essays in Understanding*, 408.

the delusion that everything is possible, but also in the delusion that there is such a thing as *man*.”¹⁹ The humanist effort to define the essence of Man in the singular seemed to itself be bound up with the logic of totalitarianism. Arendt ultimately opted to keep these thoughts to herself, sending instead a different, more blandly conciliatory letter several days later that did not place the whole traditional schema of Western humanism in question.²⁰

As witnessed in Chapter One, Arendt opted not to recant her claims that “human nature as such is at stake” when revising *Origins* for her 1955 German translation. Where Voegelin had reprimanded her with the metaphysical reminder that “a ‘nature’ cannot be changed or transformed” and that “a ‘change of nature’ is a contradiction in terms,” Arendt had sought instead to dig deeper into her intuition that, while totalitarianism might be ‘radically evil,’ it was not totally insane. What was it that had inspired totalitarians to flip the Enlightenment project of building a political order compatible with the essential nature of Man and instead seek to refashion the essence of Man to better fit their political projects? Around the time *Origins* was published, Arendt began to suspect that the writings of Karl Marx contained a key to helping make sense of the logic of totalitarianism and commenced work on a follow up volume that she tentatively titled “Totalitarian Elements in Marxism.”²¹ In the course of preparing this study, she came to appreciate more clearly how, in her words, “Marx formalizes Hegel’s dialectic of the absolute in history as a development, as a self-propelled process, and in this connection it is important to recall that both Marx and Engels were adherents of Darwin’s theory of evolution. This formalization robs tradition of the substance of its authority even while it remains within the

¹⁹ Hannah Arendt to Eric Voegelin, April 8, 1951, translated and reproduced in Peter Baehr and Gordon C. Wells, “Debating Totalitarianism: An Exchange of Letters Between Hannah Arendt and Eric Voegelin” in *History and Theory*, Vol. 51, No. 3 (October 2012), pp. 364-380; 376.

²⁰ Hannah Arendt to Eric Voegelin, April 22, 1951 in *Ibid*, 378-380.

²¹ Jerome Kohn, “Introduction” in Hannah Arendt, *The Promise of Politics*, vii.

framework of tradition. In fact there is only one step left for the Marxist concept of development to become ideological process-thinking—the step that ultimately leads to totalitarian coercive deduction based on a single premise.”²² Rather than become a book, this study became the ladder that Arendt kicked away once she had arrived at her realization that it was the *process thinking* that established the elective affinity between Marx, Darwin, and the twentieth century totalitarian movements that claimed to be acting on their authority.

Arendt distilled her new appreciation for the place of process in totalitarianism into her 1953 essay “Ideology and Terror,” which she proceeded to append to the expanded 1955 German edition of *Origins* as a new conclusion to replace the hastily sketched “Concluding Remarks” that had formerly capped the study. Regarding her reasons for making this change, she later explained how “Ideology and Terror” offered “certain insights of a strictly theoretical nature, closely connected with my analysis of the elements of total domination, which I did not possess when I finished the original manuscript that ended with rather inconclusive ‘Concluding Remarks.’”²³ It seems to have been her epiphany about the new importance of process that caused things to click. “In the interpretation of totalitarianism,” she explains in this new concluding essay, “all laws have become laws of movement. When the Nazis talked about the laws of nature or when the Bolsheviks talk about the law of history, neither nature nor history is any longer the stabilizing source of authority for the actions of mortal men; they are movements in themselves. Underlying the Nazi’s belief in race laws as the expression of the law of nature in man is Darwin’s idea of man as the product of a natural development which does not necessarily stop with the present species of human beings, just as under the Bolsheviks’ belief in class-

²² Published in Hannah Arendt, *The Promise of Politics*, 75.

²³ Arendt, “Preface” to the 1967 edition of *Totalitarianism in Origins*, 388.

struggle as the expression of the law of history lies Marx's notion of society as the product of a gigantic historical movement..."²⁴ Noting that "[Friedrich] Engels could not think of a greater compliment to Marx's scholarly achievements than to call him the 'Darwin of history,'" Arendt proceeds to point out how, "If one considers, not the actual achievement, but the basic philosophies of both men, it turns out that ultimately the movement of history and the movement of nature are one and the same. Darwin's introduction of the concept of development into nature, his insistence that, at least in the field of biology, natural movement is not circular but linear, moving in an infinitely progressing direction, means in fact that nature is, as it were, being swept into history, that natural life is considered to be historical."²⁵ From the publication of "Ideology and Terror" forward, Arendt comes to evince and increasing awareness of the crucial place of continuously law-bounded movement—that is to say, *process*—occupies in explaining the role that both the 'ideology' and 'terror' from the essay's title play in totalitarianism.

In light of her new "insights of a strictly theoretical nature," it becomes clear that what she had previously termed "totalitarian ideology" represents a kind of perversion of process thinking. Points that may have had merit as initially developed by Marx and Darwin become pathological when the processes in question are totalized to form some kind of universally explanatory framework. Arendt capitalizes 'Nature' and 'History' to distinguish these totalitarian ideological constructs from the "force of nature or of history" and points out that precisely what makes them so scary is the fact that they are at once both internally logically self-consistent (deriving all their prescriptions from a few basic laws of natural or historical motion) and completely psychotically divorced from reality. Where previously Arendt had singled out

²⁴ Ibid., 597.

²⁵ Ibid.

totalitarians based on their deluded “belief that everything is possible,”²⁶ now she begins to develop a new appreciation for *why* some may have become convinced that nothing was entirely outside human power to change in a universe where nothing is still.²⁷ It is as servants to the newly dynamic laws of Nature or History, she realizes, that totalitarians turn to terror as a political lubricant. What had previously seemed almost bewilderingly anti-utilitarian now reveals its logic. “Terror is lawfulness,” she writes, “if law is the law of the movement of some suprahuman force, Nature or History. Terror as the execution of a law of movement whose ultimate goal is not the welfare of men or the interest of one man but the fabrication of mankind, eliminates individuals for the sake of the species, sacrifices the ‘parts’ for the sake of the whole.”²⁸ What makes totalitarianism a distinctly modern phenomenon, she now seems to see, is that it represents the first flailing attempts to found a new political order based not on the solidity of the traditional laws of a given people as accreted over the course of their history (such as Edmund Burke’s vaunted “laws of Englishmen”) nor the fixed essence that all human beings share by Nature (such as Thomas Paine’s rights of Man) but on the continuous flux of process. From roughly this time forward, Arendt will come to mellow considerably in her discussions of totalitarianism, tending to treat it more as a deeply pathological—but not radically evil or totally

²⁶ Arendt, *Origins*, xxv, 591.

²⁷ Further elaborating this point a few years later, Arendt adds, “In my studies of totalitarianism I tried to show that the totalitarian phenomenon, with its striking anti-utilitarian traits and its strange disregard for factuality, is based in the last analysis on the conviction that everything is possible....The totalitarian systems tend to demonstrate that action can be based on any hypothesis and that in the course of consistently guided action, the particular hypothesis will become true, will become actual, factual reality. The assumption which underlies consistent action can be as mad as it pleases; it will always end in producing facts which are then ‘objectively’ true.” Hannah Arendt, “History and Immortality” in *The Partisan Review*, Vol. XXIV, No. 1 (Winter, 1957), pp. 11-35; 33.

²⁸ Arendt, *Origins*, 599. See also: Hannah Arendt, “Understanding in Politics” in *Essays in Understanding*, 341. NB: the editor’s commentary claims that the excised portion comprising “Understanding in Politics” was published in 1954. It was in fact published in 1953, the same year as “Ideology and Terror.” See: *Essays in Understanding*, xix, 307, 328. Hannah Arendt, “Understanding and Politics” in *The Partisan Review*, Vol. 20, No. 4 (July-August 1953), pp. 377-392.

and permanently dehumanizing—form of process political philosophy murderously divorced from reality (when mentioning it at all). By 1967, she went so far as to inform readers in a new preface to *Origins* that actually existing totalitarianism had ended with the death of Stalin in 1953 (two years *prior* to her all-or-nothing pronouncement in the 1955 translation) and to warn them against applying the label ‘totalitarian’ to the ongoing Cultural Revolution then sweeping China.²⁹ For “totalitarian government is different from dictatorships and tyrannies,” she wrote; “the ability to distinguish between them is by no means an academic issue which could be safely left to the ‘theoreticians,’ for total domination is the only form of government with which coexistence is not possible, hence, we have every reason to use the word ‘totalitarianism’ sparingly and prudently.”³⁰ This was the voice of experience speaking.

Arendt’s new theoretical insights into totalitarianism came at a cost. In his review of *The Origins of Totalitarianism*, Voegelin had declared, “To conceive the idea of ‘changing the nature’ of man (or of anything) is a symptom of the intellectual breakdown of Western civilization.”³¹ For Arendt to posit that “human nature as such” might *actually* be at stake suggested that she had spent too much time staring into the totalitarian abyss. Trying to soften his blow, Voegelin had hastened to add that “these sentences of Dr. Arendt, of course, must not be construed as a concession to totalitarianism in the more restricted sense, that is, as a concession to National Socialist and Communist atrocities. On the contrary, they reflect the typically liberal, progressive, pragmatist attitude towards philosophical problems” and thereby “reveal how much ground liberals and totalitarians have in common.”³² In her published reply,

²⁹ Making her bellicose claims in the 1955 German edition of *Origins* all the more regrettable. Arendt, *Origins*, 401-403.

³⁰ *Ibid.*, 392.

³¹ Voegelin, “The Origins of Totalitarianism,” 74.

³² *Ibid.*, 75.

Arendt felt compelled to point out: “I am rather certain that I am neither a liberal nor a positivist nor a pragmatist” and that, even so, “liberals are clearly not totalitarians.”³³ At the same time, however, Arendt was beginning to realize that totalitarianism was not as *hors categorie* as she had previously believed, but instead occupied the deranged fringe of something far larger. By the time she encountered the hydrogen bomb in 1953, Arendt had begun to better appreciate how the origins of totalitarianism rested on what she termed “the tremendous intellectual change which took place in the middle of the nineteenth century,” manifesting “in the refusal to view or accept anything ‘as it is’ and in the consistent interpretation of everything as being only a stage of some further development.”³⁴ This tremendous intellectual change may have been perverted by the totalitarians, but it had not been caused by them and, while all totalitarians might be process thinkers, not all process thinking had to be totalitarian. Some nineteenth century liberals, positivists, and pragmatists had all participated in the same “intellectual breakdown of Western civilization” that began when the Great Chain of Being snapped and everything that exists started to move. From this point forward, Arendt too begins to think increasingly in terms of processes. In “Ideology and Terror,” she mentioned what she termed “Darwin’s introduction of the concept of development into nature.” A few years later, she had realized that matters were a little more complicated. In an essay titled “The Concept of History,” Arendt writes of how “the concept of process” implies “that we think and consider everything in terms of processes and are not concerned with single entities or individual occurrences and their special separate causes”—a perspective popularized in the nineteenth century by “the then new branches of natural science, particularly biology and geology, one dealing with animal life and the other even with non-

³³ Arendt, “A Reply to Eric Voegelin,” 405.

³⁴ Arendt, *The Origins of Totalitarianism*, 598.

organic matter in terms of historical processes.”³⁵ These developments in the natural sciences of the nineteenth century prove to be central for both Arendt and Foucault as they begin to reconsider the place that biological life has assumed in political thinking. Let us therefore turn before continuing to take a quick glance at the shift Arendt is describing.

Already alluded to several times in this study, Darwin’s 1859 *On the Origin of Species* became famous not because Darwin revolutionized the Western understanding of Nature, but because his theory of biological evolution by natural selection finally offered a scientifically plausible explanation for how new species might emerge in a developing Nature. What Darwin ultimately offered was a compelling account of one of the laws governing the perceived ‘economy’ and ‘balance’ suffusing Nature’s processes.³⁶ These biological insights answered questions first prominently raised by geology. In his 1788 *Theory of the Earth*, the Scottish polymath James Hutton had proposed that, assuming that geological phenomena such as land formation or erosion proceed at a uniform pace, then the arrangement of current land formations implied that the planet was in fact far, far older than the four thousand years that biblical history suggested. If layers of seashells in the stratigraphy of the Alps revealed that this land had once been sea bed, then, Hutton suggested, “we must see the means employed by nature for constructing a continent of solid land in the fluid bosom of the deep” and “we must also see the nature and constitution of this earth as necessarily subsisting in continual change.”³⁷ A few decades later, the naturalist Georges Cuvier scoured the fossil record and compellingly demonstrated that there were links in the Great Chain of Being that had passed out of existence.³⁸

³⁵ Arendt, *Between Past and Future*, 61.

³⁶ David Sepkoski, *Catastrophic Thinking: Extinction and the Value of Diversity from Darwin to the Anthropocene* (Chicago: University of Chicago Press, 2020), 60-65.

³⁷ James Hutton, *The Theory of the Earth*, Volume II (New York: Hafner Publishing Co., 1959), 541.

³⁸ Sepkoski, *Catastrophic Thinking*, 28-29.

It is difficult to overstate the extent to which the discovery of extinction upset the ancient belief in a cosmic order of Nature and the resulting disorientation that set in as, in Lovejoy's words, "By the late eighteenth century, the cosmical order was coming to be conceived not as an infinite static diversity, but as a process of increasing diversification."³⁹ With his 1830 *The Principles of Geology*, one of Darwin's own teachers, the geologist Charles Lyell, helped introduced what historian David Sepkoski terms "ideas about natural change and balance [that] profoundly influenced scientific understanding of the nature of geological and organic change by viewing these processes as components of a linked, natural equilibrium."⁴⁰ Lyell stressed that "the annihilation of a multitude of species has already been affected"⁴¹ and proposed that, when it comes to the continuous process of Nature, "Instead of being astonished at the proofs there manifested of endless mutations in the animate world, they will appear to one who has thought profoundly on the fluctuations now in progress, to evidence in favour of the uniformity of the system, unless, indeed, we are precluded from speaking of *uniformity* when we characterize a principle of endless change."⁴² When Darwin first formulated his theory of natural selection a decade later, it was in answer to the burning question of how new kinds of life replaced the old in a balance of Nature-as-process that knew no fixed categories.

Shorn of its metaphysical anchor in the Great Chain of Being, it increasingly came to look as though the human species had drifted into existence on the contingent tides of natural processes and would continue to drift without any essential 'specific nature' to hold it in place.⁴³ Writing from the midst of these transformations, Nietzsche put the matter simply when observing

³⁹ Lovejoy, *The Great Chain of Being*, 296.

⁴⁰ Sepkoski, *Catastrophic Thinking*, 36.

⁴¹ Drawing from this a lesson about the inevitability of European colonialism, naturally.

⁴² Charles Lyell, *Principles of Geology* (New York: Penguin Books, 1997), 277.

⁴³ Daston, *Against Nature*, 8-11.

how “all [Western] philosophers...involuntarily think of ‘man’ as an *aeterna veritas*, as something that remains constant in the midst of all flux, as a sure measure of all things...But everything has become: there are no eternal facts...”⁴⁴ With process having largely replaced fixity across the sciences by the turn of the twentieth century, in 1920 John Dewey summed up these epochal developments by noting the extent to which: “Change rather than fixity is now a measure of ‘reality’ or energy or being; change is omnipresent. The laws in which the modern man of science is interested are laws of motion, of generation and consequence. He speaks of law where the ancients spoke of kind and essence, because what he wants is a correlation of changes, an ability to detect one change occurring in correspondence with another.” Where formerly philosophers concerned themselves with studying what is “constant in existence, physical or metaphysical,” now the emphasis fell on what is “constant in function and operation. One is a form of independent being; the other is a formula of description and calculation of interdependent changes.”⁴⁵ Also in 1920, the philosopher Alfred North Whitehead put matters more succinctly by pointing out: “Nature is a process.”⁴⁶

These nineteenth century developments encompass the general sense in which Arendt becomes aware of ‘process’ as not simply the key to understanding the logic of totalitarian movements, but a basic part of her contemporary present that “was born when attention shifted from the search after the ‘what’ to the investigation of ‘how.’”⁴⁷ Never one for understatement, in

⁴⁴ “Just as there are no absolute truths,” he continued. “Consequently what is needed from now on is historical philosophizing, and with it the virtue of modesty. Nietzsche, *Human, All Too Human* (Cambridge: Cambridge University Press, 1986), 356-357.

⁴⁵ John Dewey, *Reconstruction in Philosophy* (New York: Henry Holt and Company, 1920), 60-61.

⁴⁶ Alfred North Whitehead, *The Concept of Nature* (Cambridge: Cambridge University Press, 1920), 53. For an account of what he terms Aristotle’s “static fallacy,” see: Alfred North Whitehead, *Adventures in Ideas: An Essay in Cosmology*, Corrected Edition, Ed. David Ray Griffin and Donald W. Sherburne (New York: The Free Press, 1978), 276.

⁴⁷ Arendt, *Between Past and Future*, 57.

her late 1950s essay “The Concept of History” Arendt expresses her new appreciation for the place of process in contemporary thinking in the following terms, asserting,

The modern concept of process pervading history and nature alike separates the modern age from the past more profoundly than any other single idea. To our modern way of thinking nothing is meaningful in and by itself, not even history or nature taken each as a whole, and certainly not particular occurrences in the physical order of specific historical events. There is a fateful enormity in this state of affairs. Invisible processes have engulfed every tangible thing, every individual entity that is visible to us, degrading them into functions of an over-all process. The enormity of this change is likely to escape us if we allow ourselves to be misled by such generalities as the disenchantment of the world or the alienation of man, generalities that often involve a romanticized notion of the past. What the concept of process implies is that the concrete and the general, the single thing or event and the universal meaning, have parted company. The process, which alone makes meaningful whatever it happens to carry along, has thus acquired a monopoly of universality and significance.⁴⁸

This passage is at once ambivalent and unambiguous. Arendt might not like many of the implications that this transformation from fixed essence to dynamic process carries with it, but neither does she take this rupture with the traditional terms of Western metaphysics to signal the same “intellectual breakdown of Western civilization” that Voegelin does. “To *our* modern way of thinking.” “Visible to *us*.” Arendt feels the fateful enormity of this state of affairs, but she does not deny its validity. Instead, the course of the 1950s would see her increasingly shoulder the challenge of rethinking her approach to politics in process, exploring both the new possibilities and pitfalls that this awareness of process opens up while avoiding the delusions of mastery that lead towards first behaviorism and then the murderous psychosis of totalitarianism.

⁴⁸ Ibid., 63-64. Some of these claims are recycled verbatim from the opening of the earlier 1958 version of “History and Immortality,” 11.

As we have already seen, by 1955 Arendt had become convinced that the new capacity to kill all human beings had converted questions concerning humankind as a whole from a millennia-old matter of abstract philosophical and humanist speculation (approached in terms of universal essences, specific differences, singularity of substance, primary and secondary qualities, and all the other definitional tools familiar to traditional Western metaphysics) into an all too concrete problem. “Mankind, which for all preceding generations was no more than a concept or an ideal” and “which for the eighteenth century, in Kantian terminology, was no more than a regulative idea” had “become something of an urgent reality” and “an inescapable fact.”⁴⁹ At the same time, she had indicated that this newly urgent and inescapable facticity of human totality demanded something other than “the idealism of the humanist tradition of enlightenment and its concept of mankind.” If it were true that “history and nature have become equally alien to us, namely, in the sense that the essence of man can no longer be comprehended in terms of either category,” then how was one to make sense of the newly jeopardized totality of ‘mankind’?⁵⁰ Going forward, Arendt increasingly brackets questions concerning the ‘what’ of essential human nature as both inherently unanswerable and politically unhelpful, turning instead towards questions concerning ‘how’ human beings sustain their collective existence across generations in a terrestrial world where Nature is a process and all processes are contingent.⁵¹

In 1958, Arendt opted to open her opus *The Human Condition* with the explicit

⁴⁹ Arendt, *Men in Dark Times*, 82.

⁵⁰ Arendt, *Origins* (Second Ed.), 378.

⁵¹ Near the end of her life, Arendt returned to the question of process, noting what she called “the metaphysical ‘fallacies’” that had sought to fix being in essentially static terms amidst “the world’s ever-changing transitoriness.” In a moment of retrospection, she noted: “I have clearly joined the ranks of those who for some time now have been attempting to dismantle metaphysics, and philosophy with all its categories, as we have known them from the beginning in Greece until today.” Arendt made this arresting remark in the 1970s, but appears to have made the break in question in the early 1950s as she grappled with the importance of process and the implications of hydrogen weapons. Hannah Arendt, *The Life of the Mind: One-volume Edition*, Ed. Mary McCarthy (New York: Harcourt Brace & Co, 1978), Vol. 1, 211-2.

disclaimer: “The problem of human nature...seems unanswerable in both its individual psychological sense and its general philosophical sense. It is highly unlikely that we, who can know, determine, and define the natural essences of all things surrounding us, which we are not, should ever be able to do the same for ourselves—this would be like jumping over our own shadows.”⁵² Instead, as if summing up the arc of her own thinking over the course of the decade, Arendt writes subsequently, “In the place of the concept of Being we now find the concept of Process.”⁵³ With the publication of *The Human Condition*, we begin to witness Arendt’s insistence that the hydrogen bomb has made mankind an ‘urgent reality’ intertwine with her growing awareness of the importance of process. In the study’s famous prologue, Arendt offhandedly remarks that “there is no reason to doubt our present ability to destroy all organic life on earth.”⁵⁴ She concludes the prologue by drawing a nonobvious distinction between what she terms ‘the modern age’ and ‘the modern world.’ “Scientifically,” she writes, “the modern age which began in the seventeenth century came to an end at the beginning of the twentieth century; politically, the modern world, in which we live today, was born with the first atomic explosions. I do not discuss this modern world, against whose background this book was written.”^{55, 56} This last remark about refraining from directly discussing the ‘politically modern world’ that ‘was born with the first atomic explosions’ proves to be a promise mostly kept. However, for anyone interested in Arendt’s engagement with the hydrogen bomb, it quickly becomes clear that the

⁵² Hannah Arendt, *The Human Condition* (Chicago: University of Chicago Press, 1998), 10.

⁵³ *Ibid.*, 296.

⁵⁴ *Ibid.*, 3.

⁵⁵ Arendt, *The Human Condition*, 6.

⁵⁶ Although Arendt writes of the ‘atomic’ bomb here for rhetorical effect, it is worth noting that she does in fact mean the hydrogen bomb. As she specifies elsewhere, “The use of the means of force to destroy the world and annihilate human life is, moreover, neither new nor horrifying, and the people who have always believed that a categorical condemnation of force ultimately amounts to a condemnation of politics in general have ceased to be correct only in the last few years, or, more precisely, since the invention of the hydrogen bomb.” Arendt, *The Promise of Politics*, 154.

fallout from Enewetak blankets the book. Accordingly, Jaspers—with whom, as we saw earlier, Arendt had been discussing the atomic bomb since at least the summer of 1955—could enthuse upon getting his hands on the German edition, “What appeals to me so strongly in this book is that the things you explicitly state you will *not* talk about (right at the beginning and repeatedly thereafter) exert such a palpable influence from the background.”⁵⁷ The subsequent chapters of *The Human Condition* see Arendt conduct a series of experiments in crafting new theoretical tools for approaching political questions not according to the ‘what’ of Man but the ‘how’ concerning the survival of a plurality of human beings and the life processes that connect and sustain them.

The most famous of the experimental categories that Arendt establishes in *The Human Condition* involves the division she establishes between what she terms ‘labor,’ ‘work,’ and ‘action.’ As the political theorist Patchen Markell has clearly illustrated, this trichotomy is new to *The Human Condition*. In *The Origins of Totalitarianism*, Markell observes, “Arendt had approached the issue of the fate of political freedom in the modern world in binary terms, contrasting political life with natural life, and interpreting totalitarianism as a reduction of juridical persons to merely natural beings,” leaving it clear that the “distinction between labor and work wasn’t yet part of Arendt’s vocabulary.”⁵⁸ Instead, Arendt introduces the distinction between labor and work in *The Human Condition* to better differentiate between those laborious aspects of human existence involved in the never-ending processes of sustaining biological existence—whose only product is the continued life of the present generation and the arrival of the next—and the kinds of fabrication by which human beings build a durable world of artificial

⁵⁷ Karl Jaspers to Hannah Arendt, Dec. 1, 1960 in *The Arendt-Jaspers Correspondence*, 407.

⁵⁸ Patchen Markell, “Arendt’s Work: On the Architecture of *The Human Condition*” in *College Literature*, Vol. 38, No. 1 (Winter 2011), pp.15-40; 19.

things. Where work produces a component of a people's material world, 'action' becomes the term that Arendt uses to describe the human capacity to set new processes in motion. In his elaboration of these categories—and their inherent instabilities—Markell illustrates the crucial role that work plays in this schema as what he terms “the specific activity that stands between and separates labor and action—two activities that are so perilously similar in their processual structure and lack of durable results that the former threatens to swallow up the latter unless they are held apart.”⁵⁹ Work—and the artificial worlds it builds to both relate and separate people—forms a bulwark against what might otherwise be an overwhelming wash of processes.⁶⁰ “Unlike action,” Arendt writes, “which partly consists in the unchaining of processes, and unlike laboring, which follows closely the metabolic process of biological life, fabrication experiences processes, if it is aware of them at all, as mere means towards an end, that is, as something secondary and derivative.”⁶¹ And yet, as she elsewhere concedes, “Insofar as the end product of fabrication is incorporated into the human world, where its use and eventual ‘history’ can never be entirely predicted,” there too “fabrication starts a process whose outcome cannot be entirely foreseen and is therefore beyond the control of its author,” meaning that “man is never exclusively *homo faber*, that even the fabricator remains at the same time an acting being, who starts processes wherever he goes and with whatever he does.”^{62, 63} Arendt's difficulties in

⁵⁹ Ibid., 23.

⁶⁰ Arendt memorably describes her use of “world” in this sense as being “not identical with the earth or with nature, as the limited space for the movement of men and the general condition of organic life. It is related, rather, to the human artifact, the fabrication of human hands, as well as to affairs which go on among those who inhabit the man-made world together. To live together in the world means essentially that a world of things is between those who have it in common, as a table is located between those who sit around it; the world, like every in-between, relates and separates men at the same time.” Arendt, *The Human Condition*, 52.

⁶¹ Ibid., 307.

⁶² Arendt, *Between Past and Future* (New York: Penguin Books, 1977), 60.

⁶³ At the same time, while fabrication necessarily has a process dimension, Arendt likewise recognizes that action can carry its own work-like durability, meaning that “those processes which are brought into

maintaining her distinction between labor, work, and action help demonstrate the extent to which, once you begin to think of human affairs in terms of processes, it becomes clear that many of the processes are co-constitutive and mutually reliant, making it difficult to distinguish even for merely analytic purposes where one begins and another ends amid their web of relationships. We will return to further examine how Arendt develops the political implications of these processes in Section III.

Here, let us turn to consider a different set of experimental distinctions that Arendt establishes in *The Human Condition*. Long overlooked, these bear directly on the challenge of addressing the urgent reality of ‘mankind’ following the immanentization of the apocalypse and her attempt to distance herself from the ‘reckless optimism’ inherent in ‘the idealism of the humanist tradition of enlightenment and its concept of mankind.’ As we saw in the previous chapter, Arendt had felt the urgency of the new reality of ‘humankind as a whole [*Menschheit als Ganzes*]’ ever since she first opened her *Denktagebuch* in February 1953 to consider what it meant for human beings to have brought “the destruction of all life on the Earth” within the realm of human possibility.⁶⁴ In an unpublished essay that appears to have been composed in 1953, Arendt experimented with several different formulas for addressing human totality, writing, “Totalitarian lawfulness, executing the laws of Nature or History, does not bother to translate them into standards of right and wrong for individual human beings, but applies them directly to the ‘species,’ to mankind. The laws of Nature and history, if properly executed, are expected to produce as their end a single ‘Mankind,’ and it is this expectation that lies behind the claim to global rule of all totalitarian governments. Humanity, or, rather, the human species, is

being as the result of human action also have a tendency to become automatic.” Hannah Arendt, “Freedom and Politics” in *Freedom and Serfdom: An Anthology of Western Thought*, Ed. Albert Hunold (Dordrecht, NL: D. Reidel Publishing Company, 1961), 214.

⁶⁴ Arendt, *Denktagebuch*, 306.

regarded as the active carrier of these laws while the rest of the universe is only passively determined by them.”⁶⁵ In the span of just three sentences, she mentions by turns the ‘*species*,’ *mankind*, a single ‘*Mankind*,’ *Humanity*, and the *human species*. What—if any—meaningful distinction is there to be drawn between these different designations?

By the time Arendt sat down to write *The Human Condition*, the political theorist had pared down her discussion of the ‘urgent reality’ of human totality to a more narrowly defined set of terms. In describing what may have been lost in translation between Aristotle’s description of the human as a *zoon politikon* (that is, a ‘political animal’ or more literally that “a human being is by nature an animal meant for a city”)⁶⁶ and the Latin *animal socialis* of his subsequent interpreters, Arendt contends,

It is only with the later concept of a *societas generis humani*, a “society of man-kind,” that the term ‘social’ begins to acquire the general meaning of a fundamental human condition. It is not that Plato or Aristotle was ignorant of, or unconcerned with, the fact that man cannot live outside the company of men, but they did not count this condition among the specifically human characteristics; on the contrary, it was something human life had in common with animal life, and for this reason alone it could not be fundamentally human. The natural, merely social companionship of the human species was considered to be a limitation imposed upon us by the needs of biological life, which are the same for the human animal as for other forms of animal life. According to Greek thought, the human capacity for political organization is not only different from but stands in direct opposition to that natural association whose center is the home (*oikia*) and the family. The rise of the city-state meant that man received “besides his private life a sort of second life, his *bios politikos* [political life].”⁶⁷

This passage seeks to explain the disregard that Greek political thinkers purportedly held for the

⁶⁵ Arendt, *Essays in Understanding*, 340.

⁶⁶ Aristotle, *Politics*, Trans. Joe Sachs, 4, 1253a1.

⁶⁷ Quoting Werner Jaeger’s 1945 study *Paideia* with that final line. Arendt, *The Human Condition*, 24.

labor involved in securing the reproduction of the general features of biological life that human beings shared with nonhuman animals. This was the same distinction between background biological life and the artificially equalized good life of the citizen that had informed Arendt's own analysis in *Origins*, where she wrote of how "since the Greeks, we have known that highly developed political life breeds a deep-rooted suspicion" of "the sphere of private life" and the "unqualified, mere existence" that belongs to human beings when reduced to their "abstract nakedness" as "specimens of an animal species."⁶⁸ Where in *Origins* Arendt posited the distinction between the sheer animal life of the species and the uniquely human life of the citizen as simply part of what "since the Greeks, we have known," *The Human Condition* describes this distinction not as something self-evidently true, but as it arises "according to Greek thought." At the same time, Arendt uses the passage quoted above as an opportunity to introduce her own innovation. To her phrase the "society of man-kind" she adds the qualifying footnote: "I use here and in the following the word 'man-kind' to designate the human species, as distinguished from 'mankind,' which indicates the sum total of all human beings."⁶⁹ What difference might there be between the 'human species' and the 'sum total of all human beings'? As in the case of the labor/work/action trichotomy the answer is not always clear. Nor does it help that on several occasions the term 'man-kind' is split by a line break, leaving it unclear whether the hyphen arises intentionally or as a fluke of formatting.⁷⁰ Fortunately, when conducting her own translation of *The Human Condition*, Arendt retained the man-kind/mankind distinction, using "*Menschengeschlecht*" to designate the former and "*Menschheit*" the latter, making it possible to appeal to the German text for clarification in cases where the placement of the hyphen leaves

⁶⁸ Arendt, *Origins*, 382-383.

⁶⁹ *Ibid.*, fn. 4.

⁷⁰ *Ibid.*, 118, 321.

matters ambiguous in English.⁷¹

On my reading, I understand Arendt's distinction between the human species 'man-kind' and the sum total of all human beings 'mankind' as differentiating between, on the one hand, the classical conception of the human biological species as a necessary category whose immortal life is secured by the cosmic order of Nature and, on the other, the all too mortal life process that sustains the sum total of all human beings in a politically modern world menaced by atomic weapons. Here, I hope to show how tracking this distinction can help to clarify some of the opaquer claims that *The Human Condition* makes about the human life process. At the same time, probing how 'man-kind' differs from 'mankind' may also help to highlight how Arendt begins to shift political attention away from definitional concerns with the ultimate *what* of Man and towards practical questions touching on the increasingly precarious *how* by which the sum total of all human beings sustains itself. Let us take a look at 'man-kind' first.

Relegated to a footnote, there is no pretending that the distinction Arendt draws between 'man-kind' and 'mankind' serves as the axis around which *The Human Condition* spins.⁷² Nevertheless, I believe this distinction captures something important: in this case, the crucial difference between approaching the totality of human beings as an immortal category of Nature versus a temporally bounded process. Throughout *The Human Condition*, Arendt uses 'man-kind' to refer to the human species as understood categorically as a 'natural kind' within the Great Chain of Being inherited from classical metaphysics. It is in this sense that she writes of

⁷¹ "Mit dem Wort 'Menschengeschlecht' möchte ich hier und im Folgenden die Gattung bezeichnen im Unterschied zu den Menschen, für deren Gesamtheit ich das Wort 'Menschheit' gebrauchen werde." Hannah Arendt, *Vita Activa oder Vom tätigen Leben* (Munich: Piper & Co, 1967), 321 fn. 4.

⁷² Arendt herself seems to sometimes lose track of her own innovation, sometimes writing redundantly of "the species man-kind" (as in, "the species the human species," if taken literally) and on at least one occasion discussing the "life of mankind as a whole" when it is clear that she means the species (a suspicion confirmed by her use of *Menschengeschlecht* when rendering the passage in question in German). See: Arendt, *The Human Condition*, 116. Arendt, *Vita Activa*, 107.

how, for Greek thought, “What men share with all other forms of animal life was not considered to be human,” to which she adds parenthetically: “This, incidentally, was also the reason for the much misunderstood Greek theory of the non-human nature of the slave. Aristotle, who argued this theory so explicitly, and then, on his deathbed, freed his slaves, may not have been so inconsistent as moderns are inclined to think. He denied not the slave’s capacity to be human, but only the use of the word ‘men’ for members of the species man-kind as long as they are totally subject to necessity.”⁷³ ‘Man-kind’ in this case designates the single subject of the human species considered as a natural kind whose members were all equally ‘human’ in the categorical sense, whatever subsequent divisions might be drawn between who counts as more or less human based on some philosophically inflected definition of human nature.⁷⁴

While Arendt uses ‘man-kind’ relatively sparingly, she is more liberal with its referent, the ‘human species,’ which sometimes appears alongside ‘man-kind’ interchangeably. Throughout *The Human Condition*, Arendt consistently references the species when discussing the formerly timeless aspects of human existence, such as “the species’ ever-recurring life cycle” and how “labor assures not only individual survival, but the life of the species.”⁷⁵ In this vein, she further observes how, for the ancients, “Imbedded in a cosmos where everything was immortal, mortality became the hallmark of human existence. Men are ‘the mortals,’ the only

⁷³ Arendt, *The Human Condition*, 84.

⁷⁴ Arendt expresses this important point about the unity of the ‘species man-kind’ in a slightly different way around the same time when remarking how, “For Aristotle the word *politikon* was an adjective that applied to the organization of the polis and not a designation for just any form of human communal life, and he certainly did not think that all men are political or that there is politics, that is, a polis, no matter where people live. His definition excluded not just slaves, but also barbarians, who were ruled by despots in Asian empires but whose humanity [*Menschsein*] he never doubted. What he meant was merely that it is unique to man that he *can* live in a polis and that the organized polis is the highest form of human communal life and thus something specifically human, at equal remove from the gods, who can exist in and of themselves in full freedom and independence, and animals, whose communal life, if they have such a thing, is a matter of necessity.” Arendt, *The Promise of Politics*, 116. Arendt, *Was ist Politik?*, 37.

⁷⁵ Arendt, *The Human Condition*, 7-8.

mortal things in existence, because unlike animals they do not exist only as members of a species whose immortal life is guaranteed through procreation....This is mortality: to move along a rectilinear line in a universe where everything, if it moves at all, moves in a cyclical order.”⁷⁶ Clearly, Arendt is describing the immortal life of the human species as it was imagined by those who believed themselves to be inhabiting a static Nature-as-cosmos rather than her and her contemporaries’ own Nature-as-process. This literal universe of difference further helps explain why, in her words, “We find it difficult to realize that according to ancient thought on these matters, the very term ‘political economy’ would have been a contradiction in terms: whatever was ‘economic’ [from *oikos* meaning ‘household’ and the verb *nemein* meaning, among other things, ‘to manage’], related to the life of the individual and the survival of the species, was a non-political, household affair by definition.”⁷⁷ It was this private household space that “prior to the modern age comprehended all activities serving the subsistence of the individual and the survival of the species.”⁷⁸ Across these cases, the ‘species’ belongs not to the modern world of process, but what Arendt elsewhere terms “the Greek concept and experience of Nature” according to which “the things of nature are ever-present and forever.”⁷⁹ Throughout *The Human Condition*, Arendt uses ‘man-kind’ and ‘species’ to reference the way that humankind was formerly conceived in light of the bygone surety of their necessary place in the unchanging order of things—a place where the biological requirements of human survival could be politically ignored or even scorned because such natural necessities could be trusted to more or less take

⁷⁶ Ibid., 18-19.

⁷⁷ Ibid., 29.

⁷⁸ Ibid., 72.

⁷⁹ Within this bygone order of Nature, she continues, “All living creatures, man not excepted, are contained in this realm of being-forever, and Aristotle explicitly assures us that man, insofar as he is a natural being and belongs to the species mankind, possesses immortality; through the recurrent cycle of life, nature assures the same kind of being-forever of things that are born and die as to things that are and do not change.” Arendt, *Between Past and Future*, 42.

care of themselves independently of anything that human beings might hope or do.

What then of ‘mankind’ and the “sum total of all human beings”? Often, Arendt qualifies ‘mankind’ and uses the compound term to refer to some *specific* subset of human beings, as when discussing “the political experiences of Western mankind.”⁸⁰ Matters become immediately more complicated when she begins to refer to “socialized mankind,” a term that Arendt borrows from Marx and uses repeatedly throughout her engagement with him on the subject of work.⁸¹ It is when discussing the implications of “socialized mankind” that Arendt introduces her infamous claims about what she calls “the rise of the social.” This entails, as she describes it, “the rise of housekeeping, its activities, problems, and organizational devices from the shadowy interior of the household into the light of the public sphere.”⁸² Crucially, however, the resulting “nation-wide administration of housekeeping”—as Arendt wryly terms it—encompasses not merely the public concern with the production of wealth usually designated by the term “national economy,” but also the entry of matters that impinge on the survival of the species into public deliberation.⁸³ At stake here is not simply ‘the economy’ in the modern sense, but also the public introduction of the private affairs of the *oikos* where the necessities of biological life were supposed to have automatically taken care of themselves (via the unremunerated, mostly unthanked labor that goes hand in hand with the old phrase “a woman’s work is never done”). If, for the ancients, “political economy” had represented a contradiction in terms, this was because, as Aristotle had once pointed out, “No one deliberates about everlasting things, such as the cosmos...but neither does one deliberate about things that are in motion but always happen according to the same pattern,

⁸⁰ Arendt, *The Human Condition*, 12. For other slightly different usages in this vein, see also: 21, 252, 261, 316.

⁸¹ *Ibid.*, 111, 116, 118, 124.

⁸² Arendt, *The Human Condition*, 38.

⁸³ *Ibid.*, 28.

whether by necessity or else by nature....We deliberate about things that are up to us and are matters of action.”⁸⁴ With the rise of “socialized mankind,” the rhythms of biological life that had formerly been presumed to always happen according to the same pattern become a subject of public deliberation and political intervention. As I understand her, Arendt uses ‘socialized mankind’ to address the conceptual confusion and category errors that arose in the nineteenth century when Marx—the “Darwin of history”—and his contemporaries began to take the political categories that had been born in a stable cosmos and apply them to the newly dynamic life process of the biologically human species.

In *The Human Condition*, what Arendt terms ‘socialized mankind’ arises as a distinctly modern phenomenon—one that only enters into public view after the fixed category of man-kind has left its immortal home in the cosmic order and entered into the stream of history as a mortal life process with its own contingent existence and needs. Given what we have seen so far, it is perhaps unsurprising that Arendt locates Marx as a central figure in this transformation, pointing out in what should by now be familiar terms, “The coincidence of Marx's labor philosophy with the evolution and development theories of the nineteenth century—the natural evolution of a single life process from the lowest forms of organic life to the emergence of the human animal and the historical development of a life process of mankind [*Menschengeschlecht* or ‘man-kind’ in the German]⁸⁵ as a whole—is striking and was early observed by Engels, who called Marx ‘the Darwin of history.’ What all these theories in the various sciences—economics, history, biology, geology—have in common is the concept of process, which was virtually unknown prior to the modern age.”⁸⁶ Arendt’s ultimate objection here may well have less to do with the “development

⁸⁴ Aristotle, *Nicomachean Ethics*, 1112a25-35, 41-42.

⁸⁵ This seeming to be one case in which Arendt forgets to abide by her own suggested hyphenation. Arendt, *Vita Activa*, 107. See fn. 72 on page 143 above.

⁸⁶ Arendt, *The Human Condition*, 116.

of a life process of man-kind as a whole”—for it seems almost inevitable that the life of the human species would come to be reconceived along these lines in an age where “invisible processes have engulfed every tangible thing”—than with the particular *way* in which the formerly fixed life of the species passes from the private permanence of the household into public deliberation. Of this transition, Arendt writes, “permanence is entrusted to a flowing process, as distinguished from a stable structure.... Therewith mankind ceases to be only a species of nature, and what distinguishes man from animals is no longer merely that he has speech (*logon echon*), as in the Aristotelian definition, or that he has reason, as in the medieval definition (*animal rationale*): his very life now distinguishes him, the one thing that in the traditional definition he was supposed to share with animals.”⁸⁷ In its former existence as a species nestled in the cosmic order of a static Nature, man-kind was a category of being with an ontologically distinct essence whose ‘specific difference’ served as the subject of endless efforts at definition and redefinition. Reconceived in process terms, however, the biologically human species loses its ontological uniqueness and comes to occupy a continuum with other groups of organisms, distinguished not by some *sine qua non* that belongs to human beings alone, but by the very fact that through their capacity for reproduction the members of the human species constitute a single collective life process in the form of a distinct biological lineage. Arendt describes what for her appears to have gone wrong during this passage of fixed category to socialized life process, noting how, for moderns,

The only thing that could now be potentially immortal, as immortal as the body politic in antiquity and as individual life during the Middle Ages, was life itself, that is, the possibly everlasting life process of the species man-kind. We saw before that in the rise of society it was ultimately the life of the species which asserted

⁸⁷ Arendt, *Between Past and Future*, 75.

itself. Theoretically, the turning point from the earlier modern age's insistence on the "egoistic" life of the individual to its later emphasis on "social" life and "socialized man" came when Marx transformed the cruder notion of classical economy—that all men, in so far as they act at all, act for reasons of self-interest—into forces of interest which inform, move, and direct the classes of society, and through their conflicts direct society as a whole. Socialized mankind is that state of society where only one interest rules, and the subject of this interest is either classes or man-kind, but neither man nor men. The point is that now even the last trace of action in what men were doing, the motive implied in self-interest, disappeared. What was left was a "natural force," the force of the life process itself, to which all men and all human activities were equally submitted and whose only aim, if it had an aim at all, was survival of the animal species man.⁸⁸

Once political thinkers began to take seriously the discovery that the biological exigencies of the socialized species were not fundamentally fixed by Nature and began to ask what the needs of life might be, they received a single deafening answer: more life. For 'socialized mankind' the interest that rules is not the essence of 'Man' or whatever a plurality of 'men' might agree to, but the one universal interest that all members of the species presumably share as part of a life process that desires its own continuation.

"The force of life is fertility," Arendt contends and, once released from its natural cyclicity and comes to be artificially enhanced through increasingly deliberate human intervention, becomes "the devouring process of life" that weaves so insatiably through *The Human Condition*.⁸⁹ The 'social' arises not simply as the public concern for a newly dynamic life process that can no longer be expected to simply take care of itself by dint of cosmic necessity, but as a particularly flawed way of placing the newly discovered needs of biological life at the

⁸⁸ Arendt, *The Human Condition*, 321.

⁸⁹ *Ibid.*, 108.

center of political consideration. Life only seeks more life, Arendt contends, and the life process itself, if it has an aim, is simply that of “the survival of the animal species man,” as she put it above. It is in this way that “the social connects with biology and natural process” to become the “blob” that political theorist Hanna Pitkin so wonderfully analyzed, likening Arendt’s account of the ravenous life of socialized mankind to the seemingly unstoppable, all-consuming monsters of pulpy 1950s science fiction films that only grow the more they consume.⁹⁰ “The Blob appears as this inexorable process [and] acquires a will and purpose of its own,” Pitkin observes, inflicting a sense of “false necessity, spurious naturalization, pretended inevitability, self-imposed helplessness” on those who make its insatiable needs their political object.⁹¹ Overall, Pitkin presents a compelling case that Arendt’s description of the public appearance of the life process as an all-consuming ‘blob’ offers an unhelpful reification of ‘the social’ on Arendt’s part that only locks her more deeply into the sense of self-imposed helplessness and subservience to processes that she is trying to help resolve. There is surely a great deal of truth to this, but it also remains important to bear in mind the extent to which the political issues that surround ‘socialized mankind’ address real problems facing the ‘how’ of an earthly human life process whose continuation can no longer be taken for granted.

Back in February 1953, Arendt reflected in her *Denktagebuch* on how it seemed as though, as she put it, “Freedom, justice, etc. become empty words when the physical survival of mankind” comes into play.⁹² In *The Human Condition*, her critique of ‘society’ is not simply that socialized mankind has boiled all political interests down to serving the insatiable needs of the human life process, but rather that the way in which the life process has entered into politics risks

⁹⁰ Hanna Fenichel Pitkin, *The Attack of the Blob: Hannah Arendt’s Concept of the Social* (Chicago: University of Chicago Press, 1998), 15.

⁹¹ *Ibid.*, 70, 192.

⁹² Arendt, *Denktagebuch*, 306.

being self-defeating on its own terms. “Society is the form in which the fact of mutual dependence for the sake of life and nothing else assumes public significance and where the activities connected with sheer survival are permitted to appear in public,” Arendt proposes.⁹³ This in turn gives rise to a situation that not only sidelines traditional political concerns, but that risks becoming a danger to human survival in its own right. Regarding the “rise of the social,” she contends,

This constant growth, whose no less constant acceleration we can observe over at least three centuries, derives its strength from the fact that through society it is the life process itself which in one form or another has been channeled into the public realm. The private realm of the household was the sphere where the necessities of life, of individual survival as well as of continuity of the species, were taken care of and guaranteed. One of the characteristics of privacy...was that man existed in this sphere not as a truly human being but only as a specimen of the animal species man-kind. This, precisely, was the ultimate reason for the tremendous contempt held for it by antiquity. The emergence of society has changed the estimate of this whole sphere but has hardly transformed its nature. The monolithic character of every type of society, its conformism which allows for only one interest and one opinion, is ultimately rooted in the one-ness of man-kind. It is because this one-ness of man-kind is not fantasy and not even merely a scientific hypothesis, as in the "communistic fiction" of classical economics, that mass society, where man as a social animal rules supreme and where apparently the survival of the species could be guaranteed on a world-wide scale, can at the same time threaten humanity with extinction.⁹⁴

Reconceived in these terms, the “one-ness of man-kind” is not a fantasy, fiction, or hypothesis, but the urgent reality of a contingent life process whose members must constantly renew its existence with no guarantee they will succeed. It is entirely possible that, while Westerners up to

⁹³ Arendt, *The Human Condition*, 46.

⁹⁴ *Ibid.*, 45-46.

the nineteenth century were mistaken to believe that the necessities of biological life revolved in fixed patterns determined by natural necessity and beyond the bounds of political deliberation, the resulting inattention to the needs of life might have been the safer option. For, if done the wrong way, making the reproduction of life itself the active goal of politics jeopardizes the continuation of life itself.

What does it mean to posit that the supreme rule of man as social animal to guarantee species survival on a world-wide scale “can at the same time threaten humanity with extinction”? Elsewhere in *The Human Condition*, Arendt writes of “the fundamental reality of laboring humanity,” “the recollection of humanity,” and “the endurance of humanity itself,”⁹⁵ and I find it is fairly safe to assume that by ‘humanity’ here Arendt means not the essential nature of Man (whose definition, as we saw earlier, she bracketed at the outset of her study) but something more like what she intended to designate with ‘mankind’ as a more neutral descriptor for the ‘sum total of all human beings.’⁹⁶ Perhaps aware that she had not put this literally existentially important last point in the most straightforward way, Arendt expresses it slightly differently in the German edition, writing that “mass society, which fully emancipates human beings as social creatures and thus apparently has begun to guarantee the survival of the human species on a worldwide scale, nevertheless at the same time threatens to annihilate the sum total of all human beings,⁹⁷ the actual human existence of the human; it is as if the human species could cause the sum total of all human beings to perish.”⁹⁸ What does it mean for the ‘human species’ to threaten

⁹⁵ Respectively: *Ibid.*, 108, 170, 233.

⁹⁶ Although there are also two occasions where Arendt does seem to use ‘humanity’ in a qualitative sense. *Ibid.*, 105, 107.

⁹⁷ Here following Arendt in using “*Menschengeschlecht*” to designate the “human species” and “*Menschheit*” to designate “the sum total of all human beings.” See fn. 72 on page 143 above.

⁹⁸ One of those lovely, many-claused confections of academic German, in full the sentence reads: “*Da diese Einheit des Menschengeschlechts keine Einbildung ist und erheblich mehr als eine nur wissenschaftliche Hypothese, die ‚kommunistische Fiktion‘ der klassischen Nationalökonomie, kann die*

the sum total of all human beings with extinction? Might it be that attempts to guarantee the survival of the human species on a planetary scale lead to the life process glutting itself with more life until the last human being starves to death on a formerly overpopulated planet? Could it be that those who have made it their object to serve the interest of the life process of the species—whether by fostering free markets from Washington or command economies from Moscow—have developed incompatible universalisms that threaten to annihilate the sum total of all human beings in thermonuclear war? She declines to specify.

The most Arendt seems prepared to claim in *The Human Condition* is that moderns of all stripes—economic liberals just as much as Marxists—have made the life process of their species the object of their politics in a fundamentally dangerous way. Behind all the economic calculation of self-interest and the utilitarian tallying of units of pain and pleasure that rose to such prominence during the nineteenth century (and which, for her, Marx simply drove to its logical conclusion), Arendt asserts, “we find another point of reference which indeed forms a much more potent principle...and that is the principle of life itself. What pain and pleasure, fear and desire, are actually supposed to achieve in all these systems is not happiness at all but the promotion of individual life or a guaranty of the survival of mankind...In the last resort it is always life itself which is the supreme standard to which everything else is referred, and the

Massengesellschaft, welche den Menschen als gesellschaftliches Lebewesen voll emanzipiert und so augenscheinlich das Überleben des Menschengeschlechts im weltweiten Maßstab zu garantieren begonnen hat, doch gleichzeitig die Menschheit, das eigentliche Menschsein der Menschen, zu vernichten drohen; es ist, als könnte gerade das Menschengeschlecht die Menschheit zum Absterben bringen.” Ibid., 46. I render ‘*Menschsein*’ as human existence rather than ‘humanity’ here based on the observation that, when referring to ‘humanity’ in the qualitative sense, Arendt generally uses either ‘*Humanität*’ or ‘*Menschlichkeit*.’ Compare, for instance, her “On Humanity in Dark Times: Thoughts about Lessing” in *Men in Dark Times* (pp. 3-31) with „Gedanken zu Lessing: Von der Menschlichkeit in finsternen Zeiten” in Hannah Arendt, *Menschen in finsternen Zeiten* (Munich: Piper, 1989), pp. 17-48. Here what is translated as ‘humanity’ and ‘humanness’ is always *Humanität* or *Menschlichkeit*, never *Menschsein*. While Arendt did not herself perform this translation, she nevertheless approved it.

interests of the individual as well as the interests of mankind are always equated with individual life or the life of the species as though it were a matter of course that life is the highest good.”⁹⁹ For her, it could not be taken as a matter of course that “life is the highest good,” nor that the life process of the human species should be treated as the sole uniting interest of the sum total of all human beings.

As we saw in the previous chapter, Arendt first discussed how the “the remote possibility that atomic weapons used by one country according to the political wisdom of a few might ultimately come to be the end of all human life on earth” introduced the “unity of mankind” as a source of “negative solidarity” when first facing the immanentization of the apocalypse in “Karl Jaspers: Citizen of the World.” By the time of *The Human Condition*, the research that she conducted against the background of the politically modern world that was born with the first atomic explosions seems to have led Arendt to develop a new appreciation for the extent to which the “negative solidarity” that all living beings share as part of a universal interest of life to live had already become an overriding concern in politics well over a century before the Manhattan Project was launched. Not everything that Arendt says about ‘man-kind’ or the ‘human species’ or ‘mankind’ or the ‘life process’ is consistent, but it all tends towards a crucial reminder that the cosmos that harbored the immortal species man-kind has come to be replaced by the contingent flow of a life process that it has fully entered within human powers to disrupt or even fully curtail. Where formerly politics took the continuation of human biological existence its implicit prerequisite, now the continuation of all earthly human life comes to depend on political outcomes.

⁹⁹ Ibid., 311-312.

Despite the occasional ambiguities and sometimes inconsistently applied terminology addressed so far, I hope to have made clear that the Arendt of *The Human Condition* was no atavist. While she might have preferred the simplicity of a politically premodern world that trusted the needs of biological life to the steady hands of cosmic Nature, she appears to have accepted Whitehead's conclusion that "Nature is a process" and set out to face the new kinds of political challenges that took shape on those terms.¹⁰⁰ Arendt appears to have resigned herself to the fact that, once discovered, the parameters of the biological life of man-kind would necessarily become a matter of public deliberation and political concern once it was realized these took shape as part of a contingent process whose course was to a growing measure "up to us" rather than one of those things "that are in motion but always happen according to the same pattern," in Aristotle's words. "Socialized mankind" takes the irreversible discovery of the mortal life process of a malleable species (which could only ever be removed again from politics if the ancient belief in a harmonious cosmos housing the immortal life of man-kind were somehow restored) and establishes it as an undifferentiated and overriding interest in life for life's sake that is permitted to swamp all other political concerns with its existential urgency but that, in so doing, risks creating the global conditions that place its own continuation in jeopardy. "The human condition is not the same as human nature," Arendt writes at the outset of her study, "and the sum total of human activities and capabilities which correspond to the human condition does not constitute anything like human nature."¹⁰¹ Processes are not destinies, and the fact that the sum total of all human beings has collectively entered into political purview does not mean that the resulting totality automatically constitutes some kind of collective subject able to act on

¹⁰⁰ Arendt quotes Whitehead directly on this point in *Between Past and Future*, 62.

¹⁰¹ *Ibid.*, 10.

its own behalf. The existentially jeopardized life process of ‘mankind’ might have become an ‘urgent reality,’ but the resulting totality remains a problem for Arendt, not a solution. For “when one considers history as a whole” one “finds that its subject, mankind, is an abstraction which can never become an active agent.”¹⁰² This last point, as we will see in the next chapter, is debatable, for there turn out to be differing degrees of both activity and agency that open up for the sum total of all human beings as they come to be reconceived not merely as part of an ongoing life process, but an encompassing Earth System. Nevertheless, Arendt’s contributions in *The Human Condition* help to illustrate the extent to which, to borrow her words, “The shift from the ‘why’ and ‘what’ to the ‘how’ implies that the actual objects of knowledge can no longer be things or eternal motions but must be processes.”¹⁰³

If what Arendt writes in *The Human Condition* sometimes appears to raise more questions than answers, it is important to note that she never initially intended for her now-famous study to be her definitive word on the questions at hand. One month after joining Jaspers in ‘long conversations about the atomic bomb’ in 1955, Arendt committed to publishing a “little book” that December. This would take the form of a sort of primer or “introduction to politics” that she had been mulling over with “an English house that has been asking me for something for a long time.”¹⁰⁴ A year later, Jaspers wrote to tell Arendt that he had begun a project that he hoped to turn “into an expression of political consciousness in the shadow of the H-bomb,” confiding to his friend, “Sometimes I think to myself that you are at work on your two political books and that we perhaps, or almost certainly, coincide in our outlook...”¹⁰⁵ By 1958, Jaspers’

¹⁰² Ibid., 184.

¹⁰³ Ibid., 296.

¹⁰⁴ Hannah Arendt to Karl Jaspers, December 29, 1955 in *The Arendt-Jaspers Correspondence*, 271. See also: 317.

¹⁰⁵ Karl Jaspers to Hannah Arendt, December 29, 1956 in Ibid., 307.

study had taken shape as *The Atom Bomb and the Future of Man* and one of Arendt's two books had become *The Human Condition*. What of the other?

Arendt appears to have begun working on this other book project in earnest a few weeks after completing *The Human Condition* in the fall of 1957. She subsequently described herself as being "in the middle" of work on it by February of 1958, having by then discovered that the study "is going to be longer than I thought."¹⁰⁶ Arendt shed further light on the project in a December 1959 grant request to the Rockefeller Foundation, where she explained,

The tentative title of the book I intend to write is *Introduction into Politics*. My plans concerning this project are at least four years old....Large parts of it exist in first draft. The reason why I had to delay it is the following: The central political activity is action; but in order to arrive at an adequate understanding of the nature of action, it proved necessary to separate action conceptually from other human activities with which it is usually confounded, such as labor and work. I, therefore, wrote first the book which appeared in 1958 under the title *The Human Condition*; it deals with the three major human activities: Labor, Work, and Action in historical perspective. It should have been called *Vita Activa*. It actually is a kind of prolegomena [sic] to the book which I now intend to write. It will continue where the other book ends.¹⁰⁷

Even allowing for the kind of hyperbole you might expect to encounter in a grant request, it remains remarkable to see Arendt declare what many consider her opus to be simply 'a kind of prolegomena' to this follow-up volume that she had been planning in parallel while working on *The Human Condition*. Less than a year later, however, Arendt canceled her contract with the American publisher, leaving the unfinished "Introduction into Politics" to languish for over three decades until the surviving manuscript pages were stitched back together and published through

¹⁰⁶ Ibid., 317. See also: 342.

¹⁰⁷ Hannah Arendt, "Project Description for the Rockefeller Foundation" reproduced in *Was ist Politik?*, 200.

the incredible forensic work of Ursula Ludz. What passed unstated when the sequel to *The Human Condition* was shelved?

As Arendt makes clear in her grant request, she had been planning this other book since roughly the time of her discussions with Jaspers about the hydrogen bomb during her visit in 1955.¹⁰⁸ As noted earlier, she appears to have been remarkably cavalier when declaring in *The Human Condition* that the book would refrain from discussing the ‘politically modern world that was born with the first atomic explosions.’ Now, it becomes clear that if Arendt felt she could relegate these questions to the background, it seems to have been because she was already planning the follow-up study that would explicitly foreground the challenges confronting the politically modern world. Arendt opens her “Introduction into Politics” by declaring, “Any talk of politics in our time has to begin with those prejudices that all of us who aren’t professional politicians have against politics.”¹⁰⁹ As for the prevailing source of these views, she explains, “Underlying our prejudices against politics today, *since the atom bomb*, are hope and fear: the fear that humanity [*Menschheit*] could destroy itself through politics and through the means of force now at its disposal, and, linked with this fear, the hope that humanity [*Menschheit*] will come to its senses and rid the world, not of itself, but of politics.”¹¹⁰ In the introduction to this chapter, I suggested that Agamben may have only seen the tip of the iceberg when noting the “difficulties and resistances that thinking had to encounter” in the area of biopolitics. These difficulties and resistances reach an entirely new register when it is not just the politicization of life that is in question, but the political consequences of the power to kill life itself. This may

¹⁰⁸ For further confirmation that the inspiration for this project seems to have arisen during this fateful visit to Jaspers, see Ursula Ludz, „Kommentar der Herausgeberin“ in *Ibid.*, 137.

¹⁰⁹ Arendt, *The Promise of Politics*, 96.

¹¹⁰ My italics. I have edited the translation of this passage slightly for reasons that will be explained shortly. *Ibid.*, 97. Arendt, *Was ist Politik*, 14.

help to account for why no one has yet to my knowledge recognized the extent to which both Arendt and Foucault's theories of 'biopolitics' take shape within the immanentization of the apocalypse. As if seeking to provide an object lesson in these difficulties, not only did Arendt opt not to publish a study that explicitly foregrounds the question of whether 'politics' as such even has a place in her 'politically modern world,' but the translator of the passage just quoted himself inexplicably *cut* the crucial qualifier "since the atom bomb" when rendering these lines into English.

Clearly, the resistances thought encounters in this area are great, but Arendt persevered. At the outset of her "Introduction into Politics," she writes, "The answer to the question of the meaning of politics is so simple and so conclusive that one might think all other answers are utterly beside the point. The answer is: The meaning of politics is freedom."¹¹¹ Unfortunately, no sooner has she made this assertion than she acknowledges that the political experiences of recent decades justify raising a question that is "far more radical, more aggressive, and more desperate: Does politics still have any meaning at all?" Arendt cites two developments that most justify reposing the question in these more dire terms:

First, our experience with totalitarian governments, in which the totality of human life is claimed to be so totally politicized that under them there is no longer any freedom whatsoever. Viewed from this vantage point—and that means, among other things, from conditions that are specifically modern—the question arises whether politics and freedom are at all compatible, whether freedom does not first begin precisely where politics ends, so that freedom cannot exist wherever politics has not yet found its limit and its end....The second fact that necessitates the question is the monstrous development of modern means of destruction over which states have a monopoly, but which never could have been developed without that

¹¹¹ Arendt, *The Promise of Politics*, 108.

monopoly and which can be employed only within the political arena. Here the issue is not just freedom but life itself, the continuing existence of humanity [*Menschheit*] and perhaps of all organic life on earth. The question that arises here makes all politics problematic; it makes it appear doubtful whether politics and the preservation of life are even compatible under modern conditions, and its secret hope is that people may prove insightful enough somehow to dispense with politics before politics destroys us all....Both these experiences—totalitarianism and the atomic bomb—ignite the question about the meaning of politics in our time. They are the fundamental experiences of our age, and if we ignore them, it is as if we never lived in the world that is our world.¹¹²

Previously, Arendt had drawn an all-or-nothing equivalence between “the inexorable doom for human beings” under global totalitarianism and “the doom of the human race” via hydrogen bomb.¹¹³ Now, having had a few more years to reflect on the matter, she opts to describe both developments as fundamental experiences of the age, while acknowledging that the threat that the latter poses to ‘all organic life on earth’ breaks new ground in a way that strictly political questions concerning human freedom do not. Left as a freestanding prolegomenon, it is no wonder that the claims in *The Human Condition* regarding the ‘rise of the social,’ the appearance of the ‘life process,’ and subsequent willingness to accept ‘life as the highest good’ in politics would be misunderstood. In her “Introduction into Politics,” we see that the ground clearing exercise of *The Human Condition* had been preparing a one-two punch for contemporaries. With the first book, Arendt had demonstrated the extent to which modern politics had placed the insatiable needs of the life process above freedom. Now she lands the second blow, pointing out how, ever since thermonuclear weapons placed earthly human survival in jeopardy, “Here politics threatens the very thing that, according to modern opinion, provides its ultimate

¹¹² Ibid., 108-109. Arendt, *Was ist Politik*, 28-29.

¹¹³ Arendt, *Origins*, 572.

justification—that is, the basic possibility of life for all of humanity [*Menschheit*]. If it is true that politics is nothing more than a necessary evil for sustaining the life of humanity [*Menschheit*], then politics has indeed begun to banish itself from the world and to transform its meaning into meaninglessness.”¹¹⁴ In other words, I take Arendt to be suggesting, if the meaning of politics really is to be found in securing the life process of the vulnerable human species, then the resulting ‘biopolitics’ fails on its own terms and anti-political contemporaries are well justified in trying to find a way ‘somehow to dispense with politics before politics destroys us all.’

If Arendt’s disquiet about the ‘rise of the social’ caused some readers of *The Human Condition* to interpret her as a Cold War liberal advocating free markets or a philhellene pining for Athens, the blame ultimately rests with her. For it is only in the unfinished work for which *The Human Condition* might have been considered a ‘prolegomenon’ that Arendt proceeds to clarify that it is not the distribution of wealth that is at stake in making what were formerly the private affairs of the *oikos* public, but the confusion that arises when the needs of biological life become an object of political deliberation. For the Greeks, she now elaborates, “the household (and the tasks performed in it to sustain life) was never justified as a means to an end—as if, to put it in Aristotelian terms, ‘life’ per se is a means to the ‘good life’ possible only in the polis. This was neither possible nor necessary, because the means/ends category has no application whatever within the realm of life per se. The purpose of life, and all activities of labor bound up with it, is obviously the sustaining of life itself, and the impulse behind the labor to sustain life does not lie outside of life, but is included in the life process, which forces us to labor just as it

¹¹⁴ Arendt, *The Promise of Politics*, 110. Arendt, *Was ist Politik*, 31.

forces us to eat.”¹¹⁵ Understood in these terms, the end of biological life is the growth and continuation of life. By accepting life as the highest good and the meaning of politics, the servants of the life process took as their end something that in itself is so fundamentally important that it can justify any means that would be deployed in its service. Because there must be human beings for anything to be humanly meaningful, all other concerns vanish to insignificance when measured against the all-consuming importance of sustaining the contingent life process of the biological species. Life must continue, making this a political end without end to pursue by any means necessary. “It makes a huge difference whether freedom or life is posited as the highest of all goods—as the standard by which all political action is guided and judged,” as Arendt observes.¹¹⁶

In the previous chapter, we saw Arendt grappling with the question of whether courage could remain the cornerstone of political virtue when willingness to kill and die in defense of a good, politically free form of life now jeopardized the biological survival of the species itself. Here Arendt returns forcefully to this subject, arguing that “the linkage of politics and life results in an inner contradiction that cancels and destroys what is specifically political about politics.” In a truly remarkable passage, she proceeds to elaborate how,

This contradiction finds its most obvious expression in the fact that it has always been the prerogative of politics to demand of those engaged in it that under certain circumstances they must sacrifice their lives. One can of course also understand this demand in the sense of the individual being called upon to sacrifice his life for the ongoing life of society, and indeed it does exist within a context that at least sets a limit to our risking our lives: No one can or may risk his life if in doing so he risks the life of humanity [*Menschheit*]. We will return to this connection, of which

¹¹⁵ Arendt, *The Promise of Politics*, 132.

¹¹⁶ *Ibid.*, 144.

we have become fully aware only because never before have we had at our disposal the possibility of putting an end both to humanity [*Menschheit*] and to all organic life. There is in fact hardly a single political category or a single political concept that has been passed down to us that, when measured against this latest possibility, does not prove to be theoretically obsolete and practically inapplicable, precisely because in a certain sense what is now at issue for the first time in foreign policy is life itself, the survival of humankind [*Menschheit*]. By linking freedom to the very survival of humankind [*Menschheit*], we do not, however, get rid of the antithesis between freedom and life, the spark that first ignited all politics and is still the measure for all specifically political virtue. We might even assert, with considerable justification, that the fact that contemporary politics is concerned with the naked existence of us all is itself the clearest sign of the disastrous state in which the world finds itself—a disaster that, along with all the rest, threatens to rid the world of politics.¹¹⁷

This passage expresses what may be the clearest articulation of the insight that first inspired Arendt to treat the advent of the hydrogen bomb as a politically decisive development back in February of 1953 and which she later developed further in “Europe and the Atom Bomb.” “No one can or may risk his life if in doing so he risks the life of humankind.” The “can or may” expresses a recognition that the *is* and *ought* here have parted company at a moment when massed thermonuclear arsenals *can* indeed be directed against the whole of humankind and all organic life at any moment for reasons of political miscalculation, mishap, or merely by accident, leaving only the hope that the political wisdom of the few who have arrogated this unprecedented capacity may succeed in holding the immanent apocalypse at bay.

Where previously Arendt had declared the politically foundational virtue of courage to be functionally obsolete now that the self-sacrifice it demanded promised to leave none in its wake,

¹¹⁷ Ibid., 145. Arendt, *Was ist Politik?*, 70-71.

now Arendt—one of the most influential political theorists of the twentieth century—goes so far as to entertain the idea that there might be “hardly a single political category or a single political concept that has been passed down to us” that “does not prove to be theoretically obsolete and practically inapplicable” when measured against the possibility of putting an end to all human life. It was in the context of this disaster that Arendt performed the heroic work of triaging so many traditional political concepts and categories in *The Human Condition* to determine which few had survived the birth of the politically modern world relatively unscathed, which were moribund, and which were not only already dead, but might precipitate universal death should contemporaries refuse to relinquish them. Arendt ultimately used her encounter with the immanent apocalypse as an opportunity to innovate new ‘concepts and categories’ to help herself and those who would come after navigate these ruins, teasing apart labor, work, and action and helping contemporaries to face the ‘urgent reality of mankind’ by differentiating between the abstract sum total of all human beings, the formerly immortal life of the species as cosmic category, and ‘sum total of all human activities’ that collectively sustain a contingent life process. In the passage quoted above, Arendt promised to “return to this connection” between freedom and life that became newly visible when human beings first acquired the capacity to end all earthly human life. She does not do so in the remaining pages of the surviving manuscript, nor does she ever appear to have again attempted a study that would have faced the immanentization of the apocalypse so directly. However, the themes and theoretical innovations that she developed in her unfinished follow up volume to *The Human Condition* would suffuse her writings for the remainder of her life. We will return to consider several of these further developments in Section III.

“We are making no progress, and it’s all leading nowhere. It’s all repetitive, and it doesn’t add up...I could tell you that these things were trails to be followed, that it didn’t matter where they led, or even that the one thing that did matter was that they didn’t lead anywhere, or at least not in some predetermined direction...I felt a bit like a sperm whale that breaks the surface of the water, makes a little splash, and lets you believe, makes you believe, or want to believe, that down there where it can’t be seen, down there where it is neither seen nor monitored by anyone, it is following a deep, coherent, and premeditated trajectory.”
 —Michel Foucault, Lecture, 7 January 1976¹¹⁸

II. BIOPOLITICS AND THE BIOLOGICAL THRESHOLD OF MODERNITY

In January of 1976, Michel Foucault sat surrounded by tape recorders. From his perch on the dais of a lecture hall at the Collège de France, he candidly confessed to his overflow audience that it felt as though “we are making no progress, and it’s all leading nowhere. It’s all repetitive, and it doesn’t add up.”¹¹⁹ The famous philosopher and historian of knowledge had decided to spend that year’s term trying to resolve an outstanding problem left over from his groundbreaking volume *Discipline and Punish* published the year before. This study had opened by drawing a memorably grisly contrast between the spectacular public torture and execution of a would-be regicide by the French king in the mid-eighteenth century and a humdrum disciplinary routine drawn up for prison inmates just a few decades later. Foucault had made waves by arguing that the contrast between these two modes of treatment did not mean that society was becoming progressively more humane, but rather that it had transitioned between two very different ways of exercising power. On one side, he had argued, there stood the power associated with the sovereign. This was negative, subtractive, and ancient, dating back to however long ago rulers first began to use the threat of force to command obedience, punishing those who trespassed the sovereign’s will-as-law and reserving the right to subtract lives and goods through taxes, executions, and war. On the other side stood a new mode of what he called ‘disciplinary’

¹¹⁸ Michel Foucault, *Society Must Be Defended*, 4.

¹¹⁹ Ibid.

power. This was, by contrast, positive and relatively historically recent, having arisen around the end of the eighteenth century as new techniques for accumulating and organizing knowledge made it increasingly possible to track, invest, and normalize individuals by establishing a continuum of disciplinary institutions such as schools, clinics, barracks, factories, and prisons.¹²⁰ Foucault seems to have become convinced that “sovereignty and discipline...are two absolutely constitutive components of the general mechanisms of power in our society,”¹²¹ and yet had concluded *Discipline and Punish* without clearly resolving the question of how such apparently immiscible modes of power could cooperate in a single society. “This nonsovereign power, which is foreign to the form of sovereignty, is ‘disciplinary’ power,” he informed his listeners. “This power cannot be described or justified in terms of the theory of sovereignty...It seems to me that this type of power is the exact, point-for-point opposite of the mechanics of power that the theory of sovereignty described.”¹²² How then to reconcile this with the absolutely constitutive place that *both* sovereignty *and* discipline were supposed to occupy? Where was one to find the “arbitrating discourse...taking place on the front where the heterogeneous layers of discipline and sovereignty meet”?¹²³ Pursuing his intuition that war and soldiering represented one clear point of intersection between discipline and sovereignty, Foucault opted to devote the remainder of the year to an interesting but ultimately desultory march through military history.

And then, rather than take the opportunity of that year’s final session to sum up what had gone before, Foucault used his lecture of 17 March 1976 to launch off in a new direction.

¹²⁰ Michel Foucault, *Discipline and Punish* (New York: Vintage Books, 1977), 210-228.

¹²¹ “En fait, souveraineté et discipline, législation, droit de la souveraineté et mécaniques disciplinaires sont deux pièces absolument constitutives des mécanismes généraux de pouvoir dans notre société.” *Dits et Ecrits, Tome 3*, 189. This particular passage appears in different but slightly less literal translations in both *Society Must Be Defended* p. 39 and Michel Foucault, *Power/Knowledge: Selected Interviews and Other Writings, 1972-1977*, Ed. Colin Gordon (New York: Pantheon Books, 1980), 108.

¹²² Foucault, *Society Must Be Defended*, 36.

¹²³ *Ibid.*, 39.

Retracing his steps back to the immiscibility of discipline and sovereignty, he now suggested that he had mis-posed his *problématique*, framing discipline and sovereignty as point-for-point opposites while overlooking a broader source of tension. Instead, Foucault now claimed that over the last several centuries the sovereign power to take life had come to exist alongside a growing range of technical capacities oriented towards shaping, investing, and growing biological life. His previous mistake, he seems to have decided, had been to focus exclusively on the disciplinary effects that this new mode of power exercised on individuals while missing the way it also came to operate as a mass phenomenon. His disciplinary studies during the first half of the 1970s had examined many of the logistical and technical innovations that had been required to track and discipline individual bodies on a mass scale (Bentham's panopticon serving as the architectural distillation of this endeavor),¹²⁴ but it had neglected to note the transformation that was taking place in how masses of human bodies were coming to be understood as a new object of knowledge in their own right. "Unlike discipline, which is addressed to bodies," he excitedly explained, "the new nondisciplinary power is applied not to man-as-body but to the living man, to man-as-living-being; ultimately, if you like, to man-as-species."¹²⁵ The biological life of human beings, he now seemed to see with new clarity, had entered into political purview in a new way along a continuum of scales ranging from the individual body through the population and up to the species itself.

The idea of disciplining the bodies of individuals as organisms endowed with capacities would have been immediately familiar to Aristotle, his contemporaries, and all those whom he informed down the ages.¹²⁶ More than just 'discipline,' Foucault now contended that the non-

¹²⁴ Ibid., 200-204.

¹²⁵ Ibid., 242.

¹²⁶ Man-as-body had been subject to corporeal discipline for millennia, Foucault knew, having noted in *Discipline and Punish* how techniques of bodily entrainment were homed in the monasteries before

sovereign power in question could be distinguished along two axes: “one is a technology in which the body is individualized as an organism endowed with capacities, while the other is a technology in which bodies are replaced by general biological processes.”¹²⁷ While censuses and head counts were ancient, the notion that the resulting mass of humans might constitute a process with its own dynamics was comparatively recent, having arisen alongside the development of “a technology which brings together the mass effects characteristic of a population.”¹²⁸ It had required significant changes in both perspective and administrative technique unfolding over the course of the eighteenth and nineteenth centuries to constitute ‘populations’ as sources of knowledge and objects of power whose dynamics could be not only known, but altered.¹²⁹ Summing up what is new about ‘biopower,’ Foucault claimed that ultimately: “It is not a matter of taking the individual at the level of individuality but, on the contrary, of using overall mechanisms and acting in such a way as to achieve overall states of equilibration or regularity; it is, in a word, a matter of taking control of life and the biological processes of man-as-species...”¹³⁰ From here, the crux of the issue becomes not, as he had previously thought, the opposition between sovereignty and discipline *per se*, but rather a situation in which: “I wouldn’t say exactly that sovereignty’s old right—to take life or let live—was replaced, but it came to be

migrating to factories and drill fields and being institutionalized to form the continuum of schools, workshops, barracks, prisons, and so on. (Foucault, *Discipline and Punish*, 142-150). He would further go on to study how these auto-disciplinary ‘techniques of the self’ had been developed in antiquity in the later volumes of his *History of Sexuality*. See a succinct summary see: Michel Foucault, *The History of Sexuality Vol. 2*, Trans. Robert Hurley (New York: Random House, 1985), 249-254.

¹²⁷ Foucault, *Society Must Be Defended*, 249.

¹²⁸ *Ibid.*

¹²⁹ As philosopher Ian Hacking points out in a classic study, “Even the very notion of an exact population is one which has little sense until there are institutions for establishing and defining what ‘population’ means. Equally there must be ways of reasoning in order to pass from cumbersome data to sentences with a clear sense about how many were such and such.” Ian Hacking, *The Taming of Chance* (Cambridge: Cambridge University Press, 1990), 6. See also: Alison Bashford, *Global Population: History, Geopolitics, and Life on Earth* (New York: Columbia University Press, 2014), 29-54.

¹³⁰ *Ibid.*, 247.

complemented by a new right which does not erase the old right but which does penetrate it, permeate it....The right of sovereignty was the right to take life or let live. And then this new right is established: the right to make live and to let die.”¹³¹ Where the sovereign power to take life had intervened intermittently and spectacularly, Foucault finds that one of the most striking features of this new power is the way in which it tracks life as an ongoing process in order to intervene subtly and continuously into “the mass effects characteristic of a population” that is never still. The ensuing tension between a sovereign power to take life and a ‘biopower’ to invest bodies and grow the health of populations comes to define a new kind of political logic.

What I take Foucault to be describing is the same introduction of population-scale biological processes into political purview that preoccupied Arendt in the previous section (what she earlier termed elevating ‘the life process of man-kind’ to the status of the highest political good) Where for millennia the mass phenomena of birth, death, and biological life had seemed to be universally established by cosmic Nature and outside the scope of human intervention, Foucault introducing the term “*bio-politics*” to designate what brought life and its mechanisms into the realm of explicit calculations and made knowledge-power an agent of transformation of human life.”¹³² Further elaborating, he proposes: “The new technology that is being established is addressed to the multiplicity of men, not to the extent that they are nothing more than their individual bodies, but to the extent that they form, on the contrary, a global mass that is affected by overall processes characteristic of birth, death, production, illness, and so on,” marking “the

¹³¹ Ibid., 241.

¹³² The question of what, if any, difference there is between ‘biopower’ and ‘biopolitics’ in Foucault’s thinking has been confused by the fact that the English translator of *The History of Sexuality* renders ‘*bio-politique*’ as ‘bio-power’ in this key passage. As an additional caveat lector, the translator also reproduces “*seuil de modernité biologique*” as “threshold of modernity,” dropping the crucial qualifier “biological.” Foucault, *The History of Sexuality*, 143. Michel Foucault, *La Volonté de Savoir* (Paris: Gallimard, 1976), 188.

emergence of something that is no longer an anatomic-politics of the human body, but what I would call a ‘biopolitics’ of the human race.”¹³³ And what is the target of “this new technology of power, this biopolitics, this biopower that is beginning to establish itself”? It takes aim at “a set of processes such as the ratio of births to deaths, the rate of reproduction, the fertility of a population, and so on. It is these processes—the birth rate, the mortality rate, longevity, and so on—together with a whole series of related economic and political problems which, in the second half of the eighteenth century, become biopolitics’ first objects of knowledge and the targets it seeks to control.”¹³⁴ For Foucault, ‘biopolitics’ takes shape as the complicated, sometimes self-contradictory attempt to balance the ancient sovereign right to take life and the new demands that arise from having introduced bodily discipline and the processes governing population health into political purview.

Excited by this breakthrough, Foucault paused at some point in the wake of his March 1976 lecture to pen a ten page *précis* on the subject of ‘biopolitics’ that he appended to volume one of *The History of Sexuality* published that September.¹³⁵ Despite promising to revisit the subject on several occasions, Foucault published no further elaborations of his theory of biopolitics during his lifetime.¹³⁶ Interestingly, this same six month span between March and September of 1976 also marks the only period in his career that Foucault not only acknowledged

¹³³ Foucault, *Society Must Be Defended*, 242-243.

¹³⁴ *Ibid.*, 243.

¹³⁵ The excursus on biopolitics comprises the first ten pages of the chapter “Right of Death and Power over Life,” which then returns to the topic of the history of sexuality after a double-spaced paragraph break. Michel Foucault, *The History of Sexuality*, 135-145.

¹³⁶ Although he promised to return to the subject in his subsequent annual lectures at the Collège de France, his efforts to do so saw him get bogged down with the prehistory of biopolitics exemplified by the French physiocrats one year and take a detour into the study of neoliberalism another. Michel Foucault, *Security, Territory, Population: Lectures at the Collège de France, 1977-1978*, Ed. Michel Senellart, Trans. Graham Burchell (New York: Palgrave MacMillan, 2009), 1. Michel Foucault, *The Birth of Biopolitics: Lectures at the Collège de France*, Ed. Michel Senellart, Trans. Graham Burchell (New York: Palgrave MacMillan, 2010), 22.

the existence of nuclear weapons, but took the further step of trying to address their theoretical implications. It happens to be right in the midst of his famous March lecture on biopolitics that the atom bomb first makes its appearance.

Part of what makes Foucault's encounter with the immanent apocalypse so fascinating is that he may have left posterity with an account of his first thoughts on the subject developing in real time. Fontana and Bertani helpfully call attention to how, when delivering his weekly presentations at the Collège de France, Foucault does not seem to have worked according to "a preestablished plan, but tended, rather, to begin with a problem or certain problems, and the lecture developed 'on the spot' through a sort of spontaneous generation."¹³⁷ As far as I can tell, Foucault never publicly acknowledged the existence of nuclear weapons prior to broaching the subject in the midst of his March 1976 lecture on biopolitics, and it may well be that the following remarks about the theoretical implications of the atomic bomb represent just such a case of spontaneous generation. At this point in the lecture, Foucault has spent the first half of the hour laying out his theoretical apparatus and is about to pivot to demonstrate its explanatory power by using biopolitics to analyze the Nazis' infatuation with race science and population health. In the course of doing so, he offers a remarkable aside, telling his listeners:

We are, then, in a power that has taken control of both the body and life or that has, if you like, taken control of life in general—with the body as one pole and the population as the other. We can therefore immediately identify the paradoxes that appear at the points where the exercise of this biopower reaches its limits. The paradoxes become apparent if we look on the one hand, at atomic power, which is not simply the power to kill, in accordance with the rights that are granted to any sovereign, millions and hundreds of millions of people (after all, that is traditional). What makes atomic power, for the functioning of contemporary political power, a

¹³⁷ Alessandro Fontana and Mauro Bertani, "Situating the Lectures" in *Society Must Be Defended*, 287.

sort of paradox that is difficult, if not impossible, to get around, is that, in the power to manufacture and use the atom bomb, you bring into play a sovereign power that kills, but, equally, that is the power to kill life itself. So the power that is being exercised in this atomic power is exercised in such a way that it is capable of suppressing life itself. And, therefore, to suppress itself insofar as it is the power that guarantees life. Either it is sovereign and uses the atom bomb, and therefore cannot be power, biopower, or the power to guarantee life, as it has been ever since the nineteenth century. Or, at the opposite extreme, you no longer have a sovereign right that is in excess of biopower, but a biopower that is in excess of sovereign right. This excess of biopower appears when it becomes technologically and politically possible for man not only to manage life but to make it proliferate, to create living matter, to build the monster, and, ultimately, to build viruses that cannot be controlled and that are universally destructive. This formidable extension of biopower, unlike what I was just saying about atomic power, will put it beyond all human sovereignty.¹³⁸

Above, Foucault has just claimed in no uncertain terms that the “power to kill life itself” presents “the functioning of contemporary political power with a paradox that is difficult, if not impossible, to get around.” Despite the enormous amount of scholarly attention that Foucault’s scant remarks on biopolitics have received, no one to my knowledge has attempted to make sense of this remarkable announcement that the whole biopolitical schema he has just outlined may have already been rendered moribund. Foucault himself does not seem entirely certain what to make of this and, as we will see, spent the next six months continuing to ponder its potential implications.

One of the first things to note about Foucault’s encounter with the immanentization of the

¹³⁸ Although admittedly clunkier, I have preserved my own slight tweak in the translation of the passage containing “the power to kill life itself” to preserve the conceptual continuity implied in the formulation of these ideas as a single sentence, in place of the break into two sentences that appears in David Macey’s translation. *Ibid.*, 253.

apocalypse is that it arises in response to not one existential risk, but two. By the mid-1970s, Foucault had grown increasingly wary of the newly established human capacity to craft ‘universally destructive living matter’ for several years. We will examine why this was below. Here, let us turn first to consider why Foucault, who began his scholarly career amid the thermonuclear fallout scare of the 1950s, might have chosen to finally break his public silence on the subject at this particular moment. The possibility that these remarks regarding the ‘atomic power to kill life itself’ arose extemporaneously finds support in the fact that the remarks above contain a curious slippage. The disconnect in question would not stand out so starkly if these kinds of oversights did not feature so rarely in Foucault’s usually exemplary oratory. Above, he remarks how nuclear armed sovereign power acquires the capacity “to suppress itself insofar as it is the power that guarantees life.” This means that “either it is sovereign and uses the atom bomb, and therefore cannot be power, biopower, or the power to guarantee life, as it has been ever since the nineteenth century. Or, at the opposite extreme, you no longer have a sovereign right that is in excess of biopower, but a biopower that is in excess of sovereign right.”¹³⁹ This “either/or” is conspicuously out of joint: the ‘or’ in question does not finish the thought, but shifts the topic from sovereign to biopower. What passes unsaid in this slippage?

Earlier in his March biopower lecture, Foucault had explained that sovereign power differs from biopower in that “sovereign power’s effect on life is exercised only when the sovereign can kill. The very essence of the right of life and death is actually the right to kill: it is at the moment when the sovereign can kill that he exercises his right over life.”¹⁴⁰ If we take this

¹³⁹ « *Ou il est souverain, et il utilise la bombe atomique, mais du coup il ne peut être pouvoir, bio-pouvoir, pouvoir d’assurer la vie comme il l’est depuis le XIXe siècle. Ou à l’autre limite, vous avez l’excès, au contraire, non plus du droit souverain sur le bio-pouvoir, mais l’excès du bio-pouvoir sur le droit souverain.* » Michel Foucault, *Il Faut Défendre la Société*, Ed. Mauro Bertani and Alessandro Fontana (Paris: Gallimard, 1997), 207.

¹⁴⁰ Foucault, *Society Must Be Defended*, 240.

to be the case, then the task of finishing Foucault's unspoken thought may be fairly straightforward. Put another way: if "the workings of contemporary political power are such that atomic power represents a paradox that is difficult, if not impossible to get around," then the paradox in question seems to take the following form: Either the state is sovereign and uses the atom bomb to kill life itself *or* it abjures the use of this killing power and thereby ceases to be sovereign in any practical sense. In both cases, sovereignty can no longer quite mean what it once did. For those that possess them in sufficient number, hydrogen weapons mark the self-canceling outer limit of sovereign power. *Either* a sovereign entity proves its sovereignty by exercising its right to use all of the violence at her disposal without outside restraint and thereby abolishes itself along with all life *or* it declines the right to the unfettered expression of violence and in doing so foregoes the prerogative that has traditionally defined sovereignty in Western political theory. When massed thermonuclear weapons metamorphosed the ancient right to kill "millions and hundreds of millions of people" into the new power to kill life itself, the sovereign found itself caught in the choice between either killing no one or knowingly risking killing everyone. Although violence is by no means abolished under these new circumstances, the *ultima ratio regis* must be articulated much more carefully when the resort to sovereign violence risks precipitating a process whose ultimately unforeseeable outcome may escalate to the point of universal death.

Back in January of 1976, Foucault had claimed that sovereignty represents one of the "absolutely constitutive components of the general mechanisms of power in our society." A mere three months later, we see him posit that, in the conjunction between "a sovereign power that kills" and an "atomic power to kill life itself," the "workings of contemporary political power" encounter a paradox that he calls "difficult, if not impossible, to get around." The source of this

paradox seems to rest in sovereignty itself, which, as Foucault argued above, finds its fullest expression when exercising its prerogative to take as many lives as the sovereign sees fit. This apparent crisis confronting sovereignty jeopardizes one of the most foundational notions in modern political thought. As such, it seems worth pausing to ask whether the paradox in question might merely arise as an artefact of Foucault's own idiosyncratic approach to the topic. After all, as political theorist Johanna Oksala has observed, in contrast to someone like Agamben, Foucault's treatment of sovereignty is "theoretically very rudimentary," presenting "sovereign power essentially as a repressive and coercive form of power."¹⁴¹ Fellow political theorist Banu Bargu complements Oksala's point by noting how 'sovereignty' generally constitutes "the negative pole of Foucault's oeuvre in contrast to which Foucault's exploration of power relations unfolds," meaning that "his theoretical innovations are generally introduced as counterpoints to sovereignty."¹⁴² On the one hand, it is clear that, in his capacity as a theorist of different modes of power, Foucault seems to have found the ancient, repressive power of sovereign violence the least interesting. Whatever his intentions, by adopting an uncontroversial conception of sovereignty, Foucault gave himself a neutral background against which to paint his vivid accounts of other, newer forms of power. On the other hand, it is not immediately clear that the simplicity of Foucault's account of sovereignty should automatically be taken as a deficiency.

Not everything that is simple has been oversimplified. Foucault's barebones account of sovereignty corresponds closely to Max Weber's classic definition of the sovereign state as "that human community which (successfully) lays claim to *the monopoly of legitimate physical*

¹⁴¹ Johanna Oksala, "Violence and the Biopower of Modernity" in *Foucault Studies*, Vol. 10 (November 2010), pp.23-43; 41.

¹⁴² Banu Bargu, "Sovereignty" in *The Cambridge Foucault Lexicon*, Ed. Leonard Lawlor and John Nale (Cambridge: Cambridge University Press, 2014), 456.

violence within a certain territory.”¹⁴³ This definition has enjoyed its staying power for a reason. However else it may be defined, since at least the time that centrally organized states emerged out of the European feudal order, ‘sovereignty’ has been synonymous with the ability of a monarch, parliament, or people to impose its political will by all means at its disposal up to and including violence. It is this capacity to settle otherwise insuperable political disputes by “appealing to heaven” and engaging in war as the final arbiter that distinguishes a sovereign state from merely administrative units such as cities or provinces that might possess significant autonomy but be unable to go to war as the final guarantor that their will be done. One additional advantage of Foucault’s approach to sovereignty is that this comparatively simple definition makes the historical development of this power correspondingly clearer to trace. In contrast to Agamben (whose baroque theory of sovereignty ties the concept to the classical categories of Western metaphysics that are supposed to have remained unchanged and unchallenged from the time of Aristotle until the coming of Heidegger), Foucault’s formulation offers a helpful rubric for following how the application of sovereign violence has shifted over time.¹⁴⁴ There are many ways of living and many competing conceptions of what constitutes ‘being alive,’ just as there are many differing degrees of death that can kill the mind, body, social existence or juridical personhood of a human being.¹⁴⁵ Nevertheless, the sovereign power to inflict bodily harm to the point of biological death would seem to mark one practical limit to violence that has endured

¹⁴³ Max Weber, “Politics as Vocation” in *Max Weber: Political Writings*, Ed. Peter Lassman and Ronald Speirs (Cambridge: Cambridge University Press, 1994), 310-311.

¹⁴⁴ This permits someone like Bargu to build on this foundation to develop a brilliant periodization of what she calls “moments in the evolution of sovereign power,” marked by differing ‘monarchical,’ ‘disciplinary,’ and ‘biopolitical’ arrangements. Bargu, *Immolate and Starve*, 43-45.

¹⁴⁵ For an overview of several competing theories of ‘life,’ see Paul Davies, *The Demon in the Machine* (Chicago: University of Chicago Press, 2019). For lucid treatments of social death and the killing of the juridical person, see respectively: Lisa Guenther, *Social Death: Solitary Confinement and Its Afterlives* (Minneapolis: University of Minnesota Press, 2013); Samera Esmeir, *Juridical Humanity: A Colonial History* (Stanford: Stanford University Press, 2012).

throughout history (no one yet having figured out to make someone *more* ‘dead’ in a biological sense than Cain did his brother Abel).¹⁴⁶ However, as Bargu rightly observes, “The kind of force a sovereign entity controls, monopolizes, and exercises is just as important in order to define sovereignty. In fact, a key to understanding the nature of power is the specific technologies deployed for its exercise, especially technologies of violence.”¹⁴⁷ By this estimation, one of the most decisive developments in the history of sovereignty must be the epitome of violence reached by nuclear technology and, with it, the appearance of the power to kill life itself.

The first generation of atomic weapons may well have fit neatly into the existing biopolitics of populations as it had developed during the first half of the twentieth century. In the second half of his lecture on biopolitics, Foucault examines how the Nazi’s obsession with mass life processes might have taken such a murderous turn. “We have in Nazi society something that is really quite extraordinary,” he proposes, “this is a society which has generalized biopower in an absolute sense, but which has also generalized the sovereign right to kill...The Nazi State makes the field of the life it manages, protects, guarantees, and cultivates in biological terms absolutely coextensive with the right to kill anyone.”¹⁴⁸ It seems to have been fairly clear to Foucault from the moment he first formulated his theory of biopolitics that (as he later put the matter in passing), “Since the population is nothing more than what the state takes care of for its own sake, of course, the state is entitled to slaughter it, if necessary. So the reverse of biopolitics is thanatopolitics.”¹⁴⁹ In other words, constituting the biological life processes of populations as a

¹⁴⁶ There may well be a very real sense in which curtailing the collective life process of the human species represents a new kind of killing and, with it, what Schell terms a form of ‘second death’ that in some sense exceeds the biological annihilation of the individual. We will return to this question in the next chapter.

¹⁴⁷ Bargu, *Starve and Immolate*, 43.

¹⁴⁸ Foucault, *Society Must Be Defended*, 260.

¹⁴⁹ This being one of Foucault’s only mentions of ‘biopolitics’ after dropping the term in the late 1970s. Michel Foucault, “The Political Technology of Individuals” in *Technologies of the Self: A Seminar with*

new object of knowledge introduce a form of power that could justify mass killing on previously unconscionable scales for the sake of greater overall health. It was this logic that the Nazi SS Chief Heinrich Himmler captured with ghoulish precision when declaring: “It is the curse of greatness that it must step over dead bodies to create new life.”¹⁵⁰ Here again, as argued in the previous chapter, the first atomic bombs fit readily into the existing political picture—intensifying extremes without causing a qualitative break. In “Right of Death and Power over Life,” Foucault identifies how, when it comes to biopolitical societies:

Wars are no longer waged in the name of a sovereign who must be defended; they are waged on behalf of the existence of everyone; entire populations are mobilized for the purpose of wholesale slaughter in the name of life necessity: massacres have become vital. It is as managers of life and survival, of bodies and the race, that so many regimes have been able to wage so many wars, causing so many men to be killed. And through a turn that closes the circle, as the technology of wars has caused them to tend increasingly toward all-out destruction, the decision that initiates them and the one that terminates them are in fact increasingly informed by the naked question of survival. The atomic situation is now at the end point of this process: the power to expose a whole population to death is the underside of the power to guarantee an individual’s continued existence...If genocide is indeed the dream of modern powers, this is not because of a recent return of the ancient right to kill; it is because power is situated and exercised at the level of life, the species, the race, and the large scale phenomenon of population.¹⁵¹

Glossed here, the short walk from biopolitics to the atom bomb appears only too intuitive. At the turn of the twentieth century, the British had waged war against the entire Boer population in South Africa, inventing the modern concentration camp as a place to warehouse the women and

Michel Foucault, Ed. Luther H. Martin, Huck Gutman, Patrick H. Hutton (Amherst, MA: University of Massachusetts Press, 1988), pp. 145-162; 160.

¹⁵⁰ Quoted in Michael Mann, *The Dark Side of Democracy: Explaining Ethnic Cleansing* (Cambridge: Cambridge University Press, 2005), vii.

¹⁵¹ Foucault, *The History of Sexuality*, 137.

children when the men took to the hills to fight as guerillas (and killing tens of thousands by starvation and disease while doing so).¹⁵² During the Second World War, the British and the Americans repaid every bomb dropped on Great Britain during the Blitz at a ratio of 100:1, embarking on a strategic bombing campaign targeting cities, industrial centers, and the warfighting capacity of the entire German nation considered as a collective organism. In the Pacific Theater, the United States not only brought an import-reliant Japan to the brink of starvation by mining the country's harbors and sinking its merchant fleet, but also succeeded in leveling over half of all Japanese urban space by 'conventional' bombing well before the Enola Gay took flight for Hiroshima.¹⁵³ The point of these grim recitations is not to attempt to make any sort of moral equivalence between the Nazi bloodlands and liquidation centers and the preferred Anglo-American technique of mass extermination from the air, but rather to highlight the extent to which a pervasive biopolitical perspective suggested to all sides in the conflict that *populations* and their living dynamics were the primary military target.¹⁵⁴ A sovereign ordering the of killing millions and hundreds of millions of individuals is, after all, traditional; attempting to degrade or curtail the ongoing life process of a population is a comparatively recent aim, but one that came to be shared widely during the first half of the twentieth century.¹⁵⁵ The first appearance of the atomic bomb in the late 1940s merely marked the logical end point of this

¹⁵² The German Empire pursued a similar biopolitical strategy against the Herero and Nama peoples in their adjacent African colonies with far more genocidal results several years later. See: Mann, *The Dark Side of Democracy*, 103-105.

¹⁵³ Daniel Ellsberg, *The Doomsday Machine: Confessions of a Nuclear War Planner* (New York: Bloomsbury, 2017), 225-273.

¹⁵⁴ A way of war in which both the Soviet Red Army and the Japanese Imperial Army both excelled as well, and for which the French and Belgians had demonstrated their own particular penchant in colonial Africa along with the Americans in Mindanao.

¹⁵⁵ As the sociologist Michael Mann points out in his comprehensive study of the subject, "Though mass murders are obviously not new to human history, few earlier historical regimes intended to wipe out or expel whole civilian populations....Murder is not distinctively modern, but murder in order to cleanse particular identities is modern." Mann, *The Dark Side of Democracy*, 34.

process and the apex of the efficiency with which populations could be erased. Perhaps the purest expression of this logic came in October of 1947 when the United States Joint Chiefs of Staff declared that “a military requirement exists for approximately 400 atomic bombs of destructive power equivalent to the Nagasaki bomb” in order to confirm on them the capacity for “killing a nation.”¹⁵⁶

As we saw in the previous chapter, the dream of simply erasing the enemy population began to dissipate by 1949 when the Soviet Union broke America’s nuclear monopoly and dashed any lingering dreams of waging atomic *Blitzkrieg*, before being more definitively dispelled when the first thermonuclear weapons appeared in the early 1950s. At first, the astonishing efficiency of fission weapons had offered a boon for biopolitics by making it more convenient than ever to exterminate whole human populations. The political paradoxes that Foucault described above arose instead only with the subsequent appearance of ‘universal death’ ushered in by massed thermonuclear weapons. If to be sovereign had previously meant reserving the right to enforce your will through the maximum application of the force available to you, then the thermonuclear armed state quickly found itself at an impossible impasse between either preparing to exercise this right and risk abolishing all life or forfeiting its right to maximum violence and forfeiting any absolute claims to sovereignty. Meanwhile, states without thermonuclear weapons were permitted to maintain the façade that their local monopolies on violence make them the final arbiters of authority in their territories until their populations are erased in a planet-wide cataclysm.

While the theoretical consequences of the introduction of the power to kill life itself are difficult to overstate, it bears remembering that, from a Foucauldian perspective, this watershed

¹⁵⁶ As requested by Admiral William D. Leahy and quoted in Ellsberg, *The Doomsday Machine*, 267.

moment in no way erases what came before it. Rather, one of the benefits of Foucault's historically layered approach to power is that it helps to keep track of how the addition of each new mode alters the existing constellation—changing the ways in which others are expressed, the scope of their remit, and the justifications for their use—without ever fully eclipsing them. As the history of the second half of the twentieth century has shown, many local instances of the biopolitics of populations persist. Genocides still occur, but from the 1950s onwards, the exercise of the sovereign right to kill comes stalked by the possibility of precipitating a chain of events that would end in a moment of biological annihilation that would completely overwhelm any reason for initiating them. In its purest expression, the sovereign power to enforce political will through maximum violence sputters to a halt, caught at a paradoxical impasse between omnipotence and impotence where the ultimate expression of sovereignty would also mark its final and irrevocable erasure. Either it is sovereign and uses the atom bomb or it abjures the full use of its powers and in doing so relinquishes its claims to absolute sovereignty.

Having examined Foucault's take on atomic weapons, let us now turn to consider what he termed the "excess of biopower" that "appears when it becomes technologically and politically possible for man not only to manage life but to make it proliferate...and, ultimately, to build viruses that cannot be controlled and that are universally destructive."¹⁵⁷ Where atomic weapons seemed to paralyze the sovereign—which either reaffirms its sovereignty by wielding the full measure of violence at its disposal and thereby abolishes itself (and perhaps the rest of organic life) or resolves never to use this power and in doing so abjures its claims to absolute sovereignty—the 'excess of biopower' shatters sovereignty by conjuring uncontrollable proliferations of life that elude even the most self-deluded fantasies of mastery. Where the

¹⁵⁷ Foucault, *Society Must Be Defended*, 253-254.

hydrogen weapons of the 1950s operated on the largest possible scale to render the continuation of the whole of terrestrial Nature newly contingent on the outcome of human decisions, the ongoing revolutions in genetics introduced the ability for human beings to permanently alter the ‘nature’ of organisms at the most minute imaginable scale by rearranging their genetic code.

The genetic breakthroughs of the 1970s transformed the exercise of the biopower to ‘make life’ no less profoundly than the thermonuclear breakthroughs of the 1950s transformed sovereign power to take it. As we have already seen, Foucault found in the Nazis an object lesson in biopolitics and “the paroxysmal development of the new power mechanisms that had been established since the eighteenth century.”¹⁵⁸ Theirs had been the world of the “modern synthesis”—the term that polymath biologist Julian Huxley coined to describe the reconciliation of Darwinian natural selection and the Mendelian theory of inheritance achieved at the outset of the twentieth century.¹⁵⁹ By the time the Nazis consolidated their ideology, it had become clear that heredity could be broken down into distinct units called ‘genes,’ and these genes had even been successfully located on chromosomes, but what these genes were or how to deliberately alter them in desirable ways remained a mystery. From a biopolitical perspective, anyone looking to improve the health of human populations at a genetic level through what has been called ‘positive’ eugenics could do nothing more than wait for the random appearance of desirable mutations and painstakingly breed already existing traits into more of the population over the course of many generations.¹⁶⁰ For those with less patience, the only road open to dramatically improving species health was ‘negative’ eugenics: the active culling of undesirable traits from target population by either sterilizing or exterminating their bearers. This was

¹⁵⁸ Ibid., 259.

¹⁵⁹ Like J.B.S. Haldane, Huxley was also an ardent eugenicist. Julian Huxley, *Evolution: The Modern Synthesis* (London: George Allen & Unwin Ltd., 1942).

¹⁶⁰ Lily E. Kay, *Who Wrote the Book of Life?* (Stanford: Stanford University Press, 2000), 38-59.

precisely the prevailing logic that Adolf Hitler distilled with chilling clarity when arguing how, “Just as Nature concentrates its greatest attention, not to the maintenance of what already exists but on the selective breeding of offspring in order to carry on the species, so in human life also it is less a matter of artificially improving the existing generation—which, owing to human characteristics, is impossible in ninety-nine cases out of a hundred—and more a matter of *securing from the very start a better road for future development.*”¹⁶¹ The ghosts of millions haunt this sentence. If, as feminist philosopher Rosi Braidotti asserts, “Bio-power and necro-politics are two sides of the same coin,” here you can catch both faces blend as it spins.¹⁶²

By 1976, Kennedy’s ‘nuclear sword of Damocles’ had been hanging from its hair trigger for the better part of two decades. The Pandora’s box of gene editing technology, by contrast, had only just been thrown open. In an event no less significant than the splitting of the atom,¹⁶³ the road towards the splicing of the genome opened in 1953 mere months after the first hydrogen bomb test with the discovery of the double helix structure of DNA.¹⁶⁴ But this landmark breakthrough was only the first step. As one keen-eyed observer remarked in the mid-1960s: “We now seem to be at the point in biology which we reached in regard to nuclear energy about 1900. In 1900 we knew that nuclear energy existed, but we could not conceive of any way of liberating it. At the present moment we know that life is transmitted and organized through a ‘code’ contained in a molecular structure of genes, but we know only the rudiments of the language of this code and we do not know how to ‘speak’ it ourselves. That is, we cannot except

¹⁶¹ My italics. Adolf Hitler, *Mein Kampf*, Trans. James Murphey (London: Hurst and Blackett, 1939), 39.

¹⁶² Rosi Braidotti, “Biomacht und nekro-Politik. Überlegungen zu einer Ethik der Nachhaltigkeit,” in *Springerin, Hefte für Gegenwartskunst*, Band XIII, Heft 2 (Frühjahr 2007), pp 18-23; 19.

¹⁶³ For some illuminating reflections on this point, see George Dyson, *Turing’s Cathedral* (New York: Random House, 2012), 3-10.

¹⁶⁴ Francis Crick and James D. Watson, “Molecular Structure of Nucleic Acids: A Structure for Deoxyribose Nucleic Acid” in *Nature* 171 (1953) pp. 737–738.

in the most rudimentary way manipulate the genetic structure to create new forms of life.”¹⁶⁵

Less than a decade later, a series of related discoveries culminated in a breakthrough in the ability to ‘speak’ the genetic code by concatenating different snippets. Revealed to the public as ‘recombinant DNA technology’ in 1973,¹⁶⁶ these developments marked the moment when it first became possible to, if not exactly write life’s code, then to at least begin to cut and paste it into unprecedented configurations. Suddenly, stretches of DNA that had been separated by millions—or even billions—of years of evolution were being stitched together to create organisms with no place in the established web of life and no guarantees regarding the effects they might engender.

Foucault followed these developments with interest during the early 1970s while studying topics in the history of medicine that would directly inform his theory of biopolitics several years later. As philosopher Roberto Esposito has pointed out, he appears to have first used the phrase ‘biopolitics’ during a presentation on the history of medicine delivered in Rio de Janeiro in 1974, remarking in passing how “for capitalist society it is the biopolitical that is important before everything else; the biological, the somatic, the corporeal. The body is a biopolitical reality; medicine is a biopolitical strategy.”^{167, 168} Much like Arendt with hydrogen weapons, Foucault displays a somewhat ‘catastrophe-minded’ quickness in extrapolating the extreme possibilities of recent breakthroughs in gene editing technology. Prior to declaring

¹⁶⁵ Kenneth Boulding, *The Meaning of the Twentieth Century* (New York: Harper and Row, 1964), 151.

¹⁶⁶ Stanley N. Cohen, Annie C. Y. Chang, Herbert W. Boyer, and Robert B. Helling, “Construction of Biologically Functional Bacterial Plasmids In Vitro” in *Proceedings of the National Academy of Science*, Vol. 11, No. 70 (Nov. 1973) pp. 3240–3244.

¹⁶⁷ « Pour la société capitaliste, c’est le bio-politique qui importait avant tout, la biologique, le somatique, le corporel. Le corps est une réalité bio-politique ; la médecine est une stratégie bio-politique. » Michel Foucault, *Dits et écrits III*, 210.

¹⁶⁸ Esposito further seems correct in concluding that this particular use of the term ‘biopolitics’ in itself “doesn’t have much importance” compared to the overall “biopolitical semantics” that seems to be increasingly influencing Foucault’s thinking. Esposito, *Bios*, 27.

medicine to be a “biopolitical strategy,” he proposed the following during his preceding lecture delivered the day before: “Today, with the techniques available to medicine, the ability to alter the genetic structure of cells does not only affect the individual or his offspring, but the entire human species; it is the whole phenomenon of life which now finds itself within the scope of medical intervention.”¹⁶⁹ In light of this, he asserted, “Ultimately, we do not know what the genetic manipulations carried out on the genetic potential of living cells, on bacilli, or on viruses will lead to. It becomes technically possible to develop aggressive agents of the human organism against which there is no means of defense. It is possible that an absolute biological weapon can be forged against man and the human species without simultaneously developing means of defense,” resulting in a new form of “medical risk” that inspires “fears of an apocalypse of the human species.”¹⁷⁰ The means in question might differ dramatically, but medical technology seemed to be poised on the cusp of reproducing the same planet-wide power to kill life itself first generated by thermonuclear weapons two decades prior.

Foucault was far from alone in these fears. A year later, the world’s leading geneticists assembled in Asilomar, California in February 1975 to draft a famous series of precautionary principles and safety protocols for managing their unprecedented new power to create biologically novel organisms.¹⁷¹ “The new techniques, which permit recombination of genetic information from very different organisms,” they cautioned, “place us in an area of biology with many unknowns.” This in turn made “the evaluation of potential biohazards very difficult” by introducing “novel risks to workers in laboratories, to the public at large, and to the animal and

¹⁶⁹ Foucault, *Dit et écrits III*, 47-48.

¹⁷⁰ The transcript of this talk was published as an article in the January-April 1976 edition of a Brazilian medical journal around the same time that Foucault was delivering his lecture on biopolitics. *Ibid.*, 48.

¹⁷¹ Some salient details about this historic gathering are engaging recounted by Siddhartha Mukherjee in *The Gene: An Intimate History* (New York: Scribner, 2016), 246-256.

plant species sharing our ecosystems.”¹⁷² When first introducing his new theory of biopolitics, Foucault had put forward the Nazis as exemplars of a political logic that blended the venerable power to take life with the growing capacity to track the vital statistics of life processes and constitute populations as objects of knowledge and targets of intervention. But the gene editing technology of the mid-1970s seemed to introduce a categoric break in the scale of biopower no less severe than the rupture between the sovereign power to kill and the atomic power to kill life itself. In this sense, the new possibility of turning the growth of life uncontrollably against life marked as radical a break with the negative eugenics of the Nazi biopower of populations as a hydrogen bomb mounted on an intercontinental ballistic missile differed from the killing power of a V2 rocket bound for London.

Foucault’s growing fears about forging ‘an absolute biological weapon’ against ‘man and the human species’ combine with his belated epiphany about the consequences of atomic weapons to provide a very different context within which to reconsider one of his most iconic claims. In the 1976 *précis* on biopolitics published in volume one of *The History of Sexuality*, Foucault writes,

If one can apply the term *bio-history* to the pressures through which the movements of life and processes of history interfere with one another, one would have to speak of a *bio-politics*¹⁷³ to designate what brought life and its mechanisms into the realm of explicit calculations and made knowledge-power an agent of transformation in human life. It is not that life has been totally integrated into techniques that govern and administer it; it constantly escapes them. Outside the Western world famine

¹⁷² Paul Berg, David Baltimore, Sydney Brenner, Richard O. Roblin III, and Maxine F. Singer, “Summary Statement of the Asilomar Conference on Recombinant DNA Molecules” in *The Proceedings of the USA National Academy of Science* Vol. 72, No. 6 (June 1975), pp. 1981-1984; 1981.

¹⁷³ As noted earlier, the English translator of *The History of Sexuality* renders ‘*bio-politique*’ as ‘bio-power’ here, while translating “*seuil de modernité biologique*” a few sentences later as “threshold of modernity,” dropping the *crucial* qualifier “biological.” Foucault, *The History of Sexuality*, 143. Foucault, *La Volonté de Savoir*, 188.

exists on a greater scale than ever; and the biological risks confronting the species are perhaps greater, and certainly more serious, than before the birth of microbiology. But what might be called a society's "biological threshold of modernity" has been reached when the life of the species is wagered on its own political strategies. For millennia, man remained what he was for Aristotle: a living animal with the additional capacity for a political existence; modern man is an animal whose politics places his existence as a living being in question.¹⁷⁴

Esposito declares this last line to be "perhaps Foucault's most celebrated formulation,"¹⁷⁵ and it appears to have been this remark about "modern man" being "an animal whose politics places his existence as a living being in question" that stuck in Agamben's mind when bringing Foucault's biopolitics to broader attention.¹⁷⁶ There are a great many ways that these highly influential remarks can be interpreted.¹⁷⁷ However, given everything we have seen so far, I want to suggest that this famous—and famously opaque—assertion regarding a "biological threshold of modernity" warrants being taken quite literally. When Foucault points out that "the biological risks confronting the species are perhaps greater, and certainly more serious, than before the birth of microbiology," it seems safe to assume that he has in mind here the still-fresh prospect of an "excess of biopower" that enables one "to not only manage life but to make it proliferate, to create living matter, to build the monster, and, ultimately, to build viruses that cannot be controlled and that are universally destructive." If so, then the "biological threshold of modernity" that sees "modern man" become "an animal whose politics places his existence as a living being in question" might better be understood as having been crossed not with the partial

¹⁷⁴ Foucault, *The History of Sexuality*, 143.

¹⁷⁵ Esposito, *Bios*, 33.

¹⁷⁶ Giorgio Agamben, *Means without End*, 137.

¹⁷⁷ With one particularly interesting suggestion coming from Timothy Campbell and Adam Sitze, who focus on the way the "life of the species is *wagered*" to connect these claims to "casino capitalism and other assorted forms of neoliberalism" that gamble with the lives of whole populations. Timothy Campbell and Adam Sitze, "Introduction" in *Biopolitics: A Reader*, 17.

biopolitics of populations in the nineteenth century, but with the moment that the biological survival of the human species as a whole entered directly into political play.

“Politically, the modern world, in which we live today, was born with the first atomic explosions,” Arendt claimed. Likewise, Foucault came to see that a biological threshold of modernity had been crossed when the atomic power to kill life itself first confronted the workings of contemporary political power with a paradox that is difficult, if not impossible, to get around. Arendt may have begun with the shocking implications of thermonuclear weapons and arrived at her discovery of the political centrality of the human life process, while Foucault began by studying the biopolitics of population before reaching the impasse imposed by the atomic power to kill life itself, but both came to equally recognize that some of the foundational assumptions of Western political thought had been permanently overturned. “For millennia, man remained what he was for Aristotle,” as Foucault puts it, and could take comfort in the fact that—now in Arendt’s words—“Aristotle explicitly assures us that man, insofar as he is a natural being and belongs to the species mankind, possesses immortality.”¹⁷⁸ Both ultimately posit that the immanentization of the apocalypse that attends the appearance of the power to kill life itself introduces a basic break in the continuity of Western political concepts and categories.

Three months after delivering his lecture on biopower at the Collège de France, Foucault sat down for an interview in June of 1976. Later published as “Truth and Power,” this interview saw Foucault deliver one of the most widely quoted assertions of his career, famously complaining: “Political theory has never ceased to be obsessed with the person of the sovereign. Such theories still continue today to busy themselves with the problem of sovereignty. What we need, however, is a political philosophy that isn’t erected around the problem of

¹⁷⁸ Arendt, *Between Past and Future*, 42.

sovereignty... We need to cut off the king's head. In political theory this has still to be done."¹⁷⁹ These are striking words, and somewhat at odds with Foucault's usual circumspection. As Bargu notes on this point, "Since such a programmatic pronouncement is a rare occurrence in Foucault's voluminous discourse, especially in light of his general aversion to overarching normative, political, and theoretical projects, it is not to be taken lightly."¹⁸⁰ Given what we have seen so far, reconsider Foucault's uncharacteristically programmatic call for the head of the king in light of the philosopher's ongoing grappling with the fact that the power to kill life itself had already invalidated traditional claims to sovereignty. In the span of just six months, we have seen Foucault pass from claiming that 'sovereignty' comprises one of "two absolutely constitutive components of the general mechanisms of power in our society"¹⁸¹ to positing that "what we need is a political philosophy that isn't erected around the problem of sovereignty." Right in the middle of these two pronouncements sits his March 1976 encounter with the power to kill life itself, taking shape as a self-canceling hypertrophy of the sovereign power to kill when wielding nuclear weapons on the one hand and a biopower "to build viruses that cannot be controlled and that are universally destructive" and "beyond all human sovereignty" on the other.¹⁸² What if, rather than some bold pronouncement regarding where political theory should be going, we find him instead urging theorists to catch up to the pace of events that had long since overtaken them? To reiterate, by this point Foucault had already seen traditional conceptions of 'sovereignty' rendered functionally by the fact that, one, no entity that possesses this power but refrains from using it can said to be the final arbiter in its own affairs and that; two, no entity that proves its sovereignty by recourse to the power to kill life itself survives the ordeal—annihilating of

¹⁷⁹ Foucault, "Truth and Power" in *The Essential Foucault*, 309.

¹⁸⁰ Banu Bargu, "Sovereignty" in *The Foucault Lexicon*, 457

¹⁸¹ Foucault, *Dits et Ecrits, Tome 3*, 189.

¹⁸² Foucault, *Society Must be Defended*, 253.

sovereignty both practically and theoretically by ridding the planet of all those for whom this concept might have had any significance.

When interpreting Foucault's call for the king's head, it has often been assumed that he was declaring that the new task of political theorists would be to move beyond the blinkered fixation on sovereignty and begin to explore the subtler forms of power that coursed beneath the great repressive apparatuses of sovereign violence. This may well still be the case, but something significant risks being lost if his call for the king's head and an end to the fixation on sovereignty is taken to be primarily a matter of theoretical prescription rather than a frank description of what had already become a *fait accompli* for those who had crossed the biological threshold of modernity. While this assertion may at first seem like something of a stretch, consider how Foucault opts to conclude this June interview. For their final question, Foucault's interlocutors asked: "You have spoken previously of local struggles as the specific site of confrontation with power, outside and beyond all such global, general instances as parties or classes. What does this imply about the role of intellectuals?"¹⁸³ Foucault answered by distinguishing between two different genres of intellectual. On the one hand, there was the tradition of "the 'left' intellectual" who "spoke, and was acknowledge the right of speaking, in the capacity of master of truth and justice," borrowing "an idea transposed from Marxism, from a faded Marxism indeed" that he was the elaborator of the universal. (For the Marxist variant of the universal intellectual, "Just as the proletariat, by the necessity of its historical situation, is the bearer of the universal, so the intellectual, through his moral, theoretical, and politics choice, aspires to be the bearer of this universality in its conscious, elaborated form.")¹⁸⁴ Over and against this Enlightenment relic of

¹⁸³ Foucault, "Truth and Power," 312.

¹⁸⁴ *Ibid.*, 312.

this ‘universal intellectual,’ Foucault contrasted a new set of intellectuals who “have become used to working not in the modality of the ‘universal,’ the ‘exemplary,’ the ‘just-and-true-for-all,’ but within specific sectors, at the precise points where their own conditions of life or work situate them,” permitting them to acquire “a much more immediate and concrete awareness of struggles.”¹⁸⁵ Foucault was himself an exemplar of this latter approach, championing what he called ‘subjugated knowledges’ that were local and situational against the synoptic approaches that sought to put everything in its place.¹⁸⁶ This was the path of the “specific intellectual,” a vocation that he modeled both in his own research and in his hands-on efforts at prison reform through the *Groupe d’information sur les prisons*.¹⁸⁷

While Foucault may have championed the concrete causes of the specific intellectual over the grand pretensions of the universal intellectual, this preference did not automatically imply that all those who presumed to address topics of universal import knew not that of which they spoke. In between the ‘universal’ and the ‘specific’ intellectual sat the very important hybrid case of those whose highly specific area of expertise nevertheless permitted them to make claims of universal importance. The exemplar of this third category, Foucault contended, had been “the atomic scientist, who acted as the point of transition between the universal and the specific intellectual.” As he proceeded to explain, “It is because he [the atomic scientist] had a direct and localized relation to scientific knowledge and institutions that the atomic scientist could make his intervention; but, since the nuclear threat affected the whole human race and the fate of the world, his discourse could at the same time be the discourse of the universal. Under the rubric of protest, which concerned the entire world, the atomic expert brought into play his

¹⁸⁵ Ibid.

¹⁸⁶ Foucault, *Society Must Be Defended*, 7-8.

¹⁸⁷ David Macey, *The Lives of Michel Foucault* (London: Reaktion Books, 2004), 94-104.

specific position in the order of knowledge.”¹⁸⁸ The events of the twentieth century required that anyone who staked his (almost uniformly male) intellectual legitimacy on the ascendancy of the proletariat as a universal class drastically revise his credentials. Correspondingly, the same period saw the rise of a very specific, highly specialized branch of knowledge that conferred a power capable of potentially affecting all people everywhere.

At first glance, it may seem surprising to see Foucault propose that anyone might legitimately adopt a “discourse of the universal” that addresses “the whole human race and the fate of the world.” After all, not only did he exemplify the life of the specific intellectual in his own scholarship, but Foucault has contributed just about as much as anyone in the last half century to dispelling the notion that *anyone* could ever presume to speak for *everyone*. As noted, in order address of the just-and-true-for all and pontificate on the political future of Man, the universal intellectual had required an equally universal definition of humanity as a whole that could serve as the vehicle for his pronouncements. For Foucault and his fellow antihumanists, every attempt to grasp the universal plight of humankind bore the unmistakable historical fingerprints of the particular people engaged in the endeavor. In one of his most quoted passages, Foucault had concluded *The Order of Things* a decade earlier with the assertion (noted earlier in the introduction to this study): “As the archaeology of our thought easily shows, man is an invention of a recent date. And one perhaps nearing its end,” proposing that “if those arrangements were to disappear as they appeared...then one can certainly wager that man would be erased, like a face drawn in sand at the edge of the sea.”¹⁸⁹ That same year, he had proceeded to further explain how his research into the historical conditions surrounding the emergence of

¹⁸⁸ Foucault, “Truth and Power,” 313.

¹⁸⁹ Michel Foucault, *The Order of Things*, 387.

‘Man’ in the singular as an object of knowledge for Enlightenment humanists aimed at “not only erasing the traditional image of Man,” but “the very idea of Man.” Instead, he claimed, “Our task now is to free ourselves from humanism once and for all, and in this sense our work is political work.”¹⁹⁰ As one commentator summed up in the early 1990s, one of Foucault’s chief lessons had been the conviction that: “One is to refuse to define humanity in metaphysical, historical, economic, juridical, or sexual terms. Indeed, humanity must not be defined at all. The modern discourse of humanity, of its truth and its ultimate liberation, must be left behind.”¹⁹¹ With the widespread success of academic antihumanism, all pretense to address the sum total of all human beings or speak politically in terms of the just-and-true-for-all has rightly become a source of reflexive suspicion in light of the quite reasonable assumption that anyone who would presume to speak for everyone addresses humanity as a whole in the form of some figure of ‘Man’ that they have crafted in their own image—some ersatz universal that is always more or less polluted by their own normative definition of what the human essentially is, and therefore all humans must aspire to be.¹⁹²

The fact that Foucault—one of the most influential antihumanists of the twentieth century—did not himself discount the possibility that the atomic scientist might credibly adopt a “discourse of the universal” that addresses “the whole human race and the fate of the world” should give reason for pause. In the previous section, we saw Arendt draw several—albeit sometimes shaky—distinctions between ‘mankind,’ ‘man-kind,’ ‘humanity,’ and the ‘human life process’ as she attempted to parse the difference between “the idealism of the humanist tradition

¹⁹⁰ My translation. Michel Foucault, «Entretien avec Madeleine Chapsal» in *Dits et écrits* Vol. 1, 516.

¹⁹¹ Leslie Paul Thiel, “The Agony of Politics: The Nietzschean Roots of Foucault’s Thought,” *American Political Science Review* Vol. 84 No. 3 (September 1990): 907-923, 907.

¹⁹² For a concise summary of the antihumanist critique of humanism from one of Foucault’s former students, see: Rosi Braidotti, *The Posthuman* (Cambridge: Polity Press, 2013), 26.

of enlightenment and its concept of mankind” and the “urgent reality” of an only too empirical form of human totality that had entered the politically modern age alongside the first thermonuclear explosions. Foucault likewise reminds contemporaries that rejecting the traditional terms of Western metaphysics and its relentless philosophical quest to define the humanity of Man as he essentially *is* by Nature in no way requires that all discussion of the sum total of all human beings be set aside. The first half of the twentieth century had unfolded as a continuous train of catastrophes that witnessed the killing of tens of millions of human beings and the attempted extermination of whole peoples as living populations. Many of those killed were sacrificed in the name of some conception of ‘Man’ as he truly is or could be made to be, and thinkers during the second half of the twentieth century learned to be rightly wary of ‘universal intellectuals’ and to heed antihumanists’ warnings that “universal humanity is ideology” and “Man is the ideology of dehumanization.”¹⁹³ And yet, ironically, tragically, the very same period that witnessed antihumanist anti-universalism rise to the status of something approaching a kind of critical common sense in many wings of the contemporary academy happened to directly coincide with the epoch that has seen questions concerning the sum total of all human beings pass from matters of falsely totalizing humanist speculation to become universal challenges that confront all human beings with the equally total risk of universal death, sudden only for a fortunate minority.

For my part, I see no inconsistency between, on the one hand, Foucault’s avowed antihumanism and endorsement of the situated struggles waged by the ‘specific’ intellectual and his endorsement of the peculiar situation of the atomic scientists on the other. Instead, I believe it

¹⁹³ Theodore Adorno, *The Jargon of Authenticity*, Trans. Knut Tarnowski and Frederic Will (Chicago: Northwestern University Press, 1973), 59, 67.

would be a tremendous mistake to assume that Western humanists somehow possessed a monopoly on universalism or that any mention of totality revives all that was most dubious in traditional Western metaphysics. Foucault himself seems to take for granted that, to rephrase his earlier claim slightly: because ‘the atomic scientists had a direct and localized relation to scientific knowledge and institutions’ (or ‘specific position in the order of knowledge’), they could credibly ‘articulate a discourse that could at the same time be the discourse of the universal’ because ‘the nuclear threat affected the whole human race and the fate of the world.’¹⁹⁴ At issue here is the difference between two types of universalism that both crop up in Foucault’s work and are easy to confuse but reward keeping separate. This involves what philosopher and Foucault scholar Colin Koopman lucidly identifies as “a crucial distinction between universality and universalizability, or what might be described as a distinction between eternal universals and historical universals, or in yet another way as necessary universality and contingent universalizability.”¹⁹⁵ Expressed in these terms, it is clear that almost all claims to ‘necessary universality’ in human affairs have rightly come to be viewed with reflexive suspicion over the course of the last half century. At the same time, there have also been many who have permitted the belief that “the whole is the false”¹⁹⁶ to be the last word in political wisdom while overlooking the ‘contingent universalizability’ of a growing number of phenomena that can credibly claim to impinge on the lives of every living human being. Universal death did not exist when Foucault was born in 1926. It became universal at a terrestrial scale when the creation of massed stockpiles of thermonuclear weapons breached the biological threshold of modernity by introducing the power to kill life itself.

¹⁹⁴ Foucault, “Truth and Power,” 313.

¹⁹⁵ Colin Koopman, *How We Became Our Data: A Genealogy of the Informational Person*, 10.

¹⁹⁶ Theodore Adorno, *Minima Moralia* (New York: Verso, 2005), 50.

There is nothing *necessary* about the prospect of universal death by hydrogen bomb, just as the prospect of annihilating all complex life in nuclear fire or a tide of synthetic viruses robbed the whole order of terrestrial Nature of any lingering claim it might have had to being ‘necessary.’ What remains is a near infinitude of contingent processes that collectively make up the continuous flux of a finite Earth. Within this welter, it has become possible for human beings to initiate new processes that universally impinge on the survival of all human beings, and even all complex life. While it remains urgently necessary to treat all contingently universal claims with careful scrutiny, the introduction of the power to kill life itself into human affairs means that the critical thinkers of today should not be too hasty in concluding that “whoever invokes humanity wants to cheat”¹⁹⁷ or that “despite their claims to universality... ‘end of the world’ discourses are more specifically concerned about protecting the future of whiteness.”¹⁹⁸ When the biological threshold of modernity was crossed and the politically modern world born with the first thermonuclear explosions, the death of the sum total of all living human beings became a source of contingent universalizability that every subsequent generation must continually keep at bay.

There are indeed many who can justly be accused of taking an interest in the immanent apocalypse less out of concern for all human beings or solidarity with all earthly life, but instead out of a desire to preserve their privileged place in the existing order or because “it is easier to imagine the end of the world than to imagine the end of capitalism.”¹⁹⁹ (Here the millions of

¹⁹⁷ “*Wer Menschheit sagt, will betrügend,*” as Schmitt puts it in his modified paraphrase of Proudhon. Carl Schmitt, *Der Begriff des Politischen* (Berlin: Duncker & Humboldt, 1963), 55. Carl Schmitt, *The Concept of the Political*, Trans. George Schwab (Chicago: University of Chicago Press, 2007), 54.

¹⁹⁸ Audra Mitchell and Aadita Chaudhury, “Worlding Beyond ‘The’ ‘End’ of ‘The World’: White Apocalyptic Visions and BIPOC Futurisms” in *International Relations* (2020), pp. 309-332; 310.

¹⁹⁹ As famously phrased by Frederick Jameson: “Someone once said that it is easier to imagine the end of the world than to imagine the end of capitalism. We can now revise that and witness the attempt to

dollars in billionaire philanthropy that is pouring into existential risk research centers such as Oxford’s Future of Humanity Institute affords ample food for thought.)²⁰⁰ This being said, on a planet where death itself has become contingently universal, nothing would be less critical than to reflexively assume that all appeals to human universality are necessarily a ruse of power. The reality of collective life on Earth has become a political concern contingently, but no less urgently. It is seventy years since this realization broke on Arendt and almost a half century since it dawned for Foucault. Contemporary political and critical theorists must begin to directly address the new forms of non-humanist universality that have arisen alongside the immanentization of the apocalypse or risk missing increasingly planetary contexts within which all specific political struggles are now being waged.

“Wherever men, either as individuals or when grouped in communities, seek to gain sovereignty, they must first abolish freedom. But if they wish to be free, they must renounce their aspirations to sovereignty.”
 —Hannah Arendt, “Freedom and Politics” (1961)²⁰¹

III. POWER IN THE POLITICALLY MODERN WORLD

So far, this chapter has followed how Arendt and Foucault traversed similar intellectual trajectories, but in reverse. We have seen how Arendt began with the disclosure that “science seems ready to confer upon us, as its final gift, the power to erase human life from this planet”

imagine capitalism by way of imagining the end of the world.” Frederick Jameson, “Future City” in *The New Left Review* Vol. 21 (May-June 2003), pp. 65-79; 76.

²⁰⁰ For a highly insightful and unflinching discussion of this matter by those on the forefront of rapidly institutionalizing existential risk research, see Carla Zoe Cremer and Luke Kemp, “Democratizing Risk: In Search of a Methodology to Study Existential Risk” posted on *SSRN* (Dec. 28, 2021). https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3995225

²⁰¹ Hannah Arendt, “Freedom and Politics” in *Freedom and Serfdom: An Anthology of Western Thought*, Ed. Albert Hunold (Dordrecht, NL: D. Reidel Publishing Company, 1961), 205.

and proceeded to explore the extent to which the human life process had already become a central concern in modern politics. We have also seen how Foucault started with his study of the biopolitics of populations before realizing the extent to which ‘the power to kill life itself’ confronted ‘the workings of contemporary political power’ with ‘a paradox that is difficult, if not impossible, to get around’ in his own existentially precarious present. Beginning at opposite ends of the problem, both of these major twentieth century thinkers converged on a deep sense of rupture with the foundations of a Western political tradition that had for millennia approached the human being as an entity endowed with distinctly human capacities and a natural kind that owed its immortality to the abiding order of cosmic Nature. Arendt wrote of the newfound ‘ability to destroy all organic life on earth’ as having reintroduced the ‘sum total of all human beings’ as ‘something of an urgent reality,’ while Foucault addressed the way in which ‘the power to kill life itself’ had introduced a ‘discourse of the universal’ that concerns ‘the whole human race and the fate of the world.’ Although both initially approached these intersecting concerns from opposite angles, they ultimately arrived at several strikingly analogous conclusions that bear enduring importance for the political study of the immanent apocalypse.

Following Agamben’s first observations back in the 1990s, many have by now remarked upon the conspicuous points of overlap that arise between Arendt in her work as a political theorist of the life process and Foucault’s writings on the biopolitics of populations.²⁰² Political

²⁰² It has also been widely noted that Agamben’s own contributions form a sort of grand theoretical sidetrack that takes the process-oriented writings of late Foucault and the Arendt of *The Human Condition* and forces it back into the traditional schema of Nature/artifice, *zoë/bios*, bare life/politically qualified life that Arendt used in *Origins*. Agamben jettisons all of Arendt’s post-1953 theoretical innovations and the historical specificity of Foucault’s arguments about how the mass life of populations becomes an object of knowledge. What makes Agamben’s *Homo Sacer* project at once so diagnostically useful and politically sterile is that he begins with an acute sense for the collapse of the categorical oppositions that had formed the classical metaphysical foundation of Western political thought, but then proceeds to conduct his entire investigation from *within* this collapse without ever evincing any historical interest in the process or systems thinking that have flourished since. “I would not feel up to forgoing this

theorist Ville Suuronen has noted how Arendt and Foucault both recognize “the rise of liberalism as a key factor in locating the roots of modern biopolitical governance and both also saw Nazi totalitarianism as the most violent form of biopolitics,”²⁰³ while both Kathrin Braun and Clare Blencowe keenly call attention to their shared interest in how biological life became a matter of “intensity, expansion, perpetual transformation and process,”²⁰⁴ transformed by a “new temporal form of processuality emerging in the nineteenth century” within which “eternity move from transcendence into the immanence of nature or history...so that what remains from eternity is just the constancy of the process.”²⁰⁵ Absent from consideration so far has been the extent to which these theorists’ brush with universal death helped to drive the convergence in their thinking. Here, I close out this section by calling attention to the analogous insights that both Arendt and Foucault reach as immanent apocalypics regarding both the functional obsolescence of sovereignty and the importance of distinguishing between violence and political power.

Returning to Foucault, it has often been noted that 1976 marked a conspicuously abrupt turning point in the philosopher’s intellectual trajectory. No sooner had he published his first volume of *The History of Sexuality* than he began to distance himself from the new book and

indistinction of public and private, of biological body and body politic, of *zoë* and *bios*, for any reason whatsoever,” he writes. “It is here that I must find my space once again—here or nowhere else. Only a politics that starts from such an awareness can interest me.” I would contend, by contrast, that only those who develop an awareness of the scientific, social, and epistemological developments driving this ‘indistinction’ can hope to develop a politics that speaks to the world that is our world. Agamben, *Means Without End*, 138-139. For similar observations, see: Colin Koopman and Tomas Matza, “Putting Foucault to Work: Analytic and Concept in Foucaultian Inquiry” in *Critical Inquiry*, Vol. 39, No. 4 (Summer 2013), pp.817-840; 836-837; Clare Blencowe, “Foucault’s and Arendt’s ‘insider view’ of biopolitics: a critique of Agamben” in *History and the Human Sciences*, Vol. 25, No. 5 (2010), pp.113-130; 120; Markell, “Arendt’s Work,” 38 fn. 5.

²⁰³ Ville Suuronen, “Resisting Biopolitics: Hannah Arendt as a Thinker of Automation, Social Rights, and Basic Income” in *Alternatives*, Vol. 43, No. 1 (2018), 35-53; 45.

²⁰⁴ Blencowe, “Foucault’s and Arendt’s ‘insider view’ of biopolitics”, 114.

²⁰⁵ Braun, “Biopolitics and Temporality in Arendt and Foucault,” 18.

scrapped his existing plans for the course the subsequent volumes would take.²⁰⁶ As the authors of *Michel Foucault: A Research Companion* highlight, Foucault scholarship often distinguishes between “a late stage in Foucault’s authorship lasting from 1976 to 1984 oriented toward ethics and subjectivity, which replaces a prior stage from 1971 to 1976 centered on social analysis and power theory.”²⁰⁷ This prevailing wisdom seems a fair generalization, and I believe that Foucault’s confrontation with the power to kill life itself may help to explain this notable pivot in his thinking that seems to turn away from politics. At the outset of his 1976 lectures, Foucault outlined his plans for future research by declaring, “Until now, or for roughly the last five years, it has been disciplines; for the next five years, it will be war, struggle, the army.”²⁰⁸ He had hoped to reveal something important about the logic of modern politics by tracking the rearrangements of knowledge that made Carl von Clausewitz and his successors “able to analyze politics, talk about politics, and demonstrate that politics is the continuation of war by other means.”²⁰⁹ However, as we saw in the preceding section, Foucault quickly whipsawed between claiming in January of 1976 that sovereignty comprised one of the “absolutely constitutive components of the general mechanisms of power in our society” to complaining that “political theory has never ceased to be obsessed with the person of the sovereign” that June. This same span saw him also abandon his plans to use ‘war, struggle, and the army’ as a new ‘grid of intelligibility’ for understanding politics.²¹⁰

Right after calling for the head of the king in the 1976 discussion “Truth and Power,” Foucault offers his interviewers some sense of the new direction in which he is heading by

²⁰⁶ Sverre Raffnsøe, Marius Gudmand-Høyer, and Morten S. Thaning, *Michel Foucault: A Research Companion* (New York: Palgrave MacMillan, 2016), 52.

²⁰⁷ *Ibid.*, 56.

²⁰⁸ Foucault, *Society Must Be Defended*, 23.

²⁰⁹ *Ibid.*, 165.

²¹⁰ John Protevi, “War” in *The Foucault Lexicon*, 541-545.

pointing out the limited analytic purchase to be gained on contemporary power formations by focusing on traditional subjects such as “the army as a power of death, police and justice as punitive instances, and so on.”²¹¹ Instead, in the aftermath of his encounter with the immanent apocalypse, he now points out how,

The state, for all the omnipotence of its apparatuses, is far from being able to occupy the whole field of actual power relations; and, further, because the state can only operate on the basis of other, already-existing power relations. The state is superstructural in relation to a whole series of power networks.... True, these networks stand in a conditioning-conditioned relationship to a kind of ‘metapower’ structured essentially around a certain number of great prohibitive functions; but this metapower with its prohibitions can only take hold and secure its footing where it is rooted in a whole series of multiple and indefinite power relations that supply the necessary basis for the great negative forms of power.”²¹²

Having realized that the nuclear armed state, precisely *because* of the “omnipotence of its apparatuses,” has reached a point where its sovereign killing power runs aground on its own self-canceling paradox, Foucault posits that the far more interesting contemporary political questions arise amidst the “whole series of power networks” that sustain the life of society beneath the “great negative forms of power.” His interests going forward will not concern war, struggle, or the army, but the “whole series of multiple and indefinite power relations” that continue to pulse beneath the paralyzed edifice of sovereign power. In a world where war has become an existentially risky proposition, it is here that the real action is happening.

The notion that 1976 might mark a major shift in Foucault’s political thinking comes reinforced by the fact that the following academic year proves to have been the only time during his entire decade-and-a-half tenure at the Collège de France that he declined to offer his annual

²¹¹ Foucault, *Truth and Power*, 309.

²¹² Foucault, “Truth and Power,” 310.

lecture series, devoting the year entirely to research instead. Whatever else Foucault may have been up to during his year off, he set aside some time to write the introduction to the English translation of the historian of science Georges Canguilhem's *The Normal and the Pathological*.²¹³ Here, I want to call particular attention to the way in which his introductory essay homes in on the question of life itself and what he terms the “information which every living being levies on his environment and by means of which, on the other hand, he structures his environment.” Continuing, Foucault writes,

That man lives in a conceptually architected environment does not prove that he has been diverted from life by some oversight or that a historical drama has separated him from it; but only that he lives in a certain way, that he has a relationship with his environment such that he does not have a fixed point of view, that he can move on an undefined territory, that he must move about to receive information, that he must move things in relation to one another in order to make them useful. Forming concepts is one way of living, not of killing life; it is one way of living in complete mobility and not immobilizing life; it is showing, among these millions of living beings who inform their environment and are informed from it outwards, and innovation which will be judged trifling or substantial as you will: a very particular type of information.²¹⁴

This notion that both social and biological life consists of a continuous exchange of, as he puts it, “information which every living being levies on his environment and by means of which he structures his environment” appears only once in *The Normal and the Pathological*.²¹⁵ That

²¹³ Foucault had studied under Canguilhem and proudly acknowledged his intellectual debts to him. For further discussion, see: Eduardo Mendieta, “Life” in *The Foucault Lexicon*, 255; Samuel Talcott, “George Canguilhem” in *Ibid.*, 580-6; Michel Foucault, *The Archaeology of Knowledge*, Trans. Rupert Swyer (New York: Vintage Books, 2010), 5.

²¹⁴ Michel Foucault, “Introduction”, in Georges Canguilhem, *On the Normal and the Pathological* (New York: Zone Books, 1991), 21.

²¹⁵ Canguilhem claiming at one point: “In society the solution to each new problem of information and regulation is sought in, if not obtained by, the creation of organisms or institutions ‘parallel’ to those whose inadequacy, because of sclerosis and routine, shows up at a given moment.” Georges Canguilhem, *On the Normal and the Pathological*, 254-255.

Foucault would find his attention drawn to this point is interesting, for while Canguilhem touches on it only peripherally, this kind of account of life happens to be central to the field of cybernetics. This does not seem to be coincidental. Following his encounter with the immanent apocalypse and his subsequent year off, Foucault comes to increasingly engage with recognizably cybernetics-inspired theories and vocabulary, which in turn comes to influence how he begins to reconceive the relationship between power and violence for those that have crossed his ‘biological threshold of modernity.’

To better understand why Foucault may have found the resources of cybernetics useful when turning to examine the “whole series of power networks” thrumming beneath the self-paralyzed superstructure of sovereign power, let us pause to take a quick look at the broad outlines of early cybernetics. As envisioned by its founder, the polymath Norbert Wiener, the field of cybernetics took as one of its several points of departure the notion of using “the word ‘life’ to cover all phenomena which locally swim upstream against the current of increasing entropy.”²¹⁶ By doing so, Wiener hoped to carve out a new area of study devoted to researching how a continuum of increasingly complex systems—from relatively rudimentary machines to biological organisms to eco- and social systems—use forms of feedback to process information and sustain themselves against the otherwise inexorable tug towards a “state of universal rest and death” that we have already seen Kelvin identify as the inexorable end point of a universe governed solely by the laws of thermodynamics.²¹⁷ The British cybernetician Ross Ashby described “the central theme of cybernetics” as “regulation and control,”²¹⁸ with the regulation

²¹⁶ Norbert Wiener, *The Human Use of Human Beings* (Boston: Houghton Mifflin Co, 1954), 32.

²¹⁷ “While the universe as a whole, if indeed there is a whole universe, tends to run down, there are local enclaves whose direction seems opposed to that of the universe at large and in which there is a limited and temporary tendency for organization to increase. Life finds its home in some of these enclaves. It is with this point of view at its core that the new science of Cybernetics began its development.” *Ibid.*, 12.

²¹⁸ W. Ross Ashby, *An Introduction to Cybernetics* (London: Chapman and Hall, 1956), 195.

and control in question concerning the analogous ways in which complex systems of all kinds sustained themselves.²¹⁹ Combining several decades worth of early twentieth century developments in mathematics, physiology, biology, and communication and information theory, what historian Ronald Kline has termed the ‘cybernetics moment’ of the 1950s offered a new set of tools for conceiving and modeling how intersecting processes of many kinds developed similar patterns to sustain themselves as continuous flows of matter, energy, and information.²²⁰ Cybernetics and its allied systems theories assembled a set of mathematical equations, theoretical tools, and conceptual vocabulary that permitted a remarkably broad array of thinkers from disciplines as diverse as engineering, anthropology, sociology, military strategy, biology, psychology and even chemistry to begin to fundamentally reconsider how processes of varying degrees of complexity interact, while also spawning a host of new disciplines such as planetary ecology and cognitive science.²²¹ By the 1970s, the drive to establish cybernetics as an all-unifying field of knowledge had broken down,²²² but the vocabulary popularized by cybernetics (feedback, network, information process) became so culturally ubiquitous in some places as to be almost invisible, moving from breakthrough to banality in just a matter of decades as the new ways of understanding relationships, communicating, and relaying information that had developed under the umbrella of cybernetics seeped into the infrastructure of everyday life (as part of what has been called the ‘Information’ or ‘Control’ Revolution that birthed the

²¹⁹ Norbert Wiener, *Cybernetics or Control and Communication in the Animal and the Machine*, Second Ed. (Cambridge, MA: MIT Press, 1961), 223.

²²⁰ Ronald Kline, *The Cybernetics Moment*, 4-7, 192. For a more then-contemporary survey of this terrain, see: Ludwig von Bertalanffy, *General Systems Theory: Foundations, Development, Applications* (New York: George Braziller, 1969), 14, 187; Kenneth Boulding, “General Systems Theory: The Skeleton of a Science” in *Management Science*, Vol. 2, No. 3 (1956), pp.197-208.

²²¹ For more on this confluence, see: James Ladyman and Karoline Wiesner, *What Is a Complex System?* (New Haven: Yale University Press, 2020), 13.

²²² Ronald Kline, *The Cybernetics Moment*, 180.

‘Information Age’).²²³ Through the influence of philosophers such as Gilbert Simondon,²²⁴ cybernetics came to exert a major influence on social theorists in France from the mid-1960s through the 1980s.²²⁵

Foucault began to make an increasingly conspicuous use of the relational logic of cybernetics following his 1976 realization that the “functioning of contemporary political power” as traditionally understood in terms of the application of decisive force by the sovereign had reached a potentially insuperable impasse. By 1978, references to the ‘biopolitics of populations’ come to be replaced with a more compendious conception of what he begins to term ‘governmentality.’ Foucault defines this portmanteau as encompassing an “ensemble formed by institutions, procedures, analyses and reflections, calculations, and tactics that allow the exercise

²²³ James Beniger, *The Control Revolution: Technological and Economic Origins of the Information Society* (Cambridge, MA: Harvard University Press, 1986), 1-106.

²²⁴ Gilbert Simondon, *Individuation in Light of Notions of Form and Information* (Minneapolis: University of Minnesota Press, 2020).

²²⁵ The scholarship of the last two decades has seen several persuasive projects to recontextualize what had initially been received as ‘poststructuralism,’ ‘postmodernism,’ and more generally ‘French theory’ during the 1980s as part of an early attempt to come to grips with the disorienting social ramifications of this paradigm shift. The cybernetic influences on ‘French theory’ could be highly elliptical, as in the case of literary theorist Jacques Derrida, or more straight forward, such as psychoanalyst Jacques Lacan’s direct translation of Freud’s hydraulic theory of mind into the language of cybernetic systems. Gilles Deleuze was a particularly rapt student of Simondon and a direct conduit of some of these ideas for Foucault, who once famously joked that “perhaps one day this century will be known as Deleuzian.” (Michel Foucault, “Theatrum Philosophicum” in *Critique*, No. 282 (1970), pp. 885-908; 886.) If ‘French theory’ emerged in the 1980s as a sometimes opaque but also somehow fitting tool to explain the ‘postmodern condition,’ the benefit of several decades’ further hindsight suggests that much of this elective affinity may have stemmed from the creation of its own felicitous feedback loop. Here, French theoretical innovations inspired by the logic (if not always the language) of cybernetics were reimported by American humanities scholars and social scientists attempting to make sense of a society that was being rapidly transformed by the rise of “info” and “cyber” culture—transformations that have so thoroughly reshaped the fabric of daily life and social logic that it almost seems quaint to discuss them in the way that all formerly ‘futuristic’ things lose their theoretical allure once they have become a quotidian part of everyone’s lived reality. Céline Lafontaine, “The Cybernetic Matrix of ‘French Theory’” in *Theory, Culture & Society*, No. 24, Vol. 5 (2007), pp. 27-46; 37-39; Lydia Liu, “The Cybernetic Unconscious: Rethinking Lacan, Poe, and French Theory” in *Critical Inquiry* Vol. 36, No. 2 (Winter 2010), pp. 288-320; Stephanos Geroulanos and Leif Weatherby, “Cybernetics and the Human Sciences” in *History of the Human Sciences*, Vol. 33, No. 1 (2020), pp.3-11. For a brilliant account of how cybernetics passed from novelty to banality and “systems theory became a way of life,” see Fred Turner, *From Counterculture to Cyberculture* (Chicago: University of Chicago Press, 2006), 27, passim.

of this very specific, albeit very complex, power that has the population as its target, political economy as its major form of knowledge, and apparatuses of security as its essential technical instrument.”²²⁶ By 1982, he began to speculate: “Perhaps the equivocal nature of the term ‘conduct’ is one of the best aids for coming to terms with the specificity of power relations. To ‘conduct’ is at the same time to ‘lead’ others (according to mechanisms of coercion that are, to varying degrees, strict) and a way of behaving within a more or less open field of possibilities. The exercise of power is a ‘conduct of conducts’ and a management of possibilities. Basically, power is less a confrontation between two adversaries or their mutual engagement than a question of ‘government.’”²²⁷ This is recognizably cybernetic territory. Foucault’s original wording for this important formulation of power as a “conduct of conducts” is a “*conduire des conduits*,” which can also be rendered in English as a “steering of steering.” From here, historian of science Orit Halpern helpfully connects the remaining dots when she remarks how,

The very etymology of the word ‘cybernetics’ already suggests a relationship to histories of governance. Cybernetics is, in Wiener’s words, an ‘emergent term’ derived from the Greek *Kubernetes*, or ‘steersman,’ the same Greek word from which we eventually also derive the word ‘governor.’ Cybernetics is thus a science of control or prediction of future events and actions... In his final lectures, Foucault defined ‘governmentality’ as ‘the genesis of a political knowledge [*savoir*] that was to place at the center of its concerns the notion of population and the mechanisms capable of ensuring its regulation.’²²⁸ For Foucault, the particular form of political reason that emerges throughout the second half of the twentieth century comes under the rubric of biopolitics and is intimately tied to data, calculation, and

²²⁶ Foucault, *Security, Territory, Population*, 108.

²²⁷ Foucault, “The Subject and Power,” 138.

²²⁸ Halpern quotes Foucault, *Ethics*, 67. This passage can be found in its original context in the course summary appended to Foucault, *Security, Territory, Population*, 363.

economy, particularly neoliberal economics.²²⁹

As suggested here, recent debates over whether or not Foucault was himself a ‘neoliberal’ miss the far more substantive point, which is the general way in which both Foucault and many of the neoliberals borrowed from a broader cybernetic orientation to reframe social, political, and economic questions in terms of how complex processes self-stabilized through the continuous flow of feedback (with the ‘market’ becoming a kind of homeostatic *deus es machina* for some neoliberals).²³⁰ Explaining the affinity between cybernetics Foucault’s ‘governmentality’ still further, historian Eglė Rindzevičiūtė notes how, “The system-cybernetic perspective constructed the world as a set of complex and dynamic systems, consisting of different geological, biological, and technical phenomena, which were subject to tactical regulation in the same way as population was for Foucault.” However, to this she adds the important caveat: “My point is not, however, that Foucault himself recycled system-cybernetic ideas in his intellectual project of rethinking the changing nature of governance in the modern state (although he might have done so), but rather that the very emergence of governmentality studies could be understood as an outcome of registering the actual changes in governance.”²³¹ In his own post-1976 rethinking of power, Foucault came to increasingly engage with the same systems-cybernetic approach that was at the same time also revolutionizing the terms in which geological, biological, social, technological, and economic phenomena were understood.

²²⁹ Orit Halpern, *Beautiful Data: A History of Western Reason since 1945* (Durham, NC: Duke University Press, 2015), 25.

²³⁰ Recognition of the cognate influence of cybernetics on late Foucault and the neoliberals he studied stands out as conspicuously absent in the otherwise highly engaging volumes: Vanessa Lemm and Miguel Vatter Eds., *The Government of Life: Foucault, Biopolitics, and Neoliberalism* (New York: Fordham University Press, 2014) and Stephen W. Sawyer and Daniel Steinmetz Jenkins Eds., *Foucault, Neoliberalism, and Beyond* (London: Rowman and Littlefield, 2019).

²³¹ Such that, “the Foucauldian governmentality perspective might be seen as a part of the system-cybernetic world of governance.” Eglė Rindzevičiūtė, *The Power of Systems: How Policy Sciences Opened Up the Cold War World* (Ithaca, NY: Cornell University Press, 2016), 9.

Closer inspection reveals that what for decades has been taught in the social sciences and humanities as the ‘Foucauldian’ theory of power represents a determined—but by no means original or unique—effort on Foucault’s part to rethink the contemporary functioning of political power in systems-cybernetic terms. Although Foucault makes brief mention of how “one should decipher in it [power] a network of relations, constantly in tension” at the outset of *Discipline and Punish*, the next several years see him develop these themes with increasing confidence.²³² “Power is exercised through networks,” he begins to argue, “and individuals do not simply circulate in those networks; they are in a position to both submit to and exercise this power. They are never the inert or consenting targets of power; they are always its relays.”²³³ In a similar vein, “Just as the network of power relations ends by forming a dense web that passes through apparatuses and institutions, without being exactly localized in them, so too the swarm of points of resistance traverse social stratification and individual unities.”²³⁴ Accordingly, “[power] needs to be considered as a productive network that runs through the whole social body, much more than as a negative instance whose function is repression.”²³⁵ This cybernetic perspective on power, in turn, permits us to perceive how, “The disciplines show first, according to artificially clear and decanted systems, the way in which systems of objective finality and systems of communication and power can be welded together.”²³⁶ These examples could be multiplied at length. Suffice it to say: for the Foucault that emerges on the other side of his 1976 encounter with the immanent apocalypse and his repudiation of sovereignty, it becomes increasingly clear that “power relations are rooted in the whole network of the social.”²³⁷ As sociologist Céline

²³² Foucault, *Discipline and Punish*, 26.

²³³ Foucault, *Society Must Be Defended*, 29.

²³⁴ Foucault, *The History of Sexuality* Vol. 1, 96.

²³⁵ Foucault, “Truth and Power,” 307

²³⁶ Foucault, “The Subject and Power,” 136.

²³⁷ *Ibid.*, 141.

Lafontaine has aptly pointed out, “In defining power as a system of relations and emphasizing its discursive nature, Foucault is well and truly in line with the cybernetic rupture,” carrying “the mark of the *Zeitgeist*” that manifests in “the purely relational logic of the cybernetic model.”²³⁸

Foucault offers what may be the fullest elaboration of his semi-cybernetic post-1976 approach in his 1982 essay “The Subject and Power.” By this point he has long since broken with his earlier claims about the ‘absolutely constitutive’ place of sovereignty and his plans to study war as a ‘grid of intelligibility for politics.’ Here, he poses the question of whether violence ought to be considered power’s most “primitive form, its permanent secret, and last resort” and comes to the conclusion that the two in fact have nothing to do with one another. “In effect, what defines a relation of power,” he now argues, “is that it is a mode of action that does not act directly and immediately on others. Instead, it acts upon their actions: an action upon an action, on possible or actual future or present actions. A relationship of violence acts upon a body or upon things; it forces, it bends, it breaks, it destroys, or it closes off possibilities.”²³⁹ Power operates through the mediated web of interaction to create new possibilities for action while violence works through the immediate application of force to sever links and shut down possibilities. Power capacitates while violence incapacitates. Foucault contends that “the establishing of power relations does not exclude the use of violence.” Instead, even though violence can achieve “instrumental results” it does “not constitute the principle or basic nature of power,” which “operates on the field of possibilities” as the aforementioned “conduct of conducts.”²⁴⁰ As Oksala has perceptively noted on this point, “In Foucault’s earlier writings on power, the categorical distinction he makes between power and violence in this late text is in

²³⁸ Lafontaine, “The Cybernetic Matrix of ‘French Theory,’” 36-37.

²³⁹ Foucault, “The Subject and Power,” 137.

²⁴⁰ *Ibid.*, 138.

many ways perplexing. It seems as if there had been almost a complete reversal in his views. In his original and extensive work on modern forms of power such as disciplinary power, for example, Foucault seemed to have argued for exactly the opposite: any clear distinction between power and violence is untenable.”²⁴¹ I take Oksala to be entirely correct in her assessment. However, I also hope that—in light of everything we have seen so far—this conspicuous reappraisal of the relationship between violence and political power may seem somewhat less perplexing when situated in the aftermath of Foucault’s 1976 encounter with the immanentization of the apocalypse in the form of the atomic power to kill life itself.

Up until 1976, Foucault associated sovereignty with the unchecked right to kill and the capacity to force obedience through violence. Between January and June of that year, he abruptly reversed his views on the centrality of sovereignty and scrapped his plans to study politics as the continuation of war by other means. My suspicion is that he may well have developed his categorical distinction between violence and power in part as a response to his realization that the arrival of the power to kill life itself had forced the contemporary functioning of political power into a paradox that laid bare the political sterility of violence—which severs connections and forecloses possibilities. Whether or not this was the case, the resulting approach to power that Foucault develops proves to be much better adapted to making sense of the new dilemmas that arise on the far side of the biological threshold of modernity. The arrival of the power to kill life itself rendered the *ultima ratio regis* potentially self-defeating—jeopardizing not only the survival of the sovereign entity in question, but the collective life process of the human species. All future use of the nuclear armed state’s killing power found itself situated along a slippery continuum of potential escalation culminating in universal death. If it seems as though after 1976

²⁴¹ Joanna Oksala, “Violence” in *The Cambridge Foucault Lexicon*, 528-532; 529.

Foucault ceases to discuss politics, I propose that this perception may have more to do with Western political theorists' difficulties in recognizing as political anything that does not occupy the traditional continuum with violence and the extension of war as a continuation of politics by other means. If Foucault's late approach to power and the categorical distinction he draws between power and violence seems to render it politically irrelevant, then this may indicate the extent to which contemporary political theory has yet to begin to come to grips with the new limits that the immanentization of the apocalypse places on the horizons of political possibility.

The claims advanced so far about the role that Foucault's encounter with the power to kill life itself may have played in his theory of power and his repudiation of sovereignty may seem like a stretch. However, the realization that sovereignty has become theoretically obsolete and practically inapplicable turns out to be one of the first and clearest thoughts to strike many political theorists of the immanent apocalypse. In this area, Foucault only stands out for how relatively late he made this realization (and for the tantalizing possibility that a record may survive of him working through this realization out loud and in real time). Russell for his part repeatedly stressed how, "The first and most imperative requisite, if the human race is to continue to exist, is a mitigation of the absolute sovereignty which is now claimed by every nation."²⁴² Jaspers also took it as a matter of course that, "Since humanity does not want to perish, nations would have to agree to limit their sovereign power."²⁴³ In her study, McQueen offers a penetrating account of the absurdities surrounding traditional conceptions of sovereignty that cropped up for Hans Morgenthau following his own brush with nuclear death.²⁴⁴ Even the

²⁴² Bertrand Russell, "Atomic Energy and the Future of the World" (1953) in *The Collected Papers of Bertrand Russell* Vol. 28, 10.

²⁴³ Jaspers, *The Atom Bomb and the Future of Man*, 22.

²⁴⁴ Potentially inspired, as she notes, by his reading of *The Atom Bomb and the Future of Man* at Arendt's prompting. McQueen, *Political Realism in Apocalyptic Times*, 188-193, 182 fn. 158.

author of the beloved children's novel *Charlotte's Web* saw the functional obsolescence of sovereignty with crystalline clarity, E.B. White observing: "The H-bomb is universally hated, and it is universally feared. We cannot escape it with collective security; we shall have to face it with united action. It has given us a few years of grace without war, and now it offers us a few millenniums of oblivion. In a paradox of unbelievable jocundity, the shield of national sovereignty has suddenly become the challenge of national sovereignty."²⁴⁵ Traditional claims to sovereignty were self-evidently ridiculous under these circumstances, and it should come as absolutely no surprise to see that Arendt offer her own repudiation of sovereignty.

While Arendt appears to have largely taken the traditional prerogatives of sovereignty in Western political theory for granted in *Origins*, this complacency vanishes in the years following her encounter with the immanentization of the apocalypse. By the time she wrote *The Human Condition* in the mid-1950s, Arendt seems to have come to the conclusion that the "identification of sovereignty with freedom which has always been taken for granted by political as well as philosophical thought" amounted to a kind of category error. Instead, she contended, "If it were true that sovereignty and freedom are the same, then indeed no man could be free, because sovereignty, the ideal of uncompromising self-sufficiency and mastership, is contradictory to the very condition of plurality. No man can be sovereign because not only man, but men, inhabit the earth."²⁴⁶ Fantasies of sovereign mastery are spoiled by the unpredictability that comes from the fact of human plurality and the inherently unforeseeable processes that they begin together. Rather than sovereignty being the guarantor of freedom, she suggests, the irreducible kernel of spontaneity on which freedom rests seems to place freedom and sovereignty in direct

²⁴⁵ E.B. White, *The Essays of E.B. White* (New York: Harper Perennial, 1999), 120.

²⁴⁶ Arendt, *The Human Condition*, 234.

contradiction.²⁴⁷

Following the 1958 publication of *The Human Condition*, Arendt further developed her insights into the tension between sovereignty and freedom several years later with her essay “Freedom and Politics.” Now, she was prepared to go so far as to denounce the “association of freedom with sovereignty” as “unreal and disastrous.”²⁴⁸ The reason for this, she explained, stemmed from the fact that traditional theories of sovereignty had been constructed as a sort of mistaken double negative. In effect, they did little more than offer the idealized reverse of the “non-sovereignty” associated with the “dependence” that inheres in “the fact that men had need of each other to be able to live at all.” Sovereignty took shape as a fantasy of radical autonomy based on a denial of the basic “inter-dependence of men in all questions of the mere act of living” and a willful ignorance of “the fact that it is impossible to imagine men existing as separate, independent, entities” and that instead “the whole of their existence depends upon there always being others of their own kind.”²⁴⁹ What Arendt here terms the “idealization of sovereignty” seems traceable back to what she earlier termed “the delusion that there is such a thing as *man*.”²⁵⁰ Sovereignty might be possible as a kind of “independence of all others” if it were true that “there existed only one man, in the way in which we say there is only one god” or “if there were only one nation or people on earth,” but cannot withstand the fact of inextricable

²⁴⁷ Ibid., 235.

²⁴⁸ This essay appeared first in 1960 as Hannah Arendt, “Freedom and Politics: A Lecture” in *Chicago Review*, Vol. 14, No. 1 (Spring 1960), pp. 28-46. Here I am quoting from a later, slightly expanded version of the same essay published the following year. Arendt, “Freedom and Politics” in *Freedom and Serfdom: An Anthology of Western Thought*, Ed. Albert Hunold (Dordrecht: D. Reidel Publishing Company, 1961), pp.191-217; 204.

²⁴⁹ Ibid.

²⁵⁰ Hannah Arendt to Eric Voegelin, April 8, 1951 translated and reproduced in Peter Baehr and Gordon C. Wells, “Debating Totalitarianism: An Exchange of Letters Between Hannah Arendt and Eric Voegelin” in *History and Theory*, Vol. 51, No. 3 (October 2012), pp. 364-380; 376.

mutual dependence that defines the “corporate existence among those of his own species.”²⁵¹ Rather, “Only in death is human existence completely and utterly individual,” for the simple reason that death itself can be conceived on these terms as the final severing of a human’s lifelong dependence upon others. Because it built from an unreal denial of mutual dependence, Arendt asserts, “As in the case of the individual, the sovereignty of a group or a political entity is, in essence, also a myth”—but, worse than that, it is a myth, “moreover, that can be maintained by no means other than force.”²⁵² Traditional Western theories had been predicated on what I believe she had by now come to understand was an untenable ‘antithesis between freedom and life,’ taking shape as a sort of willed blindness to the connections that sustain life and make the continuous novelty and unpredictability of freedom possible. Ultimately, she asserts, “Wherever men, either as individuals or when grouped in communities, seek to gain sovereignty, they must first abolish freedom. But if they wish to be free, they must renounce their aspirations to sovereignty.”²⁵³

For Arendt, claims to sovereignty used violence to close down possibilities, reduce the scope of “that margin of unpredictability without which freedom cannot exist,”²⁵⁴ and replace the continuous novelty that arises among a plurality of diverse people with the predictability of one sovereign will. As expressed here, where sovereign claims denies the reality of mutual reliance and uses violence to degrade difference and grind human plurality into predictably uniform processes, freedom persists in the power to begin anew that is reborn with every human being and enabled by the web of relationships that sustain the biological life of the individual and form the medium for collective undertakings. The profound difference for Arendt is that, by 1961,

²⁵¹ Arendt, “Freedom and Politics,” 204.

²⁵² Ibid.

²⁵³ Ibid., 205.

²⁵⁴ Arendt, “Europe and the Atom Bomb,” 420.

freedom has ceased to be a luxury that “only seldom in history has been able to unfold its full virtuosity” and sovereignty a fiction maintained by violence. To truly inhabit the politically modern world that is our world means recognizing that if human beings do not use their freedom to alter the predictable course of events and begin anew together, then the new degree of violence required to sustain the conceit of sovereignty might well spell extinction. “For on human freedom, on man’s ability to fend off the disaster which advances like an automaton and seems therefore inevitable, on man’s ability to implement the ‘infinitely improbable’ and transform it into a reality, may well depend more today than ever before in our history, namely, the survival on earth of the human race,” she offers as the concluding line of her essay.²⁵⁵

With the hydrogen bomb still hovering at the margin of her political vision, Arendt delivered a lecture in 1961 that she titled “Revolution and Freedom.” Here she asked her audience: “Is it not obvious that it is a very different thing to risk one’s own life for the life and freedom of one’s country and one’s posterity than to risk the very existence of the human species for the same purpose?”²⁵⁶ She presumably meant this rhetorical, but there may be a ring of exasperation or even desperation to it. This question leads Arendt down a revealing aside, prompting her to stress that “war can no longer be justified on rational grounds or on the basis of power politics” and that “Clausewitz’s famous definition of war [is] even less applicable to our present circumstances, because it proceeds from the actualities of war in the nineteenth century and hence does not take into account the possibility of complete annihilation.”²⁵⁷ Arendt concludes this brief digression on atomic war by issuing what would in effect be her consistent public stance on the subject for the remaining fifteen years of her life, noting how,

²⁵⁵ Arendt, “Freedom and Politics,” 217.

²⁵⁶ Arendt, “Revolution and Freedom, a Lecture” in *Thinking Without a Bannister*, 334.

²⁵⁷ Ibid.

In this as in other modern perplexities of a political nature, it seems we are not too well equipped to deal in terms of new thoughts with troubles that quantitatively as well as qualitatively are entirely new. Those who are ready to accept nuclear warfare as a last, albeit desperate, resort pretend that essentially nothing has changed, that the old justifications still hold, and they try to reassure themselves with the hope that “the losses may not be as great as some anticipate.” Yet while we may be rightly alarmed at this optimism, which probably is nothing but lack of imagination, the inability to face the inconceivable, the truth is that those who oppose nuclear warfare on principle have come up with nothing better for *their* justification than their reversal of the old justification: “better red than dead.” Hence the whole discussion of the war question, moving within the closed circle of an obsolete alternative, is nearly always conducted with a mental reservation on both sides of the fence. Those who say: better dead than red, actually think: the losses will not be so great, our civilization will survive; while those who say: better red than dead, actually think: slavery will not be so bad, man will not change his nature, freedom will not vanish from the earth. Nobody doubts any longer that the threat of atomic war is the greatest and the most dangerous of our political predicaments which, however, I am not prepared to discuss here. And even if I were, I am afraid I would not have much to contribute although the war question has been in the back of my mind, as probably in the back of yours, for many years.²⁵⁸

In fact, it had been in the back of her mind for at least eight years, by my count, and still Arendt did not feel prepared to publicly move beyond pointing out the patent absurdity of retaining sovereign recourse to war as a continuation of politics by other means when the means in question could easily swamp any humanly meaningful end for which they could conceivably be used.

Two years later, Arendt introduced her 1963 study *On Revolution* by declaring, “In a constellation that poses the threat of total annihilation through war against the hope for

²⁵⁸ Ibid., 335.

emancipation of all mankind through revolution...no cause is left but the most ancient of all, the one, in fact, that from the beginning of our history has determined the very existence of politics, the cause of freedom versus tyranny.”²⁵⁹ Here again, she reproduced the passage quoted above about the equal absurdity of ‘better red than dead’ and ‘liberty or death,’²⁶⁰ but this time including a footnote endorsing Jaspers’ newly translated *The Atom Bomb and the Future of Mankind* as “the only discussion of the war question I know which dares to face both the horrors of nuclear weapons and the threat of totalitarianism and is therefore entirely free of mental reservations.”²⁶¹ While Arendt stopped well short of endorsing Jaspers’ conclusions, there was no doubting his study’s sincerity and resolute refusal to pull punches (even if the weight behind one of those punches came from a nightmare conception of totalitarianism as total dehumanization that she had helped inspire but since greatly nuanced).

After almost two decades of persistent but marginal allusions to the immanent apocalypse, Arendt returned to the topic one more time in her last major work of political thought with her 1970 essay “On Violence.” Here, she framed this important from the outset in light of the fact that “the technical development of the implements of violence has now reached the point where no political goal could conceivably correspond to their destructive potential or justify their actual use in armed conflict,” meaning that “warfare—from time immemorial the final merciless arbiter of international disputes—has lost much of its effectiveness and nearly all of its glamor.”²⁶² Rather, as she proceeded to point out, “That war is still the *ultima ratio*, the old continuation of politics by means of violence, in the foreign affairs of the underdeveloped

²⁵⁹ Arendt, *On Revolution*, 1.

²⁶⁰ *Ibid.*, 3-4.

²⁶¹ *Ibid.*, 274 fn. 1.

²⁶² Hannah Arendt, “On Violence” in *Crises in the Republic* (New York: Harcourt Brace & Co, 1972), 105

countries is no argument against its obsolescence, and the fact that only small countries without nuclear or biological weapons can still afford it is no consolation.”²⁶³ Seeming to throw up her hands, Arendt pointed to what she termed the “apocalyptic chess game between superpowers” that had been haunting her since Ivy Mike and declared: “To the question how shall we ever be able to extricate ourselves from the obvious insanity of this position, there is no answer.”²⁶⁴ This may well have been, but with “On Violence” Arendt does at least offer what I take to be the *beginning of an answer*, and one that proves to be highly influential for Schell and others who came after. When calling attention to Foucault’s post-1976 distinction between power and violence, Oksala perceptively points how “he poses essentially the same question as Hannah Arendt did in her definitive study of violence, “On Violence,” namely whether violence is simply the ultimate form of power” and arrives at the same conclusion.²⁶⁵ Having considered Arendt’s repudiation of sovereignty, let us close this chapter by considering the corresponding distinction that she draws between power and violence, helping to sever the theoretical continuum between politics and war and help to shift Western political thought off of its foundational antithesis between freedom and life.

When approaching the relationship of power and violence in Arendt’s political thinking, the first thing to note is that, while “On Violence” is rightly considered to be the locus classicus for her most fully developed thoughts on the subject, this was a topic that had preoccupied her for many years. The distinction that she will later draw between power and violence makes what I believe to be its first appearance in the final pages of an unfinished manuscript from 1953.²⁶⁶

²⁶³ Ibid., 108.

²⁶⁴ Ibid., 106.

²⁶⁵ Oksala, “Violence”, 528.

²⁶⁶ Titled “On the Nature of Totalitarianism: An Essay in Understanding,” with the opening section of this longer essay published as “Understanding and Politics” in the summer of 1953. Both “Understanding and Politics” and “On the Nature of Totalitarianism: An Essay in Understanding” are reproduced in the edited

Here Arendt proposes: “Power by its very nature is always the result of an organized effort of men. No men as long as they act and belong together are powerless—even though they may feel overpowered by some greater power than they can muster—and this to such an extent that it is very doubtful that man would even have the notion of power if only one man and not men would inhabit the earth.”²⁶⁷ This passage sees Arendt begin to probe the implications of her growing conviction—noted earlier in this chapter—that political phenomena arise from the plurality of ‘men’ acting together and cannot be philosophically reduced to the essential nature of Man as he exists in isolation. Extrapolating this insight, she continues,

Power is so little a *capacity* of man—only strength is such a natural endowment—that it is not even the sum total of the combined strengths of any given group of men. Power, insofar as it is a factor and certainly one of the chief ones of politics, springs up in between men and [as] such can never become the possession of one alone or even of one group by itself. Man by himself finds himself separated from the very realm from which power springs. Men together constitute the realm where power can originate and find it at the very moment when they decide to ‘act in concert.’ When man is alone, he finds that he is powerless, that is that nothing in himself can engender power. Strength on the other hand, though a natural gift given to each of us separately and in widely differing quantity, depends for its realization upon a minimum of power, or else withers away.²⁶⁸

Composed while the fallout from the planet’s first thermonuclear test was still swirling, this attempt to differentiate what is unique about the political power of the many from the isolated

volume *Essays in Understanding* (pp. 307-360), although the publication date of the former is misstated as 1954 and an editorial decision was made to terminate the reproduction of the latter several pages prior to the passages of interest here. Hannah Arendt, “Understanding and Politics” in *Partisan Review*, Vol. 20, No. 4 (July-August 1953), pp. 377-392.

²⁶⁷ Hannah Arendt, “On the Nature of Totalitarianism: An Essay in Understanding.” MMS11056, Box 76, Hannah Arendt Papers: Speeches and Writings File, 1923-1975. Library of congress, Washington DC. Undated.

²⁶⁸ Ibid.

strength of the individual. It may represent one of Arendt's first attempts to triage what survive of politics at a time when, as she expressed the matter in her *Denktagebuch* entry: "the means of violence have been developed to the point that their collective manipulation may result in absolute destruction," mandating that "the moment has come to remove them from politics altogether."²⁶⁹

Arendt further refined her understanding of what makes political power unique several years later in her unfinished follow up to *The Human Condition*. At this point in the manuscript, she has just made the arresting claim (addressed in Section I) that the new ability to destroy humankind as a whole has rendered most traditional political categories and concepts "theoretically obsolete and practically inapplicable" and shed new light on the ancient "antithesis between freedom and life."²⁷⁰ In former times, she writes, "Ultimately, the crucial issue was that the state organized itself as the 'possessor of violence [*Gewalt*]'—regardless of whether the ultimate purpose of the means of violence [*Gewaltmittel*] was determined by life or by freedom. The question of the meaning of politics today, however, concerns the appropriateness [*Zweckmäßigkeit*] or inappropriateness of the public means of violence used for such ends. What ignites the question is the simple fact that violence which is supposed to safeguard life and freedom, has become so monstrously powerful that it threatens not only freedom but life as well."²⁷¹ For the inhabitants of the politically modern world, the means of violence have expanded to such an extreme degree that their use threatens to be self-defeating. This means that violence can no longer guarantee either political freedom or biological life and finds itself shorn

²⁶⁹ Arendt, *Denktagebuch*, 307.

²⁷⁰ Arendt, *The Promise of Politics*, 145.

²⁷¹ Here I have replaced 'force' and 'brute force' in Kohn's translation with 'violence' based on Arendt's use of *Gewalt*. The same applies to the subsequent passage quoted below. *Ibid.*, 146. Arendt, *Was ist Politik?*, 72.

of its traditional justifications. If recourse to sovereign violence can no longer be sustained on a planet menaced by thermonuclear annihilation, then politics must sever its ancient continuum with war if it is to hope to have any chance of rebutting those who have come to harbor the “secret hope that people may prove insightful enough to somehow dispense with politics before politics destroys us all.”²⁷² In light of this, she proposes:

Since power [*Macht*] arises wherever people act in concert, and since people’s concerted actions occur essentially in the political arena, the potential power [*Machtpotential*] inherent in all human affairs has made itself felt in a space dominated by violence [*Gewalt*]. As a result, power and violence appear to be identical...But in terms of their origins and intrinsic meaning, power and violence are not identical, but in a certain sense opposites. Wherever violence which is actually a phenomenon of the individual or the few, is combined with power, which is possible only among the many, the result is a monstrous increase in potential violence [*Gewaltpotential*]: Though derived from the power of an organized space, it, like every potential violence, grows and develops at the expense of power.²⁷³

Readers familiar with Arendt’s subsequent arguments in “On Violence” will find the core of her categorical distinction between power and violence already highly developed here a decade earlier, with the violence wielded by the few and the political power produced by the many acting in concert framed as being categorically distinct in kind. What is more, here we see this crucial theoretical contribution of Arendt’s arising explicitly out of her attempt to reimagine what politics might be once decoupled from the dead weight of its association with a sovereign recourse to violence the immanentization of the apocalypse has rendered not only theoretically obsolete, but practically inapplicable.

Having had the better part of two decades to further refine these insights, Arendt finally

²⁷² Arendt, *The Promise of Politics*, 109.

²⁷³ *Ibid.*, 147. Arendt, *Was ist Politik?*, 73.

presented these insights to the public at large with “On Violence.” Developing a slightly more nuanced (though also characteristically unstable) typology than she had presented previously, here she proposes: “*Power* corresponds to the human ability not just to act but to act in concert. Power is never the property of an individual; it belongs to a group and remains in existence only so long as the group keeps together.” This contrasts with “*Strength*,” which for her “unequivocally designates something in the singular, an individual entity.” And then there is “*Violence*,” which in contrast to personal “*Authority*” and impersonal “*Force*” “is distinguished by its instrumental character.” “Phenomenologically,” she writes, “it is close to strength, since the implements of violence, like all other tools, are designed and used for the purpose of multiplying natural strength until, in the last stage of their development, they can substitute for it.”²⁷⁴ The opposition between power and violence reappears in the distinction between power and strength, with ‘violence’ on Arendt’s definition multiplying individual strength through the addition of weapons. The former she designates as an “end in itself” that “needs no justification, being inherent in the very existence of political communities,” while the latter could only be instrumentally deployed for some other end.²⁷⁵ Power manifests in the collective potential to establish durable new forms of human connection and begin new processes together—a collective capacity that is constantly renewed in its circulation without ever belonging to anyone in particular. Violence, by contrast, uses the technical mediation of weapons and organization to amplify individual strength to sever relationships along a continuum of escalation that leads from the isolation of social to biological death. Violence can be used for political ends, but it lacks the

²⁷⁴ Arendt also hives off ‘force’ and ‘authority’ as distinct categories as well, while noting up front: “It is perhaps not superfluous to add that these distinctions, though by no means arbitrary, hardly ever correspond to watertight compartments in the real world, from which nevertheless they are drawn. *Ibid.*, 143-145.

²⁷⁵ Arendt, “On Violence”, 150-151.

generative potential of power and could only succeed in destroying or, at best, fixing an established order in place after the power supporting it had begun to recede. While Arendt allowed that all politics contains some mixture of power and violence, these two relational modes were nevertheless not only categorically distinct but to some degree mutually exclusive, so that “where one rules absolutely, the other is absent.”²⁷⁶ In sum, it would seem, violence severs relationships and thins the range of possibilities that arise from acting in concert, whereas the exercise of power thickened connections and multiplied the possibilities of what could be accomplished.

As I have continually stressed throughout this chapter, Arendt’s arresting encounter with the implications of thermonuclear weapons compelled her to entertain the possibility that “there is in fact hardly a single political category or a single political concept that...does not prove to be theoretically obsolete and practically inapplicable.”²⁷⁷ If this were the case, however, then where to turn to begin rebuilding if so much of the traditional repertoire of political concepts and categories seemed to be woefully mis-calibrated for the politically modern world? Arendt’s own post-apocalyptic reconstruction of politics took place in the middle of what author James Baldwin remembered as the “cybernetics craze” of the 1950s and 1960s.²⁷⁸ No less than Foucault, it is possible to recognize in Arendt’s embrace of process and a dynamic theory of power as action *between* people as trafficking in what Lafontaine earlier termed the “relational logic of the cybernetic model” that stood out as “the mark of the *Zeitgeist*” during these decades.²⁷⁹ Although Arendt to my knowledge only addressed the topic of cybernetics directly on

²⁷⁶ Ibid., 155.

²⁷⁷ Arendt, *The Promise of Politics*, 145. Arendt, *Was ist Politik?*, 70-71.

²⁷⁸ Quoted in Kline, *The Cybernetics Moment*, 7.

²⁷⁹ Arendt’s and Foucault’s respective uptakes effectively bookmarking the beginning and the end of the period of effervescent enthusiasm that Ronald Kline terms the ‘cybernetics moment.’ Lafontaine, “The Cybernetic Matrix of ‘French Theory’”, 36-37. Kline, *The Cybernetics Moment*, 1-7.

one occasion,²⁸⁰ she emerges as a clear exemplar of what author Andrea Barnet terms the ‘visionary women’ of this period. “Close observers of process and patterns,” Barnet writes, “they saw the world as a web of interactions and exchanges, rather than a strict hierarchy; a mesh of dynamic, interconnected communities, rather than a place of closed and separate spaces.”²⁸¹ The notion of a ‘web of interactions’ would prove to be particularly important for how Arendt came to reconsider political power by the time she wrote *The Human Condition*. In this work Arendt calls particular attention to the highly reactive medium that takes shape in the interstices of a shared world that both connects and separates a plurality of people, proposing to call this “the ‘web’ of human relationships, indicating by the metaphor its somewhat intangible quality.”²⁸² Whether Arendt was deliberately engaging with systems-cybernetic discussions of networks and feedback effects or simply immersed in the ‘cybernetics moment,’ she certainly channels its logic when discussing the web of relationships, within which,

Because the actor always moves among and in relation to other acting beings, he is never merely a "doer" but always and at the same time a sufferer. To do and to suffer are like opposite sides of the same coin, and the story that an act starts is composed of its consequent deeds and sufferings. These consequences are boundless, because action, though it may proceed from nowhere, so to speak, acts into a medium where every reaction becomes a chain reaction and where every

²⁸⁰ During the presentation that she gave at the 1966 “Conference on the Cybercultural Revolution,” where she drew particular attention to how ‘cybernation’ had introduced machine ‘brainpower’ and, with it, new prospects for full social automation (a concern that had been with her since at least *The Human Condition*). For a fascinating discussion of this conference, see; Matt Tierney, *Dismantlings: Words Against the Machine in the American Long Seventies* (Ithaca: Cornell University Press, 2019), 77-83. For the words of Arendt’s presentation, see: Arendt, “On the Human Condition” in *Thinking Without a Bannister*, 322-327. For Arendt’s similar prior remarks on extra-human ‘brainpower,’ see: Arendt, *The Human Condition*, 172. For an interesting essay on the contents of Arendt’s lecture on ‘cybernation,’ see Brian Simbirski, “Cybernetic Muse: Hannah Arendt on Automation, 1951–1958” in *Journal of the History of Ideas* Vol. 77, No. 4 (Oct. 2016), pp. 589-613.

²⁸¹ Andrea Barnet, *Visionary Women: How Rachel Carson, Jane Jacobs, Jane Goodall, and Alice Waters Changed Our World* (New York: Harper Collins Publishing, 2018), 442.

²⁸² Arendt, *The Human Condition*, 183.

process is the cause of new processes. Since action acts upon beings who are capable of their own actions, reaction, apart from being a response, is always a new action that strikes out on its own and affects others. Thus action and reaction among men never move in a closed circle and can never be reliably confined to two partners. This boundlessness is characteristic not of political action alone, in the narrower sense of the word, as though the boundlessness of human interrelatedness were only the result of the boundless multitude of people involved, which could be escaped by resigning oneself to action within a limited, graspable framework of circumstances; the smallest act in the most limited circumstances bears the seed of the same boundlessness, because one deed, and sometimes one word, suffices to change every constellation.²⁸³

It was this inherent uncertainty and systemic unpredictability that established the direct connection between “freedom” and “the power to act,”²⁸⁴ where the highly reactive medium of relationships within which action occurs and political power manifests always inescapably carries that possibility for novelty, unpredictability, and the surprising interruption of ongoing processes that makes the political actions of free people sometimes look like a form of secular miracle. This was also, as we will see in the next chapter, a defining feature of complex systems that made tasks such as modeling the weather virtually impossible beyond a ten-day forecast. The web of relationships for Arendt becomes the medium for political power, within which politics establishes and strengthens connections, while violence severs them. What Arendt posits here bears a conspicuous resemblance to what, as we saw above, Foucault later came to call “the network of power relations [that] ends by forming a dense web that passes through apparatuses and institutions, without being exactly localized in them,”²⁸⁵ as well as the logic of systems ecology that we will see in the next chapter. My suspicion is that Foucault did not copy Arendt

²⁸³ Ibid., 190.

²⁸⁴ As she approvingly cites Vilfredo Pareto on the subject. Arendt, “On Violence,” 179.

²⁸⁵ Foucault, *The History of Sexuality* Vol. 1, 96.

for his theory of power any more than Arendt drew on the 1950s ecologists then revolutionizing their field. Instead, all three borrowed from the relational logic of Klein's 'cybernetics moment' to varying degrees to arrive at analogous insights that prove to be highly complementary when placed together. As we will further see in the next chapter, Schell has little trouble in adapting Arendt's relational theory of power and its resulting distinction between politics and violence to his own explicitly ecological undertaking.

Let us close out this discussion of Arendt by considering how she came to combine her critique of sovereignty with her relational theory of political power as distinct from violence. Arendt never stopped thinking about the immanent apocalypse "even if," as she put it in 1965, "people everywhere cease to talk about nuclear death."²⁸⁶ At the outset of *On Revolution*, she had written about how the refusal of nuclear armed states to relinquish their sovereign prerogative to engage in war meant "risking the very existence of the human species."²⁸⁷ From here, she had proceeded to acknowledge, "It would be difficult to deny that one of the reasons why wars have turned so easily into revolutions and why revolutions have shown this ominous inclination to unleash wars is that violence is a kind of common denominator for both."²⁸⁸ One of her purposes in the study that followed—explicitly written once again, like *The Human Condition*, against the background of "the threat of total annihilation"²⁸⁹—was to theoretically decouple the possibility of radical political change and the creation of a new political community from the need for foundational violence that had traditionally haunted what she terms "the problem of beginning."²⁹⁰ This work had tried to break the longstanding association between foundation and

²⁸⁶ Hannah Arendt to Hans Magnus Enzensberger, January 30, 1965 reproduced in *Thinking without a Bannister*, 314.

²⁸⁷ Arendt, *On Revolution*, 3.

²⁸⁸ *Ibid.*, 8.

²⁸⁹ *Ibid.*, 4.

²⁹⁰ *Ibid.*, 10.

violence to envision how a radical political transformation might take place through the human power to weave a new network of relationships together voluntarily rather than have some new conqueror—internal or external—either place them in chains or ‘force them to be free.’ Making liberal use of her historical sources, Arendt had endeavored to illustrate how political power, operating in a way categorically distinct from violence, could manifest through the act of mutual promising to create durable connections binding together a new political community. Where sovereign foundation myths told stories of violence being used to establish sovereign independence, Arendt invited her contemporaries to consider the potential for revolutionary novelty that comes from reinforcing and multiplying connections rather than severing them.

Arendt worked to further delink sovereign violence from political revolution with “On Violence.” Here she proposes, “What makes man a political being is his faculty of action; it enables him to get together with his peers, to act in concert, and to reach out for goals and enterprises that would never enter his mind, let alone the desires of his heart, had he not been given this gift—to embark on something new.”²⁹¹ Once more, Arendt took the opportunity of conducting her own German translation of this essay to clarify a few points of potential confusion in her original argument. In the resulting “*Macht und Gewalt* [Power and Violence]” she further specifies how, in this case, “So long as national independence, namely, freedom from foreign rule, and the sovereignty of the state, namely, the claim to unchecked and unlimited power in foreign affairs, are identified—and no revolution has thus far been able to shake this state concept—not even a theoretical solution of the problem of war, on which depends not so much the future of mankind as the question of will mankind have a future, is so much as

²⁹¹ Arendt, “On Violence,” 179.

conceivable, and a guaranteed peace of earth is as utopian as the squaring of the circle.”²⁹² This was an intriguing point, and one that harkens all the way back to some of the first intuitions that Arendt had expressed on the subject back in her *Denktagebuch* almost two decades prior.

In an interview conducted shortly after the publication of “*Macht und Gewalt*,” Arendt’s interlocutors singled out the passage just quoted. Justifiably curious, they asked her, “What other conception of the state do you have in mind?”²⁹³ Arendt seems to have found this question understandably hard to answer given that, had she already had a clear answer in mind, she would have included it when writing the essay in the first place. Instead, she pointed out—in terms very similar to those that Foucault would reprise in his call for the king’s head during another interview six years later—that the modern conception of the ‘state’ and its ‘sovereignty’ was not some immutable fact of human existence, but had arisen under quite specific circumstances in the fifteenth and sixteenth centuries. Those circumstances had now been irrevocably altered. “Sovereignty means, among other things” she explained, “that conflicts of an international character can ultimately be settled only by war; there is no other last resort. Today, however, war...among the great powers has become impossible owing to the monstrous development of the means of violence....Between sovereign states there can be no last resort except war; if war no longer serves that purpose, that fact alone proves that we must have a new concept of the state.”²⁹⁴ As for what that should look like? Good question: “The mere rudiments I see for a new state concept can be found in the federal system, whose advantage it is that power moves neither from above nor from below, but is horizontally directed so that the federated units mutually

²⁹² Hannah Arendt, *Macht und Gewalt* (Munich: Piper & Co., 1970). Here I use the translation of this passage as rendered by Denver Lindley. Arendt, *Crises of the Republic*, 229.

²⁹³ Ibid.

²⁹⁴ Arendt, *Crises of the Republic*, 229-330.

check and control their powers.”²⁹⁵ Taking this insight as a point of departure, she thought, it might be possible to constitute a horizontally integrated *international* authority for resolving otherwise insuperable political conflicts between communities in the absence of war, rather than constitute a *supernational* authority. This in turn, she argued (in words that signal just how far she has come from her earlier breathless warnings about permanent totalitarian world domination), “would lead to world government, which could easily become the most frightful tyranny conceivable, since from its global police force there would be no escape—until finally it fell apart.”²⁹⁶ The ultimate challenge of the politically modern world, then, seemed to be how to establish a specifically *international* authority that operated horizontally between political communities but could still serve as “the highest control agency” when it came time to resolve otherwise insuperable conflicts absent a physical test of strength. “This sounds like a paradox,” she conceded, “since what is highest cannot well be in between, but it is nevertheless the real question. When I said that none of the revolutions, each of which overthrew one form of government and replaced it with another, had been able to shake the state concept and its sovereignty, I had in mind something that I tried to elaborate a bit in my book *On Revolution*.”²⁹⁷

After taking a moment to specify that she *absolutely did not* have the hippies and their communes in mind,²⁹⁸ she concluded with what sounds like more than a hint of defeat, “In this

²⁹⁵ Ibid.

²⁹⁶ Ibid., 230.

²⁹⁷ Ibid., 231.

²⁹⁸ Given her own decades long difficulties trying to find the meaning of politics in the politically modern world, whatever her distaste for hippies, Arendt found couldn’t blame those who turned their back on the problem entirely. “To prevent a misunderstanding that might easily occur today, I must say that the communes of hippies and dropouts have nothing to do with this. On the contrary, a renunciation of the whole of public life, of politics in general, is at their foundation; they are refuges for people who have suffered a political shipwreck—and as such they are completely justified on personal grounds. I find the forms of these communes very often grotesque—in Germany as well as in America—but I understand them and have nothing against them. Politically they are meaningless.” Ibid., 232.

direction I see the possibility of forming a new concept of the state. A council-state of this sort, to which the principle of sovereignty would be wholly alien, would be admirably suited to federations of the most various kinds, especially because in it power would be constituted horizontally and not vertically. But if you ask me what prospect it has of being realized, then I must say to you: Very slight, if at all. And yet perhaps, after all—in the wake of the next revolution.”²⁹⁹

The political revolution that Arendt seemed to have in mind—the kind that would shake the state concept and its sovereignty—has not come to pass. But the ways of approaching political questions that inspired this desire have themselves proven to be revolutionary and widely shared. Over the course of the 1950s through the 1970s, both Arendt and Foucault seem to have become saturated—even if only by passive osmosis—in the increasingly relational logic and systems-oriented thinking radiating outward from cybernetics and its many allied fields during these pivotal years. The planetwide blanket of thermonuclear fallout produced by the weapons tests of the 1950s imparted the lesson that everything is connected and for the first time converted questions concerning the sum total of human beings from matters of abstract philosophical speculation into the contingent universality of a new kind of death that threatened to end the previously immortal life process of the species. During the 1950s, the first flush of political thinking about the immanent apocalypse seemed to run aground on the impossible alternative typified by Russell and Jaspers that announced the need to decide between siding with the essence of Man as developed by politically free peoples and defended by their sovereign political communities or preserving the existence of the human species at the cost of whatever dehumanizing consequences might come from submitting to a single planetary sovereignty for

²⁹⁹ Ibid., 233.

the sake of ending war. Although Arendt may have had a hand in helping to assemble this all-or-nothing trap with her early writings on totalitarianism, both she and Foucault ultimately avoided falling into it. As immanent apocalyptics, Arendt and Foucault both recognized the severity of the rupture that the atomic power to kill life itself imposed on the continuity of politics: Arendt writing of the ‘politically modern world’ that ‘was born with the first atomic explosions’ and Foucault a ‘biological threshold of modernity’ that was crossed when ‘the life of the species’ came to be ‘wagered on its own political strategies.’ Both in their own way embodied Foucault’s friend (and mutual admirer) Gilles Deleuze’s dictum that, when faced with radical transformation, “there is no need to fear or hope, but only to look for new weapons.”³⁰⁰ Finding that the immanentization of the apocalypse had rendered much of the theoretical arsenal of Western political concepts and categories both theoretically obsolete and practically inapplicable, both turned to contemporary developments and drew deeply of their cybernetics moment—Arendt during the heady early days, Foucault by the time the visibility of this revolution was vanishing into the cultural vernacular. This resulted in each developing a similar appreciation for the relational aspect of political power and the new possibilities that these network effects engender for those who act in concert together.

In the 1920s, Carl Schmitt had plausibly summed up ‘the political’ in the Western tradition as the zone encompassing all those practices by which opposed groups resolve disputes over which they might otherwise be willing to kill—and still might should political means reach an otherwise unresolvable deadlock. Politics existed on a continuum with “the real possibility of physical killing,” and freedom was bound to sovereignty, for only a sovereign entity could occupy the fateful position of “judging whether the adversary intends to negate his opponent’s

³⁰⁰ Gilles Deleuze, “Postscript on the Societies of Control” in *October*, Vol. 59. (Winter, 1992), pp. 3-7; 4.

way of life and therefore must be repulsed or fought in order to preserve one's own form of existence" through war as "the existential negation of the enemy."³⁰¹ One of Arendt and Foucault's enduring contributions to the politics of the immanent apocalypse has been to help develop new lines of thinking about how power might operate independently of the need to resort to violence to force a final sovereign decision. As Arendt and Foucault came increasingly to think of both the biological life of the human species and politics itself in terms of processes and the generative feedback of networked interactions, both began to undo what Arendt had aptly termed "the antithesis between freedom and life, the spark that ignited all politics."³⁰² Having crossed Foucault's 'biological threshold of modernity' and entered Arendt's 'politically modern world that was born with the first atomic explosions,' both ultimately came to repudiate the very possibility of sovereignty and the political utility of killing to force a final decision or defend the freedoms arising from a particular way of life. Might there not be a form of freedom that exists in continuity rather than antithesis with life? I think this may have been the idea implicit in Arendt's vision for a post-revolutionary order bound horizontally in a network of non-sovereign political communities for which politics becomes a matter of perpetual renegotiation rather than the imposition of final decisions.³⁰³ Similarly, at the end of his life, Foucault proposed in "The Subject and Power,"

When one defines the exercise of power as a mode of action upon the actions of others...one includes an important element: freedom....Where the determining factors are exhaustive, there is no relationship of power....Consequently, there is not a face-to-face confrontation of power and freedom as mutually exclusive facts

³⁰¹ Schmitt, *The Concept of the Political*, 27, 33.

³⁰² Arendt, *The Promise of Politics*, 145.

³⁰³ A Schmittean might see this as continuous discussion and the endless deferral of decision as liberalism in its most decadent form but, as I will argue in the next chapter, it can be more productively considered as directly analogous to the functioning of a healthy ecosystem.

(freedom disappearing everywhere power is exercised) but a much more complicated interplay... Rather than speaking of an essential antagonism, it would be better to speak of an 'agonism' — of a relationship that is at the same time mutual incitement and struggle; less of a face-to-face confrontation that paralyzes both sides than a permanent provocation.³⁰⁴

By trying to decouple politics and war, embrace interconnection, and better distinguish between power and violence, Arendt and Foucault both contributed to the task of finding ways to make politics a matter of permanent provocation rather than the pursuit of a final resolution that might precipitate the use of the power to kill life itself. There has already been a great deal of excellent work conducted in elaborating Arendt and Foucault's late visions for a non-sovereign, post-foundational political communities from what might broadly be considered a postmodern orientation.³⁰⁵ In the next chapter, we will take a different tack, exploring what happens when these insights are translated into an explicitly ecological context and the immanent apocalypse becomes a question concerning the fate of the Earth system.

³⁰⁴ Foucault, "The Subject and Power," 139.

³⁰⁵ See for instance: Jean-Luc Nancy, *The Inoperative Community*, Trans. Peter Connor, Lisa Garbus, Michael Holland, and Simona Sawhney (Minneapolis: University of Minnesota Press, 1991); Bonnie Honig, *Political Theory and the Displacement of Politics* (Ithaca: Cornell University Press, 1993); William Connolly, *Identity/Difference: Democratic Negotiations of Political Paradox* (Minneapolis: University of Minnesota Press, 2002).

“Living is no laughing matter:
you must live with great seriousness
like a squirrel, for example—
I mean without looking for something beyond and above living,
I mean living must be your whole occupation.
[...]
I mean, you must take living so seriously
that even at seventy, for example, you'll plant olive trees—
and not for your children, either,
but because although you fear death you don't believe it,
because living, I mean, weighs heavier.”
—Nazım Hikmet, excerpt from “On Living” (1947)¹

CHAPTER 3: SYSTEM

So far, this study has considered the conceptual havoc that the immanentization of the apocalypse caused for thinkers such as Arendt and Foucault and charted a few of the surprisingly congruent ways in which each attempted to make political sense of these developments. We have seen how the entry of “power to kill life itself” into shaky human hands introduced “no reason to doubt our present ability to destroy all organic life on earth,” prompting one to posit that a new form of “politically modern world” had been “born with the first atomic explosions,” while the other proposed having crossed a “biological threshold of modernity” when “the life of the species” came to be “wagered on its own political strategies.” Up until now, the aim of this study has been to stress the degree of rupture that the immanent apocalypse caused in the continuity of Western political thought—a rupture that both Foucault and Arendt both clearly identified and explored, but never systematically addressed at length. With this chapter we turn now from addressing some of the most prominent political “antitheses” and “paradoxes” thrown up by the immanent apocalypse and begin to consider the work of those who began the positive project of

¹ Nazım Hikmet, *Poems of Nazım Hikmet*, Trans. Randy Blasing and Mutlu Konuk (New York: Persea Books, 2002), 128.

reconstructing Western politics from the bomb-blasted ground up.

There are many different approaches to the still largely uncharted *terra incognita* of the immanent apocalypse and many different trails that could be blazed. This chapter explores what happens when the immanent apocalypse comes to be reconceived as an explicitly *ecological* risk—not merely as an abstract, all-menacing “power to kill life itself,” but as an increasingly precisely understood capacity to sever the newly discovered systemic connections that sustain earthly human life. It takes as its guide the essayist and popular political theorist Jonathan Schell, whose work warrants far greater attention for several reasons. Firstly and most obviously, Schell is currently in the process of being rediscovered as one of the first political thinkers to have attempted to explicitly incorporate the newfound human capacity to destroy all human life into his political thinking. Secondly, Schell warrants a place in *this study* in particular as one of the only people to explicitly recognize and follow some of the conceptual trails that Arendt first blazed through the wilderness of the immanent apocalypse. Thirdly, there is the fact that Schell not only adopted several of Arendt’s most important innovations in this area, but he developed them in an explicitly ecological direction, transforming her care for the human world into a politics oriented towards addressing the fate of the Earth for the whole of life. As we will see, Schell’s 1982 opus *The Fate of the Earth* marks one of the first attempts to recast the immanent apocalypse in terms of the new understanding of the planet as a ‘systemic whole’ that had been growing steadily since the 1950s but fully came of age in the 1980s. What follows uses Schell’s work as an entry point for making sense of the sea change that took place *within* the immanent apocalypse as early all-or-nothing fears of directly causing ‘universal death’ by radiation gradually gave way to a very different way of understanding the complex of interconnections that sustain earthly life and the alarming ease with which they might come to be fatally

disrupted. We will see how his *The Fate of the Earth* took shape in the same restructuring of planetary knowledge that would also give rise to the designation the ‘Anthropocene,’ marking the beginning of what could be considered a second phase within the immanentization of the apocalypse that began when questions concerning continued human life on Earth came to be explicitly rearticulated in ecological terms. Those of us alive today are all inheritors of this sea change, and my hope is that tracing this transition—and some of the early political insights it inspired—may help contemporaries to rediscover the explicitly existential stakes of what has come to be called the ‘Anthropocene’ and the uniquely political challenges this entails.

This chapter is divided into two parts of roughly equal length. The first section, “The Fate of the Earth System,” begins by introducing Schell and his work before proceeding to offer a brief synopsis of the ‘fundamental rearrangement of knowledge’ that transpired between the 1950s and the 1980s as the nuclear fallout that had inspired one generation with fears of “universal death” by radioactive poison became the glowing tracers that another generation used to discover the systemic connections linking all life on Earth. I place Schell’s own contribution within the context of these developments, demonstrating how *The Fate of the Earth* was born in the sea change that would later provide the terms in which the ‘Anthropocene’ came to be proposed. The second section, “Sovereignty, Natality, Love,” traces how Schell sets out from this newly discovered position of explicitly *ecological* peril to build on the foundational work that Arendt accomplished during the first phase of the immanent apocalypse. Here I focus in particular on how he adapts her earlier insights regarding the obsolescence of sovereignty, the distinction between power and violence, and the newly political import of natality. I conclude by trying to reconstruct Schell’s argument that an ecological politics of the immanent apocalypse ought to be based not on the traditional metaphor of universal brotherhood but instead what he

calls ‘universal parenthood,’ taking the principle of continuity inherent in the biological species concept as its guiding thread. Here I try to show how this new type of species-oriented politics permits Schell to pursue one path beyond the formerly paralyzing ‘antithesis between freedom and life’ by reinterpreting the continuation of life itself as the locus of freedom.

“A study of nature and man is a study of systems.”
—Howard T. Odum (1971)²

I. THE FATE OF THE EARTH SYSTEM

Born in 1943, Jonathan Schell first made a name for himself when, shortly after graduating from Harvard, he secured a press pass to Vietnam under the pretense that he would be covering the war for the *Harvard Crimson*.³ After riding along on several dozen helicopter operations, he published a series of essays in *The New Yorker* that were later published in 1967 as *The Village of Ben Suc*, a deeply humane and unflinching account of the senselessness of the war that has been praised as “arguably the most important book of reporting from Vietnam.”⁴ The magazine subsequently offered Schell a staff position that he would enjoy for the next two decades, with much of his subsequent work appearing as several hundred unsigned entries in *The New Yorker*’s “Notes and Comments” section. His second major work, *The Time of Illusion*, appeared 1976, offering a probing reflection on the Watergate Scandal. The following year, Schell began researching a new project on the subject of nuclear weapons. When he finished his study five years later, Schell so impressed his editors at *The New Yorker* with the clarity and urgency of his argument that they took the remarkable step of turning over the entire magazine to

² Howard T. Odum, *Environment, Power, and Society* (New York: Wiley Interscience, 1971), 1.

³ David Remnick, “Postscript: Jonathan Schell, 1943-2014” in *The New Yorker* (March 26, 2014).

⁴ Bill McKibben, “Jonathan Schell” in *The New Yorker* (April 7, 2014).

printing his essays on the subject—not just once, but for *three successive weeks*, releasing “A Republic of Insects and Grass,” “The Second Death,” and “The Choice” sequentially in February of 1982.

These essays were an instant sensation, proving to be both deeply insightful on their own merits and one of the more conspicuous cases of good authorial timing in recent history. When Schell began researching nuclear weapons, it was with an aim of helping to pierce the spooky silence that we have already witnessed descended on the subject during the 1960s following the passing of the Limited Test Ban Treaty, the white hot panic of the Cuban Missile Crisis, and the comparatively relaxed period of *détente* that ensued.⁵ As psychological several psychological studies came to show, the next two decades saw nuclear weapons move out of sight, but clearly not out of mind, with students at the time describing a sort of split consciousness in which they pursued degrees, got married, began careers, while at the same time never expecting to survive more than a few years into the future.⁶ As anthropologist Joseph Masco noted, the resulting regime “asked them to live on the knife’s edge of a psychotic contradiction—an everyday life founded simultaneously on total threat and absolute normality.”⁷ The opening years of the 1980s, by contrast, witnessed the repressed return with a vengeance. Brimming with bellicose rhetoric, the election of Ronald Reagan and his proposals for overhauling America’s nuclear arsenal and force posture seemed to reignite the Cold War and bring the prospect of thermonuclear annihilation back into public view.⁸ Quite abruptly, a generation that had been born and raised

⁵ Paul Boyer, “From Activism to Apathy: The American People and Nuclear Weapons, 1963-1980” in *The Journal of American History*, Vol. 70, No. 4 (Mar. 1984), pp. 821-844; 826.

⁶ Sibylle K. Escalona, “Growing up with the Threat of Nuclear War: Some Indirect Effects on Personality Development” in *American Journal of Orthopsychiatry* (October 1, 1982), 602. Robert Jay Lifton, *The Future of Immortality and Other Essays* (New York: Basic Books, 1987), 23.

⁷ Joseph Masco, *The Theater of Operations* (Durham, NC: Duke University Press, 2014), 60.

⁸ One of the many near-misses that almost snapped the hair trigger suspending the nuclear sword of Damocles occurred during one of the red alert drills that the Soviets conducted after having been

with the nuclear sword of Damocles above their head turned to confront the naked absurdity of their situation. Many thousands took to the streets—particularly in the United States and West Germany—to call for an end to this intolerable condition of total, arbitrary precarity within which they had been forced to pass their lives; some hoping for a ‘nuclear freeze’ on further weapon development, others hoping for outright abolition.⁹ As historian Spencer Weart has charted, by 1982 the number of American magazine articles addressing nuclear weapons reached a peak not seen since the Cuban Missile Crisis.¹⁰ It was against this backdrop that Schell would publish his own intervention.

Two months after first appearing in *The New Yorker* that February, Schell coordinated with his publisher to take the unusual step of releasing the essays in book form simultaneously in both reduced-price hardcover and mass-market paperback format as what became *The Fate of the Earth*. Described as “fair-minded and self-forgetful,”¹¹ Schell eschewed the expected trappings of a dust jacket photo and book promotion circuit, instead asking readers to let the book speak for itself. Forgoing the usual royalties, the book eventually came to be offered at cost to the 1.2 million subscribers of the Book of the Month Club.¹² An instant and sustained

convinced by Reagan’s speeches that an attack by the United States was imminent. Ellsberg, *The Doomsday Machine*, 229-303.

⁹ David Sepkoski, *Catastrophic Thinking*, 193. William Knoblauch, *Nuclear Freeze in a Cold War* (Vancouver: University of British Columbia Press, 2017).

¹⁰ Weart, *Nuclear Fear: A History of Images*, 376.

¹¹ In an internal memo circulated at *The New Yorker*, editor William Shawn recommended Schell as his successor on the following terms: “He is an excellent judge of talent, and of people. As for the range of his interests, it is extraordinary. As for his character, his mind, his temperament, I think he has the qualities we have been, or should be, looking for (and I use the following words with precision): warmth and good will, truthfulness, fair-mindedness, self-forgetfulness, humor, imagination, vision, conscience, inner strength, intellectual and emotional depth.” One gets the overwhelming impression, both from reading his works and from the testimony of his many friends and acquaintances, that Schell may well have been one of those truly rare specimens that are almost never found at the apex of their field: a genuinely decent person. As quoted in David Remnick, “Postscript: Jonathan Schell, 1943-2014” in *The New Yorker* (March 26, 2014).

¹² Knoblauch, *Nuclear Freeze in a Cold War*, 17.

bestseller, the impact of *The Fate of the Earth* reached not only far and wide, but bottom to top, helping to not only galvanize the grass roots of nascent antinuclear activism, but also reaching the heights of established authority, with the pope being presented a copy by Manhattan Project alumnus Victor Weisskopf and Senator Ted Kennedy entering “A Republic of Insects and Grass” into the Congressional Record.¹³ Selling out its first several runs, the buzz surrounding the book became newsworthy in its own right, with one editorial in the *Washington Post* enthusing:

Who would have thought such a dense tome would be offered as a special bargain by the Book-of-the-Month Club, touted as an event by *Time* magazine, entered into the Congressional Record more than once (by more than one anxious legislator), extolled on the "CBS Evening News" and "The Merv Griffin Show," endorsed by Walter Cronkite, and denounced on the editorial pages of *The Wall Street Journal* and *The New York Times*? It has been called "the new Bible of our time, the White Paper of our age" (by Helen Caldicott, president of Physicians for Social Responsibility) and it has been called "gobble gobble" (by novelist/columnist George V. Higgins, writing in *The Boston Globe*). Whatever it is, Jonathan Schell's "The Fate of the Earth" has people talking.¹⁴

By the end of 1982, only one other nonfiction book had outsold *The Fate of the Earth*, and that was *Jane Fonda's Workout*,¹⁵ the print accompaniment to the actress' chart-topping fitness videos, which introduced the phrases “feel the burn” and “no pain, no gain” to the popular lexicon and helped spur a fad for leg warmers.¹⁶

If it is true that you can judge the caliber of someone as much by their enemies as by their friends, then Schell distinguished himself here too. *The Fate of the Earth* came to be roundly

¹³ *Ibid.*, 18.

¹⁴ James Lardner, “The Bomb Schell” in *The Washington Post* (April 22, 1982).

¹⁵ Rens van Munster and Casper Sylvest, “Nuclear Weapons, Extinction, and the Anthropocene” in *Review of International Studies*, Vol. 47, No. 3 (July 2021), pp. 294-310; 294.

¹⁶ Nancy Hendricks, *Popular Fads and Craze Throughout US History* (Santa Barbara, CA: ABC-CLIO LLC, 2018), 525-526.

condemned by the self-anointed ‘nuclear priesthood’ of American defense intellectuals and dismissed out of hand by those who had made a profession out of “thinking the unthinkable.” But it was also too popular for them to ignore. By 1983 Herman Kahn—whose 1960 classic *On Thermonuclear War* had coined such terms of art as ‘megadeath’ (shorthand for a million human deaths) and ‘doomsday machine’¹⁷—could lament how, “Probably as much as any other single book, Jonathan Schell’s *The Fate of the Earth* raised the antinuclear consciousness to the point where anything short of the elimination of all nuclear weapons becomes morally and politically unacceptable.”¹⁸ Unfortunately, *The Fate of the Earth* also appears to have become a victim of its own success. Riding the high tide of antinuclear protest that rocked the early 1980s, it followed the same fate as the movement as a whole, which crested by mid-decade before beginning a long ebb that continues to this day (with published mention of even the existence of nuclear weapons eventually surpassing its détente low in the 2010s).¹⁹ Perhaps too popular to have been deemed worthy of academic study, the cheap paperbacks spent the next several decades quietly falling apart in attics and used bookstores. Much like Fonda’s workout routine, *The Fate of the Earth* gradually receded into cultural memory as one of the many enthusiasms to grip a decade full of passing fads.

Schell’s tragic boom and bust in popularity has only recently begun to be reversed, with the magnitude of his contributions coming to be recognized within both the new field of Existential Risk Studies (which has been gathering strength since being founded by philosopher

¹⁷ Herman Kahn, *On Thermonuclear War* (Princeton: Princeton University Press, 1960).

¹⁸ Herman Kahn, *Thinking About the Unthinkable in the 1980s* (New York: Simon and Schuster, 1984), 207.

¹⁹ A decline that was only briefly interrupted in 1991 and between 2003 and 2006, presumably caused by the drive to secure nuclear stockpiles following the breakup of the Soviet Union in the first case and the hunt for evidence of Saddam Hussein’s fabled WMD program in the latter. For corroboration, consult ‘nuclear weapon’ in Google Ngram.

Nick Bostrom in the 2000s) and by a new generation that spent the latter half of the 2010s waking up to the full scale of their existential precarity. In his important 2020 study *The Precipice*, Oxford Future of Humanity Institute (FHI) researcher Toby Ord flagged *The Fate of the Earth* at the top of his list for further reading, singling it out as: “The first deep exploration of the badness of extinction, and the central importance of ensuring humanity’s survival. Filled with sharp philosophical insight.”²⁰ The consistently prescient pair Rens van Munster and Casper Sylvest have also recently pointing out how, “Schell’s *The Fate of the Earth* was among the first books to draw on and popularize insights from Earth System science to describe the catastrophic interactions between nuclear weapons technology, the global climate, and the ecosphere – an accomplishment that in and of itself should have earned Schell a more prominent place in intellectual engagements with planet politics.”²¹ Accordingly, it might come as little surprise to learn that activists within the loosely affiliated Extinction Rebellion network should have also discovered a surprising elective affinity and important precursor in Schell who, years before most were born, had already begun to urge: “Extinction, being in its nature outside human experience, is invisible, but we, by rebelling against it, can indirectly make it visible. No one will ever witness extinction, so we must bear witness to it before the fact.”²² As already noted, however, the importance of Schell’s work stems not just from the fact that he remains one of the most lucid political thinkers to ever devote sustained attention to the immanent apocalypse, but that he did so from the newly emerging vantage point of existential risk reconceived in ecological terms. In order to better understand both Schell’s contribution and the advance of the

²⁰ Toby Ord, *The Precipice: Existential Risk and the Future of Humanity* (Oxford: Oxford University Press, 2020), 285.

²¹ van Munster and Sylvest, “Nuclear Weapons, Extinction, and the Anthropocene,” 2.

²² Jonathan Schell, *The Fate of the Earth and The Abolition* (Stanford: Stanford University Press, 2000), 227.

immanent apocalypse more generally, the remainder of this section turns to offer a brief overview of the sea change that helped give rise to the arrangements of knowledge within which fate of the Earth continues to be approached today.

As we saw in Chapter One, it was not the atomic bomb of 1945 but the hydrogen bomb tests of the early 1950s that first immanentized the apocalypse. While the atomic bomb had promised to ‘destroy civilization’ in the next war by vaporizing all concentrated centers of learning and industry in a matter of hours, it was the threat of ‘universal pollution’ by radioactive fallout that first introduced the conviction that “there is no reason to doubt our present ability to destroy all organic life on earth.”²³ The visions of ‘universal death’ that galvanized the immanent apocalypses of the 1950s had hinged on two facts: the capacity of megaton-scale hydrogen bombs to deliver not just local but *global* fallout and the belief that, given the long established link between radiation and the causes of cancer and mutation, “all man-made radiation must be regarded as harmful to man from the genetic point of view.”²⁴ As the biological hazards of radiation came to be studied more extensively, by the early 1960s it became clear that Einstein had wandered beyond his own area of expertise when warning that, with the arrival of the hydrogen bomb, “the radioactive poisoning of the atmosphere, and hence annihilation of any life on earth, has been brought within the range of technical possibilities.”²⁵ Nevertheless, even if the power to kill the totality of *life itself* remained outside human hands, the appearance of thermonuclear weapons nevertheless signaled an orders of magnitude increase in human power and the appearance of the first technology able to cause appreciable planet-wide effects with

²³ Arendt, *The Human Condition*, 3.

²⁴ “Report of the Study Group on the Effect of Radiation on Human Heredity” in Study Group on the Effect of Radiation on Human Heredity and World Health Organization, *Effect of Radiation on Human Heredity: Report of a Study Group Convened by WHO* (Geneva: World Health Organization, 1957), 11.

²⁵ Albert Einstein, “Arms can Bring No Security” in *The Bulletin of the Atomic Scientists* (Mar 1950), 71.

each individual use.²⁶ This fact opened new doors.

Over the course of the 1950s and 1960s, it gradually became clear that what was initially one man's poison could be used as another man's tracer. Adapting techniques from cybernetics, a new generation of biologists pioneered the field of systems ecology by pursuing the path that this fallout traveled as the readily traceable radioisotopes worked their way through the local ecosystems and planetary processes.²⁷ The Atomic Energy Commission (AEC) emerged at the forefront of this research, establishing an Environmental Science Branch that expanded in 1955 to include the study of what it called "ecological systems" in order to aid in "the establishment of ecological base lines and the accumulation of ecological information as tools with which to solve the inevitable problems the 'Technological Age' would bring."²⁸ Some of the first systems ecologists, such as Howard Odum, received large grants from the AEC for projects such as studying the energy flow of Coral Reefs following nuclear tests in the Eniwetok Atoll or irradiating a patch of Puerto Rican rainforest to observe the results.²⁹ Others, such as Barry Commoner, actively worked against the AEC, giving the lie to its claims regarding 'clean' hydrogen bombs by helping orchestrate the famous "Baby Tooth Survey," which revealed that the radioisotope strontium-90 (which behaves chemically much like calcium) had worked its way from the atmosphere and into the bones of growing children.³⁰ Describing his own ecological

²⁶ This case, in the form of detectable levels of global fallout. This distinguishes thermonuclear weapons from internal combustion engines, whose planetary effects have emerged gradually through the daily operation of billions of such devices.

²⁷ Jacob Hamlin, *Arming Mother Nature: The Birth of Catastrophic Environmentalism* (Oxford: Oxford University Press, 2013), 13, 86.

²⁸ John Wolf, AEC, "Forward" to Howard Odum Ed., *A Tropical Rain Forest: A Study of Irradiation and Ecology at El Verde, Puerto Rico* (Washington DC: Atomic Energy Commission, 1970), iii.

²⁹ Howard T. Odum, "The Rainforest and Man: An Introduction" in *A Tropical Rainforest* (1970), A-10. Peter Jay Taylor, "Technocratic Optimism, H. T. Odum, and the Partial Transformation of Ecological Metaphor after World War II" in *Journal of the History of Biology* Vol. 21, No. 2 (Summer, 1988), pp.213-234; 224.

³⁰ Ellen Gerl, "Scientist-citizen advocacy in the atomic age: A case study of the Baby Tooth Survey,

awakening, Commoner later reflected how, despite already having a PhD in biology, “I learned about the environment from the United States Atomic Energy Commission in 1953. Until then, like most people, I had taken the air, water, soil, and our natural surroundings more or less for granted.”³¹ As Commoner further explained, “What linked the secret, supposedly isolated, nuclear explosions to the children was the environment... Each nuclear explosion thrust radioactivity into the environment, the elaborate communication network in which every living thing is emmeshed. Unwittingly, the military technicians had tied their bombs into the network, with results that no one wanted—or could have predicted. The nuclear tests revealed how little we knew about the environmental network.”³² In the case of the systems ecologists, Marshall McLuhan’s contemporary dictum proved particularly true: “the medium is the message.”³³

The 1960s witnessed the drastic expansion in human destructive capacity introduced by the hydrogen bomb gradually begin to be matched by a commensurate increase in human understanding concerning the planet they now threatened—knowledge slowly catching up to power as a new stream of research funding helped to turn “fallout and radioactive wastes” into “tracers to evaluate pathway flows.”³⁴ These developments in turn would gradually give rise to a new way of conceiving of anthropogenic existential risk, not by directly poisoning everything that lives, but instead through environmentally mediated effects able to sever the web of life that sustains them. Over time, the claim that “everything is connected” had passed from a mainstay of

1958-1963” *Prism* Vol. 11 No. 1 (2014), pp.1-14. For the shape of the surrounding discourse at this time, see also Toshihiro Higuchi, “‘Clean’ bombs: Nuclear technology and nuclear strategy in the 1950s” in *Journal of Strategic Studies*, Vol. 29, No. 1 (2006), pp.83-116.

³¹ Barry Commoner, *The Closing Circle: Nature, Man & Technology* (New York: Random House, 1971), 44.

³² *Ibid.*, 47-48.

³³ Marshall McLuhan, *Understanding Media: The Extensions of Man* (Cambridge, MA: MIT Press, 1964), 7.

³⁴ Howard T. Odum, *Ecological and General Systems, Revised Edition* (Boulder: University of Colorado Press, 1994), 223.

ancient wisdom traditions to the cutting edge of environmental science. During the first half of the twentieth century, biological theories of ‘holism’ had begun to recognize that the environment was ‘holocoenotic,’ meaning that every change within an environment impacted something else, making it impossible to vary one factor at a time without changing the whole arrangement.³⁵ (See Figure 3.1) In the mid-1950s, the highly influential British cybernetician W. Ross Ashby highlighted how the soil research of the last several decades had revealed “that there are complex systems that just do not allow the varying of only one factor at a time—they are so dynamic and interconnected that the alteration of one factor immediately acts as cause to evoke alteration in others, perhaps a great many others.” Where previously biologists had been constrained to study phenomena that are “either intrinsically simple or that are capable of being analyzed into simpler components” (making methodological reductionism a virtue out of necessity), he promised to the curious, “Cybernetics offers a method for the scientific treatment of the system in which complexity is outstanding and too important to be ignored. Such systems are, as we well know, only too common in the biological world!”³⁶ Odum’s doctoral advisor, the tremendously influential ecologist G. Evelyn Hutchinson, had participated in several of the early Macy Conferences—the famously heterogeneous gatherings that helped to consolidate cybernetics as a super-disciplinary approach to the study of complex phenomena—and helped secure Odum an opportunity to present his doctoral research on the biological cycling of strontium at one of their gatherings.³⁷ Although Odum felt that the conference itself had produced more heat than light, he nevertheless took fully to the techniques of cybernetics as a

³⁵ W. C. Allee and Thomas Park, “Concerning Ecological Principles” in *Science*, Vol. 89, No. 2304 (Feb. 24, 1939), 167.

³⁶ W. Ross Ashby, *An Introduction to Cybernetics* (London, William Clowes and Sons, 1956), 5.

³⁷ G. Evelyn Hutchinson, “Circular Causal Systems in Ecology” in *Annual Review of the New York Academy of Sciences*, Vol. 50 (1948), pp.221-246.

way to begin to turn ecology from an intimation of wholeness into a study of interconnection, joining Commoner and many others in establishing the new field of systems ecology throughout the 1950s and 1960s.³⁸

By the early 1970s, Commoner felt ready to venture his much-cited “Four Laws of Ecology” for this fledgling field, the first of which encompassed the others and amounted to the simple—but hard learned and easily forgotten—reminder that “everything is connected to everything else.” This law, he explained, “reflects the existence of the elaborate network of interconnections in the ecosphere: among different living organisms, and between populations, species, and individual organisms and their physicochemical surroundings. The single fact that an ecosystem consists of multiple interconnected parts, which act on one another, has some surprising consequences. Our ability to picture the behavior of such systems has been helped considerably by the development, even more recent than ecology, of the science of cybernetics.”³⁹ A decade later, the biologists Anne and Paul Ehrlich (the infamous authors of *The Population Bomb* but also prominent proponents of many non-human animal and environmental causes) summed up the matter in their influential 1981 volume *Extinction*, “The organisms of an ecosystem and the physical parts of the system are bound together by a maze of interactions. The maze is so complex that it is not altogether unreasonable to say that *every living thing potentially affects every other living thing and the physical environment of this planet.*”⁴⁰ It was cybernetics and its allied systems sciences that had provided the thread that permitted ecologists to begin to make sense of this maze and map the processes whose complex interconnections bound

³⁸ Peter Jay Taylor, “Technocratic Optimism, H. T. Odum, and the Partial Transformation of Ecological Metaphor after World War II” in *Journal of the History of Biology*, Vol. 21, No. 2 (1988), 213-234; p224. See also: Ronald Kline, *The Cybernetics Moment*, Baltimore, Johns Hopkins University Press, 2017, 94.

³⁹ Commoner, *The Closing Circle*, 30.

⁴⁰ Paul and Anne Ehrlich, *Extinction* (New York: Random House, 1981), 78.

organisms, ecosystems, and the entirety of planetary life together. The resulting perspectival shift between the abstracted holism of the first half of the twentieth century and the systems-cybernetic approach of the latter half stands out starkly in the contrast between the elegant holocoenotic mandala drafted by biologist W.D. Billings to represent the “holocoenotic environmental complex” of a plant (Figure 3.1) and the diagram of the functions of a tree as later sketched by Odum (which could be mistaken for the mislabeled page of an engineering pamphlet when viewed from a distance).⁴¹ (See Figure 3.2.)

Drawing on the wide range of theoretical resources consolidated by cybernetics, the early systems ecologists had been astonished to discover both the astounding variety of ways in which whole panoplies of species worked in unwitting concert without a conductor to stabilize ecosystems through a multitude of feedback loops, but also the ease with which seeming minor disruptions—the deletion of a species here, the introduction of a trace chemical there—could send these dynamic systems careening towards cascading collapse.⁴² An enthusiastic AEC administrator summed up the chief takeaway from Odum’s experiment irradiating a patch of Puerto Rican rainforest (itself generally seen as a masterwork of planning and execution that set the template for how to conduct ‘big’ environmental science),⁴³ in the following terms:

⁴¹ Taylor, “Technocratic Optimism,” 224.

⁴² Or, as the Ehrlichs put the matter in a much-cited passage: “The natural ecological systems of Earth...are analogous to the parts of an airplane that make it a suitable vehicle for human beings. But ecosystems are much more complex than wings or engines. Ecosystems, like well-made airplanes, tend to have redundant subsystems and other ‘design’ features that permit them to continue functioning after absorbing a certain amount of abuse. A dozen rivets, or a dozen species, might never be missed. On the other hand, a thirteenth rivet popped from a wing flap, or the extinction of a key species involved in the cycling of nitrogen, could lead to a serious accident.” Ehrlich and Ehrlich, *Extinction* (1981), xii.

⁴³ Lest anyone think that this was *purely* a matter of neocolonialism or environmental racism, it should be noted in Odum’s defense that Puerto Rico was selected in part due to the presence of an already established, cutting edge radiological research station, while other ecosystem radiation experiments were also being conducted on the mainland, such as the experiments being conducted in the forests surrounding Brookhaven National Laboratory in upstate New York. Charles A.S. Hall, “Introduction: The Contributions of H.T. Odum to Ecology,” *Maximum Power*, Ed. Charles A.S. Hall (Boulder: University of Colorado Press, 1995), 1. George M. Woodwell, “Design of the Brookhaven Experiment on the Effects

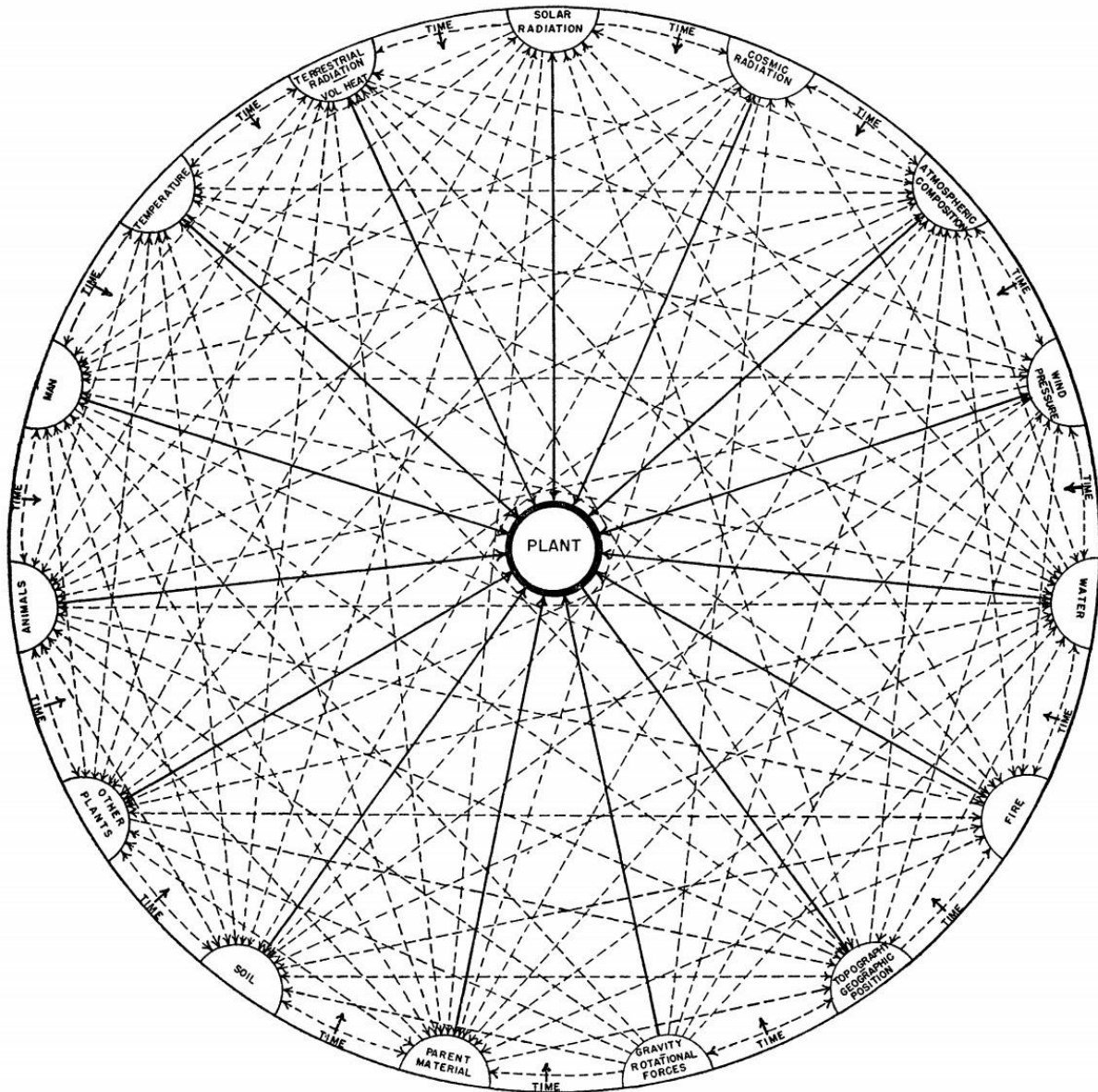


Figure 3.1: “Diagrammatic Representation of a Holocoenotic Environmental Complex” (1952)

Of his elegantly abstract web, plant biologist W.D. Billings writes, “Even though it is possible to analyze a plant environment and to study the effects of single factors on the plant, it has long been recognized by some ecologists, but not by all, that the environment-plant system is a dynamic unit in itself and reacts as a whole....The complexity of the interrelationships between the plant and its environment and between the various factors of the environment is almost enough to discourage any attempts at complete analysis and synthesis.”⁴⁴

of Ionizing Radiation on a Terrestrial Ecosystem” in *Radiation Botany* Vol. 3 (1963), pp. 125-133.

⁴⁴ From W.D. Billings, “The Environmental Complex in Relation to Plant Growth and Distribution” in *The Quarterly Review of Biology*, Vol. 27, No. 3 (Sep. 1952), pp. 251-265; 252-253. Reproduced with permission.

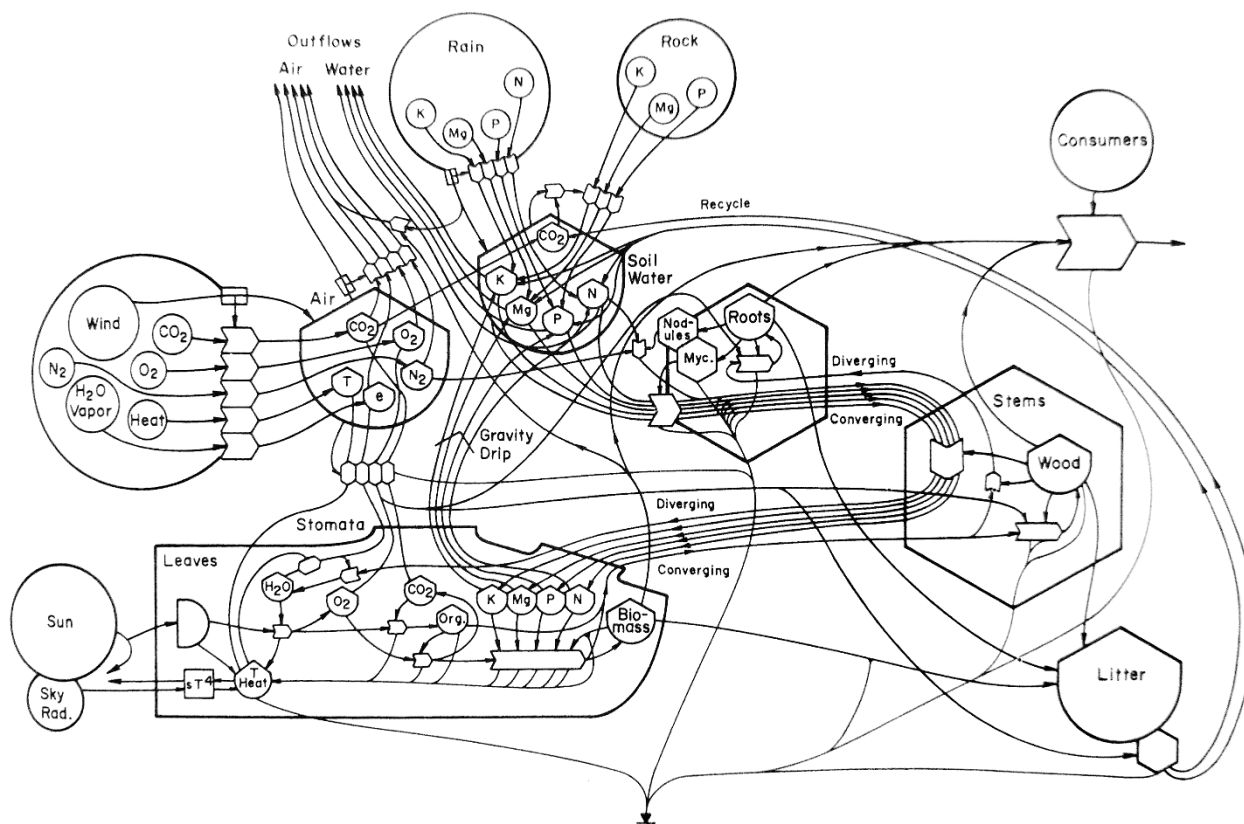


Figure 3.2: Howard Odum's "Model of the Functions of a Tree" (1983)⁴⁵

Odum writes, "Once we understand the purposeful mechanisms built by natural selection into the program's controls within the ecosystem, we can recognize the splendid miniaturization and complexity, which many misinterpreted earlier as a symptom of accident, disorder, and randomness."⁴⁶

No environmental factor in an ecological system operates in isolation. And because the environment is holocoenotic and undergoing changes from minute to minute, hour to hour, day to day, season to season, and year to year and because a change in one factor affects the rates of others and the rates of all life processes, ecological systems are not to be understood by the study of each factor, process, or condition separately. The spectrum of radiation damage ranges from apparent zero to death. But certain mosses, much less sensitive to radiation than others, ultimately died because canopy trees lost their leaves, admitting desiccating light to the forest floor.... There seems to be increasing recognition from evidence of long standing

⁴⁵ From Howard Odum's 1983 *Systems Ecology*, later republished as *Ecological and General Systems*, 379. Reproduced with permission.

⁴⁶ Odum, *Environment, Power, and Society*, 101.

that man's daily living pursuits—food, shelter, health, recreation, and production—are in their broad scope substantially ecological.⁴⁷

The takeaway, in short, was that it was almost impossible to predict in advance how complex ecosystems would respond to this sort of stress until Odum and his team began “watching with keen interest as the leaves began to yellow and fall.”⁴⁸ As the AEC administrator noted, it did not take much of a subsequent leap to realize that human organisms were no less ecologically entangled than a patch of forest moss. In a nuclear war, there would be no telling just how far this sort of cascading collapse might spread as mutually sustaining connections broke down and took still others with them. Although “nuclear bombs were designed as explosives,” Commoner concluded, they were in fact “an instrument of global ecological catastrophe.”⁴⁹

America's nuclear planners were not immune to these worries. In 1974 the influential Swiss-American nuclear strategist Fred Icklé sent a letter to the President of the US National Academy of Sciences [NAS] asking that a new study be conducted to aid him in his work on the grounds that, in his words, “Assessing likely consequences of nuclear weapons attacks includes, as a significant factor, estimating the long-term, worldwide effects that may propagate through the environment and ecological processes.”⁵⁰ The resulting NAS report of the following year attempted to model some of the ecological consequences of a hypothetical 10,000 megaton thermonuclear exchange, including “effects of radionuclides, of increased UV flux, and of climatic changes on natural ecosystems, farming, and the aquatic environment.”⁵¹ If the question where, “Would the biosphere and the species, *Homo sapiens*, survive?”, it was concluded, “the

⁴⁷ John Wolf, “Forward” in *A Tropical Rainforest* Vol. 1 (1970), iv-v.

⁴⁸ Howard T. Odum, “The Rainforest and Man: An Introduction” in *A Tropical Rainforest* (1970), A-10.

⁴⁹ Commoner, *The Closing Circle*, 176.

⁵⁰ Letter reproduced in National Research Council, *Long-Term, Worldwide Effects of Multiple Nuclear Weapons Detonations* (Washington DC: The National Academy Press, 1975), page unnumbered.

⁵¹ *Ibid.*, 2.

response by our committee is, ‘yes.’”⁵² The report further added that “although the principal findings of this report are encouraging in the sense that they indicate that *Homo sapiens*—but not necessarily his civilization—would survive a major nuclear exchange,” the scale of this catastrophe demanded both an urgent halt to nuclear proliferation and an immediate reduction in existing nuclear arsenals.⁵³ Significantly, this was one of the first major studies to include both the atmospheric cooling effect from dust and the previously unconsidered havoc that all the nitrous oxide produced by so much burning atmosphere would have on the ozone layer.⁵⁴

And yet, the 1975 NAS report on the ecological consequences of thermonuclear war came with a caveat so crucial that it could not help but cast doubt on the conclusions of the entire study. As the Nobel Prize winning physicist P.W. Anderson had quipped a few years earlier, when it came to the study of linear versus complex systems, the dictum was not “more is better” but “more is *different*”—meaning that “the behavior of large and complex aggregates” yields “at each level of complexity entirely new properties” that cannot be anticipated by “a simple extrapolation of the properties of a few particles” considered in isolation.⁵⁵ This had proven to be especially true, the authors of the NAS study conceded, when it came to particularly complex areas such as the climate,⁵⁶ which, as the authors explained, “is holocoenotic, i.e., it is composed of many interactive parts. Any action influencing a single part of the system can be expected to

⁵² Ibid ii.

⁵³ Ibid., vi.

⁵⁴ Which had only recently become a source of public concern following the supersonic transport controversy of the late 1960s and early 1970s, in which it was pointed out that, if the 500 or so such high-flying jets were ever produced the combined effects of their exhaust might lead to the sort of uptick in UV radiation that would make life on land unlivable. Ibid., 38. See also: Paul N. Edwards, “Entangled histories: Climate science and nuclear weapons research” in *Bulletin of the Atomic Scientists*, Vol. 68, No. 4 (2012), pp.28-40; 35.

⁵⁵ P.W. Anderson, “More Is Different” in *Science*, 396 Vol. 177, No. 4047 (4 August 1972), pp.393-396; 393.

⁵⁶ *Long-Term Worldwide Effects of Multiple Nuclear-Weapons Detonations*, iii.

have an effect on all other parts of the system.” This meant that even “numerically small changes in climatic variables (below present resolution capabilities) may produce significant environmental changes” and that, accordingly, “no adequate climatic models exist that would permit prediction of the nature and degree of climatic changes that might result from a large-scale nuclear event, especially with the degree of resolution that would be required to assess the biological impact.”⁵⁷ What was true of the climate, it turned out, was true of the broader system of biological and chemical processes sustaining life on Earth as a whole. Whatever hope the study may have inspired regarding the possibility of the bare biological survival of human beings somewhere on Earth following a nuclear war came tempered by the further admission that “the reader should be cautioned that this seemingly optimistic assessment, constructed by independently examining each of the specific elements noted above, has limited validity as an estimate even of long-term, worldwide effects. *The committee deliberately refrained from synthesizing an integrated vision of this catastrophe.*”⁵⁸

This landmark NAS study was the latest word on the subject when Schell began researching what would become *The Fate of the Earth* two years later in 1977. Taking leading scientists such as Harry Kendal (Nobel Laureate for physics, cofounder of the Union of Concerned Scientists, and author of the 1992 ecological alarm “World Scientists’ Warning to Humanity”) and George Woodwell (who conducted pathbreaking work in radioecology at the Brookhaven National Laboratory) as his Virgils, Schell set out to take his readers through the ecological hell of a post-nuclear landscape precisely by attempting to synthesize an integrated vision of this catastrophe. The first generation of immanent apocalypics beginning with Russell,

⁵⁷ Ibid., 151-152.

⁵⁸ My italics. Philip Handler, “Introduction” to Ibid., iv.

Arendt, and Jaspers had been converted by the belief that the “radioactive poisoning of the atmosphere” would soon mean that “all life on earth can be eliminated.”⁵⁹ As we saw in the previous chapter, this panicked sense of all-or-nothing also inflected their political thinking and lent the “antithesis between freedom and life” some of its Manichaean starkness. With *The Fate of the Earth*, Schell stands at the outset of a second, ecological generation of immanent apocalypses for whom “the power to kill life itself” came to be replaced by a new ecological awareness of the power to degrade life, to sever the connections by which life sustains life in networks of ever-growing complexity. In one of his most iconic passages, Schell describes how “a full-scale nuclear attack on the United States would devastate the natural environment on a scale unknown since early geological times,” undoing millions of years of complexly negotiated relationships between organisms in the blink of an eye. Continuing, he argued, “How far this gross simplification of the environment would go on once virtually all animal life and the greater part of plant life had been destroyed and what patterns the surviving remnants of life would arrange themselves into over the long run are imponderables; but it appears that at the outset the United States would be a republic of insects and grass.”⁶⁰ As historian David Sepkoski points out, there is nothing in Schell’s account that “could not be gleaned from more technical reports,” but Schell’s point was not to proffer some new scientific fact—something that he would not have been credentialed to do in any case.⁶¹ Instead, Schell aimed to help scientists and lay people alike to imaginatively think through what they all intuitively knew to be true: that when it came to a nuclear exchange, the combined eco-systemic effects—while in themselves too complex to be precisely foreseeable—were all but guaranteed to be worse than the sum of their parts. Even

⁵⁹ Karl Jaspers, *The Atom Bomb and the Future of Man*, 1.

⁶⁰ Schell, *The Fate of the Earth*, 65.

⁶¹ Sepkoski, *Catastrophic Thinking*, 219.

when it came to something as comparatively simple as the flensing away of the Earth's ozone layer, Schell pointed reminded readers that, while “the cause of the biological damage—increased ultraviolet radiation—would be similar everywhere, the effects would be different for each of the earth's species and ecosystems. And the effects of those effects, spreading outward indefinitely through the interconnected web of life, are not within the realm of the calculable.”⁶²

Beginning with the local effects of nuclear detonations—the devastating gamma ray burst, fireball, shockwave, and regional fallout—Schell led his readers outwards through the increasingly uncertain layers of planetary effects—global fallout, ozone depletion, some degree of cooling, and “the growing conviction among scientists that the earth, like a single cell or a single organisms, is a systemic whole, and...the fear that any large man-made perturbation of terrestrial nature could lead to a catastrophic breakdown”⁶³—with the aim of guiding them to “speculatively encounter the full complexity of human affairs and of the biosphere.”⁶⁴

Accordingly, Schell argued, “In judging the global effects of a holocaust, therefore, the primary question is not how many people would be irradiated, burned, or crushed to death by the immediate effects of the bombs, but how well the ecosphere regarded as a single living entity, on which all forms of life depend for their continued existence, would hold up. The issue is the habitability of the earth, and it is in this context, not in the context of the direct slaughter of hundreds of millions of people by the local effects, that the question of human survival arises.”⁶⁵

The overall point that Schell attempted to drive home was that, although “the view of the earth as a single system has only recently proceeded from poetic metaphor to actual scientific investigation,” the first lesson of these new findings had been the disturbing depths of human

⁶² Schell, *The Fate of the Earth*, 82.

⁶³ *Ibid.*, 92.

⁶⁴ *Ibid.*, 23.

⁶⁵ *Ibid.*, 21.

ignorance when it came to understanding how the myriad parts of this system combined to sustain it or just how far human beings could disturb it before facing catastrophic consequences. Calling into question the grim optimism of the 1975 NAS report, Schell reiterated their litany of both local and planetary ecological harms, implicitly inviting readers to intuitively synthesize combined effects that were far too complex to model, and concluding with the argument that, “considering that these consequences will all interact with one another in unguessable ways and, furthermore, are in all likelihood an incomplete list, which will be added to as our knowledge of the earth increases, one must conclude that a full-scale nuclear holocaust could lead to the extinction of mankind.”⁶⁶ Drawing these developments together (and foreshadowing other concerns that would rise to the fore by the end of the decade), Schell sought to make his contemporaries aware of, in his words,

the growing conviction among scientists that the earth, like a single cell or a single organism, is a systemic whole, and in a general way they tend to confirm the fear that any large man-made perturbation of terrestrial nature could lead to a catastrophic breakdown. Nuclear explosions are far from being the only perturbations in question; a heating of the global atmosphere through an increased greenhouse effect, which could be caused by the injection of vast amounts of carbon dioxide into the air (for instance, from the increased burning of coal), is another notable peril of this kind. But a nuclear holocaust would be unique in its suddenness, which would permit no observation of slowly building environmental damage before the full—and, for man, perhaps the final—catastrophe occurred. The geological record does not sustain the fear that sudden perturbations can extinguish all life on earth (if it did, we would not be here to reflect on the subject), but it does suggest that sudden, drastic ecological collapse is possible. It suggests that life as a whole, if it is given hundreds of millions of years in which to recuperate and send out new evolutionary lines, has an astounding resilience, and an ability to bring

⁶⁶ Ibid., 93.

forth new and ever more impressive life forms, but it also suggests that abrupt interventions can radically disrupt any particular evolutionary configuration and dispatch hundreds of thousands of species into extinction.⁶⁷

This is how, in the early 1980s, the immanent apocalypse was transformed from the all-or-nothing rapture by radioactive fallout that had haunted the figures of the 1950s into a much more uncertain awareness of the ease with which human beings might push their planetary home beyond the bounds of human habitability. The period between the 1950s and the 1980s had witnessed the mistaken promise of “universal death” by radioactive fallout reveal an unexpectedly complex field of mutually dependent processes by which the universal life of the biosphere sustained itself and the conditions of its earthly home.⁶⁸ In sum, Schell wrote, “The peril of human extinction, which exists not because every single person in the world would be killed by the immediate explosive radioactive effects of a holocaust...but because a holocaust might render the biosphere unfit for human survival, is, in a word, an *ecological* peril. The nuclear peril is usually seen in isolation from the threats to other forms of life and their ecosystems, but in fact it should be seen as the very center of the ecological crisis.”⁶⁹ With the (possible) exception of artificial superintelligence,⁷⁰ all subsequently hypothesized forms of

⁶⁷ *Ibid.*, 92.

⁶⁸ As Joseph Masco notes on the subject: “This makes the nuclear age the era in which the planet first becomes an object of comprehensive scientific study in its earth systems totality and the moment when human beings first become an existential threat to themselves. Joseph Masco, “The Age of Fallout” in *History of the Present*, Vol. 5, No. 2 (Fall 2015), pp. 137-168;153.

⁶⁹ Original italics. Schell, *The Fate of the Earth*, 111.

⁷⁰ One prominent branch of thought experiment regarding the dangers of a value ‘misaligned’ ASI would be that it either single mindedly pursues the purpose for which it was made far beyond the intentions of its creators—such as Bostrom’s half whimsical, half deadly serious image of an ASI built to optimize paperclip manufacturing converting the mass of the entire planet into paperclips—or simply finds that, whatever its purposes may be, it needs more computing power and therefore more energy and promptly proceeds to pave over the surface of the Earth in solar panels with no more consideration for human survival than human beings might have for a colony of ants when pouring the foundations for a building. For an enormously influential account of these problems, see Nick Bostrom, *Superintelligence* (Oxford: Oxford University Press, 2014).

anthropogenic existential risk have likewise been, at their core, ecological perils that terminate all earthly life not by directly killing every last living human being, but by rendering their terrestrial home uninhabitable.

By helping to shift perceptions surrounding anthropogenic existential risk from a radiological to an ecological register, *The Fate of the Earth* proved to be ahead of its time, but only just. Within weeks of Schell publishing his essays in *The New Yorker*, the atmospheric chemists Paul Crutzen and Eugene Birks released their pioneering paper “The Atmosphere after a Nuclear War: Twilight at Noon,” which examined the planetary cooling effects that might follow in the wake of a thermonuclear war. While this had been done before by the NAS study of 1975, what the earlier authors—and, somehow, every other publicly available study up until this point⁷¹—had neglected to factor in however, was the far more dramatic cooling effect that would be produced by the billowing torrents of smoke that would be produced by the firestorms of cities burning with hurricane force winds. These infernos, in turn, would create convection columns capable of carrying the ensuing debris into the upper atmosphere, where minute ash particles would linger for months above the clouds that might otherwise wash them out, blocking incoming heat and casting a pall over the surface below that might totally eliminate agriculture in the Northern Hemisphere and disrupt the photosynthesis of marine ecosystems (whose microorganisms, not trees, account for the majority of the planet’s oxygen production). The authors concluded on a note of caution, pointing out that the atmospheric effects that they had

⁷¹ In what historian Paul Edwards calls “an astonishing case of self-inflicted organizational blindness.” Daniel Ellsberg, who worked as a nuclear war planner for RAND during the late 1950s and early 1960s, notes that from early on the American military decided that it would exclude the fires that were certain to be ignited by nuclear weapons from their casualty and damage estimates. Given that the ensuing firestorms might in many circumstances wind up being the largest source of immediate local destruction following a nuclear strike, Ellsberg suggests some potentially more sinister reasons for this alarming self-blinding. See Paul N. Edwards, “Entangled histories”, 34. Daniel Ellsberg, *The Doomsday Machine*, 246-264.

identified “are quite complex and difficult to model” and hoping that this might serve as a springboard for “a more thorough analysis.”⁷² This task was taken up almost immediately by the fantastically energetic astrophysicist and prominent public face of American science, Carl Sagan, who had been a longtime opponent of nuclear weapons. Sagan seized on the opportunity to gather a team to conduct a high-profile study that could take advantage of the growing sophistication of computer climate models to simulate the climatic consequences of a 5,000-megaton thermonuclear war. The result, published in *Science* in December of 1983, was the famous study “Nuclear Winter: Global Consequences of Multiple Nuclear Explosions,” which used models developed to study the effects of volcanic eruptions to estimate a 15-25 degrees C drop in land temperatures amid the radioactive dark of the eponymous ‘nuclear winter.’ Known by the shorthand ‘TTAPS’ (an acronym formed from the authors’ last names), this landmark paper helped consolidate the shift in how the existential risk posed by thermonuclear weapons was understood, passing from a generally discredited anxiety surrounding the genetic harms of radiation to give way to a growing awareness of the complexly mediated and inherently unpredictable ecological harms that nuclear war would cause. While something like the “total pollution of the planet” by radioactive fallout would have required many tens of thousands of weapons, attempting to factor in the closely coupled atmospheric and biospheric effects of thermonuclear war suddenly required revising those numbers downwards to the low thousands (or even, under exactly wrong circumstances, the high hundreds).⁷³ Less than two years later, the intuitive synthesis that Schell performed in *The Fate of the Earth* came to be backed up by an

⁷² Paul Crutzen and John Birks, “The Atmosphere after a Nuclear War” in *AMBIO: A Journal of the Human Environment*, Vol. 11, No. 2-3 (1982), pp 114-125; 124.

⁷³ R.P. Turco, O.B. Toon, T.P. Ackerman, J.B. Pollack and Carl Sagan, “Nuclear Winter: Global Consequences of Multiple Nuclear Explosions” in *Science*, Vol. 222, No. 4630 (Dec. 23, 1983), pp. 1283-1292; 1290.

article in the world's premier scientific journal that had attempted to model some of these interactions. By doing so, the authors arrived at a new vision that permanently recast nuclear war as not merely a radiological nuisance for those not directly involved, but as instead a planetary matter of "climatic catastrophe and cascading biological devastation."⁷⁴

Always a savvy promoter, Sagan also convened a panel of roughly one hundred leading biologists to review early drafts of the TTAPS paper and prepare their own assessment to be published alongside.⁷⁵ This complementary undertaking in the life sciences came to a head with a conference held jointly in Washington D.C. and Moscow by video link unsubtly scheduled for October 31, 1983. That Halloween Paul Ehrlich summed up the view of his colleagues by pointing out how, "When many of us read Jonathan Schell's book, *The Fate of the Earth*, we were very much impressed by the moving way in which he presented the case, but I suspect that most biologists, like myself, thought it was a little extreme to imagine that our species might actually disappear from the face of the planet. It did not seem plausible from what we knew then."⁷⁶ In *The Fate of the Earth*, Schell had tried to enumerate all the potential ecological harms that might be caused by thermonuclear war, stressing both the unforeseeable interactions these would have and the fact that his exhaustive attempts were nevertheless sure to represent an

⁷⁴ Carl Sagan, "Nuclear War and Climatic Catastrophe: Some Policy Implications" in *Foreign Affairs* (Winter 1983), 259.

⁷⁵ Some would argue too savvy. For a thoughtful consideration of some of the harm that Sagan's rush to bring nuclear winter to public attention may have done to the credibility of climate science, see Jill Lepore, "The Atomic Origins of Climate Science," in *The New Yorker* (January 22, 2017). Despite attempting to secure solid scientific credentials for his findings, Sagan's own outspoken opposition to nuclear weapons led to accusations of partisanship or even propaganda. As Weart notes of the controversy that this study aroused at the time, "If you knew a person's views on nuclear disarmament, you could probably guess what the person thought of the nuclear winter prediction." Spencer Weart, *The Discovery of Global Warming, Revised and Expanded Edition* (Cambridge, MA: Harvard University Press, 2008), 140.

⁷⁶ Paul Ehrlich, "The Biological Consequences of Nuclear War" in *The Cold and the Dark: The World After Nuclear War*, Ed. Carl Sagan (New York: Norton, 1985), 58.

“incomplete list.” When Ehrlich and the other biologists added the potential for eco-systemic collapse caused by the cold and the dark to this compendium, they determined that they “could not exclude the possibility of a full-scale nuclear war entraining the extinction of *Homo sapiens*.”⁷⁷ In a policy-oriented companion article to the TTAPS paper published in *Foreign Affairs*, Sagan pointed out how popular works raising the possibility of “the extinction of the human species...such as Jonathan Schell’s *the Fate of the Earth*, have been labeled disreputable,” but could now point to the authority of roughly a hundred acutely concerned scientists convoked on both sides of the Iron Curtain to support these conclusions based on the preliminary findings of planetary ecology and the new world of intimate planetary interconnection that it had revealed.⁷⁸ One of Ehrlich’s fellow panel members—the Cornell biologist Thomas Eisner—captured the crux of this new awareness with crystalline clarity when reflecting: “I have now come to realize that the impact of nuclear war is all-encompassing and fundamentally biological...Synergisms and cascading effects are a common consequence of environmental disruptions, and tend to be unpredictable and recognizable only after the fact. What is predictable about the biological consequences of nuclear war is bad enough, but might the actual consequences be even worse? For four decades we have remained ignorant about the possibility of the nuclear winter. What else might we be overlooking?”⁷⁹

There were many potential answers to that question, but there was at least one that had already been weighing on the minds of a growing number of systems ecologists and their colleagues in planetary environmental science. Back in 1971, Commoner had taken the opportunity of his bestselling volume *The Closing Circle* to explain how GHGs such as CO₂ help

⁷⁷ *Ibid.*, 59.

⁷⁸ Sagan, “Nuclear Winter and Climate Catastrophe,” 258.

⁷⁹ Thomas Eisner quoted in “Panel on Biological Consequences” in *The Cold and the Dark*, 128-129.

to regulate planetary temperature, before warning readers: “Now that we have been burning fossil fuels and reconvertng them into carbon dioxide, the carbon dioxide concentration of the atmosphere has been rising; what effect this may be having on the earth’s temperature is now under intense scientific discussion.”⁸⁰ Meanwhile, one of Odum’s former students later recalled how, at least as far back as 1967, his mentor had begun making the crackpot prediction that “someday industrial nations would have to be subsidizing the growing of tropical forests to sequester CO₂.”⁸¹ We likewise saw in the previous section how Schell picked up on this theme as well, noting how “Nuclear explosions are far from being the only perturbations in question; a heating of the global atmosphere through an increased greenhouse effect, which could be caused by the injection of vast amounts of carbon dioxide into the air (for instance, from the increased burning of coal), is another notable peril of this kind.”⁸² However, in the post-Copenhagen era of the 2010s—when global warming ceased to be an ‘inconvenient truth’ that would compel everyone to do the right thing eventually and instead already became a present emergency that it was already too late to avoid⁸³—the *locus classicus* for an early warning about global warming has become Roger Revelle’s and Hans Seuss’ now famous⁸⁴ remarks from 1957 that “human beings are now carrying out a large scale geophysical experiment” by “returning to the atmosphere and oceans the concentrated organic carbon stored in sedimentary rocks over hundreds of millions of years” in a way that “may yield a far-reaching insight into the processes

⁸⁰ Commoner, *The Fate of the Earth*, 27.

⁸¹ “Thus a lot of his ideas that seemed so improbable in the past are considered common knowledge now,” he continued. Charles A.S. Hall, “Introduction: The Contributions of H.T. Odum to Ecology,” *Maximum Power* (1995), 1.

⁸² Schell, *The Fate of the Earth*, 92.

⁸³ For further discussion of what constitutes a ‘climate emergency, see page 10, fn. 6.

⁸⁴ But also, as far back as 1983, already considered to be well known and “often-cited.” Jesse H. Ausubel, “Historical Note” in National Research Council, *Changing Climate: Report of the Carbon Dioxide Assessment Committee* (Washington DC: The National Academy Press, 1983), 490.

determining weather and climate.”⁸⁵ However, even before this classic statement, as far back as 1938 the steam engineer G.S. Callendar had already compellingly mapped out the relationship between the industrial production of CO₂ and rising global temperatures.⁸⁶ His contributions had led to this type of planetary warming being christened the “Callendar Effect,” but only by those who did not object that this same effect had already been mapped out in detail almost a half century earlier by the Swedish chemist Svante Arrhenius, whose 1896 paper on the subject consolidated the century’s many breakthroughs in thermodynamics and related fields to calculate how much incoming heat must be retained by the atmospheric presence of CO₂ and water vapor, concluding that a doubling of atmospheric CO₂ would elevate global atmospheric temperatures by 5-6 degrees centigrade⁸⁷ (still within range of current estimates).⁸⁸

Despite these early anticipations, like planetary ecology, the study of global climate change came of age during the same watershed period from the 1950s to the 1980s. While it has long been possible to calculate the net overall temperature of the planet based on ballpark figures of energy in versus energy out (a favorite pastime of would-be geoengineers), the field of climatology as it is known today only began in earnest when breakthroughs in the mathematics of nonlinear or ‘chaotic’ systems, techniques for tackling complexity borrowed from cybernetics, new reams of planetary data gathered by far flung monitoring stations and satellites, and the advent of computer modeling transformed the intuitive art of weather prediction into an increasingly predictive science (a dramatic increase in planetary knowledge that was aided at every step by

⁸⁵ Roger Revelle and Hans Suess, “Carbon Dioxide Exchange Between Atmosphere and Ocean and the Question of an Increase of Atmospheric CO₂ during the Past Decades” in *Tellus* Vol. IX (1957), pp.18-27; 19.

⁸⁶ Paul N. Edwards, *A Vast Machine: Computer Models, Climate Data, and the Politics of Global Warming* (Cambridge, MA: MIT Press, 2010), 76-81.

⁸⁷ *Ibid.*, 73.

⁸⁸ Mark Lynas, *Our Final Warning: Six Degrees of Climate Emergency* (New York: Fourth Estate, 2021).

the tools that had been built to accommodate the hypertrophic new power embodied in nuclear weapons).⁸⁹ For many, the field of climate science—and, with it, the contemporary study of global warming—finally came of age in 1979 when the World Meteorological Organization convened a first of its kind “World Climate Conference” that gathered “experts on climate and mankind” from dozens of countries to compare models and consolidate their findings,⁹⁰ with at least one leading climatologist arguing that all the discipline has done sense has been to fill in the details and further refine the framework established at this paradigm-defining gathering.⁹¹

It was precisely these sorts of recent breakthroughs in climate modeling that had permitted the authors of the 1983 TTAPS paper to rechristen thermonuclear war a “climatic catastrophe.” Given this, it seems little wonder that when scientists looked to this new prospect for “cascading biological collapse” and wondered “what else might we be overlooking?” global warming suggested itself as an obviously undervalued concern. 1983 also saw the publication of the report by the Carbon Dioxide Assessment Committee that had been commissioned by the US

⁸⁹ From the models of fluid dynamics that von Neumann developed for the hydrogen bomb but then applied to the weather to the pathbreaking early computer that he built to run them; to the project of planetary mapping and weather prediction undertaken in order to guarantee that the bombs arrived on target to the planetary network of hyper-sensitive atmospheric monitoring stations set up in the wake of the LBT to detect rogue nuclear tests. As historian Paul Edwards points out regarding these ‘entangled histories,’ “Many of the links that connect this story seem perverse. Without nuclear weapons and fallout, we might know much less than we do about the atmosphere. Without climate models, we would not have understood the full extent of those weapons’ power to annihilate not only human beings, but other species as well.” Edwards, “Entangled histories,” 37.

⁹⁰ World Meteorological Organization, *World Climate Conference: A Conference of Experts on Climate and Mankind: Declaration and Supporting Documents* (Geneva: World Meteorological Organization, 1979).

⁹¹ In a truly excellent essay on the early attempts to raise the alarm on global warming, Nathaniel Rich recounts: “Ken Caldeira, a climate scientist at the Carnegie Institution for Science in Stanford, Calif., has a habit of asking new graduate students to name the largest fundamental breakthrough in climate physics since 1979. It’s a trick question. There has been no breakthrough. As with any mature scientific discipline, there is only refinement. The computer models grow more precise; the regional analyses sharpen; estimates solidify into observational data. Where there have been inaccuracies, they have tended to be in the direction of understatement.” Nathaniel Rich, “Losing Earth: The Decade We Almost Stopped Climate Change” in *The New York Times* (August 1, 2018).

National Research Council. This was the Reagan Era, and responsibility for writing the concluding section “Climate Change: Implications for Welfare and Policy” had been handed to the economist and nuclear strategist Thomas Schelling, whom some felt had played down the potentially dire implications of the preceding climate predictions.⁹² However, even this veteran cold warrior conceded that, although he had tried to offer a “‘calm’ assessment of the ‘foreseeable’ consequences of climate change,” this undertaking had its limits. “There is probably some positive association between what we can predict and what we can accommodate,” he wrote. “To predict requires some understanding, and that same understanding may help us to overcome the problem. What we have not predicted, what we have overlooked, may be what we least understand. And when it finally forces itself on our attention, it may appear harder to adapt to, precisely because it is not familiar and well understood. There may yet be surprises. Anticipating climate change is a new art. In our calm assessment we may be overlooking things that should alarm us.”⁹³ Here Schelling nods to the growing awareness of what historian David Sepkoski has called the “‘new catastrophism’ that took hold in mainstream science” in the 1980s after gestating since the 1950s.⁹⁴

As we saw in the previous chapter, in the nineteenth century figures such as Darwin, Lyell, and Kelvin had upended Western metaphysics by replacing the fixed order of Nature-as-cosmos that had prevailed since Aristotle with a newly dynamic understanding of Nature-as-process. Their one major point of consolation for any contemporaries struck by the ensuing sense of vertigo had been the assurance that, while “Nature is a process,”⁹⁵ it is a *very slow* process—

⁹² Ibid.

⁹³ Thomas Schelling, “Climate Change: Implications for Welfare and Policy” in National Research Council, *Changing Climate: Report of the Carbon Dioxide Assessment Committee*, 481.

⁹⁴ David Sepkoski, *Catastrophic Thinking*, 129.

⁹⁵ A.N. Whitehead, *The Concept of Nature* (Cambridge: Cambridge University Press, 1920), 53.

Lyell proposing the gradual build up and break down of geological formation across millions of years of newly discovered deep time, Darwin populating that deep time with a gradualist theory of evolution via the slow accumulation of random mutations, and Kelvin envisioning an infinite future cooling inexorably towards “a state of universal rest and death.”⁹⁶ For the century that followed, the scientific consensus had been that the great processes driving terrestrial change were uniform and linear, regular and predictable (the so-called ‘uniformitarian hypothesis’), and anyone who claimed otherwise was wrong—perhaps dangerously so.⁹⁷ As already seen, however, it was precisely the power of the hydrogen bomb to catastrophically smash the uniform unfolding of natural processes that had so alarmed Arendt and her contemporaries in the 1950s, while at the same time helping spark the “change in the fundamental arrangements of knowledge” about the dynamics of the Earth taken as a systemic whole that would issue in the broad vision of *ecological* existential risk that broke in the 1980s. Having begun to get a sense for the degree of dynamic, nonlinear interconnection at the heart of terrestrial systems, the ‘new catastrophism’ of the 1980s shattered the previous belief that only tremendous, promethean human acts could cause commensurately large disruptions to natural processes (such as the total pollution of the atmosphere by radioactive fallout leading to universal death), replacing these early fears of an all-or-nothing catastrophe with a far more nuanced awareness of the ease with which seemingly tiny, quotidian human actions—a leaking refrigerator here, an idling truck there—could ramify through these networks to cause degrees of planetary harm that might push

⁹⁶ Lord Kelvin, “On the Age of the Sun’s Heat,” *Macmillan’s Magazine*, vol. 5 (March 5, 1862), pp. 388-393; 388.

⁹⁷ As in the case of the seemingly crackpot—but briefly influential—‘catastrophic’ theories of planetary orbit put forward by Immanuel Velikovsky, whose outsider status as a ‘pseudo-scientist’ played an important role in helping consolidate the tenets of a ‘mainstream’ science in opposition. For an illuminating account of the ‘Velikovsky Affair’ and the twentieth century tussle between uniformitarianism and catastrophism, see: Michael Gordon, *The Pseudo-Science Wars: Immanuel Velikovsky and the Birth of the Modern Fringe* (Chicago: University of Chicago Press, 2012).

the whole system beyond the bounds of human survival. The ‘new catastrophism’ of the 1980s added a growing list of imminent ecological threats to the stable of horsemen waiting to unleash the immanent apocalypse by demonstrating that terrestrial processes did not always follow a slow, uniform, predictable build towards disaster, but could be driven by newly discovered systems dynamics towards “cascading biological devastation” through seemingly slight perturbations.

Above, Schell called attention to how the biological damage caused by an entirely predictable and uniform increase in incoming UV radiation would result in “the effects that would be different for each of the earth’s species and ecosystems,” with “the effects of those effects, spreading outward indefinitely through the interconnected web of life” quickly exceeding the “realm of the calculable.”⁹⁸ Similarly, the new awareness of systemic, mutually conditioning connections between life on Earth and the regulation of the other great physical processes and geochemical cycles had revealed that, although it was relatively easy to make a back-of-the-envelope calculation for how much additional incoming heat a given increase in GHGs might trap in the atmosphere, all bets were off once you began to examine the way that even minor changes might ramify throughout the system as a whole. In other words, where in the 1950s environmental hazards had been imagined as a sort of long ramp angling steadily upwards towards a cliff—the kind that you could see coming well in advance and even tiptoe right up to the edge of before turning back—the reprise of the immanent apocalypse as ecological peril in the 1980s saw this linear ramp transformed into a slippery slope whose many twists and turns could not be seen more than a few meters in advance (if that), with the chance that you might even find yourself already in doomed freefall towards cascading biological catastrophe before

⁹⁸ Schell, *The Fate of the Earth*, 82.

even realizing it (as nearly happened with bromine in the 1970s).⁹⁹

Some at the time felt that this new awareness needed a new science. Amid everything else that was happening, 1983 also witnessed NASA convene a new committee chaired by the atmospheric researcher Francis Bretherton. For those involved it had become clear that, in the words of chemist Will Steffen, “if a new science was to be founded, it would need to be based on the newly emerging recognition of Earth as an integrated entity: the Earth System.”¹⁰⁰ Three years later, the committee staged a coming out party for their new science with an elegant overview full of eye-catching images and a determined vision for how to begin to synthesize the growing mass of planetary knowledge. The authors opened by declaring:

Scientific research continues to yield fundamental new knowledge about the Earth. Studies of the continents, oceans, atmosphere, biosphere, and ice cover over the past thirty years have revealed that these are components of a far more dynamic and complex world than could have been imagined only a few generations ago. These investigations also have delineated, with increasing clarity, the complex interactions among the Earth’s components and the profound effects of these interactions upon Earth history and evolution...Our new knowledge is providing us with deeper insight into the Earth as a system. This insight has set the stage for a more complete and unified approach to its study, Earth System Science.¹⁰¹

Once again appealing to the “extraordinary burst of research findings over the past thirty years,” these newly minted Earth System scientists attempted to emphasize just how much understanding of the solid, fluid, and living processes of the Earth had not just each been transformed in their own right, but also stressing how, in their words, “All of these findings have established important connections among the components of the planet Earth and thus have

⁹⁹ More on this astonishingly near ecological miss in the Conclusion.

¹⁰⁰ Will Steffen, Katherine Richardson, Johan Rockström, “The Emergence and Evolution of Earth System Science” in *Nature Reviews: Earth & Environment*, No. 1, Vol., 1 (January 2020), pp.54-63; 56.

¹⁰¹ NASA, *Earth Systems Science: Overview* (1986), 4.

emphasized the essential unity of global processes, which are only now beginning to be studied systematically.”¹⁰² It was the ‘systematically’ that was crucial here, for while they acknowledged that “global connections among the Earth’s components began to be recognized in the last century,” it had only been with the systems and cybernetic revolution of the 1950s that the tools arose to begin to turn the phrase “everything is connected” from a truism into a research program for developing “a deeper understanding of the interactions that bind the Earth’s component into a unified, dynamical system.”¹⁰³ Along with the founding of the Santa Fe Institute in 1984, the launch of Earth System science in 1986 marked the first consolidation of a decisive shift in the fundamental arrangements of knowledge surrounding how mainstream science made sense of the terrestrial phenomena—from the slowly evolving order of the uniformitarian hypothesis to the rapid discontinuities of the new catastrophism, from rigid framework to fluid network, from predictable linearity to inherently unpredictable degrees of complexity, from Cartesian certainty to approximate knowledge, from freestanding objects to emerging relationships, from structure to process, from substance to function, and from abstract questions regarding what a thing inherently *is* towards more pragmatic concerns surrounding how a thing actively sustains itself as itself amid the continuous flux of earthly processes.¹⁰⁴

For those who were self-consciously attempting to turn this emerging paradigm into a new umbrella for studying the whole field of planetary connections, when it now came to viewing the Earth as a ‘dynamical system,’ it had become clear: “A fundamental aspect of Earth

¹⁰² Ibid., 9.

¹⁰³ Ibid., 15.

¹⁰⁴ For a quick gloss on this ongoing sea change, see Fritjof Capra and Pier Luigi Luisi, *The Systems View of Life: A Unifying Vision* (Cambridge: Cambridge University Press, 2014), 80-82. For the standout features of this new paradigm as sketched by the first gathering of the Santa Fe Institute, see David Pines Ed., *Emerging Syntheses in Science: Proceedings of the Workshops of the Santa Fe Institute* (Santa Fe: Santa Fe Institute Press, 2019).

System Science is the emphasis on an integrated view of the interactions of the lithosphere, the physical climate system (including the atmosphere, oceans, and land surfaces), and the biosphere (coupled to the other components through the biogeochemical cycles). These systems participate individually and collectively in global change on all timescales. Once change is introduced, it can propagate through the Earth System. Because of the coupling among the Earth's components, change in one component can affect the others. Because of the non-linearity of the system, change at one timescale can propagate into other temporal ranges."¹⁰⁵ In other words, at the foundation of Earth System science is the awareness that, as Arendt put it a quarter century prior, "We have begun to act into nature as we used to act into history."¹⁰⁶ However, while Arendt saw the creation of "man-made natural processes" such as "the splitting of the atom" as having "obliterated the defensive boundaries between natural elements and the human artifice,"¹⁰⁷ Earth System science was born in the attempt to consolidate the fundamental *rearrangement* of knowledge that had taken shape over the course of the previous thirty years. This was not the end of a belief in something like an order of Nature, but it did mark a paradigmatic shift in the terms in which this order came to be understood.

The passage between a static Nature-as-cosmos and a dynamic Nature-as-process had already begun to dissolve any hard and fast ontological distinctions between what was believed to be natural, necessary, and universal and what was artificial, contingent, and particular—with developments such as biopolitics and eugenics arising to attempt to take hold of the newly accessible biological life process of the human species. As we saw in the previous chapter, the hydrogen bomb further demolished these boundaries in the 1950s, not just conceptually but

¹⁰⁵ National Research Council, *Earth System Science: Overview: A Program for Global Change* (Washington DC, *The National Academy Press*, 1986), 22.

¹⁰⁶ Arendt, *Between Past and Future*, 58.

¹⁰⁷ Rachel Carson, *Silent Spring* (New York: Houghton Mifflin Books, 1962), 60.

empirically. By the early 1960s, the pioneering American environmentalist Rachel Carson reminisced at the solace she had drawn from the thought that “much of Nature was forever beyond the tampering reach of man,” noting that “it was radioactive fallout that had killed this faith.”¹⁰⁸ The mere testing of these planet-impacting weapons had caused what Carson called “the pollution of the total environment of mankind”¹⁰⁹ and even prompted public anxiety that freak weather and other natural events such as earthquakes and crop failures might be developing as a result of the total contamination of Nature.¹¹⁰ At the same time that the globally ubiquitous presence of bomb test fallout was empirically dissolving the divide between Nature and human artifice, the creation of massed thermonuclear arsenals robbed terrestrial Nature of one of its most defining features since antiquity: its natural necessity. Gone was the conviction that, while human beings might succeed in artificially bending a portion of it to their liking for a time, the natural order would inevitably snap back into place once the human pressure was removed: the stones of the buildings crumbling back to earth, the fallow fields returning to the forests, the livestock turning feral. For the first time, human beings had self-consciously acquired the ability to wreck the whole order of terrestrial Nature with the push of a button, rendering its continued existence contingent on human decision making and conferring on Nature the second order artificiality that comes from surviving on human sufferance. But, as noted earlier, one person’s universal poison is another person’s tracer. The same total pollution by radioisotope that had killed Carson’s faith in freestanding Nature gave the early explorers of the Earth System a network of glowing threads to trace as they set about mapping the connections linking all of the

¹⁰⁸ Quoted in Weart, *The Rise of Nuclear Fear*, 194.

¹⁰⁹ Carson, *Silent Spring*, 39.

¹¹⁰ Joseph Masco, *The Theater of Operations*, 87. Weart, *Nuclear Fear*, 190. See also: National Academy of Sciences, *The Biological Effects of Atomic Radiation: Summary Report* (Washington DC: The National Academy Press, 1960), 41. Henry Wexler et al, “Meteorological Aspects of Atomic Radiation in *Science* Vol. 124, No. 3212 (June 1956), pp.105-112; 111.

planet's processes into a single systemic whole. Doing so, they discovered not merely that human beings had “obliterated the defensive boundaries between natural elements and the human artifice” through atomic testing, but that there was virtually no collective human activity that did not cause appreciable effects cascading across these systemic connections.

As used in this general context, “A system is simply a bounded set of interacting, interdependent parts linked together by exchanges of energy, matter, and/or information.”¹¹¹ From a cybernetic systems perspective, it was being discovered that every entity consisted of a more or less closely coupled relationship between system and environment: from the evolutionarily alien mitochondria housed within every human cell to trillions of bacterial cells that make the human body home as symbionts to the homes that human beings build for themselves in social communities to the ecosystem that nestles them to the great biogeochemical cycles that sustain each ecosystem and outwards towards the Earth System, Solar System, and beyond.¹¹² Within this web, one can still certainly try to differentiate between natural and artificial phenomena and between what is human-caused and what would have arisen without human intervention—and there may even be crucially important reasons to try and do so—but the primary point to note here is that, from a systems paradigm, any distinction drawn between Nature and artifice arises as a heuristic device adopted for a specific purpose rather than the ontological foundation for explaining existence (why some natural things are or recur forever

¹¹¹ Braden Allenby and Daniel Sarewitz, *The Techno-Human Condition* (Cambridge, MA: MIT University Press, 2011), 205, fn. 1.

¹¹² On this nesting of systems/environments that characterizes life from the sub-cellular to the planetary scale, Capra and Luisi observe: “An outstanding property of all life is the tendency to form multileveled structures of systems within systems. Each of these forms a whole with respect to its parts while at the same time being a part of a larger whole. Thus, cells combine to form tissues, tissues to form organs, and organs to form organisms. These in turn exist within social systems and ecosystems. Throughout the living world, we find living systems nesting within other living systems.” Capra and Luisi, *The Systems View of Life*, 64-65.

while other human built things begin to fall apart the moment they are finished). By placing human beings at the center of a crease in existence, the formerly defining distinction between Nature and artifice could not help but be both anthropocentric and humanistic—always on the lookout for identifying the uniquely human essence and ‘specific difference’ that permitted human beings alone to diverge from Nature and create their own temporary enclaves of human agency and freedom. From a systems view, by contrast, there simply is no center for human beings to occupy (Figure 3.3). Here, it no longer makes sense to attempt to define the essence that permits human beings to separate from Nature: both because they are continuously coupled to the whole and because, like every other system, any lingering ‘essence’ of the human is not to be found in isolation, but instead in the way that every human system processes matter, energy, and information to sustain itself as itself in conjunction with everything else.

For the first Earth System scientists, there were still compelling reasons to attempt to differentiate between human and nonhuman drivers of various planetary processes, but this distinction had now been downgraded from a cornerstone of Western ontology to a question of research methodology. With what may have been a nod to Revelle and Seuss, the NASA committee described the central “challenge to Earth System science” as being: “To develop the capability to predict those changes that will occur in the next decade to century, both naturally and in response to human activity. This challenge presents us with an unparalleled opportunity. Humankind is perturbing a responsive, dynamic system. By examining the Earth’s response to that perturbation, we may be able to determine the fundamental physics, chemistry, and biology of the system itself.”¹¹³ When the AEC established its Environmental Sciences Branch in the 1950s, it had been with the aim of establishing “ecological base lines and the accumulation of

¹¹³ NASA, *Earth Systems Science*, 27.

ecological information as tools with which to solve the inevitable problems the ‘Technological Age’ would bring.”¹¹⁴ Three decades later, the scientists who were attempting to make sense of this growing wealth of data had discovered that “global changes induced by human activity” are not only “difficult to distinguish from those arising from natural processes occurring on the same timescale,” but that they could not *accurately* model the current dynamics of the Earth System without taking the collective actions of human beings into account.¹¹⁵ Instead, they argued that, although “human-induced changes are difficult to assess and measure accurately, it is already evident that they are playing a role in shaping present and future global conditions.”¹¹⁶ As the studies of the past thirty years had shown, models for understanding global-scale change in the fluid and biological Earth simply could not account for contemporary conditions without factoring in “the presence of human activity as a major inducer of change.” For the authors, this meant that from now on “humanity must live with the results of change from both anthropogenic and natural factors.”¹¹⁷ It is important to note, however, that as we saw above with the systems ecologists Odum and Common and as the authors of the report themselves stressed, they were not so much breaking new ground as attempting to consolidate and integrate several decades’ worth of paradigm shifting discoveries.¹¹⁸

¹¹⁴ John Wolf, AEC, “Forward” to *A Tropical Rainforest* (1970), iii.

¹¹⁵ NASA, *Earth Systems Science*, 26.

¹¹⁶ *Ibid.*, 12.

¹¹⁷ *Ibid.*, 17.

¹¹⁸ Further anticipating precisely these points, the pioneering climate scientist William Kellogg had argued the following at an important interdisciplinary conference on the atmosphere organized by Margaret Meade a decade earlier: “We know that there are many nonlinear interactions (where the behavior of the whole is not necessarily the sum of the contributions of the parts) within the system, often referred to as “feedback mechanisms,” and our current climate models do not yet include all the important ones....The important point to bear in mind is that *mankind surely has already affected the climate of vast regions, and quite possibly of the entire earth*, and that its ever escalating population and demand for energy and food will produce larger changes in the years ahead.” William Kellogg, “The Atmosphere and Society” in *The Atmosphere: Endangered and Endangering* (1975), 96.

To conclude, the aspiring Earth Systems scientists declared: “The people of the Earth are no longer simple spectators to the drama of Earth evolution but have become active participants on a worldwide scale, contributing to processes of global change that will significantly alter our habitat within a few human generations. In some cases, such as the depletion of the Earth’s energy and mineral resources, the effects of human activity are obvious and irreversible. In other cases, such as the alteration of the atmospheric composition, the processes of change are more difficult to document, and their consequences harder to foresee.”¹¹⁹ Nevertheless, the NASA committee of newly self-styled Earth System scientists decided to take a crack at offering a model for how the atmospheric composition of the Earth was currently being both regulated and disrupted. The result was the iconic “Bretherton Diagram” (Figure 3.3) named after the committee’s chair, which they presented in both a more comprehensive schematic and a simpler version designed for the purposes of public instruction. The box on the right labeled ‘Human Activity’ served as their catch all for the sum total of everything that every human being did as an inextricably participant component of the Earth System, from the respiration of CO₂ by someone in a persistent vegetative state up through the stokers at a coalfired power plant. The net result, they warned, is that “human activity is now causing significant changes on a global scale within the span of a few human generations. The burning of fossil fuels, for example, is injecting carbon dioxide into the atmosphere at unprecedented rates.”¹²⁰ It is this whimsically shaded box encompassing the whole of ‘human activity’ that would later become the Anthropos of the Anthropocene—the sum total of human activities.

¹¹⁹ Ibid., 5.

¹²⁰ Ibid., 10.

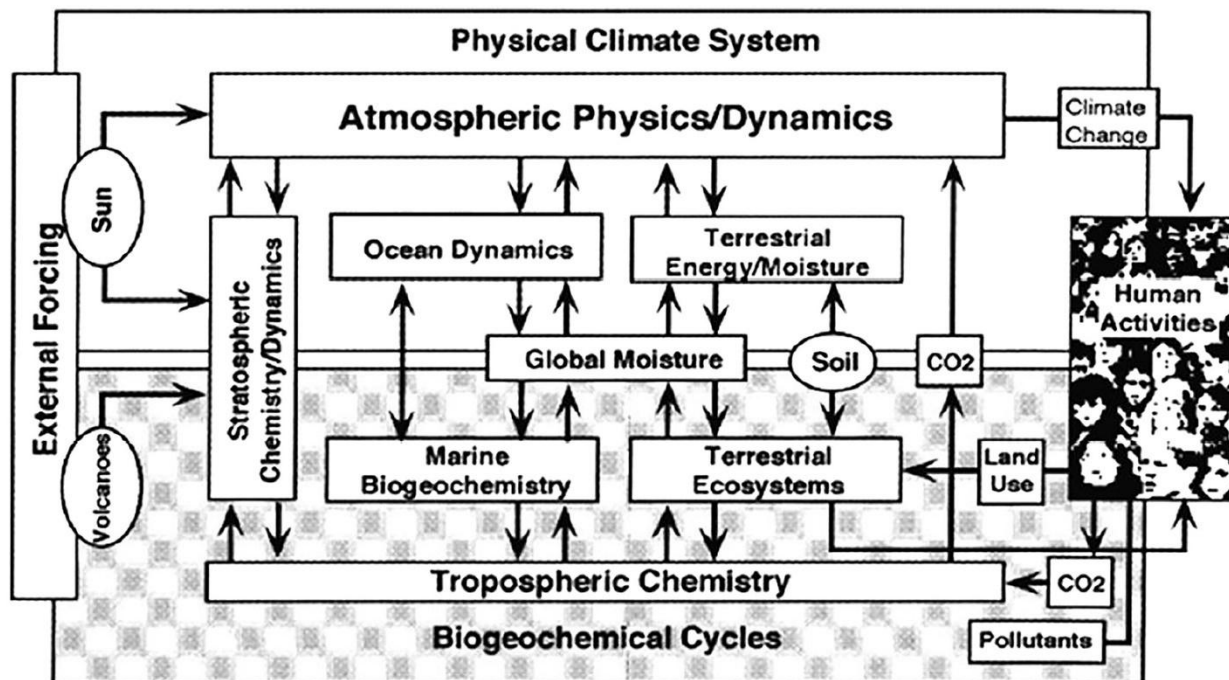


Figure 3.3: The “Bretherton Diagram” (1986)

Assembled by the NASA committee responsible for launching Earth systems science and named after its chair, the applied Mathematician Francis P. Bretherton, this diagram represents one of the first rough sketch to attempt to capture the major forces driving today’s Earth system.¹²¹

Above, the *Anthropos* reemerges not as an essentializing attempt to define the human or a totalizing effort to explain the ecological crisis as the product of some tragic flaw in human nature. Rather, the totality of the *Anthropos* is introduced into Earth System science in recognition of the simple fact that *the models of the Earth System’s functioning do not work without taking the sum total of human activities into account*. We will return to this point in the conclusion, where I argue that those who take the central import of the ‘Anthropocene’ to be the definition of ‘humanity’ it entails risk missing the political consequences almost completely. Rather, the *Anthropos* of the Earth Systems science Anthropocene does not make any substantial claim regarding what humankind as a whole essentially *is*, but rather registers the disturbing realization that no aspect of the Earth System can be fully understood without taking into

¹²¹ Image in the public domain. Reproduced from NASA, *Earth System Science Overview*, 19.

account what humankind as a whole collectively *does*. This may seem like a minor point, but as I highlight in the conclusion, it is this basic misunderstanding that fuels the mania for renaming the Anthropocene and distracts attention away from the long-ignored fact that, by becoming a potentially deciding component of many planetary systems, human beings have arrogated the power to kill, if not life itself, then at least all biologically human life.

At present, however, let us return to Schell and the pioneering work he accomplished as one of the first political theorists to attempt to make sense of this bewildering degree of interconnection. I hope that by now it should be clear that, while van Munster and Sylvest are slightly anachronistic in claiming that “Schell’s *The Fate of the Earth* was among the first books to draw on and popularize insights from Earth System science,” their overall point is substantially correct, with Schell’s attempts to rethink ‘the fate of the Earth’ as a ‘systemic whole’ simply placing him in a prominent current that was quickly becoming mainstream.¹²² Having offered a bit of biographical detail and situated Schell’s work within the rapidly history of planetary science, let us now turn to examine several features of Schell’s political contribution offered from within this emerging paradigm, with a particular eye to the way that he remaps some of Arendt’s most important contributions to the immanent apocalypse onto this newly unfolding ecological terrain.

¹²² van Munster and Sylvest, “Nuclear Weapons, Extinction, and the Anthropocene,” 2.

“When we turn from extinction, which silences us with its nothingness, to the abundance of life, we find ourselves tongue-tied again, this time by the fullness of what lies before our eyes. If death is one mystery, life is another, greater one. We find ourselves confronted with the essential openness, unfathomability, and indefinability of our species. We can only feel awe before the mystery that both is what we are and surpasses our understanding. Without violating that mystery, we can perhaps best comprehend the obligation to save the species simply as a new relationship among human beings.”
 —Jonathan Schell, *The Fate of the Earth* (1982)¹²³

II. SOVEREIGNTY, NATALITY, LOVE

Arendt once praised Jaspers as being, in every respect, “the only successor Kant has ever had.”¹²⁴ What follows makes a similar claim for Schell, who I believe can truly be said to be the only successor that Arendt has ever had—at least in her capacity as immanent apocalyptic. In one of the last articles he would publish during his lifetime, Schell called attention to what he had found to be “a conspicuous gap” in the work of Hannah Arendt who, he observed, had “reflected deeply and powerfully on the nature of totalitarianism, imperialism, nationalism, antisemitism, and almost every other horror and vexation of the twentieth century that might be mentioned, yet she devoted no sustained attention to nuclear arms.”¹²⁵ The previous chapters reveal that this was a mistaken impression on Schell’s part, but also one that was easy to make. Arendt did indeed devote sustained attention to nuclear weapons, but it was a furtive form of attention; the kind that keeps a coiled menace always in the corner of one’s eye while seldom staring at it directly. For his part, Schell found that, “although Arendt never directly addressed the nuclear question in a public work, yet in reflecting on this question, I have always found her work more suggestive and invaluable than any other thinker’s.”¹²⁶

¹²³ Jonathan Schell, *The Fate of the Earth*, 174.

¹²⁴ Arendt, *Men in Dark Times*, 74.

¹²⁵ Jonathan Schell, “In Search of a Miracle: Hannah Arendt and the Atom Bomb” in *Politics in Dark Times: Encounters with Hannah Arendt*, Ed. Seyla Benhabib, (Cambridge: Cambridge University Press, 2010), 247.

¹²⁶ Jonathan Schell, “A Politics of Natality” in *Social Research*, Vol. 69, No. 2 (Summer 2002), pp.461-571; 461.

Schell's writings reveal him to be more of an intuitive than an analytic thinker. Although he seems to have been constitutionally disinclined towards the kind of fussy, fine-grained reconstruction of Arendt's engagement with the hydrogen bomb presented in this study, he nevertheless clearly recognized the conspicuous compatibility between Arendt's post-1953 theoretical innovations and the 'politically modern world that was born with the first atomic explosions' and 'against whose background' *The Human Condition* had been written.¹²⁷ As we have already seen, Jaspers—who had become well aware of how large the implications of thermonuclear weapons loomed in his friend's thinking—could enthuse upon reading her study: "What appeals to me so strongly in this book is that the things you explicitly state you will *not* talk about (right at the beginning and repeatedly thereafter) exert such a palpable influence from the background."¹²⁸ Absent this awareness, Schell nevertheless likewise pinpointed this arresting but oblique remark from the prologue to *The Human Condition*, noting, "This passage expressed precisely my experience with Hannah Arendt and the bomb: She would not address it directly, but her work would provide a kind of intellectual foundation for doing so."¹²⁹ Beginning in the 1980s, Schell would proceed to build a remarkably cogent, urgent, and humane politics of the immanent apocalypse on this foundation, combining Arendt's much-discussed 'love of the world' with care for the fate of the Earth as a systemic whole.

Schell did not enjoy Jaspers' privilege of spending several summers immersed in deep conversations about the atom bomb with Arendt in Basel. He was, however, granted the opportunity to ask her about this 'conspicuous gap' in her writing in passing. As he wryly recalls, "I once had occasion, at a conference in Washington in the early 1970s, to ask her directly why

¹²⁷ Arendt, *The Human Condition*, 6.

¹²⁸ Karl Jaspers to Hannah Arendt, December 1, 1960 in *The Arendt-Jaspers Correspondence*, 407.

¹²⁹ Schell, "In Search of a Miracle: Hannah Arendt and the Atomic Bomb," 248.

she had avoided the nuclear subject. She answered, in the emphatic, sharply articulated, heavily accented English that was all her own, ‘You do it! You have it in your bones.’ Her ‘you’ was the plural one, directed to my generation, which does literally have nuclear contamination in its bones, in the form of the strontium-90 deposited by fallout from nuclear tests.”¹³⁰ As we saw earlier with the case of Commoner, Odum, and other early radioecologists, this strontium-90 did not just make its way into the baby teeth of baby boomers, but came to work its slow way through whole ecosystems and the great chemical cycles, tracing previously unfathomable degrees of planetary interconnection as it went. In other words, not only did Schell have bits of the bomb tests in his bones, but he became one of the very first to develop a politics of the immanent apocalypse that took the newly constituted Earth system as its context. Here, I aim to show how Schell’s engagement with the interconnected planetary conditions of biological existence that permit him to develop one way of resolving the ‘antithesis between freedom and life’ in a way that permits him to avoid the alternative tendencies towards either quietism or extremism that defined the first generation of immanent apocalyptics. What follows proceeds by outlining three mutually supporting structures that Schell built on Arendt’s intellectual foundation: an ecological elaboration of her critique of sovereignty, a refinement of her distinction between power and violence, and a reappraisal of the political significance of natality. Let us take these topics in order, beginning with the fate of the sovereign.

For the first several decades following the immanentization of the apocalypse, most political theorists who ventured to tackle the paradoxes and potentially insuperable antitheses never got beyond the obsolescence of sovereignty. Schell, by contrast, stands out for making this *his point of departure*. Much like Arendt, Schell detected an air of bad faith in the way that the

¹³⁰ Ibid.

political consequences of nuclear annihilation were being discussed. As we saw earlier, with Arendt this had taken the form of accusing her contemporaries of advocating either freedom at the cost of life or life at the cost of freedom without ever facing the fact that the advent of the totalitarian concentration camp system and the invention of the hydrogen bomb had introduced a new kind of radical evil: a politically modern world where, as quoted in Chapter One, “there are neither political nor historical nor simply moral standards but, at the most, the realization that something seems to be involved in modern politics that actually should never be involved in politics as we used to understand it, namely all or nothing—all, and that is an undetermined infinity of forms of human living-together, or nothing, for a victory of the concentration-camp system would mean the same inexorable doom for human beings as the use of the hydrogen bomb would mean the doom of the human race.”¹³¹ Schell, by contrast, seems to have rightly suspected that this very sense of ‘all or nothing’ lurking behind the antithesis between freedom and life might itself be part of the trap that Arendt had attempted to avoid—a legacy of the way that sovereignty had come to seem almost synonymous with ‘the political’ as a whole.¹³² He in fact quotes precisely this passage about the fateful appearance of ‘all or nothing’ in the second edition of *Origins* to make the point that there must be something askew in the political perspective of those who seem prepared to equate the permanent biological annihilation of the human species with the reduction of the free plurality of the world’s peoples to the slavish subjects of totalitarian world domination.¹³³

¹³¹ This passage was added to the second 1958 edition. Arendt, *Origins*, 572.

¹³² An argument famously advanced by the German jurist (and erstwhile Nazi legal theorist) Carl Schmitt, who argued that ‘politics’ adjudicates all those matters over which people might otherwise be prepared to kill, that this killing only takes place under the exceptional circumstances when normal political means are suspended and replaced by war, and that it is the sovereign who decides when politics ends and war begins, thereby making sovereignty structurally indissociable from politics. Schmitt, *The Concept of the Political*, 38.

¹³³ Jonathan Schell, *The Unconquerable World in The Fate of the Earth, The Abolition, The*

It is a testament to Schell's depth as a political thinker that he did not try to dodge the choice between freedom and life by arguing that 'slavery will not be so bad, man will not change his nature, freedom will not vanish from the earth forever,' but instead dug directly into the question of why it had always assumed that any form of world political organization must necessarily be sovereign. Rather, for him it became clear that sovereignty represents "the conceptual crystallization of an all-or-nothing trap....That was why at the birth of the concept of sovereignty its two inseparable defining principles were complete reliance upon the sword and indivisibility....Although sovereignty is now defended as the guarantor of the plurality of states, originally it was diversity's enemy. It was the instrument of a radical simplification of politics, reducing the array of political actors to subjects on the one side and a sovereign on the other."¹³⁴

To view political sovereignty as the guarantor of freedom, Schell contends, was to already be searching for a way out from *inside* the trap. It made sense that the principle that freedom can only be guaranteed through the undivided exercise of violence would have engrained itself in European political thought, for the formation of states during the early modern period had been a matter of 'adapt or die' during several centuries of unremitting conflict that eventually issued in the Westphalian 'system of sovereignty' built on "the apparently indissoluble connection between sovereignty and war. For without sovereignty," he observes, "it appeared, peoples were not able to organize and launch wars against other peoples, and without war they were unable to preserve their sovereignty from destruction by armed enemies. Indeed, the connection between sovereignty and war is almost a definitional one—a sovereign state being a state that enjoys the

Unconquerable World (New York: Library of America, 2020), 560-569.

¹³⁴ Ibid., 693-694. On the subject of sovereignty, what follows ranges across *The Fate of the Earth* (1982), *The Abolition* (1984), and *The Unconquerable Word* (2003), all of which I take to be developing the same original insight that Schell came to articulate with increasing clarity over the course of two decades.

right and the power to go to war in defense or pursuit of its interests.”¹³⁵ From here, the very same sovereign prerogative that once scythed down the whole thicket of overlapping freedoms in pre-modern Europe had entrenched itself with the equation: one people, one state, on territory. “This is the formula for national sovereignty,” Schell explained. “For self-determination is nothing but sovereignty under conditions of democracy. ‘National sovereignty’ means that the people, through the agency of the state, justifiably reject any interference in their affairs on their territory. What the state may do to its own people—or what the majority of its people may do to some minority among them—is solely their own business and no one else’s. The solution perfectly fits—and no by accident—the demands of military planning... Under the name of national sovereignty, the absolutism of kings became the absolutism of peoples.”¹³⁶ And from the absolutism of peoples, in turn, all that remained was to discover the life processes of the populations these peoples comprised to arrive at the thanatopolitics of biological extermination that had bled the first half of the twentieth century white.¹³⁷

This sort of mistaken association between sovereignty and freedom, having already proven disastrous on its own terms, reached the apex of its absurdity following the arrival of thermonuclear weapons. Now, the nation state discovered that “in order to protect its national sovereignty it must put the survival of mankind at risk,” falling into what felt like “a trap from which there is no escape as long as nations possess arsenals of nuclear weapons.”¹³⁸ This trap, Schell argued, was the logic of ‘deterrence’ that promised to keep all the familiar political structures from before the birth of Arendt’s ‘politically modern world’ in place by using the threat of nuclear annihilation to nullify the threat of nuclear annihilation via the promise of

¹³⁵ Schell, *The Fate of the Earth*, 187.

¹³⁶ Schell, *The Unconquerable World*, 625.

¹³⁷ Schell, *The Fate of the Earth*, xxii-xxiv; xxxvii-xxxix.

¹³⁸ *Ibid.*, 216.

mutually assured destruction. And yet, while deterrence theorists might argue that it was *they* who truly cared about human survival and had guaranteed it by finding a way to use the power of nuclear weapons to cancel the power of nuclear weapons—by maintaining the ‘strategic stability’ of a well-calibrated balance of terror—there seemed to be something off about these claims. “If human survival had been the world’s overriding goal from the time the nuclear threat first presented itself,” Schell observed, “and *not* to use nuclear weapons had really been the dominant consideration in nuclear policy—that is, if people had been ready to risk or sacrifice their particular ways of life for the sake of life itself (not their individual lives but the survival of the species)—then they would have at least seriously considered either disarming unilaterally or establishing world government, or doing both.”¹³⁹ Instead, efforts such as the Baruch Plan (for consolidating nuclear power under a single authority) had been conducted in less than good faith,¹⁴⁰ giving rise to the United Nations as what Schell called “the empty husk of irresolute good intentions” in a “world that in fact chose the course of attempting to refashion the system of sovereignty to accommodate nuclear weapons.”¹⁴¹

National sovereignty seemed to have become a sort of addiction that might prove fatal to the human species as a whole if those who still enjoyed the trappings of sovereign power did not surrender their death grip. Schell’s diagnosis of this political pathology was that “the nuclear powers do *not*, as the statesmen so often proclaim, possess nuclear weapons with the sole aim of preventing their use and so keeping the peace; they possess them also to defend national interests and aspirations—indeed, to perpetuate the whole system of sovereign states.”¹⁴² Within this

¹³⁹ Jonathan Schell, *The Abolition in The Fate of the Earth and The Abolition* (Stanford: Stanford University Press, 2000), 314.

¹⁴⁰ For an interesting discussion of this point, see Bertrand Russell, *Has Man a Future* (1961), 28-29.

¹⁴¹ Schell, *The Fate of the Earth*, 194.

¹⁴² *Ibid.*, 209.

revamped system of sovereignty it had further become clear that, as he put it, “People do not want deterrence for its own sake; indeed, they hardly know what it is, and tend to shun the whole subject. They want the national sovereignty that deterrence promises to preserve. National sovereignty lies at the very core of the political issues that the peril of extinction forces upon us. Sovereignty is the ‘reality’ that the ‘realists’ counsel us to accept as inevitable, referring to any alternative as ‘unrealistic’ or ‘utopian.’”¹⁴³ The grim result of all this had been the continuous triumph of the self-styled realists and the ongoing continuation of the “peril of extinction [as] the price that the world pays not for ‘safety’ or ‘survival’ but for its insistence on continuing to divide itself up into sovereign nations.”¹⁴⁴

For Schell, the crux of the problem is that menacing the species annihilation in order to guarantee of a people’s sovereign freedom is not even a Faustian bargain, but flawed in its basic premises. In terms reminiscent of Arendt on this point, he observes how, “The underlying *human* question that the invention of nuclear weapons confronts us with is whether we will live or die as a species, but the underlying *political* question, which must be tackled before the human question can be favorably resolved, is how disputes among nations are to be handled in a world in which war has been spoiled as an instrument of state policy. Nuclear weapons are radical biologically and spiritually because they threaten our species with extinction, but they are radical politically because they have spoiled war.”¹⁴⁵ What did Schell mean by this wonderful phrase ‘spoil war’? Simply that, while it might often be said that nuclear weapons had “made war obsolete,” this was a misnomer. For obsolescence, as Schell pointed out, “occurs when a means to some end is superseded by a new and presumably better means.”¹⁴⁶ Instead, with the immanentization of the

¹⁴³ Ibid., 218.

¹⁴⁴ Ibid., 210.

¹⁴⁵ Schell, *The Abolition*, 243. See also 286.

¹⁴⁶ Schell, *The Fate of the Earth*, 193.

apocalypse, war had simply ceased to be able to perform the function for which it had been believed to be indispensable. With the retrospective clarity of an owl taking flight at dusk, Schell saw more acutely than any of the prior immanent apocalypics what war had been to sovereignty and what it could no longer be, writing,

Never has a single technical invention had a more sudden or profound effect on an entrenched human institution than nuclear weapons have had on war. For war was a paradoxical freak of evolution: a creature that depended for its survival on that unsung virtue of arms, their weakness—without which war's critical event, its gift to politics, defeat, could not occur. But human weakness, in the twentieth century, proved a dwindling asset. Like clean air, rain forests, stratospheric ozone, and passenger pigeons, it was being steadily depleted by technical progress. In July of 1945, it ran out. The logic of total war had carried its practitioners to the brink of a destination, the far side of human existence, to which the logic of politics could never follow. For politics was a human activity, and in the post-nuclear landscape there might be no human beings. The bomb revealed that total war was not an everlasting but a historical phenomenon. It had gone the way of the tyrannosaurus rex and the saber-toothed tiger, a casualty not of natural but scientific evolution, whose new powers, as always, the war system could not refuse. Its day was done.¹⁴⁷

Looking back on war, it became clear biopolitical exterminations and twentieth century total war targeted at killing the life processes of populations had been aberrations in a practice whose ultimate aim was not killing but domination, not annihilation but the production of 'helplessness' in the defeated with 'weakness' its essential ingredient. With the advent of massed thermonuclear weapons, this ability to be made weak went out the window. If ever pushed too far, the nuclear armed sovereign could always, Samson-like, just bring the whole system of sovereignty crashing down on everyone's heads in a panicked, petulant, or even entirely

¹⁴⁷ Schell, *The Unconquerable World*, 414.

accidental reaction to imminent defeat and, in so doing, compound the end of one people's cherished way of life with the destruction of most complex earthly life. The resulting insight for Schell was that "violence can no longer break down the opposition of the adversary; it can no longer produce victory and defeat; it can no longer attain its ends. It can no longer *be war*."¹⁴⁸ This was what it meant to 'spoil war,' to rob it of its sovereign function of producing weakness and imposing decision to resolve otherwise insuperable disputes.

As Schell has been among the few political theorists to realize, the upshot of the spoiling of war has been that, as he puts it, "There is thus no need to 'abolish war' among the nuclear powers; it is already gone. The choices don't include war any longer. They consist now of peace, on the one hand, and annihilation, on the other. And annihilation—or 'assured destruction'—is as far from being war as peace is, and the sooner we recognize this the sooner we will be able to save our species from self-extinction."¹⁴⁹ In other words, the 'spoiling of war' had introduced a new situation far weirder than those who ignored the functional obsolescence of sovereignty could imagine. As final political arbiter, "war has gone out of existence without leaving behind any means at all—whether superior or inferior—to that end"—being 'spoiled' not by any deliberate design by anarchists, pacifists, one-worlders, or Kantian liberals, but simply by the scientific creation of weapons too large to be safely used within the confines of human beings' planetary home.¹⁵⁰ The irony of deterrence theory—and the system of quasi-sovereignty it sanctions—has been that, by relying on the guarantee of mutually assured destruction, it has in effect melded all the world's nuclear arsenals into a single doomsday machine wired into control systems in a half dozen different countries. Put another way, the architects of the post-sovereign

¹⁴⁸ My emphasis. Schell, *The Fate of the Earth*, 191.

¹⁴⁹ *Ibid.*, 193.

¹⁵⁰ *Ibid.*

stalemate that now enters into its seventh decade “have centralized the means of violence while leaving the decision-making decentralized—in effect, delegating to each member of the community a veto power over the continued survival of the species. It is no overstatement to say that if any society organized its affairs in this way, giving to each citizens the power to kill all the others, it would be regarded as deranged.”¹⁵¹ We will return to this matter in conclusion when we turn to ask what it might mean to face the Anthropocene not as apocalyptic *ingénue* but as the inheritors of a great derangement who have long since learned to live under what might otherwise seem like utterly intolerable conditions of total vulnerability to arbitrary, world-ending violence for every minute of their lives.

What then to make of the spoiling of war and the functional obsolescence of sovereignty? One of the most remarkable things about Schell as immanent apocalyptic is that not only did he succeed in staring unblinking into the nihilating void of nuclear death without psychic shielding for so long,¹⁵² but that he did so without succumbing to either the white hot mania or the black depression that plagued many of the immanent apocalyptics.¹⁵³ Like Arendt and Foucault before him, Schell embodied Deleuze’s dictum that “there is no need to fear or hope, but only to look for new weapons.”¹⁵⁴ In this, Schell bears more than a passing resemblance to that other great

¹⁵¹ Ibid., 216.

¹⁵² Of the kind described with enduring wit and penetrating insight by Carol Cohn in her classic essay: “Sex and Death in the Rational World of Defense Intellectuals” in *Signs*, Vol. 12, No. 4 (Summer 1987), pp. 687-718.

¹⁵³ Russell recounts how, as he waited for the hydrogen bomb to drop, “My private thoughts meanwhile were more and more disturbed. I became increasingly pessimistic and ready to try any suggested escape from the danger. My state of mind was like a very much exaggerated nervous fear such as people are apt to feel while a thunderstorm gathers on the horizon and has not yet blotted out the sun. I found it very difficult to remain sane or to reject any suggested measures.” Russell, *Autobiography*, Vol. 3, 18-19. Upon seeing Anders for the first time after his immanent apocalyptic turn in 1961, Arendt recounted how “he has really changed, not that he looks so much older—although his hair has become cotton white— but he has deteriorated in some *undefinable* way, his hands are completely crippled, he is very thin, very neurotic.” Arendt, *Between Four Walls*, 375.

¹⁵⁴ Deleuze, “Postscript on the Societies of Control,” 4.

American political pragmatist, John Dewey, particularly in his conviction that, ultimately, “If, given the world’s discouraging record of political achievement, a lasting political solution seems almost beyond human powers, it may give us confidence to remember that what challenges us is simply our extraordinary success in another field of activity—the scientific. We have only to learn to live politically in the world in which we already live scientifically.”¹⁵⁵ However, for Schell this wasn’t so much an unalloyed faith in the power to science to solve the problems it had created, but rather an awareness that while science had precipitated an unprecedented crisis in political thought by spoiling war, it had also provided a new set of resources for establishing a different approach to politics on a planet where war could no longer always serve as the final arbiter. For Schell, the only way out was through. Rather than reflexively recoil from ‘biopolitics’ or wish that the all-consuming blob that is the human life process could be banished from the public sphere, he delved deeper into life itself to ask what it might mean to begin to try to live politically in the mutually-sustaining complex of interconnections of an Earth System that was just then taking shape scientifically.

Had Schell stopped at offering a sweeping critique of post-nuclear sovereignty and deterrence theory, he might rightly be remembered as one of the most articulate critics to arise during the ‘Nuclear Freeze’ campaigns of the early 1980s.¹⁵⁶ What makes Schell a figure of immediate contemporary importance, however, is the way that he directly grounded these critiques in the fundamental rearrangement of knowledge that was giving rise to a new awareness of the Earth not merely as an abstractly interconnected whole, but as a “a unified, dynamical system.”¹⁵⁷ As previously foreshadowed with Arendt and Foucault, this new arrangement of

¹⁵⁵ Schell, *The Fate of the Earth*, 108.

¹⁵⁶ This is the sense in which George Kateb praises him in *The Inner Ocean: Individualism and Democratic Culture* (Ithaca: Cornell University Press, 1992), 108-109.

¹⁵⁷ Schell, *The Fate of the Earth*, 15.

knowledge carried as its correlate a very different understanding of how power is exercised: not as some sort of fixed quantity that resides with the powerful to be used at their pleasure, but as a fluid quality that arises in the continually renewed tangle of relationships between people and things. With the benefit of hindsight, it becomes clear that this idea that power is fundamentally relational has recurred continuously throughout the whole history of Western political thought.¹⁵⁸ It is equally clear, however, that these many important antecedents come together in a newly powerful synthesis during the ‘Cybernetics moment’ of the 1950s,¹⁵⁹ giving rise to both the creation of the computer networks that have remade the fabric of human life and the discovery of the ecological networks that continue to reshape ideas regarding what constitutes ‘human life’ both singly and collectively—accelerating the aforementioned transition from rigid framework to fluid network, from structure to process, from substance to function, from freestanding objects to emerging relationships, and from abstract questions regarding what a thing inherently *is* towards more pragmatic concerns surrounding how a thing actively sustains itself as itself amid the continuous flux of earthly processes. It was this ‘change in the fundamental arrangements of knowledge’ that Arendt had picked up on and begun to propagate herself, having by 1960 already clearly come to see how a whole “world of relationships most certainly does not arise out of the strength or energy of the individual, but rather out of the many, and it is out of their being together that power arises, a power that renders even the greatest individual strength powerless.”¹⁶⁰ She in turn used this basic insight to ground the highly influential dichotomy established in “On Violence” between what she identified as an instrumental, fundamentally non-political capacity for violence (which, because it is mediated by the instruments of weapons,

¹⁵⁸ For a quick tour of some of these ‘systems thinkers’ *avant la lettre*, see Capra and Luisi, *The Systems View of Life*, 19-59.

¹⁵⁹ Kline, *The Cybernetics Moment*. See also: Beniger, *The Control Revolution*, 58-68.

¹⁶⁰ Arendt, *The Promise of Politics*, 162.

can gather cobwebs in warehouses until it is ready to be used by as few as one person or even fully autonomously) and a *power* that corresponds to the specifically political “human ability not just to act but to act in concert”—that is, a “power that is never the property of an individual [but] belongs to a group and remains in existence only so long as the group keeps together.”¹⁶¹ Swimming in the same currents, Foucault added a decade later that power “needs to be considered as a productive network that runs through the whole social body, much more than as a negative instance whose function is repression,”¹⁶² because in fact “power relations are rooted in the whole network of the social.”¹⁶³ Schell directly develops this recent tradition of rethinking power in relational terms, helping to drive it to its logical conclusion by extending the scope of this relationality beyond Foucault’s “whole network of the social” and Arendt’s reactive medium of the “boundlessness of human interrelatedness”¹⁶⁴ to encompass the immense—but nevertheless strictly bounded—scope of the Earth System itself. Caught up in the same ongoing shift in the structure of scientific understanding, Arendt and Foucault’s relational theories of power bore a homologous resemblance to, and strong elective affinity with, parallel developments in the creation of information networks and the mapping of natural systems, with the contributions of both thinkers proving to be immensely helpful for contemporary scholars trying to make sense of these developments.¹⁶⁵ With Schell, the close connection between a

¹⁶¹ Arendt, “On Violence,” 143.

¹⁶² Foucault, “Truth and Power,” 307

¹⁶³ “The Subject and Power,” 141.

¹⁶⁴ Were, as she puts it, “Because the actor always moves among and in relation to other acting beings, he is never merely a “doer” but always and at the same time a sufferer. To do and to suffer are like opposite sides of the same coin, and the story that an act starts is composed of its consequent deeds and sufferings. These consequences are boundless, because action, though it may proceed from nowhere, so to speak, acts into a medium where every reaction becomes a chain reaction and where every process is the cause of new processes.” Arendt, *The Human Condition*, 190.

¹⁶⁵ See for instance: Koopman, *How We Became Our Data* (2019); Oliver Belcher and Jeremy J Schmidt, “Being earthbound: Arendt, process and alienation in the Anthropocene” in *EPD: Society and Space* Vol. 39, No. 1 (2020), pp.103-120.

relational theory of power and corresponding developments in the understanding of information and ecological systems becomes explicit.

At various points throughout *The Fate of the Earth*, Schell turns to ecological principles and analogies to make sense of the functional obsolescence of sovereignty, the spoiling of war, and the decoupling of power and violence that marks the beginning of a way to rethink the relationship between freedom and life under conditions of total ecological precarity. On this point, he observes, “The system of sovereignty is now to the earth and mankind what a polluting factory is to its local environment. The machine produces certain things that its users want—in this case, national sovereignty—and as an unhappy side effect extinguishes the species.”¹⁶⁶ Near the end of “The Second Death,” Schell proposes a series of principles for living in what he calls “the nuclear common world,” which emerges as his direct adaptation of Arendt’s “politically modern world” that “was born with the first atomic explosions.”¹⁶⁷ We will return to address this ‘common world’ in greater detail in the conclusion, for this approach to human totality proves to be the crux of Schell’s contribution to the politics of the immanent apocalypse and key to his contribution to making political sense of the Anthropocene. At this juncture, however, it is important to note that for Schell a basic “principle of life in the nuclear common world would be respect for the earth.” Elaborating further, he writes,

This is nothing but a full realization of the ecological principle, according to which the earth’s environment is seen not merely as a surrounding element in which it is more or less pleasant to live but as the foundation of human as of other life. The oneness of the earth as a system of support for life is already visible around us. Today, no matter how strenuously statesmen may assert the ‘sovereign’ power of their nations, the fact is that they are all caught in an increasingly fine mesh of

¹⁶⁶ Schell, *The Fate of the Earth*, 187.

¹⁶⁷ *Ibid.*, 118-125.

global life, in which the survival of each nation depends on the survival of all. There is no ‘sovereign’ right to destroy the earthly creation on which everyone depends for survival (although such a right is exactly what each superpower now claims for itself). More and more, the earth is coming to resemble a single body...which is inhabited by billions of separate intelligences and wills. In these circumstances, the use of violence is like the left hand attacking the right, or like both hands attacking the throat. We want to maintain the independence of each person’s mind and will—for our liberty consists in this—but in doing so we must not kill the one terrestrial body in which we are all incarnated together.¹⁶⁸

This passage registers Schell’s acute awareness of the increase in human powers to disrupt the delicate interconnections that make up this previously invisible mesh of global life. At the same time, we also catch hints of a growing sense that the rest of non-human life collectively exercises degrees of agency over the maintenance of planetary habitability that had barely been guessed at before the twentieth century. (The ‘single body’ Schell has in mind here is quite specific, comprising what he follows Commoner in calling “the totality of the ecosphere, with its endless pathways of cause and effect, linking the biochemistry of the humblest algae and global chemical and dynamic balances into an indivisible whole.”)¹⁶⁹ Schell stands out for offering a specifically *ecological* critique of sovereignty and the self-defeating dynamics of the violence that is supposed to guarantee it. Recontextualizing the above claims about the ‘spoiling’ of war, Schell reminds readers, “War depended, above all, on the weakness of human powers, and when human powers came to exceed human and other earthly endurance—when man as master of nature grew mightier than man as a vulnerable, mortal part of nature—war was ruined. Since war was the means by which violence was fashioned into an instrument that was useful in political affairs, the

¹⁶⁸ Ibid., 177-178.

¹⁶⁹ Ibid., 77.

ruin of war by nuclear weapons has brought about a divorce between violence and politics.”¹⁷⁰ One of the chief lessons of the “nuclear age” had been that “the use of force is self-canceling,”¹⁷¹ but as fear of universal death by fallout began to give way to awe at systemic interconnection, it became clear that other bases for politics might be self-reinforcing.

The mass production of thermonuclear weapons created what Schell termed a ‘deterred world,’ a cautious condition of stalemate in which any sudden moves might bring down nuclear winter and cascading biological collapse at any moment. As newly destructive technologies develop, the planetary flow of information speeds up, and the oceans and atmosphere heat up, there will come a point when decisions need to be made at a planetary level concerning the collective wellbeing of all human and other terrestrial life; decisions that—if existing precedent is anything to go by—some of the thermonuclear armed states will feel represents an attempt to “negate their way of life and therefore must be repulsed or fought in order to preserve one’s own form of existence.”¹⁷² Then the theoretical absurdities of sovereignty in the collectively deterred world will rapidly transform into the practical resolution of these dilemmas in the erasure of all those for whom they posed a problem. “Life is movement and change,” Schell writes. “No stalemate can be eternal. Differences must arise. They will have to be resolved, and a means of resolving them will have to be found—a means other than violence....The size of the predicament is not ours to choose; only the resolution is.”¹⁷³ For Schell this does not mean renewing William James’ well-intentioned search for “the moral equivalent of war,”¹⁷⁴ but rather building up a different approach to politics whose ultimate ideal is not the imposition of the will

¹⁷⁰ Ibid., 220.

¹⁷¹ Schell, *The Abolition*, 318.

¹⁷² Schmitt, *The Concept of the Political*, 27.

¹⁷³ Schell, *The Abolition*, 360.

¹⁷⁴ William James, “The Moral Equivalent of War” in *Pragmatism and Other Essays* (New York: Washington Square Press, 1963), pp. 289-301.

of the victor on the weakened body of the defeated party, but instead takes as its foundation the new powers that human beings acquire by working together and enjoy for only as long as they can sustain their cooperation.

Schell's ecologically inflected critique of sovereignty carries over into his uptake of Arendt's distinction between violence and political power. To the extent that the name "Jonathan Schell" rings any bells for most political theorists, it is less often as the author of several anti-nuclear books from the 1980s than as a significant contributor to the study of nonviolence. A grandly ambitious work in its own right, Schell's 2003 volume *The Unconquerable World* offers a sweeping account of the crisis that political violence suffered over the course of the twentieth century and the literally revolutionary power that nonviolence came to manifest during this same period. Here, Schell brings a line of thinking begun in *The Fate of the Earth* to one of its logical culminations, arguing, "The menace of annihilation—of cities, of nations, of the species—arguably suppressed the menace of world war, and now we must suppress the menace of annihilation. A decision for nonviolence, in our time, is a decision to exist."¹⁷⁵ But what was this 'nonviolence' of which he wrote? If 'violence' had already proven its political impotence at the planetary scale, what shape might its opposite take? As he explains, "'Nonviolence' is a word of negative construction, as if the most important thing that could be said about nonviolent action was that it was *not* something else. Yet that which it negates—violence—is already negative, a subtractor from life. A double negative, in mathematics, gives a positive result. And in fact the thing itself—nonviolence—is entirely positive, as Gandhi said. Yet in English there is no positive word for it....Arendt sought to wrest the word 'power' from its normal usage and turn it

¹⁷⁵ Schell, *The Unconquerable World*, 684.

to this end.”¹⁷⁶ Schell builds directly on the attempts that Arendt undertook in *On Revolution* and “On Violence” to conceive of political power in a way that is categorically distinct from violence as a different type of force that arises in the sustained connections between people. “If power was the force that is created by action in common and sustained by mutual promises,” Schell writes, “then it followed that violence, which is the action of one person against another, was in fact destructive of it, inasmuch as violence breaks up the relationships of trust on which power is based.”¹⁷⁷ Instead, he points out, “To the question what the usefulness of violence was and was not, Arendt answered that violence, even when used in the service of goodness, lies outside politics and is destructive of it. And to the question what the role of nonviolent action in politics is, her answer was: politics *is* nonviolent action.”¹⁷⁸ Along with developing Arendt’s immanent apocalyptic insights into the obsolescence of sovereignty, Schell distills what I take to be the simple but profound insight that politics is the establishment and maintenance of relationships, while violence is their undoing. On this view, politics comes to be reinvented not as a mode for reaching a sovereign decision regarding matters over which opposed parties might otherwise be willing to kill (and *will kill* if a political stalemate must be advanced by other means), but instead as a collective practice of crating and sustaining connections that will permit people to accomplish things together that they could have never done separately.

Over and against those who would see this call for nonviolence as hopelessly idealistic or naïve, one of Schell’s chief insights is to argue that this approach to politics as nonviolent action is not something that people should do, but rather that it is something that they both must do and *already are doing*. This cooperative power has always been part and parcel of the Western

¹⁷⁶ Ibid., 681.

¹⁷⁷ Ibid., 564.

¹⁷⁸ Ibid., 568.

political tradition going back to the efflorescence of collective empowerment that defined the life of the ancient *poleis* for their citizens. But, by the same token, this ‘power’ could also afford to be largely overlooked as the background hum of life sustaining itself in a fixed order of Nature-as-cosmos that could always be trusted to ensure species survival. It was only when in the early 20th century the capacity for violence began its truly exponential take off beyond the bounds of what the biosphere can bear that thinkers in the Western tradition really began to pay sustained attention to what M.K. Gandhi had earlier termed “the law of love,” meaning something like the collective power to carry on and constantly repair our conditions of living together beneath the radar of political or historical notice.¹⁷⁹ Schell greatly admired Gandhi’s formulation, perceiving it to be the heart of a “closely connected complex of ideas” linking Gandhi and Arendt as twentieth century analysts of political power reconceived in relational terms. Both agreed that political ‘power’ in their sense must be practiced and that violence is not merely an expedient, but instead actively degrades it.¹⁸⁰ Politics creates connections that enable and sustain forms of living together; violence severs connections, stripping away the capacities that only become possible in connection with others and degrading life along a continuum that leads from social to biological death. After nuclear-armed violence reached its self-paralyzing terrestrial limit, it was the law of love that persisted in holding collective life together through the power to weave and repair ways of living together in a systemically connected world that had grown too strong for

¹⁷⁹ As Gandhi famously argues in *Hind Swaraj*, “The fact that there are so many men still alive in the world shows that it is based not on the force of arms but on the force of truth or love. Therefore, the greatest and most unimpeachable evidence of the success of this force is to be found in the fact that, in spite of the wars of the world, it still lives on. Thousands, indeed tens of thousands, depend for their existence on a very active working of this force. Little quarrels of millions of families in their daily lives disappear before the exercise of this force. Hundreds of nations live in peace. History does not and cannot take note of this fact. History is really a record of every interruption of the even working of the force of love or of the soul.” M.K. Gandhi, *Hind Swaraj and Other Writings*, Ed. Anthony J. Parel (Cambridge: Cambridge University Press, 1997), 89-90.

¹⁸⁰ For an enumeration of what these uncanny congruences, Schell, *The Unconquerable World*, 566.

war. As Schell stressed again and again, to accept this was not *idealism* but *realism*. How was it that self-described ‘realists’ persisted in ghoulishly parading the headless corpse of the king at state functions or preserving the façade of sovereignty in order to serve a myopically narrow conception of national interest? How impoverished must a ‘reality’ be that neglects to notice the systemic connections by which the myriad cells and symbionts that make up the human body sustain one another, the human beings within society assist one another to be, and human societies participate in the planetary life of the Earth System as a whole? What Gandhi called the ‘law of love’ in the 1910s the cyberneticists of the 1940s rechristened the homeostatic tendencies of self-organizing complex systems to sustain themselves over time against the constant tug of entropy that is always seeking to collapse complexity into simplicity, diversity into uniformity, differentiation into sameness, life into death.¹⁸¹

For Schell politics becomes a matter of establishing, sustaining, and multiplying the connections by which life enriches itself. Violence severs these connections. His insights in this area carry directly ecological underpinnings and, as such, are perhaps best illustrated with an ecological example. Consider plantations. The violent severing of connections can create immense bursts of energy that can be used to do prodigious amounts of work. The Roman Empire first pioneered a plantation system of mass monocrop agriculture in the Mediterranean basin, which in turn later came to be imposed by their European inheritors across vast tracts of the planet. To make a plantation, you must pick a crop that is not native to the area. For, as Odum explains, “Any attempt to form plantations with a native species is likely to set in action the mechanisms that had evolved earlier to keep all species regulated at safe low levels....When

¹⁸¹ More on what this means for Schell in the conclusion. See Norbert Wiener, *The Human Use of Human Beings*, 96.

species are completely removed from the continent where they were part of a stable system, growth and production often have a wholly different order of magnitude.”¹⁸² By severing a plant from the myriad interconnections that both sustain and contain it within its native ecosystem, you unlock a potential for hypertrophic growth, reducing the complex ecologies of the plains of Saint-Domingue or the forests of the Congo to endless fields of sugar cane (native to Southeast Asia) or rubber (native to Brazil). What the Romans discovered—and the Spanish, French, and British all copied—was that the only way to unlock enough human energy to reap this natural wealth was by likewise uprooting people, severing them from the connections that sustained their collective lives, reducing them as far as possible to the state of disintegrated social death called *slavery* and using the resulting surplus of energy—no longer being dissipated in all those pursuits that usually make a human life worth living—to reap the huge harvest of your unconstrained monoculture, which in turns provides even more energy for severing more links in a growing cycle of feedback.^{183, 184} New, potentially quite aesthetically or intellectually refined ways of life can arise in the glut of surplus energy that this kind of monoculture produces. If done right, this form of sustained living by killing, growing by cutting can accumulate fabulous amounts of wealth, assemble giant armies, and even temporarily place most of the surface of the planet

¹⁸² Odum, *Environment, Power, and Society*, 284.

¹⁸³ For an illuminating comparative history of plantation agriculture and the societies it sustains, see James F. Hancock, *Plantation Crops, Plunder and Power: Evolution and Exploitation* (New York: Routledge, 2017). See also: Anna Tsing, *The Mushroom at the End of the World* (Princeton: Princeton University Press, 2015).

¹⁸⁴ Using the past tense here because the widespread adoption of the abundant, highly concentrated energy made available by fossil fuels has almost entirely replaced comparatively inefficient slave labor over the course of the last two centuries. It is this close link between the expansion of political and social freedom and the development of an unsustainable way of life enabled by the mass use of ecologically ruinous use of fossil fuels that drives so many of the ethical and political challenges facing those alive today as they seek to adapt to mounting ecological emergencies while retaining gains in human equality. For further discussion of some of these dilemmas, see: Ian Morris, *Foragers, Farmers, and Fossil Fuels: How Human Values Evolve* (Princeton: Princeton University Press, 2015). See also: Vaclav Smil, *Energy and Civilization: A History* (Cambridge, MA: MIT University Press, 2017), 306-312.

under its blade. But it lives by severing the very connections that ultimately sustain it, glutting itself on all the slowly accumulated energy that has been stored up in the planet's bewildering complexity and eventually expiring in the deserts that it leaves in its wake.¹⁸⁵ This is the essence of violence and the exact ecological opposite of politics. The world that this violence has made is presently collapsing as species after species falls through the fraying networks of severed ecological connection or finds itself unable to adapt to mounting heat or toxicity. One of the chief questions raised by the immanentization of the apocalypse in ecological terms is whether humans still have it within their power to render this collapse regional rather than total. This is one of the key concerns driving disputes over geoengineering and a topic to which we will return briefly in the conclusion to this study.

Having by now run its course, the severing sovereign violence of the past several centuries brings the human species to the cusp of annihilation. For Schell, political recovery must necessarily be both biological and ecological: a matter of both, on the one hand, relearning how sustain connections that empower life and shore up its teetering terrestrial home; and, on the other, of using the newly precise knowledge of systemic interconnection to develop correspondingly greater degrees of power that can fill the void vacated by war and support a fully post-sovereign politics. In a pivotal passage in *The Fate of the Earth*, Schell writes,

By threatening life in its totality, the nuclear peril creates new connections between the elements of human existence—a new mingling of the public and the private, the political and the emotional, the spiritual and the biological. Arendt, speaking of the individual's capacity for action, writes, 'With word and deed we insert ourselves into the human world, and this insertion is like a second birth, in which we confirm and take upon ourselves the naked fact of our original physical appearance.' Now

¹⁸⁵ Literally and figuratively in places such as the deforested Mediterranean Basin, the formerly Fertile Crescent, and the sod-busted former prairies of the United States.

the whole species is called on literally to take on itself the naked fact of its original physical appearance—to protect our being through an act of our will. Formerly, the future was simply given to us; now it must be achieved. We must become the agriculturalists of time. If we do not plant and cultivate the future years of human life, we will never reap them. This effort would constitute a counterpart in our conscious life of reason and will of our instinctual urge to procreate. And in so doing it would round out and complete the half-finished common world of pre-nuclear times, which, by the time nuclear weapons were invented, had enabled humankind to learn and to suffer but not to act as one.¹⁸⁶

With the immanentization of the apocalypse, the future becomes neither something that is guaranteed to end in brimstone nor something that can be safely expected to drag on till eventual ‘heat death,’ but for the first time becomes an object of politics in its own right: not as the future post-capitalist world to win through revolution nor the future of federated perpetual peace, but as the entirely unqualified future that offers nothing beyond the promise to remain open so long as humans never actualize their apocalyptic capacities.

“Formerly, the future was simply given to us; now it must be achieved.” With the advent of the immanent apocalypse, for the first time the preservation of the *mere existence* of the future becomes a political object and, in so doing, begins to establish a new form of politics oriented towards achieving that goal. Politically, this might seem depressingly ‘low-sighted’ to some, and precisely in line with all the many pathologies of neoliberalism and the ‘risk societies’ that are so eager to avoid catastrophe that they abandon the pursuit of a better world and become fixated on sustaining the status quo. What Schell argues for here is precisely a politics that *is* low-sighted, but low sighted in the sense of looking down to gauge just where your feet stand in relation to the space-black abyss on whose edge you are teetering. It is a call to look down and find your

¹⁸⁶ Schell, *The Fate of the Earth*, 174.

footing. To complain of a neoliberal flight from real politics—*dangerous* politics, the kind of politics that can make big changes for good or ill—without acknowledging that the continuation of mere human existence now directly depends on the outcome of politics is to risk becoming a part of the problem oneself. This vertiginous awareness of being perched on the edge of biological annihilation is, as Arendt once put it poignantly, one of “the fundamental experiences of our age, and if we ignore it, it is as if we never lived in the world that is our world.”¹⁸⁷ All politics that ignores this situation becomes by definition ‘utopian,’ located nowhere; its claims groundless in the sense of being dangled over an abyss that those who make them ignore—biologically at the risk of annihilation, argumentatively at the risk of irrelevance. To reprise Arendt’s accusation: they are not serious.

One of the chief contentions of this study—and another point that Schell captured with almost singular clarity—is that few of the political pathologies that have arisen in the last three quarters of a century can be disentangled from a more general disregard for the immanentization of the apocalypse that afflicts partisans on all points of the Western political spectrum. First pathologized as “apocalypse blindness” by Anders,¹⁸⁸ Schell saw far more clearly than most the creeping psycho-political harm that was being caused by this degenerative condition.

“Intellectually,” he observed,

we recognize that we have prepared ourselves for self-determination and are improving the preparations every day, but emotionally and politically we have failed to respond. Accordingly, we have begun to live *as if* life were safe, but living *as if* is very different from just living. A split opens up between what we know and what we feel. We place our daily doings in one compartment of our lives and the threat to all life in another compartment. However, this split concerns too

¹⁸⁷ Arendt, *The Promise of Politics*, 109-110.

¹⁸⁸ Anders, *Die Atomare Drohung*, 106-126.

fundamental a matter to remain restricted to that matter alone, and it begins to influence the rest of life. Before long, denial of reality becomes a habit—a dominant mode in the life of society—and unresponsiveness becomes a way of life....As long as politics fails to take up the nuclear issue in a determined way, it lives closer than any other activity to the lie that we have all come to live—the pretense that life lived on top of a nuclear stockpile can last. Meanwhile, we are encouraged not to tackle our predicament but to inure ourselves to it: to develop a special, enfeebled vision, which is capable of overlooking the hugely obvious; a special, sluggish nervous system, which is conditioned not to react even to the most extreme and urgent peril; and a special, constricted mode of political thinking, which is permitted to creep around the edges of the mortal crisis in the life of our species but never to meet it head on.¹⁸⁹

Before those alive today can begin to make full political sense of what to do with the immanent apocalypse, we must first come to grips with what three quarters of learning to live beneath the nuclear sword of Damocles has *done to us*. This is a deeply wrenching process, but one that must be undertaken by any who seek to not only address the planet-scale crises that will continue to place all complex life in jeopardy over the course of this century, but to fan the flame of hope in *politics* itself as a practice that can still realize a better world. Otherwise, given the equal failure of practical politicians and political theorists to address the many cliffs towards which humankind as whole appears to be sliding, there will remain little more than, as Arendt put it earlier, the “secret hope that people may prove insightful enough to dispense with politics before politics destroys us all.”¹⁹⁰ I for my part would not have undertaken this study if I did not still believe in the promise of politics, however, and will return to offer a few positive suggestions for reconstructing a politics of the immanent apocalypse in the dissertation’s conclusion. Having

¹⁸⁹ Schell, *The Fate of the Earth*, 152, 161.

¹⁹⁰ Arendt, *The Promise of Politics*, 109.

examined Schell's arguments about the functional obsolescence of sovereignty and his ecological adaptation of the violence/power distinction, let us now turn to the two related areas where he further built on Arendt's foundational insights: the political implications that arise from the fact that all human beings are born and the question of what it might mean to love a vulnerable world.

I believe it to be no coincidence that Arendt, one of the first people to take seriously the prospect that "the existence of all human beings" had been "menaced with absolute destruction,"¹⁹¹ might also be one of the first to feel the political weight of human natality. How might the outlook of a post sovereign politics of positive connection take shape if it took as its foundational task sustaining the inextricably conjoined lives of humans and every other kind of thing that lives? When FHI researcher Toby Order calls *The Fate of the Earth* "the first deep exploration of the badness of extinction, and the central importance of ensuring humanity's survival," it is likely Schell's uptake of Arendt's politicization of natality that he has in mind.¹⁹² For Arendt the immanent apocalyptic, 'natality' seems to have emerged as one of the few political principles that she could be sure fit comfortably in a politically modern world where the appearance of the atomic power to kill life itself had rendered so many traditional political concepts and categories either theoretically obsolete or practically inapplicable. Arendt concluded her influential chapter on "Action" in *The Human Condition* by arguing, "The miracle that saves the world, the realm of human affairs, from its normal, 'natural' ruin is ultimately the fact of natality, in which the faculty of action is ontologically rooted. It is, in other words, the birth of new men and the new beginning, the action they are capable of by virtue of being born."

¹⁹¹ Arendt, *Denktagebuch* Vol. 1, 306-307.

¹⁹² Ord, *The Precipice*, 285.

She then finishes with the elegant flourish of claiming that this principle “found perhaps its most glorious and most succinct expression in the few words with which the Gospels announced their ‘glad tidings’: ‘A child has been born unto us.’”¹⁹³ As we have seen, these words were written ‘against the background’ of Arendt’s ‘politically modern world,’ with plans already well underway for an explicitly atomic sequel that never arrived. Schell carries forward what I believe to be precisely this line of thought as follows when writing,

According to the Bible, when Adam and Eve ate the fruit of the tree of knowledge God punished them by withdrawing from them the privilege of immortality and dooming them and their kind to die. Now our species has eaten more deeply of the fruit of the tree of knowledge, and has brought itself face to face with a second death—the death of mankind. In doing so, we have caused a basic change in the circumstances in which life was given to us, which is to say that we have altered the human condition....The possibility that the living can stop the future generations from entering into life compels us to ask basic new questions about our existence, the most sweeping of which is what these unborn ones, most of whom we will never meet even if they are born, mean to us. No one has ever thought to ask this question before our time, because no generation before ours has ever held the life and death of the species in its hands.¹⁹⁴

Since antiquity, various iterations of the ‘biological species concept’ had answered the question “what are human beings?” tautologically in terms of what they do—namely, they make more human beings.¹⁹⁵ Politics existed because humans were capable of doing far, far more than just that, but this political existence rose on the foundation of human beings existing as a natural kind whose essential substance endured as a necessary part of the cosmic order. This meant that for millennia in the Western political imagination the bare life of the species was merely a nuisance

¹⁹³ Arendt, *The Human Condition*, 247.

¹⁹⁴ Schell, *The Fate of the Earth*, 115-116.

¹⁹⁵ Daston, *Against Nature*, 9-13.

that distracted from all higher political endeavors; unalterable ‘facts of life’ whose incessant urgency was best relegated to private, household matters to make room in public for bigger and better things. With the immanentization of the apocalypse, however, the life and death of the species enters into human hands for the first time, permanently excising the human condition of natality from the realm of natural necessity.¹⁹⁶

Arendt was one of the very first political thinkers to begin to wonder what the mere fact of being born might look like as a victory to be achieved rather than yet another of life’s unending labors to be endured. As Schell points out, “What Arendt finds in both birth and action is, above all, that both are “beginnings” and, as such, bear fruit that is absolutely novel and unpredictable.”¹⁹⁷ Linking natality with political action through their twin powers to establish new relationships and interrupt the ongoing course of events seemed to be Arendt’s way of staring down the antithesis between freedom and life, the all-or-nothing menace of total domination of total annihilation by positing a secular reason for believing in “miracles.”¹⁹⁸ Arendt entertained (but never published) the thought that, as she wrote,

The crucial difference between the infinite improbabilities on which earthly human life is based and miraculous events in the arena of human affairs lies, of course, in the fact that in the latter case there is a miracle worker—that is, that man himself

¹⁹⁶ As Schell notes of Edmund Burke and all the other canonical Western political thinkers rendered ‘pre-modern’ by the arrival of the atom bomb and the birth of the ‘politically modern world’: In their thinking “we make the tacit assumption that there will be future generations, taking it for granted that nature, acting in and through us, will bring them forth, as it always has done. And in the pre-nuclear world, before it was in our power to extinguish the species, this confidence was warranted. But now the creation of new human beings is just the thing that is in question.” *Ibid.*, 144.

¹⁹⁷ Schell, “A Politics of Natality,” 464.

¹⁹⁸ “If it is true that politics is nothing more than a necessary evil for sustaining the life of humanity, then politics has indeed begun to banish itself from the world and to transform its meaning into meaninglessness...If we proceed from the logic inherent in these factors and assume that nothing except those conditions we now know determines the present or future course of our world, we might say that a decisive change for the better can come about only through some sort of miracle.” Arendt, *The Promise of Politics*, 110-111.

evidently has a most amazing and mysterious talent for working miracles. The normal, hackneyed word our language provides for this talent is ‘action.’...The miracle of freedom is inherent in this ability to make a beginning, which itself is inherent in the fact that every human being, simply by being born into a world that was there before him and will be there after him, is himself a new beginning.¹⁹⁹

In effect, it seems like Arendt answered the novel, deeply disorienting antithesis ‘between freedom and life’ with the response that “where there is life, there is hope”—in the sense of human life’s incredible powers to surprise (even her own grim) expectations for what seems to be the necessary course of events. Nevertheless, this feels like a fairly thin straw to grasp in the face of the urgent call to resist the onrushing forces of utterly unredeemed biological annihilation, and it may ultimately not be too much of a surprise that Arendt opted to ultimately keep these thoughts to herself.²⁰⁰

What form of politics might it be possible to build on Arendt’s foundational realization that natality is no longer a human necessity? There are potentially many different answers to this question, each pregnant with implications for how someone might go about reconstructing politics in the wake of the immanent apocalypse. However, whether or not you agree with Schell’s positive prescriptions, I believe that he is right to try and preempt one possible response in advance. On this point, Schell contends that it would be a fundamental mistake to take the immanentization of the apocalypse as an opportunity to reprise something like the ‘liberalism of fear’ and a politics oriented towards the prevention of cruelty to individuals. As Judith Shklar

¹⁹⁹ Ibid., 113.

²⁰⁰ Schell for his part notes of these unpublished passages: “Her point is that notwithstanding the current intellectual and practical paralysis of action, the very nature of politics guarantees that “we do indeed have the right to expect miracles.” These observations, which point ahead to seminal passages on the subject of the “natality” of humankind in her published works, are in this text pressed into the merely structural, rather strained role (let us remember that we are dealing with texts she chose not to publish) of bridging the distance between the immediate crises of totalitarianism and the bomb on the one hand and her inquiry into the fundamentals of politics on the other.” Schell, “In Search of a Miracle: Hannah Arendt and the Atomic Bomb,” 253.

lucidly argued when coining the term, the liberalism of fear “may not offer a *summum bonum* toward which all political agents should strive, but it certainly does begin with a *summum malum*, which all of us know and would avoid if only we could. That evil is cruelty and the fear it inspires, and the very fear of fear itself. To that extent the liberalism of fear makes a universal and especially a cosmopolitan claim, as it historically always has done.”²⁰¹ To say that what is at politically at stake in the immanent apocalypse is something quite different from the liberalism of fear is not to say anything in particular for or against the latter. Born as a political bandage intended to staunch the bleeding from exterminationist wars of religion—whose century of Reformation and Counter-Reformation, slaughter and counter-slaughter drastically depopulated central Europe²⁰²—the liberalism of fear sacrifices high minded appeals to a *summum bonum* with the deliberate aim of producing a principle of toleration strong enough to resist the evil of cruelty and the *summum malum* of extermination that finds its ultimate expression in genocide. This makes Shklar’s liberalism of fear something quite different from the immanently apocalyptic political conditions that Schell is describing. For the latter, the *summum malum* is likewise a determining factor, but here the evil that must be avoided is not cruelty or merely mass killing but the creation of nonbeing. For the former, the sum of all fears is ultimately *genocide*—that horrible neologism coined in 1943 to describe the erasure of a *genos* or culturally distinct people.²⁰³ For the latter, it is what American philosopher John Summerville coined in the

²⁰¹ Judith Shklar, *Political Thought and Political Thinkers* (Chicago: University of Chicago Press, 1998), 10-11.

²⁰² Resulting in what low estimates put as the death of 20% of the Holy Roman Empire’s prewar population during the period from 1618 to 1648, compared to the 6% of the total European population killed during the Second World War. Regional variation meant depopulation of as much as 60% in some particularly disputed areas such as Lorraine. Peter Wilson, *The Thirty Year’s War: Europe’s Tragedy* (Cambridge, MA: Harvard University Press, 2009), 786-789.

²⁰³ By lawyer Raphael Lemkin by combining, as he said, “the ancient Greek word *genos* (race, tribe) and the Latin *-cide* (killing)” in order to designate “a coordinated plan of different actions aiming at the destruction of essential foundations of life of national groups, with the aim of annihilating the groups

early 1980s as *omnicide*,²⁰⁴ justifying this neologism on the grounds that “such a word would logically indicate the terminal extension of the series of existing words which denote types and quantitative ranges of the killing of human beings, e.g., suicide, tyrannicide, regicide, patricide, matricide, infanticide, genocide, and now final, all-inclusive omnicide—the killing of all humans by some humans, including themselves.”²⁰⁵ The genocidal destruction of entire peoples is at least as old as written history, with archaeology grimly attesting to even earlier erasures that took place long before the scribes of the first kings of kings began to boast of their deeds.²⁰⁶ The prospect of omnicide enters existence with the immanentization of the apocalypse and commences a new line of political thought that cannot be neatly mapped onto *any previous form of politics* for which the *summum malum*—the absolutely worst case scenario should everything political end in disaster—was the annihilation not a *particular people* rather than the complete ontological erasure of *all people as such*.

The immanentization of the apocalypse does not mean that either the liberalism of fear or any other political approach that has been formulated with an eye towards precluding genocide (such as certain human rights regimes) lose their meaning. Quite the contrary. Given the ease with which those who set out to save humankind from annihilation can find themselves justifying

themselves.” Raphael Lemkin, *Axis Rule in Occupied Europe* (2006), 79. For the specifically ‘culturalist’ sense in which Lemkin used genocide to refer to the destruction of a people as an enduring historical organism, see A. Dirk Moses, “Raphael Lemkin, Culture, and the Concept of Genocide” in *The Oxford Handbook of Genocide Studies*, Ed. Donald Bloxham and A. Dirk Moses (Oxford: Oxford University Press, 2010), 19-41.

²⁰⁴ The term first appeared in the early 19th century to describe a form of broad-spectrum pesticide, before receiving sporadic mentions in its current meaning beginning in the 1950s. However, it enjoys its contemporary usage to the anti-nuclear writings published by Somerville in the early 1980s. For one of the first uses, see John Somerville, *Soviet Marxism and Nuclear War: An International Debate* (Westport, CN: Greenwood Press, 1981), 151.

²⁰⁵ John Somerville, “Einstein’s Legacy and Nuclear Omnicide” in *Peace Research* Vol. 18, No. 1 (January 1986), pp. 20-25, 53-58; 24.

²⁰⁶ Kurt W. Alt, Cristina Tejedor Rodríguez, Nicole Nicklisch et al, “A Massacre of Early Neolithic Farmers in the High Pyrenees at Els Trocs, Spain” in *Nature: Scientific Reports* (2020), pp. 1-10; 6.

the destruction of a part to save the whole (see Chapter One), the prevention of genocide becomes, if anything, even more of an active consideration within a politics of the immanent apocalypse that takes omnicide as its *summum malum*. The threat of genocide in no way loses its importance, but it does necessarily become a matter of secondary importance for the simple, agonizing fact that genocide can only occur if there remain people left to kill. Instead, as Schell recognized, “The nuclear peril threatens life, above all, not at the level of individuals, who already live under the sway of death, but that the level of everything that individuals hold in common. Death cuts off life; extinction cuts off birth. Death dispatches into the nothingness after life each person who has been born; extinction in one stroke locks up in the nothingness before life all the people who have not yet been born. For we are finite beings at both ends of our existence—natal as well as mortal—and it is the natality of our kind that extinction threatens.”²⁰⁷ As Ord notes, Schell is above all a theorist of extinction, and someone who recognized with remarkable lucidity the political stakes implicit in the distinction between extermination and extinction, genocide and omnicide. “In extinction by nuclear arms,” Schell writes, “the death of the species and the death of all the people in the world would happen together, but it is important to make a clear distinction between the two losses; otherwise, the mind, overwhelmed by the thought of the deaths of the billions of living people, might stagger back without realizing that behind this already ungraspable loss there lies the separate loss of the future generations.”²⁰⁸ The locus of this badness resides in the seldom asked question of why human continuity matters—what the ‘meta-narrative’ implied by the perseverance of human existence beyond the present generation means for those alive today.²⁰⁹ “Who would miss human life if they extinguished it?”

²⁰⁷ Schell, *The Fate of the Earth*, 117.

²⁰⁸ *Ibid.*, 115.

²⁰⁹ For a clear-eyed observation on the place that the arrival of the immanent apocalypse may have in subtending some of the logic of what called itself ‘post-modernity,’ see: Simon Malpas, *The Postmodern*

Schell asks. The only honest answer, he rightly asserts, is ‘nobody.’ Rather,

Of life alone is it the case that while its receipt can be welcomed, its denial cannot be mourned. The peril of extinction, by bringing us up against this reality, concentrates our attention in a new way on the simple and basic fact that before there can be good or evil, service or harm, lamenting or rejoicing, there *must be life*. In coming to terms with the peril of extinction, therefore, what we must desire first of all is that people be born, for their own sakes, and not for any other reason. Everything else—our wish to serve the future generations by preparing a decent world for them to live in, and our wish to lead a decent life ourselves in a common world made secure by the safety of the future generations—flows from this commitment: Life comes first. The rest is secondary.²¹⁰

Unlike the liberalism of fear, Schell’s immanently apocalyptic politics *does* have a *summum bonum* in the form of life itself—or, better yet, *living* in the sense of life carrying itself forward as a process continuous in both space and time. At issue here is not something like ‘bare life’ in the Agambinian sense of the eminently killable biological component of the human that remains when all else has been stripped away.²¹¹ Rather, the political import of natality arises out of the unqualified life that unfurls as what was once called ‘the full plenitude of being’—that is, the open life and continuous living of a humankind whose constituents may yet become anything in conjunction with all the other forms of life to which they are inextricably connected.²¹²

(New York: Routledge, 2005), 33-34.

²¹⁰ Original italics. Schell, *The Fate of the Earth*, 171-172.

²¹¹ Giorgio Agamben, *The Omnibus Homo Sacer*, 1265.

²¹² Instead, Schell offers what I take to be a more ecologically and technologically grounded call for the same thing that Agamben also seems to desire when the latter declares: “The fact that must constitute the point of departure for any discourse on ethics is that there is no essence, no historical or spiritual vocation, no biological destiny that humans must enact or realize. This is the only reason why something like an ethics can exist, because it is clear that if humans were or had to be this or that substance, this or that destiny, no ethical experience would be possible—there would be only tasks to be done.... There is in effect something that humans are and have to be, but this something is not an essence nor properly a thing: *It is the simple fact of one's own existence as possibility or potentiality*.” Original italics. Giorgio Agamben, *The Coming Community*, Trans. Michael Hardt (Minneapolis: University of Minnesota Press, 1993), 43.

Schell develops the insights of systems ecology to develop a radically different sort of life-oriented politics. The approach that he offers differs markedly from either the all-consuming political elevation of the human life process to the highest good or the ‘biopolitics of populations’ that Arendt and Foucault witnessed take hold during the nineteenth century before choking on the power to kill life itself in the second half of the twentieth. For Schell, the biological continuation of human life can no longer be relegated to the pre-political background of an order of Nature that automatically preserves all creatures, but neither is biological life itself taken up as the object of a politics whose highest dreams are the glory of the race or the ‘great health’ of the species. Rather, he urges those alive today to adopt a politics that avoids reducing themselves to nothing so that future generations may yet be anything. This is, if anything, the *opposite* of the liberalism of fear, for it guarantees that “*in saving* the future generations we will bring them every kind of suffering that life holds.” Instead, as Schell has been among the clearest to see, “The fact that it is not extinction but life that brings suffering, and even death, is the clearest proof that extinction is misconceived as a disaster in the ordinary sense. On the contrary, survival means disaster—endlessly, as long as life is beset by accident and folly... Fortunately or unfortunately, we cannot pick and choose which experiences of life to give the future generations. Either we keep them out of life completely or we get them in for all of it. To favor life on these terms is difficult, but it is not inhuman.”²¹³ Whether or not one ultimately agrees with Schell on this point, I believe it worth hearing him out for the conclusions that he draws from this.

As developed by Schell, natality turns the principle of continuity inherent in the life process of the species into a political program that aims to leave the widest possible horizon of

²¹³ Schell, *The Fate of the Earth*, 176.

the human experience open to those whose subsequent arrival we must now actively fight to achieve. In contrast to traditional liberalism, Schell stresses (with a nod to Arendt): “Instead of being asked not to kill our neighbors, we are asked to let them be born. If it is possible to speak of a benefit of the nuclear peril, it would be that it invites us to become more deeply aware of the miracle of birth, and of the world’s renewal. ‘For unto us a child is born.’ This is indeed ‘good news.’”²¹⁴ Ultimately, the political import of this good news is that this political goal of achieving the future continuity of human existence creates a new form of connection between the otherwise disaggregated sum total of all those involved. As he puts it, “we can perhaps best comprehend the obligation to save the species simply as a new relationship among human beings.”²¹⁵ For me, one of Schell’s most brilliant political insights is to realize that one of the biggest possible miscalculations here would be to follow the usual liberal reflex of making extinction a source of fear to be somehow legally proscribed and avoided rather than finding an alternative, entirely new set of political compass points in the newly vulnerable existence of the unborn themselves. “It is sometimes suggested that fear will inspire us to combat the nuclear peril,” he writes, “but that reasonable-sounding idea seems to me equally mistaken. Fear, a more or less reflexive response that we share with other species, drives each of us, as an individual, to save himself in the face of danger. Fear cannot distinguish between a fire in one’s own house and a nuclear holocaust—between one’s own death and the end of the world²¹⁶—and is therefore useless even to begin to suggest to us the meaning of the nuclear peril...Fear isolates. Love connects.”²¹⁷ Fear is the fear of violence and the severing of connections. It is antipolitical. Love

²¹⁴ Ibid., 174.

²¹⁵ Ibid.

²¹⁶ To wit: “There is no common measure adequate to persuade me that a personal mourning is less serious than a nuclear war.” Jacques Derrida, “No Apocalypse, Not Now: Seven Missiles, Seven Missives” in *Diacritics*, Vol. 14, No. 2 (Summer, 1984), pp. 20-31; 28.

²¹⁷ Schell, *The Abolition*, 222.

creates new relationships that have the chance to establish durable forms of connection that interrupt ongoing dynamics and begin something new. It lies at the heart of what the politics of the immanent apocalypse becomes for Arendt and Schell. The type of love in question, as both maintained, asks nothing of the beloved, only that they be. It is an open-ended form of attachment that wants to give the whole world and seeks to save it on those grounds, not out of selfish fear of personal death—which will inevitably come for all of those who are alive today in any case—but out of the selfless desire that others still unborn might have this world too. Over and against a tradition that finds in biological life the lowest common denominator and something beneath the dignity of political concern, they discovered that, as the poet Nazım Hikmet put it beautifully: living is no laughing matter.

In her intellectual biography of Arendt, Elizabeth Young-Bruehl rightly identified this ‘love of the world’ as a central feature of her subject’s political thought, having gone so far as to contemplate titling *The Human Condition* instead “*Amor Mundi*.”²¹⁸ However, I believe Young-Bruehl missed the full import of what type of love this was and from whence it arose. Arendt wrote of this plan in a letter to Jaspers on the eve of her visit to him in 1955, telling her dear friend and mentor: “I would like to bring the wide world to you this time. I’ve begun so late, really only in recent years, to truly love the world that I shall be able to do that now.”²¹⁹ How did this newfound love of the world manifest when they met in person later that year? As we saw in the first chapter, Arendt wrote her husband from Basel that November, “Right now we are immersed in long conversations about the atom bomb.”²²⁰ If there is one thing that truly warrants declaring Schell the only successor that Arendt has ever had, it is precisely their acutely shared

²¹⁸ Hannah Arendt to Karl Jaspers, August 6, 1955 in *The Arendt-Jaspers Correspondence*, 264.

²¹⁹ Ibid.

²²⁰ Arendt, *Between Four Walls*, 287.

love of the world as a new source of attachment linking all those living, dead, and yet to come in the political project of cultivating an open future.²²¹ This was a way of forming a constitutive attachment to what Arendt termed “mere existence, that is, all that which is mysteriously given us by birth and which includes the shape of our bodies and the talents of our mind,” and which “can be adequately dealt with only by the unpredictable hazards of friendship and sympathy, or by the great and incalculable grace of love, which says with Augustine, ‘*Volo ut sis* [I want you to be],’ without being able to give any particular reason for such supreme and unsurpassable affirmation.”²²² When Arendt first penned these lines in the late 1940s, she had understood this form of love as irreducibly private and outside politics.²²³ It was the confrontation with the hydrogen bomb that seems to have convinced Arendt that the world too could be loved in these terms. Where many took the discovery that the whole of human life could be canceled at any moment as an invitation to detachment or nihilism, Arendt and Schell took this profoundly alarming development as an opportunity to grow *more* attached, to love this vulnerable world and recognize the deeper form of connection that opens when the mere act of leaving life open becomes a source of political struggle; to realize that the world must be loved this much if you're going to say ‘I lived.’ These were the terms in which Schell unapologetically made the political choice to champion life over freedom, following Arendt herself in locating within life itself the inexhaustible potential and source of endless surprise that has always been the quintessence of

²²¹ Pitkin also picks up on this connection between Arendt’s late blossoming ‘love of the world’ and her conviction that the politically modern world was born with the first atomic explosions. Pitkin, *The Attack of the Blob*, 106-107.

²²² Arendt, *Origins*, 382.

²²³ Continuing a few lines later, she specifies: “Our political life rests on the assumption that we can produce equality through organization, because man can act in and change and build a common world, together with his equals and only with his equals. The dark background of mere givenness, the background formed by our unchangeable and unique nature, breaks into the political scene as the alien which in its all too obvious difference reminds us of the limitations of human activity—which are identical with the limitations of human equality.” *Ibid.*

freedom. Having realized the political potential of natality, it became clear to both that those alive today have nothing to lose but their lives, but they have a world to win.

For Schell, the political love of life came with a crucial corollary. This was the fact that any politics conceived in these terms must necessarily be existential: oriented towards the unqualified freedom of life itself and giving future generations ‘the whole of life’ with all of its good and bad. “For the generations that now have to decide whether or not to risk the future of the species,” he wrote, “the implication of our species’ unique place in the order of things is that while things in the life of mankind have worth, we must never raise that worth above the life of mankind and above our respect for that life’s existence. To do this would be to make our highest ideals so many swords with which to destroy ourselves. To sum up the worth of our species by referring to some particular standard, goal, or ideology, no matter how elevated or noble it might be, would be to prepare the way for extinction by closing down in thought and feeling the open-ended possibilities for human development which extinction would close down in fact.”²²⁴ This, for Schell, had been Jaspers’ mistake, and precisely the sort of well-intentioned, even highly noble dogmatism that had permitted the great philosopher to advocate risking the biological annihilation of the species for the sake of preserving a particular standard by which he judged human lives to be worth living.²²⁵ (This is also, incidentally, the same mistake that transhumanist existential risk researchers such as Bostrom and many colleagues at the Future of Humanity Institute make when they fixate on their vision of achieving ‘technological maturity’ and humanity’s ‘cosmic endowment’ and—having decided where humankind must go if it is to achieve its cosmic destiny—damn however many passengers of ‘spaceship Earth’ perish along

²²⁴ Schell, *The Fate of the Earth*, 129-130.

²²⁵ *Ibid.*, 130-131.

the way provided it arrives at its duly appointed destination.)²²⁶ What Schell offers, by contrast, is a pragmatic politics that places life first not because killing is wrong or because life is the highest good, but because it is the wellspring of all human potential that must first be secured if anything else that is humanly meaningful is ever to occur. With the arrival of the immanent apocalypse, living becomes the end in view that must be constantly steered towards against the entropy that threatens extinction through either a moment of madness, accident, miscalculation or simply the quotidian insanity of living every day by severing ever more of the ecological connections that sustain you. It means realizing, in effect, that life weighs heavier.

So where, finally, does a post-sovereign, non-violent politics of natality begin? Schell addresses this point explicitly, observing how, “Inasmuch as extinction is a second death that, when concretely defined, means the end of birth, the foundation of a political order that guaranteed the continuity of life would be a true ‘second birth’—a rebirth—by which this second death was defeated. It would be an act of deliberate rescue counterpoised against universal destruction, a new beginning thrown onto the scales against the end, absolute and eternal, with which our kind threatens itself.”²²⁷ In step with Arendt, Schell realized that, ever since the citizens of the first *poleis* donned their armor and shields and marched out to defend their sovereign freedoms, the metaphor subtending politics in Western thought was one of brotherhood that prized above all else the willingness to give your biological life for the sake of the good life you had made with your peers. As we saw earlier, Arendt had perceived clearly that this seemingly constitutive connection between politics, sovereignty, and war had meant that since antiquity Westerners had “considered courage to be the political virtue *par excellence*, the

²²⁶ Nick Bostrom, “Existential Risk Prevention as Global Priority” in *Global Policy*, Vol. 4, No. 1 (February 2013), pp.15-31.

²²⁷ Schell, “In Search of a Miracle: Hannah Arendt and the Atomic Bomb,” 248.

one virtue without which political freedom is wholly impossible.”²²⁸ And yet, as she realized as far back as 1953, “With the appearance of atomic weapons...the ancient appeal to courage has for all practical purposes become meaningless, and, with it, the whole political and moral vocabulary in which we are accustomed to discuss these matters...No human courage would be conceivable if the condition of individual life were the same as that of the species.”²²⁹ By developing her critique of sovereignty and her theories of power and nativity, Arendt presented Schell with a solid foundation on which to build a new moral and political vocabulary fit for a new kind of politics of life itself. Gathering all of these threads together, Schell sums up his immanently apocalyptic vision for a politics predicated on species life in the following terms:

Because the will to save the species would be a will to let other people into existence rather than a will to save oneself, it is a form of respect for others, or, one might say, a form of love. This love, I believe, would bear a resemblance to the generative love of parents, who in wanting to bring children into the world have some experience of what it is to hope for the renewal of life. They know that when a child is born the whole world is reborn with it...If the ideal for the relationship among living people is brotherhood, then the ideal for the relationship of the living to the unborn is parenthood. Universal brotherhood, which seeks to safeguard lives that are already in existence, embodies the solicitude and protectiveness of love, and its highest command, therefore, is ‘Thou shalt not kill.’ Universal parenthood, which would seek to bring life into existence out of nothing, would embody the creativity and abundant generosity of love, and its highest commandment, therefore, would be ‘Be fruitful and multiply.’ *But this commandment is not the strictly biological one.* The nuclear peril makes all of us, whether we happen to have children of our own or not, the parents of all future generations. Parental love, which begins even before any child exists, is unconditional. It does not attach to any quality of the

²²⁸ Arendt, “Europe and the Atomic Bomb,” 420.

²²⁹ *Ibid.*, 421.

beloved; it only wants him to be.²³⁰

Taken as ur-metaphor, universal parenthood offers a fundamentally different political logic than universal brotherhood. Where the highest ideal of the latter is to sacrifice for your comrades, the former more clearly recognizes that while there might be times that call for total self-abnegation, there are also clear limits beyond which all sacrifice becomes self-defeating if it precludes the possibility of others arriving. Politics as universal parenthood mobilizes the principle of continuity that makes the human species more than the mere sum total of all human beings and turns this formerly taken for granted biological principle into a deliberate, forever near-term end for orienting a new form of politics. And yet, it should also be noted that a politics of ‘universal parenthood’ is no more heteronormative than a politics of universal brotherhood is homonormative. Although biological procreation remains the only means of establishing human continuity for the immediate future,²³¹ you do not need to beget yourself to participate in the continuity of the species that arises with the preservation, enrichment, and passing on of the common world. This common world grows with every new human relationship and is enriched by every new connection that human beings learn to maintain with the rest of life to sustain their mutual conditions of planetary possibility. One of Schell’s most enduring political contributions

²³⁰ My italics. Schell, *The Fate of the Earth*, 175.

²³¹ As we saw in the first chapter, sexual compatibility and the reproduction of viable offspring has traditionally served as one of the centrally defining features of the biological species concept since Aristotle and reaffirmed by Linnaeus, Buffon, and Kant. Right as the biological species concept was being elevated to the dominant position it would assume in the mid-twentieth century by Ernst Mayr, it was being pointed out that ‘species’ in this sense did not apply to organisms that do not reproduce sexually (which is to say, the majority of life on Earth). Should human beings broadly adopt technologically mediated, non-sexual modes of reproduction (perhaps coupled with deliberate genetic engineering), any lingering sense of ‘species’ self-evidence is likely to breakdown. The consequences of this development fall beyond the scope of this study, but indicate one urgent avenue for further research. For the appeal and limitations of sexual compatibility as a species criterion, see Ernst Mayr, “Species Concepts and Definitions” in *The Species Problem*, Ed. Ernst Mayr (Washington D.C.: American Association for the Advancement of Science, 1957), 1-22. For a reply that demonstrates the inapplicability of the biological species concept to non-sexed organisms, see T.N. Sonneborn’s “Breeding Systems, Reproductive Methods, and Species Problems in Protozoa” in the same volume, pp. 155-324.

arises from the way that he refashions Arendt's 'love of the world' into a more expansive form of care for the fate of the Earth System and all its inextricably connected constituents who make one another's lives possible. It realizes, in an ecological register, the earlier insights of Arendt and Foucault that politics creates connections and multiplies possibilities; violence severs connections and forecloses possibilities, reaching its extreme form in the power to kill life itself and the possibility of precluding any from ever coming after.

CONCLUSION

In one of the first books to introduce the phenomenon of anthropogenic global warming to a popular audience, essayist Bill McKibben proposed in his 1989 classic *The End of Nature* that, by artificially warming every square inch of the planet, “we have ended the thing that has...defined nature for us—its separation from human society.”¹ Here McKibben was quick to specify that by the ‘End of Nature’ he did not mean the end of the world. Rather, his point was that “an idea, a relationship, can go extinct, just like an animal or a plant. The idea in this case is ‘nature,’ the separate and wild province, the world apart from man to which he adapted, under whose rules he was born and died”—an idea that rested on the distinction between those things that “were ‘natural,’ as opposed to man made.”² As Nature began to lurch into motion a century earlier, John Stuart Mill had summed up the meaning of ‘Nature’ in McKibben’s sense right around the same time that Nietzsche was penning his fable about the fate of the ‘clever animals’ doomed to freeze. Noting that ‘Nature’ had by now become an “ambiguous term,” Mill highlighted how what he considered to be the proper scientific definition of Nature as “the sum of all phenomena...entirely conflicts with the common form of speech by which Nature is opposed to Art, and natural to artificial.” ‘Nature’ had acquired two prominent uses, he observed, so that: “In one sense, it means all the powers existing in either the outer or the inner world and everything which takes place by means of those powers. In another sense, it means, not everything which happens, but only what takes place without the agency, or without the

¹ He continues, nodding to the antiquity of this distinction by noting how, “The Sophists contrasted the ‘natural’ with the ‘conventional’—what exists originally with what it becomes as the result of human intervention.” Bill McKibben, *The End of Nature*, (1989), 55. For an account of the early use of the nature/artifice distinction among the sophists, see: W.K.C. Guthrie, *The Sophists*, 21-24, 53-58.

² Bill McKibben, *The End of Nature* (New York: Random House, 2006), 41, 54.

voluntary and intentional agency, of man.”³ By the time McKibben wrote a century later, human beings had already significantly altered the gaseous composition of the atmosphere, injecting measurable degrees of human agency into the temperature of all terrestrial processes and leaving it forever after uncertain whether any ostensibly ‘natural’ phenomenon would have unfolded on Earth in quite the same way absent the ‘agency of man.’ For his part, however, McKibben also conceded that global warming was not absolutely novel in this regard. Rather, “The invention of nuclear weapons may actually have marked the beginning of The End of Nature: we possessed, finally, the capacity to overmaster nature, to leave an indelible imprint everywhere all at once.”⁴ More specifically, as we saw in Chapter Three, it was the planet-wide blanket of radioisotopes laid down by the hydrogen bomb that began to end the plausibility—not just theoretically, but empirically—of Nature as the separate realm of freestanding necessity that Westerners had envisioned since antiquity.

This study has argued that Nature has undergone at least three major transformations in Western history. Nature first came to be forged as a Great Chain of Being that anchored the fixed order of Nature-as-cosmos before becoming a contingent balance of Nature-as-process over the course of the nineteenth century. What McKibben termed the ‘End of Nature’ marks the third of the transitions that we have followed, when the hydrogen bomb and its planet-wide dusting of fallout injected a pinch of human artifice into every process and radically called into question the ancient foundations of Nature—as important for Darwin as they were for Aristotle—as what political philosopher Leo Strauss aptly dubbed a “term of distinction” for differentiating between

³ John Stuart Mill, “On Nature” in *Nature, The Utility of Religion and Theism* (London: Watts & Co., 1904), 8-9.

⁴ McKibben, *The End of Nature*, 57.

the natural and the artificial.⁵ What this study has called the ‘immanentization of the apocalypse’ corresponds to the beginning of the end of Nature as something wholly separable from human activities in either theoretical or practical terms. This development reached its apogee when the hydrogen bomb tests of the 1950s first convinced a generation that, however seemingly isolated, no corner of the planet was beyond human reach—and, by extension, destruction at human hands. Although widely felt among her contemporaries, Arendt experienced this transformation in the nature of Nature particularly acutely, leaving a vivid record of this epochal shift in the palimpsest of *The Origins of Totalitarianism*. In the self-consciously inconclusive “Concluding Remarks” of 1951, she had foreshadowed some of her later arguments by pointing out the credulousness of Enlightenment thinkers such as Condorcet who believed that their generation had determined the eternal Rights of Man after having definitively discovered the essence of Man as he is at all times and places by Nature. Looking back on this heady period in retrospect, she observed how,

Nobody at the time could possibly have foreseen that the ‘nature’ of man, defined and redefined by two thousand years of philosophy, might contain unpredictable and unknown possibilities; that man’s mastery of nature would reach a point where he could conceive the possibility of destroying the earth with manmade instruments; and that his knowledge of nature would one day instill in him serious doubts about the existence of natural laws at all. That, in other words, humanity might one day become as emancipated from nature as eighteenth century man was

⁵ For a sense of the centrality of the nature/artifice distinction to the Western tradition, consider Strauss’ claim: “Philosophy as distinguished from myth came into being when nature was discovered, or the first philosopher was the first man who discovered nature. The whole history of philosophy is nothing but the record of the ever repeated attempts to grasp fully what was implied in that crucial discovery which was made by some Greek twenty-six hundred years ago or before....The purport of the discovery of nature cannot be grasped if one understands by nature ‘the totality of phenomena.’ For the discovery of nature consists precisely in the splitting-up of that totality into phenomena which are natural and phenomena which are not natural: ‘nature’ is a term of distinction.” Leo Strauss, *Natural Right and History* (Chicago: University of Chicago Press, 1953), 82.

from history. Today we consider both history and nature to be alien to the essence of man. Neither any longer offers us that comprehensive whole in which we feel spiritually at home.⁶

When making the revisions that attended the German translation of 1955, Arendt decided to cut her original “Concluding Remarks” but to keep this just-quoted passage—albeit with a few changes. A mere four years after first publishing the above, subsequent developments prompted Arendt declare instead:

Today we are perhaps better qualified to judge exactly what this human “nature” amounts to; in any event it has shown us potentialities that were neither recognized nor even suspected by Western philosophy and religion, which for more than three thousand years have defined and redefined this ‘nature.’ But it is not only the, as it were, human aspect of nature that has become questionable to us. Ever since man learned to master it to such an extent that the destruction of all organic life on earth with manmade instruments has become conceivable and technically possible, he has been alienated from nature. Ever since a deeper knowledge of natural processes instilled serious doubts about the existence of natural laws at all, nature itself has assumed a sinister aspect. How should one be able to deduce laws and rights from a universe which apparently knows neither category? Man of the twentieth century has become just as emancipated from nature as eighteenth-century man was from history. History and nature have become equally alien to us, namely, in the sense that the essence of man can no longer be comprehended in terms of either category. On the other hand, humanity [*Menschheit*], which for the eighteenth century, in Kantian terminology, was no more than a regulative idea, has today become an inescapable fact.⁷

Already by 1951, Arendt had felt prepared to declare that she and her contemporaries “consider both history and nature to be alien to the essence of man” and anticipated that “humanity might

⁶ Arendt, *Origins*, 627.

⁷ *Ibid.*, 378. Arendt, *Elemente und Ursprünge Totaler Herrschaft*, 757-758.

one day become as emancipated from nature as eighteenth century man was from history.” By 1955, however, this formerly hypothetical day had already come and gone, with “Man of the twentieth century” having by then become “just as emancipated from nature as eighteenth century man was from history.” What changed? Between 1951 and 1955 human beings gave birth to a star and, in so doing, “learned to master nature to such an extent that the destruction of all organic life on earth with manmade instruments has become conceivable and technically possible.” It is interesting to see the antiquity of Western philosophy gain a millennium in between these two passages, but more importantly you can almost *feel* Arendt’s mounting impatience with those who have spent millennia merely ‘defining’ and ‘redefining’ human nature and her frustration with just how poorly equipped these humanist philosophers have left her and her contemporaries when it comes to confronting a new scale of power that not only alienates them from Nature (and undermines all the categories built upon it), but also reintroduces human totality as not merely a regulative abstraction but ‘an inescapable fact.’ In this revision, Arendt captures the sense in which ‘Nature’ began rapidly to lose plausibility in its role as reservoir of ‘natural’ necessity containing all those freestanding things beyond the scope of human agency. Here, the fact that the whole living order of terrestrial Nature can be undone by human beings robs Nature of its independence and confers upon it the second order artificiality that comes from surviving on human sufferance.

Auguste Comte once observed: “*To destroy you must replace.*”⁸ If the 1950s marked the beginning of the ‘End of Nature,’ it was only with the arrival of a viable replacement in the form of the Earth system that a moribund, empirically implausible Nature-as-cosmos or slow, self-

⁸ Original italics. Auguste Comte, *The Catechism of Positive Religion*, Trans. Richard Congreve (London: Savill and Edwards, 1858), 4.

balancing process began to give way to the understanding of the planet as a complex, dynamic system that it remains for many today. In 1987, a coterie of newly minted Earth system scientists established the International Geosphere-Biosphere Program (IGBP) as an institutional vehicle to carry their fledgling super-discipline forwards. By 2000, the IGBP had become a prominent nexus for connecting biologists, geologists, physicists, climatologists, and planet-observers of all types. That year's annual conference in Cuernavaca, Mexico attracted hundreds of leading scientists and a healthy smattering of Nobel Laureates. Among the latter was the atmospheric chemist Paul Crutzen, who had received the 1995 prize for chemistry in recognition of his contribution to discovering several contributing causes of ozone depletion (and whom we saw help raise the alarm about nuclear 'twilight at noon' in Chapter Three). Interestingly, Crutzen's most impactful contribution at that year's conference turns out was not to have been a paper or lecture, but rather an interruption that he made in the course of one of the panels. Setting the scene, fellow chemist—and then-IGBP executive director—Will Steffen recalls how,

Scientists from IGBP's paleoenvironment project were reporting on their latest research, often referring to the Holocene, the most recent geological epoch of earth history, to set the context for their work. Paul [Crutzen], a vice-chair of IGBP, was becoming visibly agitated at this usage, and after the term Holocene was mentioned yet again, he interrupted them: "Stop using the word Holocene. We're not in the Holocene any more. We're in the ... the ... the ... (searching for the right word) ... the Anthropocene!"⁹

What had inspired this outburst? What was this 'Anthropocene' supposed to connote? Crutzen took the opportunity to explain his thinking more formally three months later with a one-page piece in the IGBP *Newsletter* that he co-authored with the biologist Eugene Stoermer. In it they

⁹ Will Steffen, "Commentary" in *The Future of Nature: Documents of Global Change*, Eds. Libby Robin, Sverker Sörlin, and Paul Warde (New Haven: Yale University Press, 2013), 486.

reminded readers how, within the last several centuries, an exponentially increasing human population had converted roughly half of Earth's terrestrial surface into cities, cropland, pastureland, or wasteland, drastically disrupting the nitrogen cycle through synthetic fertilizers and the carbon cycle through fossil fuel consumption, releasing novel pollutants with planetary impacts such as ozone-destroying chlorofluorocarbons (CFCs) and leading to a many thousandfold increase in the rate of species extinction. All these factors were new and distinguished the present moment from the unusually stable 10,000 years since the last ice age that the International Geological Congress had christened the Holocene (or 'recent whole') in 1885. "Considering these and many other major and still growing impacts of human activities on earth and atmosphere, and at all, including global, scales," they summed up, "it seems more than appropriate to emphasize the central role of mankind in geology and ecology by proposing to use the term 'anthropocene' for the current geological epoch."¹⁰ When speaking out in Cuernavaca, Crutzen turns out not to have been trying to find "the ... the ... the" right word to coin a new phrase, but rather rack his brain to recall a term that Stoermer had already been using offhandedly for the better part of two decades.¹¹ For all the controversy that the term has subsequently inspired, it is worth keeping in mind that the theoretical underpinnings of the phrase 'anthropocene' arose during the consolidation of Earth system science from the 1950s

¹⁰ Paul J. Crutzen and Eugene F. Stoermer, "The 'Anthropocene'" in *Global Change: The IGBP Newsletter*, Vol. 41 (2000), pp. 17-18; 17.

¹¹ A fact that Crutzen acknowledged in co-authoring the IGBP newsletter piece more formally introducing the 'Anthropocene' with Stoermer. Will Steffen, Jacques Grinevald, Paul Crutzen and John McNeill, "The Anthropocene: Conceptual and Historical Perspectives," *Philosophical Transactions of the Royal Society No. 369* (2011), pp. 842-867; 843.

through the 1980s that we followed in Chapter Three, while the term itself had already long since passed into casual circulation among IGBP affiliates.¹²

Since its public debut in 2000, the ‘anthropocene’ has taken on a triple life. Thanks in part to the energetic efforts of geologist Jan Zalasiewicz, the term has been mooted for approval by the International Geological Congress to designate a new epoch in planetary history that signals a rupture with the Holocene that preceded it. Considered in from this angle, the resulting Anthropocene is primarily a question of geological convention, with debates swirling over whether the planet-scale changes that human beings have caused are severe enough to leave a record in the geological strata that will remain clearly identifiable many thousands of years hence. It is in this context that the so called ‘bomb spike’ of planet-swaddling radionuclides laid down by the global fallout of the (above ground) thermonuclear tests of 1952 to 1963 serve as an ideal candidate.¹³

Distinct from these disciplinary debates within geology, there is the much broader acceptance of the ‘Anthropocene’ by the Earth system scientists—the heirs of those early explorers such as Commoner and Odum who used these tracers for other purposes. In this second sense, for those who studied the planet as a systemic whole, it had already become abundantly clear by the early 1980s that, as Odum put it, “Humanity qualifies for catastrophe status.”¹⁴ Biologist Erle Ellis calls attention to the way in which the term ‘Anthropocene’ has serves to informally designate the ongoing “catastrophic, human-induced shift in the Earth’s functioning

¹² Clive Hamilton, *Defiant Earth: The Fate of Humans in the Anthropocene* (New York: Polity Press, 2017), 20-21, 34; Erle C. Ellis, *The Anthropocene: A Very Short Introduction* (Cambridge: Cambridge University Press, 2018), 16-18.

¹³ Kyle Nichols and Bina Gogineni, “The Anthropocene Dating Problem: Disciplinary Misalignments, Paradigm Shifts, and the Possibility for New Foundations in Science” in *Nature and Value*, Ed. Akeel Bilgrami (New York: Columbia University Press, 2020), 53. See also: Jan Zalasiewicz, “The Extraordinary Strata of the Anthropocene” in *Ibid.*, 29-45.

¹⁴ Howard T. Odum, *Ecological and General Systems* (1994), 576.

as a system.” However, as he further observes, while “Earth system scientists have indeed used the Anthropocene as a kind of shorthand for human transformation of Earth’s functioning,” at the same time “the Anthropocene itself is a synthesis of existing evidence, and not a new source of evidence for these changes or their consequences. For scientists in general, the evidence that humans are causing potentially catastrophic changes to Earth’s functioning as a system is rich, multifaceted, detailed, and robust—the product of decades of research.”¹⁵ Approached from this angle, it is generally accepted that the Earth system Anthropocene began in the 1950s as well.¹⁶ However, while some geologists are drawn to clear-cut division of the ‘bomb spike,’ many contemporary Earth system scientists point instead to what has come to be called (with a nod towards Karl Polanyi’s famous Great Transformation) the Great Acceleration—a time beginning shortly after the Second World War when everything from energy use to CO₂ production to deforestation to artificial nitrogen fixation to human population and just about any other metric that could be used to gauge human impact on a planetary scale began increasing at an often exponential rate.¹⁷ It was three decades into the Great Acceleration that the makers of the Bretherton Diagram from Chapter Three found they had to include a box labeled “human activities” to register how “the dynamics of the Earth System have become significantly more complicated since humanity emerged as a global system component”¹⁸ and the corresponding “anthropogenic regime shift in the functioning of the Earth system”¹⁹

¹⁵ Erle C. Ellis, *The Anthropocene* (2018), 130.

¹⁶ *Ibid.*, 53.

¹⁷ John R. McNeill and Peter Engelke, *The Great Acceleration: An Environmental History of the Anthropocene from 1945* (Cambridge, MA: Harvard University Press, 2016). See also: Will Steffen, Paul J. Crutzen, and John R. McNeill, “The Anthropocene: Are Humans Now Overwhelming the Great Forces of Nature?” in *Ambio* (Dec. 2007), Vol. 36, No. 8, pp. 614-621; 617.

¹⁸ As the influential climatologist Hans J. Schellnhuber put the matter. Hans J. Schellnhuber, “Discourse: Earth System Analysis: The Scope of the Challenge” in Hans J. Schellnhuber and Volker Wenzel, *Earth System Analysis: Integrating Science for Sustainability* (Heidelberg: Springer Verlag, 1998), 23.

¹⁹ Ellis, *The Anthropocene*, 73.

All this stands in marked contrast to the furor that arose with the reception of the term ‘Anthropocene’ among scholars in the humanities and humanistic social sciences. A vocal rejection of the ‘Anthropocene’ gathered speed in the early 2010s following early disciplinary bridging works such as Chakrabarty’s “The Climate of History.” While few in the humanities doubted the severity of the disruptions that the designation ‘Anthropocene’ was intended to capture, dissatisfaction proved so widespread that one recent survey by the anthropologist Franciszek Chwałczyk found upwards of 92 proposed alternative terms. He offers a helpful taxonomy for parsing this list, cogently differentiating between: (1) the “diagnostic propositions” that reject the collective blame that the term ‘Anthropocene’ seems to place on humankind as a whole in favor of alternative titles that more precisely address one’s preferred culprit for the present crisis (such as the oft-cited Capitalocene);²⁰ (2) the “postulative propositions” that shift attention away from the causes of the crisis and orient themselves towards potential resolutions instead (such as the Cosmopolocene, Symbiocene, or Good Anthropocene); and (3) the “meta-propositions” that inevitably cropped up to register the importance of the debates themselves and the wide degree of conceptual disorientation they indexed (such as the Neologismscene, Anthro-scene, or Anthro-obScene).²¹ In light of everything that we have seen so far, I propose that this wide spread reaction against the Anthropocene comes bound up with the same

²⁰ “Are we really living in the Anthropocene,” sociologist Jason Moore asks, “with its return to a curiously Eurocentric vista of humanity, and its reliance on well-worn notions of resource- and technological-determinism? Or are we living in the *Capitalocene*, the historical era shaped by relations privileging the endless accumulation of capital?” Jason Moore, *Capitalism and the Web of Life* (New York: Verso, 2015), 173. See also: Andreas Malm and Alf Hornborg, “The Geology of Mankind? A Critique of the Anthropocene Narrative” (2014), 66-67; Donna Haraway, *Staying with the Trouble* (Durham, NC: Duke University Press, 2016), 50-54.

²¹ Franciszek Chwałczyk, “Around the Anthropocene in Eighty Names—Considering the Urbanocene Proposition” in *Sustainability* Vol. 12, No. 11 (2020), pp.1-33; 9-11.

well-justified rejection of the political consequences of Western humanism that we have touched on repeatedly throughout this study.

In my brief overview of antihumanist anti-universalism in Chapter One, we saw how the bloody conflicts between incompatible humanist universalisms that rocked the first half of the twentieth century helps to spark a revolt against humanism in Germany starting in the 1920s, which then spread to France in the 1940s before becoming what intellectual historian Stefanos Geroulanos aptly termed “an almost official face of French thought” by the 1960s.²² I brought that thumbnail sketch to a close with Lyotard and Derrida in the 1980s, but the decades that followed saw the antihumanist center of gravity pass westward once more. This time the new locus became the United States, where from the 1990s to the 2000s the antihumanist rejection of Enlightenment universalism came to acquire the status of a sort of critical common sense for many in the academic humanities and humanistic social sciences. In 2004, philosopher Judith Butler eloquently summed up the prevailing wisdom when claiming: “The terms by which we are recognized as human are socially articulated and changeable. And sometimes the very terms that confer ‘humanness’ on some individuals are those that deprive certain other individuals of the possibility of achieving that status, producing a differential between the human and the less-than-human.”²³ That same year, art critic Abigail Solomon-Godeau put the matter more succinctly with the rhetorical question: “Have we not by now learned that the universalist notion of ‘Man’ is a figure of exclusion and repression?”²⁴ Having relocated to Chicago, in 2005 Derrida’s former student Jean-Luc Marion distilled the political logic of antihumanism with particular lucidity when noting, “There appears the definitive weakness of every humanism: not

²² Geroulanos, *An Atheism that Is not Humanist Emerges in French Thought*, 2.

²³ Judith Butler, *Undoing Gender* (New York: Routledge, 2004), 2.

²⁴ Abigail Solomon-Godeau, “The Family of Man: Refurbishing Humanism for a Postmodern Age” in *Photography after Photography: Gender, Genre, History* (2004) 59-60.

only does it claim to comprehend as a matter of fact what man can and ought to be; but above all it assumes that such a knowledge reinforces the humanity in man, when such knowledge instead destroys it or, in any case, threatens it.” In light of this, Marion wrote, “A frightening consequence thus imposes itself: to claim to define what a man is leads to or at least opens the possibility of leading to the elimination of that which does not correspond to this definition. Every political proscription, every racial extermination, every ethnic cleansing, every determination of that which does not merit life—all of these rest upon a claim to define (scientifically or ideologically) the humanity of man...Determining the humanity of man thus amounts to making an end of him.”²⁵ Having inherited a legacy of colonial genocide, world war, and systematic exploitation, expropriation, and at times extermination perpetrated by those who claimed to be discharging their duty to ‘humanity,’ there exists solid ground for the widespread antihumanist consensus that “the whole is the false,”²⁶ “whoever invokes humanity wants to cheat,”²⁷ and that “it is almost impossible to think of a crime that has not been committed in the name of humanity.”²⁸

Given all this, it is easy to see how many scholars in the humanities and humanistic social sciences would have been primed to reject the figure of Man or species totality implied by the *Anthropos* at lurking lexically at the heart of the Anthropocene—accepting the severity of the planetary crisis but proposing 92 alternative titles. While the positive alternatives proliferated throughout the 2010s, the critiques consolidated, with the Anthropocene being alternatively denounced as: “the enfolding of man into a single story, with a single past and a single

²⁵ Jean-Luc Marion, “*Mihi magna quaestio factus sum: The Privilege of Unknowing*” in *The Journal of Religion*, Vol. 85, No. 1 (January 2005), pp. 1-24; 13-14.

²⁶ Theodore Adorno, *Minima Moralia* (New York: Verso, 2005), 50.

²⁷ Carl Schmitt, *The Concept of the Political* (Chicago: University of Chicago Press, 2007), 54.

²⁸ Tony Davies, *Humanism* (New York: Routledge, 2008), 141.

future/demise [being] the most powerful (and problematic) aspect of the discourse;”²⁹ an “easy story” told about “humanity as an undifferentiated whole” that “does not challenge the naturalized inequalities, alienation, and violence inscribed in modernity’s strategic relations of power and production;”³⁰ an form of “displacement” by which “climate change is *denaturalized* in one moment—relocated from the sphere of natural causes to that of human activities—only to be *renaturalized* in the next, when derived from an innate human trait;”³¹ or the way that “the term’s enlightenment legacy...appeals to a false universal of homogenous ‘Man,’ which was created with a white, Christian, heterosexual male person as the basis for the universal.”³² Accordingly, if any attempt to universally define Man must necessarily create a pernicious set of terms for establishing new forms of hierarchy and exclusion *within* the totality of human beings, then it should be no surprise that the last decade would see so many antihumanist humanities scholars balk at Crutzen’s designation of ‘Anthropocene’ for either its dangerous presumption or insidious naiveté.

If it is true that no universal image of ‘Man’ can adequately encompass all human beings, then it also makes sense to reject the ‘Anthropocene’ and its putative *Anthropos* on more explicitly political grounds as a harmful sleight of hand—one that attempts to shift the blame for present crises away from the discrete sections of humankind or social systems that caused them and onto some abstract notion of humankind as a whole. At best, invoking the notion of human totality implied by the *Anthropos* of the ‘Anthropocene’ would seem to unjustly impose collective human responsibility for crises that have been caused by the disproportionate acts of a

²⁹ Lepori, “There Is no Anthropocene,” 105.

³⁰ Jason Moore, *Capitalism in the Web of Life: Ecology and the Accumulation of Capital* (New York: Verso, 2015), 170.

³¹ Malm and Hornborg, “A Geology of Mankind?,” 65.

³² Anna Tsing in *Reflections on the Plantationocene: A Conversation with Donna Haraway and Anna Tsing*, Ed. Addie Hopes and Laura Perry (Madison: University of Wisconsin, 2019), 3.

relative few (with the added injustice that those who have done the least to drive changes such as global warming are also set to be among the most vulnerable to its effects). At worst, opponents of the ‘Anthropocene’ posit that its appeal to an *Anthropos* falsely naturalizes human beings, as if the present crises had arisen as the result of some tragic but necessary flaw in essential human nature rather than as the result of historically contingent—and therefore politically contestable—social systems. The undifferentiated *Anthropos* has been likened to a pernicious form of ‘species thinking’ that both falsely naturalizes a culturally contingent definition of ‘Man’ (thereby trying to falsely pass of what is historically accidental as politically incontestable) and that consequently distracts attention away from the direct drivers of today’s crises by fostering a sense that all human beings are equally guilty in general (meaning that none are especially guilty in particular).³³

I for my part have no desire to contest the antihumanist critique of Enlightenment humanism or the pernicious consequences that arise from any political project that begins with the attempt to define the essence of Man in the singular. On the contrary, as I tried to illustrate with the case of Jaspers in Chapter One, I believe that the immanentization of the apocalypse renders the traditional tenets of Western humanism even more untenable, driving otherwise humane thinkers towards countenancing human extermination on a previously unthinkable scale. At the same time, however, I have also highlighted what I believe has been a particularly advanced case of Anders’ ‘apocalypse-blindness’ that sees antihumanist critiques of humanism’s ersatz universalism overlook or outright dismiss the specter of universal death and the profoundly urgent political challenges introduced by the power to kill life itself (with the case of Foucault’s brief but spectacular engagement with the subject in Chapter Two standing out as the

³³ Malm and Hornburg, “The Geology of Mankind?”, 67.

exception that proves the rule). As we saw in Chapter Three, the Earth system science that would serve as the context for first coining the Anthropocene has dealt with the immanent apocalypse since its inception, taking shape amid the tracers of the hydrogen bomb tests and providing the models of planetary dynamics that gave the first prospective glimmers of the comparative ease with which human beings might precipitate nuclear winter or flense away the ozone layer or initiate a self-reinforcing feedback cycle of runaway global warming. Here, I would like to conclude this study by arguing that there may well be a measure of apocalypse-blindness that leads critics of the Anthropocene to miss the urgent political challenges introduced by the contingent universalism of universal death and to invite readers to consider the politically generative potential of approaching the Anthropocene and its *Anthropos* as immanent apocalyptic features of the politically modern world that was born with the first atomic explosions.

What might we stand to learn by refusing to reject the ‘Anthropocene’ out of hand and opting instead to “stay with the trouble” that inheres in its highly problematic title?³⁴ A prominent indictment against the ‘Anthropocene’ is that the term falsely implicates humankind as a whole in a cascading series of ecological crises that were neither caused by humankind as a whole nor will have their first and worst effects felt evenly across all human beings in their totality. As Andreas Malm and Alf Hornborg put the matter memorably in a widely quoted passage: “The ‘Anthropocene’ might be a useful concept and narrative for polar bears and amphibians and birds who want to know what species is wreaking such havoc on their habitats,

³⁴ This is the approach that Bruno Latour takes when discussing the subject, arguing that “to stay with the trouble it’s better to stay with the word.” He makes this quip in response to Haraway’s proposition in *Staying with the Trouble* to nix the ‘Anthropocene’ in favor of her deliberately outré alternative, the ‘Chthulucene.’ Bruno Latour, *Facing Gaia: Eight Lectures on the New Climate Regime*, Trans. Catherine Porter (Medford, MA: Polity Press, 2017), 121 fn. 30. Haraway, *Staying with the Trouble*, 30-57.

but alas, they lack the capacity to scrutinize and stand up to human actions. Within the human kingdom, on the other hand, species-thinking on climate change is conducive to mystification and political paralysis. It cannot serve as a basis for challenging the vested interests of business-as-usual.”³⁵ This is a good point well taken. However, as we have already seen throughout this study, there is a disturbing aspect of “business-as-usual” that continues to escape nearly all political and social theorists: namely, the business of placing the whole of human life knowingly in jeopardy. Earth system science took shape in the shadow of universal death, using the fallout from the first hydrogen bomb tests as an indispensable resource for tracing the systemic connections linking planetary processes. One of the most consistently overlooked aspects of the Earth system Anthropocene is not merely the claim that “humankind” has become “a major geological force,”³⁶ but that the scale of this force is not merely capable of causing appreciable planet-scale changes, but even of actively degrading the conditions of planetary habitability beyond the bounds of what humankind can endure.

In his letter to the Ephesians, Paul the Apostle writes of his Messiah: “He himself is our peace, who has made the two groups [Jews and gentiles] one and has destroyed the barrier, the dividing wall of hostility, by setting aside in his flesh the law with its commands and regulations. His purpose was to create in himself one new humanity out of the two, thus making peace.”³⁷ In this passage Paul is describing the radical reconciliation of both Jew and gentile in the creation of one universal communion for all humankind. The phrase translated here as “new humanity” is *Kainos Anthropos* (καινός άνθρωπος).³⁸ In 2000, Paul Crutzen announced the arrival of another

³⁵ Malm and Hornborg, “The Geology of Mankind?”, 67.

³⁶ Will Steffen, Paul Crutzen and John McNeill, “The Anthropocene: Are Humans Now Overwhelming the Great Forces of Nature?” in *Ambio* Vol. 36, No. 8 (Dec. 2007), pp. 614-621; 618.

³⁷ NIV, Ephesians 2:14-15.

³⁸ Gregory W. Dawes, *The Body in Question: Metaphor and Meaning in the Interpretation of Ephesians 5:21-33* (Boston: Brill Publishing, 1998), 171-173.

form of human universality. Like his namesake, however, Crutzen was merely the messenger; the apostle of a gospel whose central tenets had already been established decades prior. Recalling the neologism long since coined by Stoermer, Crutzen had expressed his frustration that day in Cuernavaca that Earth system scientists presenting their findings at a meeting of the IGBP could continue to blithely discuss the Holocene as if they did not know that “the people of the Earth are no longer simple spectators to the drama of Earth evolution but have become active participants on a worldwide scale.”³⁹ Had they not heard the bad news? Far from being an innovation, Crutzen’s declaration that “we’re in the Anthropocene!” was “conceived as more of a rhetorical prod,”⁴⁰ reminder, and convenient shorthand for designating the pervasive planetary impact being caused by human beings as seen from the perspective of Earth system science.

As we have already seen, the awareness of human beings as planet-scale actors had been developing rapidly since the 1950s, when the advent of thermonuclear weapons first introduced both the technical means to radically alter the conditions of planetary habitability with the push of a button and a new set of tools for discovering the previously unguessed-at intricacies of the systems that sustain earthly life. Within the Earth system, there are neither Jews nor gentiles nor any other qualifier that has traditionally been used to draw politically relevant distinctions between peoples. Instead, here one encounters a finite number of human systems that must continually process matter, energy, and information to sustain themselves as themselves—an astoundingly complex feat of endurance for which they are utterly dependent on the whole world of symbionts that make human bodies home to the broader built social and material environments that both sustain and are sustained by human beings, and the broader biosphere

³⁹ NASA, *Earth Systems Science: Overview* (1986), 5.

⁴⁰ Morton, *The Planet Remade*, 45.

and cycles of biogeochemical flows that sustain inextricable connections across all scales.⁴¹

Within this milieu, a new human totality emerges: a *Kainos Anthropos* that reconceives human totality in terms of universal planetary connection as components of a single system whose mutually sustaining interactions only tail off somewhere in the near-void of space.

Few Earth system scientists were more cognizant of the human power to precipitate what Russell once called ‘universal death’ than Crutzen himself, who played an integral role in raising the alarm about the prospect of ‘twilight at noon’ in the wintry aftermath of a nuclear war—as seen above. But it bears noting that Crutzen was also acutely aware that this grisly prospect represented merely one of a growing number of means by which human beings had come to jeopardize the whole of human life. When receiving his Nobel Prize in 1995 for his work on CFCs, Crutzen took the opportunity of his Nobel Lecture to warn of what a near miss the ozone scare of the 1970s had been. Bromine, he noted, operates much like chlorine (the first C in CFCs), but turns out to be almost one hundred times more dangerous for ozone than chlorine (itself disastrous) on an atom-for-atom basis. “This brings up the nightmarish thought,” he cautioned, “that if the chemical industry had developed organobromine compounds instead of the CFCs...then without any preparedness, we would have been faced with a catastrophic ozone hole everywhere and at all seasons during the 1970s, probably before the atmospheric chemists had developed the necessary knowledge to identify the problem and the appropriate techniques for the necessary critical measurements. Noting that nobody had given any thought to the atmospheric consequences of the release of Cl [chlorine] or Br [bromine] before 1974, I can only

⁴¹ Putting what I take to be the same point slightly differently Clive Hamilton contends, “From an Earth System viewpoint, there are on Earth no divisions between North and South or between nations, cultures, genders, and races. There are only humans with more or less power to disturb it. If the Anthropocene is a rupture in the history of the Earth as a whole, then it is also a rupture in the history of humans as a whole.” Hamilton, *Defiant Earth*, 34.

conclude that mankind has been extremely lucky...”⁴² Was Crutzen reintroducing Enlightenment ‘Man’ or a “universal format of humanity” when claiming that “mankind has been extremely lucky” in *not* inadvertently flensing away the ozone layer and subjecting all life on land to a drastic increase in ultraviolet radiation whose effects on mice, humans, moss and “the interconnected web of life are not within the realm of the calculable”?⁴³ I do not believe so. Rather, in contrast to those who argue that the undifferentiated totality of humanity implied by the *Anthropos* of the Anthropocene leads to “mystification and political paralysis,” I echo Arendt in contending that one of the most politically urgent and ultimately unavoidable aspects of the *Kainos Anthropos* is the profoundly jarring awareness that, for the first time in history, the sum total of all human beings is no longer merely a philosophical abstraction, but has instead come to be an all too empirical object. Not only can the net effects of all human actions be measured, but the models of the functioning of the Earth System fail to conform to ongoing measurements if they *neglect* to take the collective consequences of the *Kainos Anthropos* into account. Just as importantly, this newly available approach to tallying human totality is not only measurable, but manipulable. This is to say that, in contrast to all previously ‘mystifying’ accounts of human totality, it is actually possible to empirically affect the *Kainos Anthropos* as a single, undifferentiated whole—albeit so far only via the prospect of precipitating cascading ecological collapse and ‘universal death.’ And so, while I entirely agree that the image of undifferentiated human totality conjured by the Earth system Anthropocene may be useless for traditional political purposes—which concern the plight of this or that particular people—this is not the fault of the *Kainos Anthropos* of combined human activities *per se*, but rather a side effect of the

⁴² Paul Crutzen, “My Life with O₃, NO_x, and Other YZO_xs” *Nobel Lecture* (December 8, 1995), 214.

⁴³ Schell, *The Fate of the Earth*, 82.

new and utterly unprecedented types of political challenges that arise when it is not merely the affairs of a particular people, but the existence of all people as such that come to hinge on the political outcome of human decision making. In this sense, the conspicuous flight *from* the ‘Anthropocene’ and its universal stakes for humankind perpetuates what has become by now an almost three-quarter century refusal to face the deeply disturbing political consequences that arise with the growing power to precipitate ‘universal death.’

The *Kainos Anthropos* I am describing first took shape as a new approach to human totality when Western thinkers began to set aside the ancient quest to define the *what* of a fixed essence of Man in the singular and turned instead to consider *how* a plurality of human beings persist and become capable of collectively performing actions that only arise as a mass phenomenon in the relations between them. Arendt helped to refocus attention in this direction with her efforts in *The Human Condition* to approach the “sum total of all human beings” not in terms a “human nature” that they all presumably share, but instead “the sum total of all human activities and capacities which correspond to the human condition [and] does not constitute anything like human nature.”⁴⁴ As illustrated in the preceding chapters, Arendt’s insights in this area belong to part of a broader transformation that took place across many disciplines and regions of thought between the 1950s and the 1980s, further dissolving the traditionally solid and self-contained objects of Western metaphysics into processes and then mapping the mutual interactions of these processes as systems components whose most defining features only arise in their relations with others. Having come of age in the post-cybernetic systems milieu of the 1980s, the *Kainos Anthropos* of the Anthropocene hails from a paradigmatically different world; one that has very little to do with ancient schemas of primary substances, secondary qualities,

⁴⁴ Arendt, *The Human Condition*, 10.

and specific differences that inspired over two millennia of Western humanist endeavors to universally define what a human being essentially is by Nature. Instead, here the emphasis shifts from endless taxonomic and definitional questions regarding what Man is and where to draw substantial boundaries and towards what human beings collectively do: the material, energetic, and informational processes that human beings collectively sustain in conjunction with myriad other systems as part of a dynamically interactive whole. Popularized first as a rhetorical prod at the 2000 meeting of the IGBP, Crutzen's 'Anthropocene' served to remind the Earth System scientists that nothing that they study on today's planet takes place independently of the system-wide impacts that human actions are causing—a recognition that featured front and center at the establishment of their meta-discipline in the 1980s and was itself merely a heroic feat of synthesis that tried to make sense of how, as earlier quoted, "Studies of the continents, oceans, atmosphere, biosphere, and ice cover over the past thirty years have revealed that these are components of a far more dynamic and complex world than could have been imagined only a few generations ago."⁴⁵ Given this, I hope to have impressed the possibility that, when taken on its own terms, the *Anthropos* of the Earth system Anthropocene does not simply represent the tradition of all the dead generations of humanists returned to weigh like a nightmare on the minds of the living.

Ironically—tragically, even—it is the many vocal academic antihumanists themselves who continue to raise this specter so that they can proceed to banish it once more, perceiving in the human totality of the *Anthropos* the image of their old foe: the Enlightenment universalist definition of 'Man' with all his tacit exclusions, hierarchies, and repressions. The *Kainos Anthropos* of the Anthropocene, by contrast, does not, as feminist philosopher Rosi Braidotti

⁴⁵ NASA, *Earth Systems Science: Overview* (1986), 4.

says of “the human of Humanism,” “stand for normality, normalcy and normativity” or “function by transposing a specific mode of being human into a generalized standard, which acquires transcendent values as *the* human: from male to masculine and onto human as the universalized format of humanity.”⁴⁶ Instead, it seeks to express the interactions that the sum total of human beings have with their planetary environment—continually shaping and being shaped in a dynamic dance performed on the edge of an ecological cliff. It conjures a conception of humanity as a whole described in functional terms according to the connections it creates and the dynamics it drives within the planetary system. It addresses humanity in the vernacular of systems science, not normatively in the venerable Western language of philosophical anthropology or Aristotelian metaphysical biology.⁴⁷ This means that all human beings find themselves inextricably entwined in the *Kainos Anthropos* of the Anthropocene by virtue of belonging to a planetary web of life in which nothing is ever separable save for heuristic purposes. Accordingly, the many critiques that take aim at the Anthropocene on the grounds that it falsely naturalizes ‘Man’ or surreptitiously revives a politically pernicious “universal format of humanity” fall wide of the mark, mistaking their target in a way that obscures all that is newest and most urgent in the image of human totality furnished by Earth system science.

There may well prove to be many politically sound reasons for ultimately choosing to reject the designation ‘Anthropocene’ in favor of other more ‘diagnostic propositions’—such as the Technocene, Eurocene, or Capitalocene. However, this reflex to reject all discussion of humanity in universal terms and redirect attention towards familiar culprits—such as runaway technology, the legacy of European colonization, or capitalism—draws attention away from the

⁴⁶ Braidotti, *The Posthuman*, 26-28.

⁴⁷ For an account of Aristotle’s metaphysical biology, see Alisdair MacIntyre, *After Virtue* (Notre Dame; University of Notre Dame Press, 2007), 148-159.

very different set of political and conceptual challenges that arise when the combined effects of all human actions come to be measurable on a planetary scale and humanity itself comes to be reconceived in terms of an active planetary process developing dynamically in a system of systems. As mentioned before, while the idea that “everything is connected” may be ancient, the ability to begin to map, represent, and model those connections is barely a half century old, bringing with it a novel set of resources for reconceiving the terms in which political thinkers frame human universality and totality. Those alive today have still barely begun to explore the political tensions that open up in the ontologically alien world of complex planetary interconnection furnished by Earth System science. I believe that it would be a tragic mistake to forego the present opportunity to develop a cartography of the *Kainos Anthropos* of the Anthropocene and the novel political potentials and pitfalls it contains in favor of instead offering yet another critique of capitalism or colonialism (however important these may be).

How are political questions to be decided when the outcome may decide the continued existence of every living human being? We are no closer to answering this question today than when it was first raised in the shadow of the hydrogen bomb or returned as the specter of cascading ecological collapse amid nuclear winter, ozone depletion, or global warming. Political theorists have abrogated their responsibility to face this newly existential class of political questions for far too long, embracing an antihumanist rejection of all things total and universal at precisely the same time that the novel prospect of universal death appeared on the horizon and, with it, the rise of radically new ways to reconceive human totality. If political thinkers continue to demur from rethinking what politics might look like when recast at this scale, the newly opened conceptual territory will continue to be colonized by those who would forego politics altogether and anoint themselves the experts in charge of securing the continuation of human

existence at whatever cost they deem necessary. Crutzen has been perceptively described as possessing “an understated, rather Dutch, slightly Yoda-ish charisma” and “political instincts that served him beyond academia, a feeling for the stuff that mattered and for how to get people to see that it mattered.”⁴⁸ Like his apostolic namesake, after calling attention to the existence of the ‘Anthropocene’ (and, implicitly, of the *Kainos Anthropos* that inhabits it), Crutzen has emerged as the herald of an increasingly messianic movement that seeks to convert Earth System scientists’ growing understanding of planetary processes into programs that aim to directly counteract some of the more disastrous consequences of collective human activities. Knowledge is power, and just as the hypertrophic increase in human power created by the hydrogen bomb spawned a corresponding increase in knowledge that eventually consolidated under the umbrella of Earth System science, the immense increase in knowledge *about* the Earth system science is leading to a corresponding prospect of exercising new degrees of power to deliberately intervene *in* the operation of various components of the Earth system. In the wake of cybernetics, not only is knowledge power, but the growth of *information* about the dynamics of a system begins to correspond to increasingly precise degrees of *control* that can be exercised over that system.⁴⁹

Every year, as vast new quantities of data are accumulated about the functioning of the Earth system, intimations of abstract holocoenotic holism come to be replaced by ever more refined functional diagrams that will continue to inspire desires to deliberately intervene in the dynamics depicted. In 2002, Crutzen brought the ‘Anthropocene’ to broader attention with an

⁴⁸ Morton, *The Planet Remade*, 153.

⁴⁹ “Fundamentally, improvements in control are really improvements in communicating information within an organization or mechanism. The sum total of progress in this sphere is explosive... Present awful possibilities of nuclear warfare may give way to others even more awful. After global climate control becomes possible, perhaps all our present involvements will seem simple. We should not deceive ourselves: once such possibilities become actual, they will be exploited.” John von Neumann, “Can We Survive Technology?” in *The Neumann Compendium*, Ed. F. Brody and T. Vámos (Singapore: World Scientific Publishing Co Pte Ltd, 1995), 519.

enormously influential publication in the premier science journal *Nature*, where he argued that, absent some global catastrophe such as nuclear war, an asteroid strike, or pandemic, “mankind will remain a major environmental force for many millennia.” In light of this, he argued, “A daunting task lies ahead for scientists and engineers to guide society towards environmentally sustainable management during the era of the Anthropocene. This will require appropriate human behaviour at all scales, and may well involve internationally accepted, large-scale geo-engineering projects, for instance to ‘optimize’ climate. At this stage, however, we are still largely treading on *terra incognita*.”⁵⁰ Although I believe that all those who are alive today owe a significant debt of gratitude to the Earth System scientists for their heroic work in initially charting the *terra incognita* of our dynamically interconnected planet, it would be a mistake to permit them to colonize this new terrain uncontested. As Crutzen and several coauthors point out in a follow up piece on the Anthropocene published in 2007, “Humanity is, in one way or another, becoming a self-conscious, active agent in the operation of its own life support system.”⁵¹ Here, they argue explicitly that “the severity of global change, particularly changes to the climate system, may force societies to consider more drastic options” such as “geo-engineering,” which, on their description, “involves purposeful manipulation by humans of global-scale Earth System processes with the intention of counteracting anthropogenically driven environmental change such as greenhouse warming.”⁵² Taking it as a matter of course that “future generations of *H. sapiens* will likely do all they can to prevent a new ice-age by adding powerful artificial greenhouse gases to the atmosphere,” the authors suggest that it will likewise only be a matter of time before similarly drastic engineering measures are taken to prevent

⁵⁰ Paul J. Crutzen, “Geology of Mankind” in *Nature* Vol. 415 (2002), 23.

⁵¹ Will Steffen, Paul J. Crutzen, and John R. McNeill, “The Anthropocene: Are Humans Now Overwhelming the Great Forces of Nature?” in *Ambio* Vol. 36, No. 8 (Dec. 2007), pp. 614-621; 619.

⁵² *Ibid.*

equally catastrophic degrees of warming.⁵³ Suffice it to say that given his key role in raising the alarm about the prospect of nuclear winter a quarter of a century prior, Crutzen knew whereof he spoke when pointing out on the subject of geoengineering how, “for example, the anthropogenic emission of aerosol particles (e.g., smoke, sulphate, dust, etc.) into the atmosphere leads to a net cooling effect, masking some of the warming we would otherwise see now.”⁵⁴

From an Earth System orientation, it is a taken for granted fact that no individual human action is definitively separable from planet-scale effects and that the sum total of all human actions has long since become a key factor in shaping planetary processes. Within this approach, the apocalyptic catastrophe of thermonuclear war followed by nuclear winter comes to occupy merely one point on a continuum of inadvertent human-caused planetary disruption—distinct for its severity and immediacy from the global changes that are presently being caused by the release of GHGs from the burning of fossil fuels, but not so radically different. As knowledge of the inadvertent disruptions human beings are causing continues to increase, the temptation will grow to transform this new information into a corresponding form of power to control the dynamics in question (even if only to mitigate the human disruptions already caused). To this temptation will be added the clamor of all those who, having denied the existence of global warming until the last vestige of plausible deniability was washed away in the latest 10,000 year storm, demand an immediate technical solution to banish this unpleasant disruption.⁵⁵ And yet, as the disturbingly late discovery of nuclear winter and the near-miss with bromine reveal, even seemingly slight perturbations to the Earth System can carry potentially existential consequences for the web of

⁵³ *Ibid.*, 620.

⁵⁴ *Ibid.*, 619.

⁵⁵ Oliver Morton brilliantly anticipates this coming lurch, wryly dubbing it the “Freakonomics Pivot” based on a similar about-face performed by pop-economist duo Stephen Dubner and Steven Levitt. Morton, *The Planet Remade*, 153-154.

life and the human habitability of the planet—none of which, given the degrees of complexity at play, may prove to be detectable before their effects are irreversible.

What to make of all this? I will not pretend to have anything approaching a solution. Nor do I think that the usual search for solutions may be warranted in a context where what is at stake is not a specific malady to be cured, but a chronic condition that must now be endured for as long as possible. Given what I have tried to demonstrate here is the irreducibly *existential* element of the Earth System Anthropocene, the question instead might better be posed: how can we begin to learn to live together in a way that preserves what is best in our political ideals—such as ongoing aspirations for justice, equality, and universal inclusion—while keeping universal death at bay? If the only definitive way to exit a world of increasingly overdetermined anthropogenic risk is by actualizing the human potential to destroy all human life, then what must we change in our politics in order to “make the end times endless?”—as the antinuclear luminary Günther Anders memorably put the matter.⁵⁶ What I want to suggest here in closing is that the transformations tracked in this study not only altered the terms in which the total annihilation of humankind was understood, but also generated a correspondingly different way of conceiving of human beings in their totality. Where generations of humanists had sought to approach human universality by peeling away the layers of human artifice to identify the substantial similarities that all human beings shared by Nature beneath their merely qualitative differences, the systems scientists of the second half of the twentieth century arrived at a new conception of human totality based not on what all human beings essentially are, but on what all human beings collectively do. The *Kainos Anthropos* of the Earth System Anthropocene was born, in a sense, *post*-humanist by those who had already come to recognize that the longstanding divisions between Nature and artifice had

⁵⁶ Günther Anders, „Thesen zum Atomzeitalter“ in *Die Atomare Drohung*, 98.

lost their plausibility and that whatever may be most essential true about human beings resides not at the core of their substance, but arises actively in the mutually sustaining connections that the form both with one another and all the other systems that they inhabit and that inhabit them—from the cellular to the planetary.

The *Kainos Anthropos* arose as what Foucault might have called “the effect of a change in the fundamental arrangements of knowledge” about how the planet operates as a systemic whole. In *The Order of Things*, the thinker had looked towards the scientifically defined outlines of Enlightenment Man and speculated that if the arrangements of knowledge that had brought him into existence “were to disappear as they appeared, if some event of which we can at the moment do no more than sense the possibility...were to cause them to crumble...then one can certainly wager that man would be erased, like a face drawn in sand at the edge of the sea.”⁵⁷ The *Kainos Anthropos*, by contrast, was born under the sign of its own erasure. To borrow again from Foucault: it “is an invention of recent date. And one perhaps nearing its end.”⁵⁸ It invites contemporaries to adopt an approach to politics that holds the end close in its thoughts the better to keep it from drawing closer.

⁵⁷ Ibid.

⁵⁸ Foucault, *The Order of Things*, 422.

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