

Modernity, Anthropocene, Capitalocene, and the Climate Crisis

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This chapter discusses grand narratives, myths and discourses in the Anthropocene during and beyond modernity. The two main protagonists are abstractions to which responsibility has been ascribed for the climate and ecological crisis confronting humanity, other species, and the Earth system: Anthropos, the telluric super-agent who has produced a new geological epoch, and capital. The first section of this chapter discusses the emergence of the grand narrative of the Anthropocene. In section two, I discuss the Anthropocene in relation to the dominant tropes of modernity on science, reason and progress, and the intersection between modernity and capitalism. I pay particular attention to the idea of progress as and through economic growth, ecomodernism, and neoliberalism. Section three examines some of the grand narratives of the Anthropocene, the Age of Humans. These include: naturalist, post-nature, eco-catastrophist, and eco-Marxist (Capitalocene) narratives. The penultimate section considers problems created by the persistence of what I call Holocene rationality. In the concluding section, I argue that the Anthropocene is an age of unreason that we must transcend in pursuit of a great awakening.

1. The Emergence of the Anthropocene Narrative

Natural scientists use the concept of the Anthropocene to highlight the rupture of the Earth System.¹ In 2002, Nobel chemistry laureate, Paul Crutzen, popularized the concept when arguing that “[i]t seems appropriate to assign the term ‘Anthropocene’ to the present, in many ways human-dominated, geological epoch.”² Crutzen contended that the Anthropocene was arguably inaugurated by James Watt’s refinement of the steam engine between 1763 and 1775, which enabled the widespread use of coal as a source of energy and launched the Industrial Revolution.³ Others suggest that humankind became a full-fledged Promethean, telluric force during the Great Acceleration:

The second half of the twentieth century is unique in the entire history of human existence on Earth. Many human activities reached take-off points sometime in the twentieth century and have accelerated sharply towards the end of the century. The last 50 years have without doubt seen the most rapid transformation of the human relationship with the natural world in the history of humankind.⁴

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- 1 Clive Hamilton, “The Anthropocene as Rupture,” *The Anthropocene Review* 3, no. 2 (2016): 93–106, at 94. Hamilton describes Earth System as an “integrative meta-science of the whole planet as a unified, complex, evolving system beyond the sum of its parts.”
 - 2 Paul Crutzen, “Geology of Mankind” *Nature* 415, no. 4687 (2002): 23. In 2000, Crutzen and Eugene Stoermer had introduced the concept in the newsletter for the International Geosphere-Biosphere Programme in which they described the ways in which mankind had become a “significant geological, morphological force”: Paul Crutzen and Eugene Stoermer, “The ‘Anthropocene,’” *Global Change Newsletter* 41 (2000): 17–18.
 - 3 Watt improved the steam engine invented by Thomas Newcomen in 1712.
 - 4 W. Steffen et al., *Global Change and the Earth System: A Planet under Pressure* (Berlin: Springer, 2005), 131. See also Will Steffen et al., “The Trajectory of the Anthropocene: The Great Acceleration,” *The Anthropocene Review* 2, no. 1 (2015): 81–98.

Whichever periodization is favoured, it is widely accepted that *Homo sapiens* is altering the geo-history of the Earth.⁵ Future geologists will find evidence in the planet's stratigraphy of radio-nuclides from nuclear weapons testing, greenhouse gas emissions, the 300 metric tonnes of plastic produced annually, and enough concrete to cover the surface of the planet — more than half of which has been produced in the past two decades.⁶ In addition to anthropogenic climate change, seven other planetary boundaries have been breached or are under threat.⁷ Nearly half the Earth's land surface has been transformed by human activity during the Great Acceleration, with significant impacts on nutrient cycling, biodiversity, ecosystems, and soil structure. More than half of accessible freshwater is utilized directly or indirectly by human beings, and underground water resources are being rapidly depleted.⁸

The idea of the Anthropocene is gaining increasing purchase in the academy and public discourse as a shorthand for the power of human agency in the Age of Humans. It is a powerful trope — indeed, an overarching grand narrative — about the climatic harms caused by overweening arrogance, hubris and

5 The International Commission on Stratigraphy has yet to decide whether to accept the Anthropocene as a new geological epoch as proposed by the Working Group on the Anthropocene that began its work in 2009. Periodizations are inevitably contested. Proponents of the Capitalocene, such as Moore, argue that it can be traced back as far as the emergence of mercantile capitalism in the sixteenth century: Jason W. Moore, "The Capitalocene, Part I: On the Nature and Origins of Our Ecological Crisis," *The Journal of Peasant Studies* 44, no. 3 (2017): 594–630.

6 The total amount of concrete produced by humanity is about 1 kg/m² across the whole surface of the Earth. Enough plastic wrap has been manufactured since 1950 to cover the whole Earth, and enough aluminium foil to cover Australia: Will Steffen, "Welcome to the Anthropocene," *Australasian Science* 37, no. 2 (2016): 28–29. More than 8 million tonnes of plastic are dumped into the oceans annually, see *Plastic Oceans*, <http://www.plasticoceans.org/the-facts/>. Stratigraphy is both a branch of geology and an archeological record of human activity.

7 Johan Rockström et al., "Planetary Boundaries: Exploring the Safe Operating Space for Humanity," *Ecology and Society* 14, no. 2 (2009): 32–65.

8 Ian Angus, *Facing the Anthropocene: Fossil Capitalism and Crisis of the Earth System* (New York: Monthly Review Press, 2016), ch. 2.

greed, and the onto-epistemological challenges that climate change poses to our understandings of what it means to be human in geo-human history.⁹ Like Donna Haraway, I use the concept despite deep reservations. I use Anthropocene because, in Haraway's words, "the word is already well entrenched and seems less controversial to many important players compared to the Capitalocene."¹⁰ (Haraway argues that both narratives "lend themselves too readily to cynicism, defeatism, and self-certain and self-fulfilling predictions.")¹¹ For a start, the idea that an undifferentiated humanity is responsible for the rupture in the Earth System is historically inaccurate. Most of the individuals historically responsible for carbon dioxide emissions — the super-agents of the Anthropocene — are from developed, industrialized, Western countries.¹² Bonneuil and Fressoz note that "Great Britain and the United States made up 60% of cumulative total emissions to date in 1900, 57% in 1950, and almost 50% in 1980. From the standpoint of climate, the Anthropocene should rather be called the 'Anglocene.'¹³ According to Malm and Hornborg, "In the early 21st century, the poorest 45% of the human population accounted for 7% of emissions, while the richest 7%

9 Some writers are already discussing the possibility that the Anthropocene may be an interlude that will be succeeded by yet to be named epoch. See for example, Luc Semal, "Anthropocene, Catastrophism and Green Political Theory," in *The Anthropocene and the Global Environmental Crisis: Rethinking Modernity in a New Epoch*, eds. Clive Hamilton, Christophe Bonneuil, and François Gemenne (London: Routledge, 2015), 87–99.

10 Donna Haraway, "Tentacular Thinking: Anthropocene, Capitalocene, Chthulucene," *e-flux* 75 (2016), <http://www.e-flux.com/journal/75/67125/tentacular-thinking-anthropocene-capitalocene-chthulucene/>.

11 Donna J. Haraway, "Staying with the Trouble: Anthropocene, Capitalocene, Chthulucene," in *Anthropocene or Capitalocene? Nature, History, and the Crisis of Capitalism and the Crisis of Capitalism*, ed. Jason W. Moore (Oakland: PM Press, 2016), 34–76, at 59.

12 The idea of super-agency is borrowed from Clive Hamilton, *Defiant Earth: The Fate of Humans in the Anthropocene* (Cambridge: Polity Press, 2017).

13 Christophe Bonneuil and Jean-Baptiste Fressoz, *The Shock of the Anthropocene: The Earth, History and Us* (London: Verso, 2016), 132.

produced 50%.”¹⁴ From the start of the Industrial Revolution to the last quarter of the twentieth century, the climate catastrophe was overwhelmingly the responsibility of white, bourgeois and predominantly Christian men.¹⁵ Anna Gear argues that Anthropos is a narrow, self-interested figure that excludes most of humanity and all of nature. For this reason, the Anthropocene is also a crisis of hierarchies. Gear maintains that:

any ethically responsible future engagement with “anthropocentrism” and/or with the “Anthropocene” must explicitly engage with the oppressive hierarchical structure of the anthropos itself — and should directly address its apotheosis in the corporate juridical subject that dominates the entire globalised order of the Anthropocene age.¹⁶

In an influential essay, Dipesh Chakrabarty argues that human history and geological history have converged as an unintended consequence of individual greenhouse gas emissions undifferentiated by class, gender, race or historical context. “Species,” he writes, “may indeed be the name of a placeholder for an emergent, new universal history of humans that flashes up in the moment of the danger that is climate change.”¹⁷ Chakrabarty’s “speciesism” disconnects the Anthropocene from the underlying structures of social and environmental exploitation such as colonialism and capitalism.

14 Andreas Malm and Alf Hornborg, “The Geology of Mankind?” *The Anthropocene Review* 1, no. 1 (2014): 62–69, at 64.

15 Rapidly industrializing countries in the global South are responsible for a growing proportion of greenhouse gas emissions but their historical responsibility is far lower than that of OECD member states.

16 Anna Gear, “Deconstructing Anthropos: A Critical Legal Reflection on ‘Anthropocentric’ Law and Anthropocene ‘Humanity,’” *Law and Critique* 26, no. 3 (2015): 225–49.

17 Dipesh Chakrabarty, “The Climate of History: Four Theses,” *Critical Inquiry* 5, no. 2 (2009): 197–222, at 221. See Malm and Hornborg, “Geology of Mankind” and Gear, “Deconstructing Anthropos” for critiques of Chakrabarty’s argument.

This gives rise to a second reservation, namely a tendency amongst many theorists of the Anthropocene to obscure or subordinate the contributions of capitalism and colonialism to the climate crisis. Jason Moore argues that the concept of the Anthropocene is problematic because it does not give sufficient weight to the ways in which a particular mode of production reinforced the anthropocentric epistemologies at the heart of modernity. For this reason, he argues that the term “Capitalocene” more accurately captures the historical processes that have brought us to this conjuncture.¹⁸ Neither modernity nor the Anthropocene are comprehensible in the absence of the histories of (carbon) colonialism and capitalism. As Bonneuil and Fressoz argue:

[The] industrial development model and its metabolism in terms of matter and energy, which altered the geopolitical trajectory of our Earth, is inseparable from the history of capitalist world-systems, of unequal ecological exchange, of colonialism and imperialism, of exploitation and underdevelopment.¹⁹

2. The Grand Narratives of Modernity

Bruno Latour contends that the Anthropocene is “the most decisive philosophical, religious, anthropological and [...] political concept yet produced as an alternative to the very notions of ‘Modern’ and ‘modernity.’”²⁰ This may be true if the Anthropocene is understood as an intellectual era after and beyond mo-

18 Jason W. Moore, “Introduction” to *Anthropocene or Capitalocene? Nature, History, and the Crisis of Capitalism* (Oakland: PM Press, 2016).

19 Bonneuil and Fressoz, *Shock of the Anthropocene*, 228. See also Alf Hornborg, “Zero-Sum World: Challenges in Conceptualizing Environmental Load Displacement and Ecologically Unequal Exchange in the World-System,” *International Journal of Comparative Sociology* 50, nos. 3–4 (2009): 237–62.

20 Bruno Latour, “Facing Gaia: Six Lectures on the Political Theology of Nature,” Gifford Lectures on Natural Religion, 2013, <http://www.bruno-latour.fr/sites/default/files/downloads/GIFFORD-BROCHURE-1.pdf>.

ernity. However, it is chronologically untrue if we accept that the Anthropocene began around the turn of the nineteenth century and thus overlapped with, and was indeed largely impelled by, modernity's faith in science and particular forms of rationality and progress that we might term "Holocene epistemologies". Ecological devastation has clearly intensified during the Great Acceleration, the beginning of which is often traced back to the 1950s, but whose foundations were laid two centuries earlier.²¹

The concept generally described as modernity had its origins in the eighteenth-century Enlightenment. A central component of modernity is the idea that Europe had launched humanity on an irreversible linear, progressive, and teleological trajectory towards the future through a radical *rupture*—an onto-epistemological rupture with the past impelled by equally radical previous ruptures, most notably the Cartesian rupture between nature and society and that between feudalism and capitalism. In Latour's words:

Modernity comes in as many versions as there are thinkers or journalists, yet all its definitions point, in one way or another, to the passage of time. The adjective "modern" designates a new regime, an acceleration, a rupture, a revolution in time. When the word "modern", "modernization", or "modernity" appears, we are defining, by contrast, an archaic and stable past.²²

In addition to progress, modernity's defining tropes include rationalism, secularism, technocentrism, and assertions of the discovery of absolute universal truths.²³ The moderns' Age of

21 There is a danger of infinite regress in identifying the origins of the Anthropocene as a geological epoch that has induced some writers to argue that it was initiated by agriculture.

22 Bruno Latour, *We Have Never Been Modern*, trans. Catherine Porter (Cambridge: Harvard University Press, 1993), 10 (emphasis added).

23 Ellen Meiksins Wood writes: "The so-called Enlightenment project is supposed to represent rationalism, technocentrism, the standardization of knowledge and production, a belief in linear progress and universal, abso-

Reason was also the age of humanism that celebrated individual agency and autonomy as well as the cognitive faculties of Europeans. In the Holocene, modernity was also an apotheosis of human exceptionalism based upon a series of myths, to which we now turn.²⁴

2.1 *Reason and Science*

The first of these myths celebrates the (reductive) modern faith in reason and science. The transition to Western modernity was driven by the conviction that the world could be shaped by human agency and reason rather than by the vicissitudes of nature or supernatural forces. Scientific method and Enlightenment rationality shaped Western socio-cultural norms and practices. In the seventeenth century, the Scientific Revolution gave rise to the perception of nature as inert and passive — a perception that infused the law and facilitated the mechanistic materialism that underpinned the Eurocentric Promethean impulse towards domination over alien others.²⁵ Machines became structural models for Western epistemology and law.²⁶ Separation, exclusion and domination became persistent economic, legal, and political leitmotifs.

The rupture between humanity and nature was foundational to modernity. Francis Bacon argued that nature was an inanimate machine whose secrets could be extracted through technologies that would enable men to transform it “from a teacher

lute truths”: “Modernity, Postmodernity, or Capitalism?” *Monthly Review* 48, no. 3 (1996): 21–39, at 23.

- 24 The Holocene is the second and most recent epoch of the Quaternary period. It began approximately 11,700 years ago and is characterized by a stable climate that facilitated agriculture and the development of human civilizations.
- 25 Sam Adelman, “Epistemologies of Mastery,” in *Research Handbook on Human Rights and the Environment*, eds. A. Grear and L. Kotzé (Cheltenham: Edward Elgar Publishing, 2015), 9–27.
- 26 Fritjof Capra and Ugo Mattei, *The Ecology of Law: Toward a Legal System in Tune with Nature and Community* (Oakland: Berrett-Koehler, 2015).

to a slave.”²⁷ In 1641, Descartes introduced the idea of a division between the realm of the mind (*res cogitans*) and that of matter (*res extensa*), setting in play a dualism that continues to shape much of humanity’s engagement with the environment through a praxis of domination and alienation.²⁸ Val Plumwood argues that such dualisms are relations of separation, domination, and exclusion, which generate hierarchies in which highly-valued constructs (men, humans) are contrasted with subordinate ones (women, nature). Identity is formed in a process “which distorts both sides of what it splits apart, the master and the slave, the coloniser and the colonised [...] the masculine and the feminine, human and nature.”²⁹ Plumwood argues that the occidental relationship between people and nature:

explains many of the problematic features of the west’s treatment of nature which underlie the environmental crisis, especially the western construction of human identity as ‘outside’ nature.³⁰

In a similar vein, Lorraine Code maintains that:

The imperialism of overdeveloped countries imposing their knowledge, social orderings, customs, economics, and other values, with scant concern for local sensitivities of land or of people, is one of the most visible wide-ranging — anti-ecological — products of the excesses of scientism, reductionism, and the instrumental-utilitarian moral and political theories that sustain an ethos of dominance and mastery.³¹

27 Carolyn Merchant, *The Death of Nature: Women, Ecology, and the Scientific Revolution* (New York: Harper & Row, 1980), 169.

28 René Descartes, *Discourse on Method and the Meditations* (London: Penguin, 1968).

29 Val Plumwood, *Feminism and the Mastery of Nature* (London and New York: Routledge, 1993), 32.

30 *Ibid.*, 2.

31 Lorraine Code, *Ecological Thinking: The Politics of Epistemic Location* (Oxford: Oxford University Press, 2006), 8. Alf Hornborg describes an alternative narrative to the Anthropocene in “The Political Ecology of the

Latour has argued that science, technology, and society are co-produced through reciprocal changes in the relationships between facts, theories, machines, human actors, and social relations.³² In his view, there has never been a complete separation between human and non-human or nature and society. In *We Have Never Been Modern*, Latour contends that the “modern constitution” bequeathed to us by the likes of Robert Boyle and Thomas Hobbes was a programme for purifying the discourses of nature and society by purging all traces of each in the other. This process of modernity was intensified by secularisation and the construction of boundaries between academic disciplines — a project that failed because such a radical separation has never been possible: we could never be modern so long as we denied that nature and culture/society are inextricably entangled.³³ Latour argues that science cannot exist without the contamination of its “pure space” by economics, law, and politics. His solution is a non-modern constitution for a “Parliament of Things”, in which natural and social phenomena are comprehended as hybrids that emerge through the interaction of concepts, people, practices, and objects.³⁴ Hybridization is the diametric opposite of purification: everything of historical significance occurs in a “middle kingdom” in which nature and society are intermingled and includes such hybrids as genetically modified organisms, cybernetics and robotics.³⁵ The nature-culture divide must therefore be reconceptualized as an assemblage of “nature-cultures,” which existed in premodernity and persist beyond modernity.³⁶ Latour’s concern is that modernity cannot acknowledge the unavoidability of hybridization without col-

Technocene: Uncovering Ecologically Unequal Exchange in the World-System,” in *The Anthropocene and the Global Environmental Crisis*, eds. Hamilton, Bonneuil, and Gemenne, 1–13.

32 Latour, *We Have Never Been Modern*.

33 Ibid.; Bruno Latour, *Science in Action: How to Follow Scientists and Engineers through Society* (Cambridge: Harvard University Press 1987).

34 Latour, *We Have Never Been Modern*.

35 Ibid.

36 Ibid., 96ff.

lapsing back into premodern undifferentiation, which is why modernity must vigilantly maintain the myth of purification at all costs.³⁷

Hybridity and fluidity are central aspects of Donna Haraway's Chthulucene thinking about the onto-epistemological challenges of the Anthropocene. "What happens," she asks:

[W]hen human exceptionalism and bounded individualism become unthinkable in the best sciences across the disciplines and interdisciplines? Seriously unthinkable: not available to think with. Why is it that the epochal name of the Anthropos imposed itself at just the time when understandings and knowledge practices about and within symbiogenesis and sympoetics are wildly and wonderfully available and generative [...]?³⁸

Much of the literature on the Anthropocene is framed by the implications of the central illusion of Holocene rationality, but this framing does not necessarily translate into humble intellectual acceptance of the consequences of what was always self-evident to those with eyes to see. Modernist rationalism persists in its blind war, effectively denying ecological limits while enacting an accumulative logic of plunder and control.

While the rise of secularism destabilized religious and philosophical orthodoxies and led to demands for greater individual autonomy and liberty which culminated in the American and

³⁷ Ibid.

³⁸ Haraway in Moore, *Anthropocene or Capitalocene?*, 60–61. See also Damian White, Alan Rudy, and Brian Gareau, *Environments, Natures and Social Theory: Towards a Critical Hybridity* (London: Palgrave Macmillan, 2015). Symbiogenesis is an evolution term that refers to cooperation between species to increase their chances of survival. Sympoetic evolutionary systems are collectively produced but do not have self-defined spatial or temporal boundaries. Information and control are distributed among their components. They have intrinsic potential for surprising change. On the latter, see Haraway's description at KIASualberta, "Donna Haraway - SF: String Figures, Multispecies Muddles, Staying with the Trouble," *You Tube*, June 27, 2014, <https://www.youtube.com/watch?v=Z1uTVnhIHS8>.

French revolutions), it also opened the way to possessive individualism, overturning centuries of commons land governance — a sea change that extended private property by legitimating the conquest of nature. Legally and politically, modernity was marked by the consolidation of land ownership — by the Westphalian state through sovereignty and patrimony over natural resources, and for individuals as private property. John Locke, for example, grounded his theory of individual property rights in the biblical injunction that commanded industrious and rational men to subdue the Earth, while John Stuart Mill argued that individual freedom and autonomy depended upon “a high degree of success in their struggle with Nature.”³⁹ State sovereignty — for Hobbes, the basis of security and protection in the “war of all against all” in the state of nature⁴⁰ — became the foremost facilitator of the sustained and unsustainable war against nature that today produces ecological instability everywhere.

Max Horkheimer argued that mastery of nature is a pyrrhic victory that leads to disillusionment. The “disease of reason,” he declared, “is that reason was born from man’s urge to dominate nature.”⁴¹ With Theodor Adorno, he famously argued that the “dialectic of enlightenment” turns reason into an iron cage; attempts by human beings to arrange nature for subjugation have the unintended consequence that the power of nature over people “increases with every step they take away from the power of nature.”⁴² Reason produced wilful ignorance in the form of the quintessential delusion of modernity — the idea that nature

39 Respectively, John Locke, *Two Treatises of Government* (Cambridge: Cambridge University Press, 1988), II.v.32, 290 and John Stuart Mill, *Considerations on Representative Government* (1861; Lahore: Serenity Publishers, 2008), 40.

40 Thomas Hobbes, *Leviathan* (London: Penguin, 1985), 186.

41 Max Horkheimer, *Dawn and Decline: Notes 1926–1931 and 1950–1969* (New York: Seabury, 1978); Max Horkheimer, *Eclipse of Reason* (Columbia: Columbia University Press, 1947), 176.

42 Max Horkheimer and Theodor Adorno, *Dialectic of Enlightenment* (Stanford: Stanford University Press, 2002), 30–31.

could be tamed, once considered to be the yardstick by which human freedom is measured — signified nothing so much as the constraints of fetishized science and reason.⁴³ The underlying paradox of technologically-impelled progress is this: the expansion of human powers, driven by hubristic delusions of mastery, progressively circumscribes those very powers due to increasingly intense climate-related weather events.⁴⁴ The Anthropocene calls for humility in the face of existential threats such as global heating and pandemics but encounters the hubris of technological modernizers and the masters of the universe who annually gather in Davos. Modernity’s destructive delusions persist despite, or possibly because of the freedoms it brought.

Modernity provided a mixed legacy of real freedoms and Promethean delusions of mastery. While the natural rights of some were acknowledged but nowhere permanently guaranteed, capitalism generated technological innovations such as the steam engine that unleashed unconstrained economic growth and extractive industrialization. From the start of the Industrial Revolution, the prosperity on both sides of the Atlantic Europe brought by rising standards of living was accompanied by widespread ecological destruction. By the middle of the nineteenth century, Europeans were increasingly aware of rapid deforestation throughout the continent,⁴⁵ while ecocide and genocide were prominent features of the “white man’s burden” of spreading colonialism, imperialism, Christianity and modernity to the ends of the earth.⁴⁶

The contradictions of modernity have not gone unaddressed. Boaventura de Sousa Santos contends that modernity is charac-

43 David Harvey, “The Fetish of Technology: Causes and Consequences,” *Macalester International* 13, no. 1 (2003): 3–30.

44 Caroline C. Ummenhofer and Gerald A. Meeh, “Extreme Weather and Climate Events with Ecological Relevance: A Review,” *Philosophical Transactions of the Royal Society B* 372, no. 1723 (2017): 20160135.

45 Bonneuil and Fressoz, *The Shock of the Anthropocene*, ch. 9.

46 In his 1899 poem “The White Man’s Burden: The United States and the Philippine Islands,” published in the *New York Sun*, Rudyard Kipling invites the United States to assume colonial control over the Philippines.

terized by the tension between two pillars: regulation (exemplified by science and law) and emancipation — and that regulation persistently overwhelms emancipation.⁴⁷ These contradictions are exemplified by science. Science underpins material progress, not least through continuous innovations that enable nature to be “tamed,” giving rise to a particular way of knowing, but also, paradoxically, to the quintessentially modern faith in technoscience as progress. Science, for example, provides rigorous and incontrovertible evidence of ecological devastation and frightening, reductionist, “solutions” such as geoengineering. We rely on climate science in formulating demands for climate justice *despite* our awareness that scientific objectivity and neutrality promote technocratic and undemocratic responses which tend to ignore socio-economic and political factors.

Philippe Descola argues that “[t]he exaltation of Science as the archetype of valid knowledge and the transcendent source of truth inhibits any reflexive thought on this bizarre cosmology that the Moderns have created.”⁴⁸ The Age of Enlightenment was simultaneously an age of unreason. The Anthropocene is also an Agnotocene, a period of wilful ignorance.⁴⁹ It was hubristic agnotology that greeted the fall of the Berlin Wall in 1989, exemplified by Fukuyama’s assertion that history had ended with its culmination in the form of capitalism and liberal democracy.⁵⁰ Such ignorance matters — decisive outcomes hang upon it. The implications for justice are serious. Santos et al. argue that there is no ignorance or knowledge *in general* and

47 Boaventura de Sousa Santos, *Toward a New Legal Common Sense: Law, Globalization and Emancipation* (Cambridge: Cambridge University Press, 2002).

48 Philippe Descola, *The Ecology of Others* (Chicago: Prickly Paradigm Press, 2013), 61.

49 From agnotology, the study of the production of zones of ignorance: Bonneuil and Fressoz, *The Shock of the Anthropocene*, 198. In the Age of Unreason, moderns did not understand nature, misconstrued it, or chose wilful ignorance about their place in it.

50 Francis Fukuyama, *The End of History and the Last Man* (New York: The Free Press, 1992).

that no complete knowledges exist.⁵¹ Because knowledges operate in constellations, global social justice is not possible without a global cognitive justice that accords equal respect to different epistemologies. Global social justice is thus made possible only by “substituting a monoculture of scientific knowledge by an ecology of knowledges.”⁵²

2.2 *Growth as Progress*

We turn now to the second great myth of modernity.

Donna Haraway writes that:

A kind of dark bewitched commitment to the lure of Progress lashes us to endless infernal alternatives, as if we had no other ways to reworld, reimagine, relive, and reconnect with each other, in multispecies wellbeing.⁵³

Progress is a central ideological pillar of modernity, capitalism, and the Enlightenment, which has buttressed Western epistemologies since the Scientific Revolution (not least in the idea of development as modernization and economic growth).⁵⁴ An associated aspect of this belief in progress is the notion that Western rationalism has grasped and refined universal principles that govern everything. Likewise, the development of Europe was promoted as a universal pathway for humanity to follow on the basis that Europe’s individualistic credo was a globally applicable transcultural truth. The influence of such universalizing logics, especially of liberalism and capitalism, reached their

51 Boaventura de Sousa Santos, João Arriscado Nunes, and Maria Paula Meneses, “Opening Up the Canon of Knowledge and Recognition of Difference,” in *Another Knowledge is Possible: Beyond Northern Epistemologies*, ed. Boaventura de Sousa Santos (London: Verso, 2007), xx–lxii, at xlvi.

52 Ibid.

53 Donna Haraway, “Staying with the Trouble,” in Moore, *Anthropocene or Capitalocene?*, 54.

54 See Jorge Larraín, *Theories of Development: Capitalism, Colonialism and Dependency* (Malden: Polity, 2013); Richard Peet and Elaine Hartwick, *Theories of Development: Contentions, Arguments, Alternatives* (New York: Guilford Publications, 2015).

apogee with the advent of neoliberalism in the last quarter of the twentieth century.

Progress narratives have, and always had, a dark side. Modern liberal notions of universal justice were developed through the construction of otherness and accompanied by the resultant exploitation, expropriation, and dispossession of such others—including indigenous peoples, women, and nature. In short, the West's development was contingent upon the underdevelopment of the rest of the world through political, economic and carbon colonialism, and ecologically unequal exchange.⁵⁵ As Malm and Hornborg argue, historical inequalities based upon the use of specific technologies made the Anthropocene possible, both as a mind-set and an epoch.⁵⁶ Jeremy Baskin argues that the term Anthropocene:

reveals the power of humans, but it conceals who and what is powerful, and how that power is enacted. It draws “the human” into “nature” but not the multiple and unequal social values, relations and practices of power that accompany actual humans.⁵⁷

In an analogous vein, Peter Fitzpatrick writes that:

Enlightenment creates the very monsters against which it so assiduously sets itself. These monsters of race and nature mark the outer limits, the intractable “other” against which Enlightenment pits the vacuity of the universal and in this opposition gives its own project a palpable content. Enlight-

55 See, for example, Walter Rodney, *How Europe Underdeveloped Africa* (London: Bogle-L'Ouverture Publications, 1972). On carbon colonialism, see Andreas Malm and Alf Hornborg, “The Geology of Mankind?”

56 Andreas Malm and Alf Hornborg, “The Geology of Mankind?”

57 Jeremy Baskin, “Paradigm Dressed as Epoch: The Ideology of the Anthropocene,” *Environmental Values* 24, no. 1 (2015): 9–29, at 16.

ened being is what the other is not. Modern law is created in this disjunction.⁵⁸

In exposing the mythology of modern law, Fitzpatrick describes how property becomes

the foundation of civilization, the very motor-force of the origin and development of society, the provocation to self-consciousness and the modality of appropriating nature [...]. What is being universalized here is a particular form of Occidental property. Where it is absent there can only be its precursors or savagery.⁵⁹[...]

By 1800 the West already controlled over a third of the earth's surface. With its expansive claim to exclusive rationality, with its arrogation of a universal and uniform knowledge of the world, and with its affirmation of universal freedom and equality, the Enlightenment sets a fateful dimension.⁶⁰

Richard Norgaard argues that the belief in progress is so deeply entrenched in modernism that questioning it risks accusations of backwardness. It contains

several aspects which have already terminated the future for many humanities and is likely to result in an early demise for its perpetrators as well [...] [T]he modern belief in progress was so strong during the nineteenth century that Western and westernized peoples lost much of their sense of responsibility for the earth and for future generations. We believed that progress through Western science would solve everything and thus that responsibility entailed accelerating the advance of science.⁶¹

58 Peter Fitzpatrick, *The Mythology of Modern Law* (London: Routledge, 2002), 45.

59 Ibid, 33.

60 Ibid, 65.

61 Richard Norgaard, *Development Betrayed: The End of Progress and a Co-evolutionary Revisioning of the Future* (London: Routledge, 1994), 44.

Furthermore, progress is closely linked to the wilful pursuit of endless economic growth despite clear evidence that breaching biophysical limits and planetary boundaries threatens all forms of economic activity.⁶² At least since the so-called Great Recession, the climate crisis and low growth have combined to undermine the belief that future generations would always be materially better off than their ancestors, the Western idea of progress is increasingly questioned, but still holds a powerful level of mythic force in the global legal order.

2.3 *Capitalism and Development*

We turn now to the mythic status of the relationship between capitalism and development, which is the driving factor for so many contemporary social and ecological ills. Marx wrote that money that does not expand is not capital.⁶³ Growth is thus the *sine qua non* of capitalism and the driving force behind ecological rifts and the rupture to the Earth system.⁶⁴ Capitalism can be traced back to sixteenth-century mercantilism and Europe's colonial expansion through the appropriation of slaves, land and natural resources. However, the advent of the Industrial Revolution and the emergence of the Anthropocene inaugurated 250 years of carbon-based industrialization, urbanization, proletarianization, and technological transformation. By the end of the eighteenth century, capitalism had become the dominant global mode of production. And, as Horkheimer and Adorno argue, capitalism's control fetish arises from the foundational Enlight-

62 There is a 5 per cent chance of staying within the 2°C target in the Paris Agreement by the end of the century with current economic, emissions and population trends, and just a 1 per cent chance that temperatures will rise by less than 1.5°C: Adrian E. Raftery et al., "Less Than 2°C Warming by 2100 Unlikely," *Nature Climate Change* 7 (2017): 637–41. On the growth fetish, see Clive Hamilton, *Growth Fetish* (Crow's Nest: Pluto Press, 2011). Richard Norgaard, *Development Betrayed*, 32 argues that modernity is the key driver of ecologically unsustainable practices.

63 Karl Marx, *Capital Volume 1* (Moscow: Progress Publishers, 1887), ch. 4.

64 John Bellamy Foster, Brett Clark, and Richard York, *The Ecological Rift: Capitalism's War on the Earth* (New York: Monthly Review Press, 2011).

enment narrative of mastery over nature through instrumental reason.⁶⁵

The “discovery” by the West of the Third World after the Second World War led to the emergence of developmentalism—an ideology rooted in progress measured by economic growth, industrialization and modernization.⁶⁶ GDP—rather than justice or wellbeing—became the dominant measure of national virility. The West sought to universalize its model of development through capitalism—which has embedded within it Cartesianism, utilitarianism, anthropocentric axiology, and history, understood as linear and teleological progress from backwardness to modernity. Arturo Escobar observes that questioning development leads to accusations of implicitly calling modernity itself into question.⁶⁷ The dominant contemporary narrative of development is sustainable development—a vague and capacious concept that appeals to states and transnational capital by fostering the illusion that endless economic growth, environmental protection, and the delivery of social justice through poverty reduction can be simultaneously achieved.⁶⁸ At the center of this hegemonic conception of development is the ecomodernist dream of deriving profits from a green economy.⁶⁹ The solution to the ecological deprivations of capitalism, it seems, is more of the same.

65 Horkheimer and Adorno, *Dialectic of Enlightenment*; Adelman, “Epistemologies of Mastery”.

66 Peet and Hartwick, *Theories of Development*, 3.

67 Arturo Escobar, “El post-desarrollo como concepto y práctica social,” in *Políticas de Economía, ambiente y sociedad en tiempos de globalización*, ed. Daniel Mato (Venezuela: Facultad de Ciencias Económicas y Sociales, Universidad Central de Venezuela, 2005), 17–31.

68 Sam Adelman, “The Sustainable Development Goals, Anthropocentrism and Neoliberalism,” in *Global Goals: Law, Theory and Implementation*, eds. Duncan French and Louis Kotzé (Cheltenham: Edward Elgar, 2018), 15–40.

69 Michael Shellenberger and Ted Nordhaus, “An Ecomodernist Manifesto: From the Death of Environmentalism to the Birth of Ecomodernism,” *The Breakthrough Institute*, April 15, 2015, <https://thebreakthrough.org/articles/an-ecomodernist-manifesto>.

2.3.1 Ecomodernism

Ecomodernism reprises the main tropes of modernity, on growth and progress, by transmuted classic liberalism into neoliberalism.⁷⁰ It is a market-obsessed discourse that sits comfortably alongside developmentalist narratives such as sustainable development due to the substantial overlaps between modernisation theory and ecological modernisation.⁷¹ To ecomodernists, we have not been modern enough. Having learned nothing and forgotten nothing, they advocate market solutions to climate change and ecological destruction according to the perverse logic that the only way to save nature from the depredations of the market is to commodify and monetize it.⁷² For ecomodernists, the end of nature is inconsequential because the end of nature constitutes an opportunity to remake it in Man's image — in a good, profitable Anthropocene form. Technology is seen as a tool to save humanity from the harms wrought by technology during the Holocene experiment with the Earth system — unrestrained technological interventions can be made to yield unending profits using unproven technologies.⁷³ From this perspective, the Anthropocene is the continuation of the Enlightenment story of domination and progress. Ecomodernists celebrate the prospects of a “good” Anthropocene in which unreason, faith, and technological fetishism combine to perpetuate the illusion that planetary catastrophe will be averted with

70 Erik Swyngedouw, “CO₂ as Neoliberal Fetish: The Love of Crisis and the Depoliticized Immuno-Biopolitics of Climate Change Governance,” in *The SAGE Handbook of Neoliberalism*, eds. Damien Cahill, Melinda Cooper, Martijn Konings, and David Primrose (London: Sage, 2018), 295–307.

71 Adelman, “The Sustainable Development Goals”; Ariel Salleh, “Neoliberalism, Scientism and Earth System Governance,” in *The International Handbook of Political Ecology*, ed. Raymond L. Bryant (Cheltenham: Edward Elgar, 2015), 432–46.

72 Ryan Gunderson, “Commodification of Nature,” in *The International Encyclopedia of Geography: People, the Earth, Environment and Technology*, ed. Douglas Richardson (Chichester: John Wiley & Sons, 2016), 1–20.

73 Shellenberger and Nordhaus, “An Ecomodernist Manifesto.” See also Clive Hamilton, “The Theodicy of the ‘Good Anthropocene,’” *Environmental Humanities* 7, no. 1 (2016): 233–38.

the discovery of a technological silver bullet (which is doubtless already patented).⁷⁴

There is thus a chronological disjuncture between the tenacious persistence of the rationality of Holocene modernity and of Anthropocene “post”-modernity. We live in a period in which zombie categories — neoliberalism and Holocene onto-epistemologies — continue to dominate despite being incommensurate with the scale and urgency of the climate and environmental crises. The contradictions of the Holocene metamorphose in the Anthropocene because, in Antonio Gramsci’s words, “[t]he crisis consists precisely in the fact that the old is dying and the new cannot be born; in this interregnum a great variety of morbid symptoms appear.”⁷⁵

2.3.2 *Neoliberalism*

The latent contradictions at the heart of capitalist modernity, between science and reason, between the laws of nature and individual autonomy and freedom, and between economic growth and ecological sustainability, erupted with the spread of market fundamentalism and neoliberal globalisation. Whereas mainstream neoclassical economists regarded markets as means of achieving ends such as social justice or individual wellbeing, neoclassical economics conflated markets and society and views competition as an iron rule of nature.⁷⁶ This dismal economics reduced *Homo sapiens* to feral competitors, market actors, bloodless profit-and-loss calculators, and efficiency maximizers — the economic counterparts to abstract legal personality. Unreason elevated (or reduced) neoliberalism to an article of faith, a quasi-religion at odds with the precepts of Enlighten-

74 Calls to geoengineer the Earth’s climate will increase as average global temperature increases. See Sam Adelman, “Geoengineering: Rights, Risks and Ethics,” *Journal of Human Rights and the Environment* 8, no. 1 (2017): 119–38.

75 Antonio Gramsci, *Selections from the Prison Notebooks* (London: Lawrence & Wishart, 1971), 276.

76 Jason Read, “A Genealogy of Homo-Economicus: Neoliberalism and the Production of Subjectivity,” *Foucault Studies* 6 (2009): 25–36.

ment, a triumph whose hollowness is measured by the Great Recession, Brexit, Trump, the climate crisis, and the shambolic responses of the US and UK to the coronavirus pandemic. Unreason dressed up as ineluctable logic led to deregulation, free trade, and to the privatization of the planet.⁷⁷

Against reason, Friedrich von Hayek argued that only markets can deliver social justice because, unlike human beings, they do not discriminate.⁷⁸ Hayek's grandiose epistemological claim is that the market — an abstraction — is omniscient, and therefore the only legitimate form of knowledge because human values are merely subjective opinions.⁷⁹ Inequality is inevitable but not unjust, and poverty is nobody's fault.⁸⁰ Neoliberalism is, of course, a deeply ideological project. As Hayek's disciple Margaret Thatcher bluntly stated in her inimical way, "Economics are the method, the object is to change the heart and soul."⁸¹

Hayek believed he was solving the central problem of modernity, that of objective knowledge. Markets revealed truth and delivered justice. Self-interest was pseudo-scientifically

77 See for example, Timothy Luke, "Eco-Managerialism: Environmental Studies as a Power/Knowledge Formation," in *Living With Nature: Environmental Politics as Cultural Discourse*, eds. Frank Fischer and Maarten A. Hajer (Oxford: Oxford University Press, 1999), 103–20.

78 Friedrich A. von Hayek, *Law, Legislation and Liberty, Volume 2: The Mirage of Social Justice* (Chicago: University of Chicago Press, 2012). See also Friedrich A. von Hayek, *The Road to Serfdom* (London: Routledge, 1997). Targeting totalitarianism, his philippic served as a generalized libertarian assault on regulation, and his ersatz "scientific" economics attacked both the epistemological and material foundations of the Enlightenment. See Kasper Støvring, "The Conservative Critique of the Enlightenment: The Limits of Social Engineering," *The European Legacy* 19, no. 3 (2014): 335–46.

79 Friedrich A. von Hayek, "Economics and Knowledge," *Economica* 4, no. 13 (1937): 33–54, at 33, 52, et passim.

80 Raymond Plant, "Hayek on Social Justice: A Critique," in *Hayek, Co-ordination and Evolution: His Legacy in Philosophy, Politics, Economics and the History of Ideas*, eds. Jack Birner and Rudy van Zijp (London: Routledge, 1994), 164–77, at 165.

81 Ronald Butt, "Mrs Thatcher: The First Two Years," *Sunday Times*, May 3, 1981. <http://www.margarethatcher.org/document/104475>. Another of Hayek's apostles who wrought untold damage was Milton Friedman.

made axiomatic, and value was reduced to individual preference, opinion or, most often, to price. Today we are governed by big data, algorithms, and artificial intelligence that reduce what is most human — volition, freedom to reason, to feel, and to choose — and subordinate these to market consumerism enacted by mouse clicks.

3. Beyond (Post-)Modernity: The Grand Narratives of the Anthropocene

Jean-François Lyotard famously defined postmodernity as “incredulity towards metanarratives.”⁸² As we have seen, modernity has been replete with metanarratives and myths such as the insidious idea of progress as the engine of history, driving humanity onwards and upwards towards the final unfolding of Hegel’s Spirit, Marx’s communist vision, or America’s manifest destiny.

It was perhaps inevitable but nonetheless ironic that the Anthropocene — the Age of Humans — has emerged as the grandest of all metanarratives in which *Homo sapiens* is apotheosized as the telluric super-agent capable of transcending the mixed legacy of modernity, either by reflexively abjuring its excesses or completing the unfinished project of the moderns.⁸³ Beck argued that the problem does not lie in modernity but in our failure to reflect upon its lessons. The essential lesson of the climate crisis is that reflexive modernization has failed:

82 Jean-François Lyotard, *The Postmodern Condition: A Report on Knowledge*, trans. Geoff Bennington (Minnesota: University of Minnesota Press, 1984), x, xxiv. Fredric Jameson argued that postmodernity emerged in conjunction with neoliberal globalisation. Fredric Jameson, “Notes on Globalization as a Philosophical Issue,” in *The Cultures of Globalization*, eds. Fredric Jameson and Masao Miyoshi (Durham and London: Duke University Press, 1998), 54–77.

83 Hamilton, *Defiant Earth*, 110, argues that “turbo-charged agency was the essence of modernity, combining freedom of oppression with power over nature, using science and technology and the institutions that mobilized them.”

Western modernity's belief in linear progression contradicts the ongoing self-disenchantment of Western modernity [...] in the light of climate change, the apparently independent and autonomous system of industrial modernization has begun a process of self-dissolution and self-transformation. This radical turn marks the current phase in which modernization is becoming reflexive, which means: we have to open up to global dialogues and conflicts about redefining modernity.⁸⁴

It seems we must decide with Latour whether we have never been modern; with Ulrich Beck, whether to reflexively embrace the opportunities of ecomodernism; or with Clive Hamilton, whether we are not yet modern enough.⁸⁵

Christophe Bonneuil discerns four grand Anthropocene narratives: (1) the mainstream naturalist narrative, in which the human species is "is elevated to a causal explanatory category in the understanding of human history"; and simple modernity gives way to the reflexive modernity advocated by Beck and Giddens; (2) a post-nature narrative promoted by ecomodernists; (3) an eco-catastrophist narrative; and (4) an eco-Marxist narrative.⁸⁶

In the *naturalist* grand narrative, science is the "*deus ex machina*" that was not part of the cultural-political-economical

84 Ulrich Beck, "Climate for Change, or How to Create a Green Modernity?" *Theory, Culture & Society* 27, nos. 2-3 (2010): 254-66, at 264.

85 Latour, *We Have Never Been Modern*; Beck "Climate for Change;" Hamilton, *Defiant Earth*. Haraway argues that we have never been human: Donna Haraway, "When We Have Never Been Human, What Is to Be Done?" *Theory, Culture & Society* 23, nos. 7-8 (2006): 135-58.

86 Christophe Bonneuil, "The Geological Turn: Narratives of the Anthropocene," in *The Anthropocene and the Global Environmental Crisis*, eds. Hamilton et al., 19. On reflexive modernity, see Ulrich Beck, Anthony Giddens, and Scott Lash, *Reflexive Modernization: Politics, Tradition and Aesthetics in the Modern Social Order* (Stanford: Stanford University Press, 1994). Bonneuil and Fressoz, *The Shock of the Anthropocene*, cogently demonstrate that past societies were not unknowing, unreflexive, nor ignorant of risks to the global environment of their activities.

nexus that made the Anthropocene, but which will now guide humankind and save the planet.”⁸⁷ This is a discourse that reproduces the dominant tropes of modernity, of Man’s progress “from environmental obliviousness to environmental consciousness, of Man equaling Nature’s power, of Man repairing Nature.”⁸⁸ The naturalist narrative “abolishes the break between culture and nature, between human history and the history of life and Earth” so that the “entire functioning of the Earth becomes a matter of human political choices.”⁸⁹ Bonneuil observes that crisis normally denotes a transitional state, but that in the Anthropocene, we have passed the point of no return.⁹⁰

The *post-nature narrative* entails a great inversion. Whereas modernity promised emancipation from nature’s determinism, in the Anthropocene, humanity is inescapably reinserted into an engineered environment in which it is no longer dominant. The rift between nature and society is closed but not healed. The post-nature narrative “shares — and even radicalizes — the Promethean tropes of the first grand narrative as well as the belief that environmental awareness or reflexivity is very recent”, but departs from the naturalist narrative “in viewing the Anthropocene as a story of feedback loops, connections, networks and hybridity that cut across most of modernity’s boundaries.”⁹¹ Beck discerned emancipatory effects in the epochal changes of the Anthropocene that make possible new ways of being and

87 Bonneuil, “The Geological Turn,” 23. Baskin (“Paradigm Dressed as Epoch: The Ideology of the Anthropocene,” *Environmental Values* 24, no. 1 (2015): 9–29, at 16) writes that “We know, too, that the terms ‘Nature’ and ‘Culture’ are not universal categories, nor is there only one understanding of how they are connected. A range of alternative ‘ontological routes’ exist, including those fundamentally incommensurable with the dominant perspective of the contemporary West and modernity, the ‘Naturalist’ approach, as Descola labels it. Thinking through ‘nature’ is not straightforward, but it is essential to any coherent concept of the Anthropocene.”

88 Ibid.

89 Bonneuil, “The Geological Turn,” 33, 39.

90 Ibid, 35.

91 Ibid, 24.

thinking by extending and deepening modernisation.⁹² Other authors have proclaimed the “end of modernity” in simpler, non-reflexive forms. For example, in contrast to modernizers who postulate a premodern natural world distinct from society, Latour suggests that we need to “ecologize” rather than modernize, and that political ecology can transform by transcending the division between nature and society.⁹³

The *eco-catastrophist narrative* is one of limits and finitude, in which endless growth and inevitable progress crash into the biophysical limits of the Earth system. It is characterized by “a non-linear and non-progressivist conceptualisation of time and history”, in which the climate crisis offers opportunities for alternative forms of economics such as degrowth and *buen vivir*, as well as a new egalitarian, participatory politics in resilient post-growth societies.⁹⁴ This narrative is either fatalistic or realistic, depending on one’s interpretations of reason and progress.

The “Capitalocene” is an *eco-Marxist narrative* in which the main driver of the Anthropocene is not undifferentiated *Homo sapiens* but capital.⁹⁵ This account is theoretically and empirically plausible in light of abundant evidence of the myriad ways in which the logic of capital (that compels growth), the exploitation of fossil fuels, faith in technoscience, and tropes about progress and developmentalism impel the rupture in the Earth system. Capitalism emerged long before the Industrial Revolution but there is little doubt that capitalist relations were deepened and spread through the use of fossil fuels. The Capitalocene describes the “geology not of mankind, but of capital accu-

92 Ulrich Beck, “Emancipatory Catastrophism: What Does It Mean to Climate Change and Risk Society?” *Current Sociology* 63, no. 1 (2015): 75–88.

93 Bruno Latour, *Politics of Nature: How to Bring the Sciences into Democracy*, trans. Catherine Porter (Cambridge: Harvard University Press, 2009), and *An Inquiry into Modes of Existence: An Anthropology of the Moderns* (Cambridge: Harvard University Press, 2013).

94 Bonneuil, “The Geological Turn,” 27.

95 As Moore (*Anthropocene or Capitalocene?*, 50) argues, it is “an ugly word for an ugly system.”

mulation” through specific sets of social relations.⁹⁶ It explains neoliberalism, green economy, ecomodernism, and sustainable development in ways that the construct of the Anthropocene cannot, because the latter ignores or masks the structural violence of capitalism. The Capitalocene, by contrast, explains carbon colonialism and unequal ecological exchange. For Moore, it “signifies capitalism as a way of organizing nature — as a multi-species, situated, capitalist world-ecology.”⁹⁷

4. Beyond the Holocene

We await the official verdict on whether the Anthropocene is a new geological epoch. This is important but not decisive because the term is now widely used in the humanities, social sciences, and other disciplines. What is striking, however, is the disjuncture signalled by the scientific implications of the Anthropocene and the limitations of Holocene epistemological responses, many of which fit comfortably within the main tropes of modernity — albeit as variations on a theme. Modernity perdures because moderns are trapped in the iron cage of Holocene onto-epistemologies. Modernity is the last gasp of Holocene rationality in a period in which Kantian individuals still hubristically believe they are masters of their own fates as well as that of the Earth and, as such, are the point of departure for thinking in and about the Anthropocene.

First, the impulse towards universalization, deployed to obliterate otherness through exclusion, now becomes a mechanism of inclusion. “We,” an undifferentiated collective, are deemed to have acquired telluric super-agency and responsibility for the rupture to the Earth System, regardless of the vast differences in our historical contributions to climatic harms. Whereas the French and American revolutions sought to universalize the interests of white, bourgeois, Christian men during the Age of

96 Andreas Malm, *Fossil Capital: The Rise of Steam Power and the Roots of Global Warming* (London: Verso, 2016), 390–91.

97 Moore, *Anthropocene or Capitalocene?*, 6.

Enlightenment; the Anthropocene normalizes and universalizes the actions and interests of a small segment of humanity in the Age of Humans. Second, whereas modernity celebrated humanity's liberation from nature through technological domination, the Anthropocene veers between lamenting the realization that this freedom was illusory and reinserting "man' into nature only to re-elevate 'him' within and above it."⁹⁸ Third, as Baskin argues, modernity's "use of 'instrumental reason' generates a largely uncritical embrace of technology" which, in the hands of ecomodernists, "legitimises certain non-democratic and technophilic approaches, including planetary management and large-scale geoengineering, as necessary responses to the ecological 'state of emergency'."⁹⁹ Much writing on the Anthropocene criticizes the excesses of technologically-induced environmental degradation, but much of it retains modernity's faith in techno-scientific solutions. Fourth, as its name implies, the Anthropocene perpetuates modernity's thoroughgoing anthropocentrism.

Peter Fitzpatrick writes that "Towards the end of the period of Enlightenment, the sovereign subject is dethroned and there remains no one to do the work of the gods."¹⁰⁰ Nietzsche insisted on the necessity of confronting the full implications of the death of God¹⁰¹ (and, by implication, accepting the death of nature); in the Anthropocene, ecomodernists and geoengineers step forward to do the work of the gods.

The Anthropocene is a metanarrative about exploitation of the environment, with a twist. Instead of abundance, "nature" is now characterized by new leitmotifs about limits, thresholds, and planetary boundaries. Too often, this results in a focus on the ecological consequences of industrial capitalism rather than on the underlying socio-economic, political, and legal structures that produce them. Despite this, a disconcerting faith

98 Baskin, "Paradigm Dressed as Epoch," 11.

99 Ibid.

100 Peter Fitzpatrick, *The Mythology of Modern Law* (London: Routledge, 2002), 92.

101 Hamilton, *Defiant Earth*, 117.

persists in humanity's technological capacity to overcome Anthropocene constraints. There is also discontinuity about history. Chronologically, the advent of geo-human history implies that we have moved beyond modernity. In this sense, the Anthropocene is tantamount to a new meta-historical concept that transcends the bounds of Holocene history, a story about the meaning of the past and the making of the future. A third, contradictory, discontinuity concerns the nature–society binary. The Cartesian rupture is reconceptualized but not reconciled. In Anthropocene literature, human and natural systems are entangled and shape each other, but are not reconciled. Nature now assumes a frightening otherness beyond humanity's control that breeds fear and feeds Promethean urges. The clearest continuity is anthropocentrism because, after all, what else distinguishes the Age of Humans?

The Anthropocene forces us to understand time and history anew because it is no longer possible to accept the modern conception of history flowing from the rupture that Jacob Burckhardt described as “the break with nature caused by the awakening of consciousness.”¹⁰² In the words of W.B. Yeats, history is “changed, utterly changed” by the geological super-agency of a section of humanity with demiurgical pretensions but limited power to decide geo-human history and much less. The super-agency of some circumscribes the power of all. It is the power of the powerless. Postmodern theorists such as Fredric Jameson argued that neoliberalism had brought about fundamental changes in the way cultural and political history is experienced. From the nineteenth century onwards, the chronology of modern history was linear and teleological, with the past progressively unfolding into a future whose destination seemed predetermined. In contrast, postmodernity was a space-time in which this onward march of history disintegrated into a perpetually rehashed present. The end of history and the triumph of liberal democracy and capitalism was declared at the end of the Cold

¹⁰² Jacob Burckhardt, *Reflections on History* (1868; rpt. Indianapolis: Liberty Classics, 1979), 31.

War, even as Walter Benjamin's angel of history was stirring a storm that "drives [us] irresistably into the future, to which [our backs are] turned, while the pile of debris before [us] grows toward the sky. What we call progress is *this* storm."¹⁰³

A stark choice confronts us in the Age of Humans: whether to perpetuate the Age of Unreason or follow a different path. Marx wrote that "Reason has always existed, but not always in a reasonable form."¹⁰⁴ During the Anthropocene, the logic of capital has proved more powerful than autonomous, sovereign Kantian rationality. We might dispute Latour's conclusion that "modernity is a concept, not a thing that happened" on the basis that the Anthropocene is the materialization of modernity but, nonetheless, concur that "[w]e have never been modern in the very simple sense that while we emancipated ourselves, each day we also more tightly entangled ourselves in the fabric of nature" so that "the reality of this modernisation has been its opposite."¹⁰⁵

For Clive Hamilton, "[m]odernity was not an illusion but the arrival of the time of greatest promise and greatest danger, each represented by real social forces that have fought out the great political and social battles."¹⁰⁶ Hamilton inveighs against the Kantian subject and post-humanist approaches — the latter because they tend to discount human agency and belittle humanity and its achievements:

The Anthropocene shows up humans as super-agents, powerful even beyond the imaginings of the Moderns, the agent who broke the bounds of Cartesian subjectivity to enter into

103 Fukuyama, *The End of History and the Last Man*; Walter Benjamin, "On the Concept of History," in *Selected Writings, Volume 4, 1938–1940*, eds. Howard Eiland and Michael W. Jennings (Cambridge: Belknap Press of Harvard University Press, 2006), 392.

104 Karl Marx, "To Arnold Ruge in Kreuznach, September, 1843," in Karl Marx and Friedrich Engels, *Collected Works*, vol. 3 (London: Lawrence & Wishart, 2010), 133–45, 143.

105 Bruno Latour, "Fifty Shades of Green," *Environmental Humanities* 7, no. 1 (2015): 219–25, at 221.

106 Hamilton, *Defiant Earth*, 110–11.

the object only to find itself confronted by a power over which it can never prevail.¹⁰⁷

Our response should be acceptance of our super-agency and the awesome responsibility that comes with it and the magnitude of the choice between preservation and destruction:

Only when we accept the greatness of the human project and the extreme danger that goes with it can we pose the epoch-defining question: how are we to use our power to pacify and protect the Earth rather than destroy it?¹⁰⁸

Hamilton believes that alternative cosmologies such as *buen vivir* do not have answers to the Anthropocene:

To turn to them for answers shoulders them with an impossible burden. We made the mess and “going native” ontologically is no answer. Looking upon Indigenous cultures with awe and regarding them as having magical potency is to fetishize them, a tendency now taken so far by some as to attribute to them the power to fix the climate and reverse the geological destabilization of the planet. There is no need to reject the historical truth of modernity and go looking among pre-modern ontologies for an alternative. *The only way forward* is to begin from where we are, in modernity, and from there work toward a “beyond-modernity” way of being.¹⁰⁹

Indigenous cosmovisions may not be the answer, but Hamilton’s dismissive approach implies that there is no wisdom to gain from onto-epistemologies that value harmony, humility, and ecocentrism — not least because it is immensely difficult to discern answers by perpetuating the hubristic follies of modernity. As noted above, Santos et al. argue knowledges operate in

¹⁰⁷ Ibid, 101. Emphasis in original.

¹⁰⁸ Ibid, 111.

¹⁰⁹ Ibid, 106. Emphasis in original.

constellations and that there is no monolithic, singular knowledge—modernist, or otherwise. Global social justice is only possible with global cognitive justice, which, itself, is possible only by “substituting a monoculture of scientific knowledge by an ecology of knowledges,”¹¹⁰ and it is this “transition from a monoculture of scientific knowledge to an ecology of knowledges [that] will make possible the replacement of knowledge-as regulation with knowledge-as-emancipation.”¹¹¹

It appears that we are confronted with a stark choice between rejecting modernity, aiming to transcend it, or celebrating and deepening it. For Hamilton, this is Hobson’s choice because “there is no going back to pre-modern ontologies for an understanding; we must look ahead to *the evolution of modernity* itself, driven by its own endogenous forces and contradictions within a larger order.”¹¹² The Anthropocene, he writes, “finally allows a clear view of what humans are” — an assertion open to ambiguous interpretations.¹¹³

5. Conclusion

Karl Marx begins *The Eighteenth Brumaire of Louis Bonaparte* with the acerbic observation that history repeats itself first as tragedy and then as farce.¹¹⁴ In the following paragraph, Marx writes that human beings “make their own history, but they do not make it as they please: they do not make it under self-selected circumstances, but under circumstances existing already, given and transmitted from the past. The tradition of all dead generations weighs like a nightmare on the brains of the living.”¹¹⁵ For the foreseeable future, humankind and the Earth will make geo-human history under circumstances created by

110 Santos et al., “Opening up the Canon of Knowledge,” xlviii.

111 *Ibid.*, li.

112 Hamilton, *Defiant Earth*, 110.

113 *Ibid.*, 120.

114 Karl Marx, *The Eighteenth Brumaire of Louis Bonaparte* (Moscow: Progress Publishers 1972), 10.

115 *Ibid.*

a relatively small number of human beings whose works have circumscribed the agency and power of all beings in the Anthropocene.

Born in the age of reason, the Anthropocene epitomizes unreason, which, ironically, seems entirely appropriate in this post-rational, post-truth era. The Age of Enlightenment witnessed the apotheosis of human beings through humanism, but the Age of Humans too seems like an ironic misnomer. Whereas modernity was predicated upon the fallacy that humanity could free itself from the dictates of the realm of necessity, today human beings are (re-)immersed in the nature that cannot be tamed. Amitav Ghosh writes, “Quite possibly then, this era, which so congratulates itself on its self-awareness, will come to be known as the time of the Great Derangement.”¹¹⁶ Albert Einstein is reputed to have remarked that no problem can be solved at the same level of consciousness that created it.

It is time for a great awakening.

¹¹⁶ Amitav Ghosh, *The Great Derangement: Climate Change and the Unthinkable* (London: Penguin 2016), 11.