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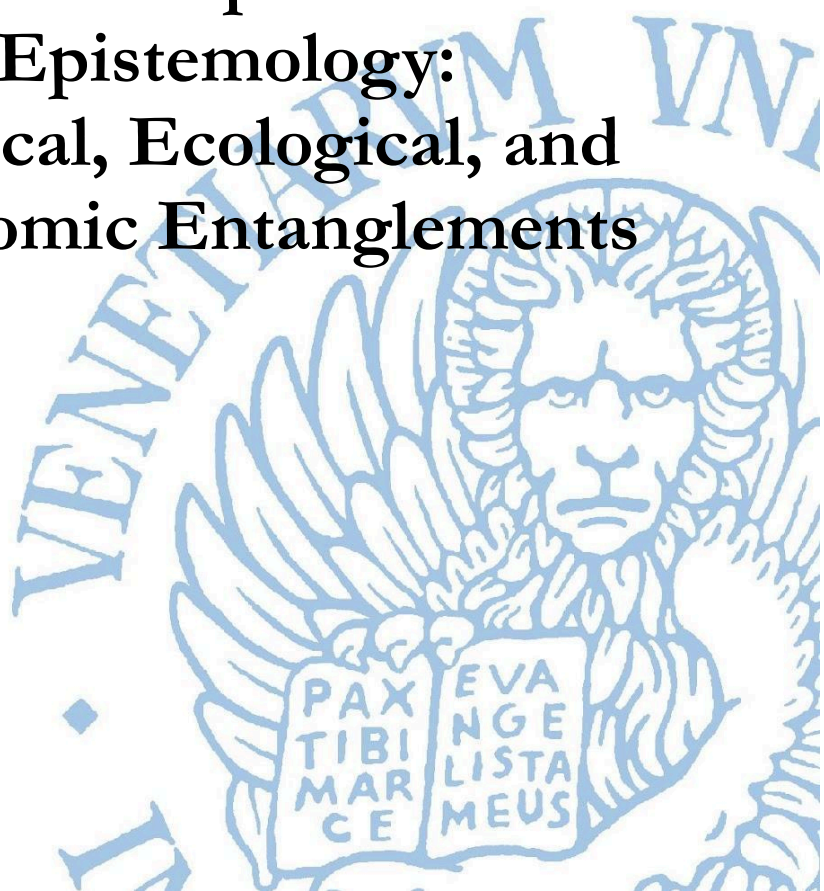
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Pietro Daniel Omodeo

**Anthropocene
Epistemology:
Political, Ecological, and
Economic Entanglements**

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This essay critically explores the connection between epistemology, political ecology, economy, and technological developments in the Anthropocene, understood as the epoch in which humankind has become a major force of geological transformation. It addresses the Anthropocene as a discourse and as a reality, bringing together epistemological reflexivity, ideology critique, and political economy-cum-ecology. The essay begins with an overview of the genesis and development of the Anthropocene concept—an often-repeated history which I reconsider from the viewpoint of historiographic developments in the history and philosophy of science. Since the Anthropocene hypothesis makes the history of knowledge, technological advancement, and socioeconomic structures fundamental factors in the Earth's history, I point to the necessity of revising our reality-conceptions to account for the development of a world in which epistemic, economic, and political histories intersect with physics, geology, and biology. As a reappraisal of the historico-materialist approaches to science studies, I propose to expand the 'externalist' understanding of the socio-economic roots and social functions of science by including, in the geoanthropological paradigm to come, considerations of social metabolism and ecology. This proposal is also meant to serve as a basis for new forms of cross-disciplinary economic thinking that must comprise cultural and environmental perspectives. These considerations are the background of my criticism of the ideological aberrations in the debate on Anthropocene politics, which I term 'dark ecologies'. I especially refer to Bruno Latour's adherence to Malthusian and social-Darwinian ideas. In the last part, I discuss eco-socialist alternatives to the ecological impasse and advocate for the defence of the commons against their alienation as a premise of future prosperity.

Keywords

Political ecology, geoanthropology, technological alienation, Latour, Malthusianism, tragedy of the commons, eco-socialism

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This essay critically explores the connection between epistemology, political ecology, economy, and technological developments in the Anthropocene, understood as the epoch in which humankind has become a major force of geological transformation. It addresses the Anthropocene as a discourse and as a reality, bringing together epistemological reflexivity, ideology critique, and political economy-cum-ecology. The essay begins with an overview of the genesis and development of the Anthropocene concept—an often-repeated history which I reconsider from the viewpoint of historiographic developments in the history and philosophy of science. Since the Anthropocene hypothesis makes the history of knowledge, technological advancement, and socioeconomic structures fundamental factors in the Earth's history, I point to the necessity of revising our reality-conceptions to account for the development of a world in which epistemic, economic, and political histories intersect with physics, geology, and biology. As a reappraisal of the historico-materialist approaches to science studies, I propose to expand the 'externalist' understanding of the socio-economic roots and social functions of science by including, in the geoanthropological paradigm to come, considerations of social metabolism and ecology. This proposal is also meant to serve as a basis for new forms of cross-disciplinary economic thinking that must comprise cultural and environmental perspectives. These considerations are the background of my criticism of the ideological aberrations in the debate on Anthropocene politics, which I term 'dark ecologies'. I especially refer to Bruno Latour's adherence to Malthusian and social-Darwinian ideas. In the last part, I discuss eco-socialist alternatives to the ecological impasse and advocate for the defence of the commons against their alienation as a premise of future prosperity.

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1 The Anthropocene Challenges to Disciplinarity: Ecology, Economy, and the Sciences

Anthropogenic climate change, the transgression of the planetary boundaries that secure the thriving of human societies, and the unintended consequences for the planet of technoscientific industrialism risk plunging humankind into a tragic historical phase of wars, famine, pandemics, and economic instability. Unless the fundamental economic, social, and environmental conditions of the Anthropocene—the epoch in which human activities have become a major geological force—are correctly assessed and redirected towards collectively established societal goals, a future of misery for entire populations can hardly be avoided. Far from being a simple task, the detection of pathways for a peaceful cohabitation of the world's nations in concert with ecological sustainability, justice, freedom, and emancipation from poverty will depend on the capacity to develop cultural-political practices that reconnect science and society: a realignment of expertise in the natural sciences, economy, the social sciences, and the humanities with the struggles of civil society for a fair and sustainable future for everybody.

Today, there is a clear need for new integrative pathways in economic thinking. For more than two decades, the Anthropocene debate about human geology has acted as a catalyst for new approaches to investigate the economic and technoscientific entanglements with the environment at a planetary scale. This debate unfolded at the beginning of the twenty-first century and still affects interdisciplinary enquiry in spite of the formal rejection of the Anthropocene hypothesis by the Subcommittee on Quaternary Stratigraphy of the International Commission on Stratigraphy in March 2024, also with the backing of the International Union of Geological Sciences.¹ Independent of whether this is a temporary or definitive decision on chronostratigraphy, one has to acknowledge the scientific and cultural impact of the ideas brought forward by the scientists of the Anthropocene Working Group, who worked for the validation of the Anthropocene hypothesis from 2009 to 2024. Their signature publication, *The Anthropocene as a Geological Time Unit: A Guide to the Scientific Evidence and Current Debate* (2019), edited by Jan Zalasiewicz, Colin N. Waters, Mark Williams, and Colin P. Summerhayes, also introduced the concept of the technosphere to account for the impact of economic structures on the Earth system. Their work has fueled debates about the relevance of political economy for the Earth sciences. In turn, novel sociological approaches have embraced

¹ <https://stratigraphy.org/news/152> (accessed on 22 February 2026).

the Anthropocene call to develop an environment-oriented social science; for instance, Nigel Clark and Bronislaw Szerszynski's *Planetary Social Thought* (2021). The question of economic growth and its compatibility with the planet's ecological boundaries has rearticulated the question of the limits to growth once raised by the Club of Rome in various forms, including the defense of non-monetary riches from the tragedy of commodification. This shift is in line with calls to imagine approaches to economic thinking 'beyond growth'. The 2020 OECD report 'Beyond Growth' bears witness to a growing awareness of the challenges that sustainability culture poses to economy and policy-making. This report was an initial answer by an advisory group of economists to the OECD Secretary-General Angel Gurría's request to reassess dominant growth narratives by examining 'how economic, social and environmental considerations could be integrated in a coherent approach'.²

This essay on Anthropocene multidisciplinary entanglements aims to offer a broader critical and philosophical basis for such inquiries. It draws on preliminary thoughts published in 2022 in a history of science journal, *Physis*, under the title 'History of Science and History of the Earth in the Anthropocene' (Omodeo 2022a).³ Here, I expand the scope of that article, which was initially meant to offer clues about the consequences of the Anthropocene debate for the history and philosophy of science, to consider broader problems related to the philosophy of technology, ecology, and political economy. I now address an interdisciplinary community of scholars across such fields as the environmental humanities, sociology, epistemology studies, and economy. In order to clarify the scientific and cultural-political basis of Anthropocene interdisciplinarity, I begin with an overview of the genesis of the concept, an often-repeated history, which I reconsider from the viewpoint of the history of knowledge. I take the opportunity to reconsider the French school of the *Annales* for their capacity to connect geography, political economy, and history as a source for further reflections on the science-mediated relation between humans and their environments. However, *Annales* scholars were not explicitly confronted by the geological impact of economy. The Anthropocene made the history of science and technology part of natural history (Renn 2020). In this respect, rather than a revision in historiography, we need a revision of ontology to account for the development of a world in which epistemic, economic, and political histories intersect with physics, geology, and biology. In view of the externalist tradition of historical materialism, the political economy

² OECD 2020, 5. The advisory group comprised Andy Haldane, Michael Jacobs, Alan Kirman, Nora Lustig, Mariana Mazzucato, Robert Skidelsky, Dennis Snower and Roberto Unger. I am especially thankful to William M. Hynes for making me aware of these challenges to economic thinking and the work of the New Approaches to Economic Challenges (NAEC) Unit of OECD.

³ My reference author is Ludwik Fleck, *Genesis and Development of a Scientific Fact* (Fleck 1979 [1935]).

and social functions of science need to be expanded to include the problem of social metabolism and the ecological crisis. Thus, insights derived from eco-Marxism and political ecology can and should be integrated with the meta-reflection on science and, in turn, science studies should become an asset of ecological critique. This perspective is in the background of my criticism of the most disturbing ideological aberrations in the debate on the politics of the Anthropocene, in particular the revival of fascist and nazi ideas as grounds for a 'realist' ecology. I am particularly critical of anthropologist Bruno Latour's reappraisal of Malthusian and social-Darwinian ideas. Then, I present alternatives to the ecological barbarity of our conjuncture, which includes the return to direct-extermination politics. I do so by emphasising the importance of defending the commons against their alienation, as articulated by various leftist authors, particularly Silvia Federici. My reflections, concerns, and proposals are aimed at fostering new approaches to social and economic problems in close collaboration with the natural sciences and the humanities. The case for new economic thinking is discussed in the concluding part of this essay.

2 The Quest for Stratigraphic Evidence of Anthropogenic Geology

There is a standard account of the circumstances surrounding the coinage of the neologism 'Anthropocene'. We find the story repeated in the many introductions to the subject—a sort of origin myth about a founding father and his exceptional act. The Nobel laureate in Chemistry, Paul Crutzen, pronounced the *fiat* at the International Geosphere-Biosphere Programme (IGBP) conference in Mexico in 2000: 'Stop using the word Holocene. We're not in the Holocene anymore. We're in the... the... Anthropocene!' (Horn and Bergthaller 2019:1-2; Crutzen and Stoermer 2000).⁴ The context and the author refer directly to the link—decisive on a cultural level and in the broader debates—between the geological question of the anthropogenic transformation of the Earth System and climate change. Crutzen, famous for his studies on the depletion of the ozone layer—a symbol in the 1990s of the deleterious consequences of industrial pollution—appeared to be the most appropriate person to represent a shift in the scientific understanding of human impacts on the planet: from the lofty to the deep, from the atmospheric consequences of global warming to the telluric depths of global climate change.

⁴ On the diplomatic-scientific history behind the IGBP and the concept of the Earth System, see Rispoli and Doubravka 2020. For an eco-Marxist overview, see Cukier and Guillibert 2025.

The context was that of the conference of an institution which, since 1987 (and until 2015), pursued the declared aim ‘to coordinate international research on global-scale and regional-scale interactions between Earth’s biological, chemical, and physical processes and their interactions with human systems’.⁵ One can hardly imagine a better and more authoritative stage for the proposal of a systemic shift of the planet Earth as a whole.

The standard account of the lightning strike that generated the Anthropocene concept was soon placed in doubt by the appearance of a second inventor, biologist Eugene Stoermer, who had used the term before the IGBP meeting. Genealogists of various intellectual lineages then undertook a search for further ancestors, prominent among whom was the nineteenth-century geologist Antonio Stoppani on account of his term ‘anthropozoic’. Eco-Marxists John Bellamy Foster and Brett Clark also detected an early use of the term Anthropocene in the English edition of the *Soviet Encyclopedia* (1973) (Shantser 1973:140; Foster and Clark 2021). What is more, Crutzen’s titanic endeavour found several imitators who showed great verve and imagination in creating progressively more baroque terms: Capitalocene, Chthulucene, and so on (Bonneuil and Fressoz 2017, Part 3).⁶

Historians of science can certainly not be satisfied with a mythological account of a new scientific concept, along with its research lines and their broad meaning. Gone are the days when advances in knowledge were attributed to the mental parthenogenesis of solitary geniuses. In the 1920s, a reputable philosopher such Alfred North Whitehead pointed out that Newton was born in the year of Galileo’s death, in *Science and the Modern World* (1926), suggesting that this coincidence of dates concealed profound meanings of a higher order beyond collective historical and cultural circumstances. Already in 1931, the Soviet historian of science Boris Hessen advanced a strong criticism of such a hagiographic narrative, ridiculing Whitehead’s words and initiating a history of science—first ‘externalist’ and then philosophical and culturalist—that dismissed historiographic naiveties or relegated them to popularization (Hessen 1931:151; Winkler 2007).

Faced with the question of the Anthropocene, science studies—in particular, the history and philosophy of science—must address two immediate challenges. One regards the identification of the genesis and development of the Anthropocene concept, which, it should be noted, cannot and must not coincide with the history of the term. The idea of the unfolding of

⁵ IGBP web page: <http://www.igbp.net/about.4.6285fa5a12be4b403968000417.html> (accessed on 26 December 2025).

⁶ For an assessment of the impact of the Anthropocene concept on the social sciences, see Clark and Szerszynski 2021. See also Heyd 2022.

the geoanthropological dialectics has roots in historical views about nature, culture, and human possibilities of transforming reality. The second challenge concerns the investigation of a scientific debate which is still in the making. The two aspects are not sharply distinct, since the definition of this field of study with its problems, methods, and theoretical frameworks helps elucidate, in retrospect, the ‘proto-ideas’ of the Anthropocene.⁷ Hence this question is both historical and theoretical, as the definition of the scientific field and its history necessarily refer to one another.⁸

Moreover, the historical-scientific problematic of the Anthropocene cannot be reduced to a stratigraphic concern because the meaning of empirical research is necessarily framed within investigations and theorisations that are broader than the interactions between the formalism of two intersecting spheres: one for the *gea* and one for the *anthropos*. Rather, the Anthropocene concept can be linked to a rich tradition of studies on complex systems and a *longue-durée* history of geoanthropological thinking. In her research on the history of systems thinking and its geological, ecological, and cultural intricacies, Giulia Rispoli has traced the roots of the Anthropocene to cybernetics and, even earlier, to the geological philosophy of early twentieth-century Russia (Rispoli 2014).⁹ Prominent in this context are geologist Vladimir I. Vernadsky and Alexander Bogdanov, the philosopher of tektology, which he conceived of as a holistic science of self-regulating and self-organizing systems (Biggart et al. 1998). The former author is particularly important because his concepts of the biosphere and noosphere showed the relevance of both biology and knowledge in the processes and transformations of the Earth. Key concepts of the Anthropocene debate, in particular those of the technosphere and ergosphere (Renn 2020:383; Haff 2019), find their reference points in these early twentieth-century intellectuals, while a *long-durée* history of geoanthropological thinking about the ecological relation between humans and their geological settings is still awaiting adequate reconstruction (Bonneuil 2020).

The task of history, sociology, and the philosophy of science (of political-historical epistemology) is to connect the theoretical and cultural frameworks to the detailed empirical research conducted by scientists who have been seeking the ‘stratigraphic proof’ of the Anthropocene. The Anthropocene Working Group (AWG) has done extensive work to detect

⁷ By proto-ideas I am referring to Ludwig Fleck’s *Urideen*, ideas underlying the genesis and development of the sciences and accompanying them. Unlike Canguilhem’s ‘ideologies’, these *Urideen* are not obliterated following any ‘epistemological break’ marking the passage from obsolete philosophical concepts to definitive scientific theories (Fleck 1979:23-27; Canguilhem 2009:46).

⁸ In other words, the question of the Anthropocene is strictly historical-epistemological in the canonical sense (Rheinberger 2007; Badino, Ienna, and Omodeo 2022).

⁹ Rispoli (2025:Chap. 2) offers a broader reconstruction of the prehistory of the Anthropocene idea.

ubiquitous and permanent microscopic traces constituting the ‘marker’ of the profound geological impact of humans. The 1950s have been considered as the hypothetical boundary of the Anthropocene—that is, the moment of transition from the Holocene to a new epoch. Underlying the choice of this historical conjuncture is a series of correlations between environmental and social data that can be represented by a curve whose exponential growth has increased starting from the mid-twentieth century. These correlations constitute the so-called ‘Great Acceleration’ (Steffen et al., 2015), which has for some time provided Anthropocene geologists with a basis for an investigation of the historical and social ‘causes’ of phenomena such as the presence of radioactive isotopes after Hiroshima, Nagasaki, and later atmospheric nuclear explosions and the worldwide spread of microplastics or particulate matter from industrial combustion (Waters et al. 2015; Rose 2015).

Validation techniques are rigorously defined for stratigraphers, who led a global core sampling campaign to identify the Anthropocene markers.¹⁰ Global Boundary Stratotype Sections and Points (GSSPs) rely on geological data, especially of atomic and molecular dimensions, which would corroborate the Anthropocene hypothesis (Zalasiewicz et al. 2015). The history of the social construction of this scientific fact, the ‘proof’ of the new geological epoch, is yet to be written, partially because it is still being chronicled and partially because the formal rejection of the AWG’s proposal by the International Union of Geological Sciences is very recent (March 2024).

Moreover, facts and evidence are never neutral, and geology is no exception. Facts depend on theoretical frameworks (paradigms), social validation (sufficient abstractions and positional objectivity), and mentalities (*Denkstille*).¹¹ Geology is the extractivist science par excellence: its interests are related to those of mineral and resource exploitation (including the infamous carbon fossils of climate change) and, as historians of science such as Kathryn Yusoff and Pratik Chakrabarti have denounced, its practices and institutions are a legacy of colonialism—hegemonic relations still displayed by the centrality of the British geological community in matters of stratigraphic validation (Chakrabarti 2020 and Yusoff 2018). A political-epistemological reflection on the conditions and embedded goals of the scientific controversies over the Anthropocene requires one to address the meta-level of the ideological

¹⁰ On 31 October 2023, after the publication of the initial part of this chapter as an article, the Anthropocene Working Group concluded the assessment and indicated the Canadian Crawford Lake as the GSSP of the Anthropocene.

¹¹ On *sufficient* abstraction and *conditional* objectivity in relation to knowledge economy, see Omodeo and Patkauskas 2025.

drivers that are revealed by the historiographical, epistemological, and political reflections on this subject. I should begin with the historiographic problem of the Anthropocene.

3 History-Writing: Natural History (Re)Encounters Human History

On a historiographical level, the question of the Anthropocene became intertwined with the discussion on history writing and the ‘environmental humanities’ from a very early stage. In a much-quoted article from 2009, Dipesh Chakrabarty formulated a series of theses on the ‘climate of history’, outlining the need for a geological-environmental breakthrough in the humanities, especially in history. The first two theses have become a standard reference for political-epistemological considerations about the nexus of human and natural histories:

Thesis 1: Anthropogenic explanations of climate change spell the collapse of the age-old humanist distinction between natural history and human history

[...]

Thesis 2: The idea of the Anthropocene, the new geological epoch when humans exist as a geological force, severely qualifies humanist histories of modernity/globalization. (Chakrabarty 2009:201 and 207)¹²

The problem that Chakrabarty raises is crucial from an epistemological viewpoint. It concerns the need for a paradigm that would be adequate to deal with the human-natural entwinement. Yet, his presentation of the problem involves some incorrect assumptions about the epoch-making unicity of Anthropocene epistemology. In the first place, the distinction between natural history and human history is neither age-old nor humanist. As a matter of fact, until the late eighteenth century and the early nineteenth century, it was generally believed, in Europe at least, that the time of the Earth and that of humanity essentially coincided. The main reason for this assumption was religious, as it stemmed from the creation myth from *Genesis*. According to medieval and early-modern interpretations of the Bible, the world was only a few millennia old. Chronologies of the world and of human history in the mid-seventeenth century and early sixteenth century bear witness to the lasting influence of this conception—consider, for instance, Isaac Newton’s efforts to squeeze all human history into the centuries separating

¹² Cf. Chakrabarty 2021.

the divine creation of the world and his present, including one mass extinction, that of the great flood recounted in the Bible.¹³ Similarly, Giambattista Vico opened his *Scienza Nuova* with a universal chronology table and a lengthy discussion of it.¹⁴

At the same time, remarkable exceptions to visions of a short geological history of human-natural relations—according to which human history and the history of the Earth basically coincided—existed in the Middle Ages and early modernity. Ibn Rushd, the most reputed Andalusian commentator of Aristotle, known among Latinate scholars as Averroes, defended the thesis of the eternity of the world and therefore opened up the possibility to think of abyssal times. Some of his followers—for instance, Averroists of the Padua school during the Renaissance—drew geological consequences concerning the long periods of time that are necessary for geological processes to take place.¹⁵ However, it was only in the time of Jean-Baptiste Lamarck, Alexander von Humboldt, Charles Lyell and Charles Darwin that the idea of ‘deep time’, and of the evolution of the Earth on a time scale that makes human history’s temporalities look irrelevant, emerged and became established among scientific circles.¹⁶ One can follow Christoph Bonneuil and affirm that the history of knowledge has gone through different ‘regimes of planetarity’ (Bonneuil 2020). One can also argue that geoanthropological thinking—that is to say, ways of conceiving of the human-geological relation—have shifted several times and are still awaiting an adequate conceptual reconstruction. Therefore, the split between human and natural history is not as old as Chakrabarty assumes. Moreover, it did not emerge from a humanistic tradition (one linked with the philological and philosophical tradition of the Renaissance) but rather from the natural sciences, in particular geology and biology. Astronomy might be added to the disciplines that downsized human history and excluded it from cosmological time. For this reason, Friedrich Engels saw the idea of an evolving universe brought forward by Pierre Simon Laplace and Immanuel Kant in the late Enlightenment as a fundamental contribution to the ‘historicization’ of nature (Engels 1987:323-327). To be sure, this also implied a radical disjuncture between the temporality of human history and that of the world, which made the newly acquired conception of the temporality of the Earth look revolutionary and comparable to the idea of cosmological infinity. In his *Principles of Geology* (vol. 1, 1830), Lyell celebrated James Hutton’s *Theory of the Earth*

¹³ On the great flood and natural philosophy, see Barnett 2019.

¹⁴ For a recent reassessment of Vico from the viewpoint of a praxis epistemology, see Esposito 2025.

¹⁵ The most notable thinker, in this respect, was Girolamo Fracastoro, as Ivano Dal Prete has pointed out (Dal Prete 2022:157).

¹⁶ Although the expression ‘deep time’ is quite recent, as it was first introduced by the science populariser John McPhee in *Basin and Range* (1981), it has acquired high visibility in the history of geology thanks to Stephen Jay Gould (1987) before it entered the Anthropocene debates. See also Rudwick 2014.

(1788 and 1792) for the uniformitarianism thesis according to which the causes of gradual transformation of the Earth (sedimentation, erosion, volcanic activities and such) are still observable and their slow pace has, among its most significant consequences, that of the immensity of geological time:

In the economy of the world—said the Scotch geologist [Hutton]—I can find no traces of a beginning, no prospect of an end'; a declaration the more startling when coupled with the doctrine, that all past changes on the globe had been brought about by the slow agency of existing causes. [...] Such views of the immensity of past time, like those unfolded by the Newtonian philosophy in regard to space, were too vast to awaken ideas of sublimity unmixed with painful sense of our incapacity to conceive a plan of such infinite extent. Worlds are seen beyond worlds immeasurably distant from each other, and, beyond them all, innumerable other systems are faintly traced on the confines of the visible universe. (Lyell 1830:91)

Nonetheless, despite too much confusion from the viewpoint of the history of science, Chakrabarty's concern about the methodological separation between the natural sciences and the humanities is justified. This disciplinary divide, for which German neo-Kantianism (particularly Wilhelm Dilthey's version) is often credited, remains a major impasse for a unified science of humanity and the Earth. The concern does not imply that significant steps have not been taken in the last century or so. From the disciplinary viewpoint of history, one ought to reassess the connection between history and geography (including climatology) as a relevant area to detect potentialities, shortcomings, and partial solutions to the Anthropocene question about the 'climate of history', in Chakrabarty's words. An important intellectual laboratory on these topics is the French school of the *Annales*. Lucien Febvre devoted a work of great methodological insight to this problem. In *La terre et l'évolution humaine* (*The Earth and Human Evolution*) (1922), he discussed the relationships and frictions between history, human geography, and sociology (or 'social morphology'). The reference in the title to 'human evolution' hinted at biological theories, but Febvre carefully avoided reductionism, particularly biologism. For him, it was not a question of deterministically inferring historical development starting from the *milieu*—be it biological, geographical or even sociological—but of studying humans as beings that are equipped with relatively autonomous agency, the ability to create undetermined novel effects. Rereading his book today, one is surprised to find methodological observations of great relevance to a historiography of the Anthropocene, even if this book was

written more than a hundred years ago. It is sufficient to substitute 'geology' for 'geography' and 'Anthropocene research' for 'human geography' in passages like the following:

What is the relationship between today's human societies and the current geographical environment? This is the fundamental and only problem addressed by human geography.

I say 'the only one' not by chance. Generally, one believes oneself obliged to distinguish between two problems. On the one hand, it is said that human geography has the task of showing in what manner and to what extent humankind is a geographical agent that works and modifies the surface of the globe, in the same manner as water, wind or fire. On the other hand, human geography must ascertain that geographical factors, such as soil or climate, play an absolutely decisive and fundamental role in the life of human societies. This is a Byzantine distinction, in reality, a purely Scholastic distinction lacking any validity.

In order to act on the environment, humans do not place themselves outside the environment itself. (Febvre 1922:422)

Some insights for an 'ecological history' can be found in the classic work on climate history by Emmanuel Le Roy Ladurie, *Histoire du climat depuis l'an mil* (1967), an early attempt to develop a method that derives scientific data from historical sources. In Le Roy Ladurie's view, a non-anthropocentric, pure climate history (*histoire climatique pure*) should renounce proxy data for climate change because socio-economic factors cannot be excluded from the explanation of proxy data, such as the diminution of viticulture in England and the farming of sheep in early modern Spain in early modernity, or changes in the commerce and prices of wheat in the centuries of an alleged Little Ice Age (Le Roy Ladurie 1967:16). For him, only direct sources (e.g. on the extension of glaciers) can be legitimately used for climatology. As for the effects of climate on history, they constitute the subject of an ecological history to come, which would only become possible after preliminary work on natural processes *independent* of humankind (Le Roy Ladurie 1967:25). This approach, as important as it has been for raising questions about legitimate and illegitimate approaches to the relationship between history and climate, is still distant from an integrated understanding of the Anthropocene entanglement between the two poles of the natural-cultural nexus.

Fernand Braudel is another thinker of the *Annales* who deserves consideration as a reference author for a historiography of the Anthropocene. The structure of his masterpiece, *La Méditerranée (The Mediterranean)* (first edition, 1949), was based on the idea that to understand the encounter between human history and natural history, one had to consider three different temporalities. As he explained,

This book is divided into three parts [...]

The first part is devoted to a history whose passage is almost imperceptible, that of man in his relationship to the environment [...] the history of man's contact with the inanimate [...]

On a different level from the first there can be distinguished another history, this time with slow but perceptible rhythms [...] the history of groups [...]

Lastly, the third part gives a hearing to traditional history [...] of individual men [...] of events: surface disturbance, crests of foam that the tides of history carry on their strong backs. (Braudel 1972:20-21)

The issue of scalability still constitutes a major problem in the Anthropocene debate (Tsing 2012). In our specific case, the Marxist question of the relationship between base and superstructure hovers in the background of Braudel's approach, even though he seeks a deeper substratum beneath the economic structures. For him, this is physical geography, an 'almost immobile' reality upon which are grafted the long times of socio-economic processes. Even if events (his book deals with the battle of Lepanto in 1571) are equated with ripples on the surface of vast expanses of water, symbolizing the socio-environmental depths of civilization, there is no reductionism in his outlook as the relation between conditions and actions is by no means one of causal necessity (Omodeo 2025). However, from an Anthropocene perspective, one might say that, although the environmental conditions of culture are relevant to Braudel, the reverse—that is, the cultural conditions of ecology, not to speak of geology—find no consideration in his historiography.

Chakrabarty observes this limitation but is not charitable towards Braudel:

In today's climatologists' terms, we could say that Stalin and Braudel and others who thought thus did not have available to them the idea, now widespread in the literature on global warming, that the climate, and hence the overall environment, can sometimes reach a tipping point at which this slow and apparently timeless backdrop for human actions transforms itself with a speed that can only spell disaster for human beings. (Chakrabarty 2009:205)

This association of Stalin's dogmatic vistas on history and nature and Braudel's ideas on historiography and geography is crude. It is an oversimplification of Marxist perspectives and their reduction to the problem of Stalin's regime marked by political and ideological violence. Chakrabarty's comparison between the dogmatic separation of dialectical materialism and historical materialism in Stalin's *Dialectical and Historical Materialism* (which canonized a

politically motivated orthodoxy in epistemology in the Soviet Union in 1938) and the most innovative and nuanced historiographical work of *La Méditerranée* is shocking to anybody who seriously considers the many contributions of cultural studies and Marxist and historical-materialist historiography to a great variety of fields. It seems to me that the reduction of Braudel to Stalin signalizes Chakrabarty's deep disaffection with Marxism and other critical strands, such as subaltern studies and postcolonial studies.¹⁷ The only author stemming from the intellectual left to whom he gives some credit is Giovanni Arrighi for his *The Long Twentieth Century* (1994) and *Adam Smith in Beijing* (2007), although these works—offering a post-Gramscian world systems analysis—are not the best candidates for environmental political considerations given their shift of focus from production and labour to finance and management (Arrighi 1994).

Rather than dealing with social, contextual, or ecological historiography, Chakrabarty's criticism of the limitations of what he regards as the legacy of 'age-old humanism' targets early-twentieth-century neoidealists and their sources: most prominently Robin George Collingwood and Benedetto Croce and, to a lesser extent, Vico and Wilhelm Windelband. He regards them as history theorists and historicising philosophers, who embrace the principle of *verum ipsum factum* (which can be rendered as 'truth rests on the making') and, according to his interpretation of this dictum, pit spiritual freedom against nature's passivity. In other words, Chakrabarty builds his argument for an ecologically aware historiography against a fictitious historiographic tradition that was already passé eighty years ago. Think of the reception of Antonio Gramsci's criticism of idealistic historiography. In the *Prison Notebooks*, he called for a historical-materialist perspective on historical agency that reverses the celebration of the individual and focuses on understanding the movements of the masses. A non-idealistic reading of Gramsci and the material embedment of such movements in economic structures and organic historical relations could favour an environmentally oriented understanding of history-making (Omodeo 2022b; Luperto 2025). Consider also—beyond Braudel's argument about the geographic settings of history—that materialist strands strongly opposed disembodied philosophies and favoured a reflection of the dialectics between subjective and objective factors of history-making which by necessity include considerations on nature. I will deal with these philosophical aspects elsewhere, but I will already delve into important epistemological aspects

¹⁷ Chakrabarty opens his essay on the climate of history with a clear dismissal of those strands (Chakrabarty 2009:199): 'I realized that all my readings in theories of globalization, Marxist analysis of capital, subaltern studies, and postcolonial criticism over the last twenty-five years, while enormously useful in studying globalization, had not really prepared me for making sense of this planetary conjuncture within which humanity finds itself today.'

that can help us address the methodological question of the Anthropocene in a less artificial manner and in a more politically sensitive way than a polemic with ghosts.

4 Historical Epistemology and the Materiality of the Ergosphere

The acknowledgement that human agency and technology are forces of geological transformation has implications that reach far beyond history-writing (and the theory of history). Therefore, it is expedient to move from problems of historiography to problems in historical epistemology and historical materialism. As Anthropocene historian of science Jürgen Renn has observed in *The Evolution of Knowledge* (2020), the history of knowledge has been an integral factor in the planet's evolution because science is key to its ongoing transformation. Accordingly, in the Anthropocene, the reconstruction of past forms of knowledge and their connections to the present is essential for an appropriate understanding of co-evolving theories and praxis.¹⁸ In particular, Anthropocene epistemology turns knowledge theory into a 'historical ontology', or—to avoid misunderstandings linked to abuses of the latter term—it reveals the material import of knowledge and its conditions.¹⁹

Renn argues that a key concept of the debate on human-made geology, such as the emergence of the technosphere, cannot be upheld unless it is explained in light of the historical development of scientific thinking and its close link with human labour in the industrial age. Hence, he proposes a counter-concept of the 'ergosphere' in order to overcome the limitations of technocentric readings of social reality:

I suggest the concept of an 'Ergosphere'—a sphere of human 'work'—characterized by the transformative power of human labour both with regard to the global environment and humanity itself. The Greek word *ergon* means 'work' in the transformative material sense, referring not primarily to effort and suffering like the word *ponos*, but also not primarily to the procedural, goal-oriented capability captured by the word *techne*. The Ergosphere is, by definition, still open in its evolutionary logic to different ways of shaping the relationship

¹⁸ In this regard, I refer to Omodeo (2020a) in which I explore the scientific problems from the perspective of a theory of praxis in dialogue with the work of Gramsci and the contemporary Marxist debates.

¹⁹ Dominique Lecourt drafted the concept of historical epistemology to articulate the theoretical and political encounter between Bachelard and historical materialism (Ienna 2023:26-27 and 35). Criticism of recent ontologies include new materialisms as neo-idealistic tendencies despite their name (Malm 2018).

between humanity and its planetary home in terms of the cumulative effects of human interventions embodied in their 'works'. (Renn 2020:382-384)

The centrality of labour vis-à-vis technology revives crucial political and social debates typical of Marxist historiography and the philosophy of science. In his defence of the relevance of technology for the history of modern mechanics, Hessen argued for the primacy of practices over ideas:

Practice has not to be explained by reference to ideas but on the contrary the formation of ideas has to be explained by reference to material practice. (Hessen 1931:154)

Hessen grounded his vision in Marx's conceptions, especially the *Preface to A Contribution to the Critique of Political Economy* of 1859 and *The German Ideology*. Although key texts by Marx on labour and machines had not yet been published at the time when Hessen delivered his famous communication on the history of Newtonian physics at the International Congress of the History of Science and Technology (London 1931), he clearly argued for the primacy of society over technology—of the labouring hand over the ingenious mind (Babu and Omodeo 2025:6-8)—as a cornerstone of Marxist critique. Marx's economic manuscripts of 1844, with the analysis of alienation, were published for the first time one year later (1932), whereas the *Grundrisse*, which pointed out the dialectics of living labour and dead labour (machines), first appeared in two parts between 1939 and 1941. However, even before these works were broadly circulated, Hessen drew on Marx's denunciation of commodity fetishism to arrive at a quite accurate understanding of the contradictory relation between factory workers and 'things'—that is, objectified labour in the form of commodities as well as machines:

The fetishism of the commodity system, laid bare by Marx's genius, lies in the fact that the relationship of material things, created by human society, are isolated from human relationships and are looked upon as the essence of the things themselves.

The solution and exposure of such fetishism consists in the fact that it is not things which of themselves create relations, but that the relationships between things created in the process of social production simply express the specific social relationship of human beings, which in the latter's view take on the fantastic form of relationship between things. (Hessen 1931:209)

For Hessen, the luddites' destruction of machines originated from the workers' perception that factory machines embody relations of power, domination, and exploitation, as well as from

their incorrect identification of possible paths of emancipation. In fact, a real change of objectified relations is only possible by acting on political grounds and transforming the social relations that are the basis of technological exploitation. Acting on the means of production alone—even destroying them—cannot revolutionize society or improve working conditions against processes of marginalization of labour and unemployment. These considerations are still valid for the AI-based reorganization of labour as evidenced by recent studies (Pasquinelli 2023). From the viewpoint of the Anthropocene, automation constitutes one additional step towards the technological organization of productivity on a planetary scale (Pasquinelli 2017).

Relative to the relationship between practices and machines, it is useful to consider Marx's *Grundrisse* and *Capital*, as they offer a direction to re-ground the concept of the technosphere. In particular, the so-called 'Fragment on Machines' of the *Grundrisse* (an extract from Notebooks VI and VII) has played an important role in political strands that have inspected technological innovation from the viewpoint of factory work. In Italy, Raniero Panzieri's translation of the relevant passages into Italian for the militant journal *Quaderni Rossi* (*Red Notebooks*, no. 4, 1964) became a powerful inspiration for socialist factory movements and a fundamental reference for Italian *operaismo* (Panzieri 2020).²⁰ In the 'Fragment on Machines', Marx deals with industrial machinery as the quintessential capitalist means of production, not only due to its productive efficacy but also for its coordination and subjugation of labour in forms that escape individual workers' control. From the viewpoint of capitalist investment, machines are 'fixed capital'; from the viewpoint of the working class, they are 'objectified labour' dominating 'living labour'. The relationship between the workers and the materiality of their activity (one could call it, in eco-Marxist terms, their 'labour metabolism') is fundamentally modified in terms of mastery:

Its distinguishing characteristic [of machinery] is not in the least, as with the means of labour, to transmit the worker's activity to the object; this activity, rather, is posited in such a way that it merely transmits the machine's work, the machine's action, on to the raw material—supervises it and guards against interruptions. (Marx 1993:Notebook VI, 692)

Strengths and skills do not belong to the workers anymore but rather become the attributes of machines themselves. The workers, as one reads in the *Grundrisse*, are reduced to thinking organic appendices of automated processes. Not only do machines coordinate and make production possible, but they also subtract the knowledge about the process itself from the

²⁰ Cf. Negri's lessons in Paris on the *Grundrisse* (Negri 1993).

workers. Intelligence becomes objectified. The science of machines and knowledge in general comes to dominate labour and its organisation as an externalised force.

The science which compels the inanimate limbs of the machinery, by their construction, to act purposefully, as an automaton, does not exist in the worker's consciousness, but rather acts upon him through the machine as an alien power, as the power of the machine itself. The appropriation of living labour by objectified labour—of the power or activity which creates value by value existing for-itself—which lies in the concept of capital, is posited, in production resting on machinery, as the character of the production process itself, including its material elements and its material motion. The production process has ceased to be a labour process in the sense of a process dominated by labour as its governing unity. Labour appears, rather, merely as a conscious organ, scattered among the individual living workers at numerous points of the mechanical system; subsumed under the total process of the machinery itself, as itself only a link of the system, whose unity exists not in the living workers, but rather in the living (active) machinery, which confronts his individual, insignificant doings as a mighty organism. (Marx 1993:Notebook VI, 693)

This is a clear political epistemology stance vis-à-vis science and technology as forces of production that can be applied to labour-positioned criticism of the technosphere. The roots of ergospheric critique of the capitalist drivers of technological innovation, and particularly of science as a force of production, emerged in the Seventies, when the neutrality of science came to the fore as an element of Cold-War ideology on both sides of the iron curtain.²¹

Panzieri's interventions on these topics between 1961 and 1965 through the workers' journal that he founded, *Quaderni rossi (Red Notebooks)*, are still relevant. He defended the thesis that labour is an intrinsic limit for capitalism and the capitalist use of machines. At the same time, labour's opposition to capitalist logic and technology does not lead to emancipation in any deterministic manner. The end of capitalist relations cannot be expected to arise from 'external' limitations either, nor from science and technology because they are not intrinsically emancipatory despite much ideological celebration in that direction.²² In 'Sull'uso capitalistico delle macchine nel neocapitalismo' (On the Capitalistic Use of Machines in Neocapitalism), Panzieri developed a criticism of the co-option of science and technology as a means of exploitation based on Marx's analysis of relative surplus value in *Capital* I 4. There, Marx

²¹ However, these themes had been to some extent anticipated, for instance, by Marxist sociologist of science John Bernal who critically assessed the function of science already in the Forties (Bernal 1946).

²² On the problem of internal versus external limits of capitalism according to Marx and Marxists, see Haber and Monferrand 2013.

discussed (chap. 11) the productive power of collaboration, by which the result of individual workers' labour is more than the sum of individual contributions. The coordination of labour is made possible, in the factory, by machines. Technology also permits to extract surplus value (relative surplus value) by increasing the output of labour without extending the working day. Thus, organization and efficiency are closely linked in industrial societies, and they are supported by technology and science, which, far from the neutral externalities of capital, prove to be assets for capitalism. Indeed, they *are* capital—'fixed capital'. As Panzieri argued, technological progress is a mode of existence of capital as it maximises profits while reducing labour to a minimum.²³

Far from limiting this logic to the factory, capitalism tends to incorporate all spheres of life and nature. In *Capital*, Marx's crucial pages on the agricultural exploitation of land deepen his discussion of the problem of technological domination. Moreover, Marx did not limit his analysis of machines to the factory as a place of value extraction but also linked it to the expansion of technological infrastructures transforming geography and society. As one reads in the *Grundrisse*,

Nature builds no machines, no locomotives, railways, electric telegraphs, self-acting mules etc. These are products of human industry; natural material transformed into organs of the human will over nature, or of human participation in nature. They are *organs of the human brain, created by the human hand*; the power of knowledge, objectified. The development of fixed capital indicates to what degree general social knowledge has become a *direct force of production*, and to what degree, hence, the conditions of the process of social life itself have come under the control of the general intellect and been transformed in accordance with it. To what degree the powers of social production have been produced, not only in the form of knowledge, but also as immediate organs of social practice, of the real life process. (Marx 1993:Notebook VII, 706-707)

The criticism of the co-option of science and technology by capitalist development was received and strengthened in the context of scientists' activism in later decades. A particularly important

²³ Panzieri deals with technological progress as a 'mode of existence of the capital' in Panzieri (1961:54): 'La tecnologia incorporata nel sistema capitalistico insieme distrugge 'il vecchio sistema della divisione del lavoro' e lo consolida 'sistematicamente quale mezzo di sfruttamento della forza-lavoro in una forma ancor più schifosa. Dalla specialità di tutta una vita, consistente nel maneggiare uno strumento parziale, si genera la specialità di tutta una vita, consistente nel servire una macchina parziale. Così, non solo si diminuiscono notevolmente le spese necessarie alla riproduzione dell'operaio, ma allo stesso tempo si completa la sua assoluta dipendenza dall'insieme della fabbrica, quindi dal capitalista' [*Capitale* I 2]. Lo stesso progresso tecnologico si presenta quindi come modo di esistenza del capitale, come suo sviluppo.'

document in this direction is *L'Ape e l'architetto* (*The Bee and the Architect*) (1977), a work in political epistemology that expressed views of the 1968 protest movement in Rome. Its authors—all physicists: Giovanni Ciccotti, Marcello Cini, Michelangelo De Maria and Giovanni Jona-Lasinio—denounced the political-cultural conditioning of science and its functions within the capitalist framework, aiming at a new emancipated and emancipatory path to science and technology. Their starting point was to abandon all trust in the ahistorical abstract objectivity of science in order to reveal its connections with the historical totality. They embraced the idea that a wished-for socialised advancement of science must occur by a modification of all social relations so as to avoid its capture by dominant capitalist interests. For them, Marxist historicization did not mean diminishing the objectivity of scientific knowledge. Rather, it demanded its greater universalization in the sense of a bottom-up socialization of the aims that inform knowledge. In developing their argument, which is at once epistemological and political, the Rome physicists also drew on the *Grundrisse* and Panzieri's work on the capitalistic use of machines (Ciccotti et al. 2024:63-64).²⁴

Insights from *operaismo* and the *Grundrisse* recently reappeared in Matteo Pasquinelli's historical epistemology of AI. As he argues in 'The Automaton of the Anthropocene: On Carbosilicon Machines and Cyberfossil Capital' (2017), digital infrastructures and AI are now expanding machinic domination to the realm of intellectual labour and organization on a planetary scale (Pasquinelli 2017). For Pasquinelli, the Anthropocene itself is the result of the interconnection between the extractivist voracity of industrial economies (see also Andreas Malm's 'Fossil Capitalism' 2016) and the digital infrastructures. The planet has become a vast carbon-silicon technosphere whose comprehension and criticism necessitate an analysis grounded in the ergosphere, along with a history of labour and technology that takes account of their broad—and by now planetary—connections.

5 Divergent Ideologies for Anthropocene Ecology

Chakrabarty's theses on the climate of history and Renn's ergosphere concept enable me to reconsider fundamental historiographical and epistemological questions related to the

²⁴ In spite of his criticism of the most radical theses of the Rome group of physicists gathered around Cini, Marxist philosopher of science Ludovico Geymonat tried to solve in turn the dilemma of the false opposition between the objectivity of science and its non-neutrality by resorting to dialectical method and praxis philosophy (Geymonat 1982:17).

Anthropocene from the angle of Marxist historical epistemology and the philosophy of technology. The political problem needs to be further articulated in relation to both the ideological orientation of the Anthropocene and the identification of paths to navigate the material conditions of an ecological crisis that has reached a planetary scope and a geological depth. The most famous critiques of the term Anthropocene were motivated by the perception that the geological connotation of the term, on the one hand, and the generic *ἄνθρωπος*, on the other, could obscure decisive questions about the underlying socio-economic structures and asymmetries of power (in economic, gendered, geopolitical, and racialised relations).

Among the most visible ideology-critical interventions, Jason Moore's inelegant neologism, 'Capitalocene', was useful in stressing the urgency of an ecological critique of capitalism—the economic and societal formation that is at the origin of the planetary crisis—at a time when this fundamental component was still missing in the debate (Moore 2016). His criticism of the name Anthropocene was reinforced by Donna Haraway's coinage of 'Chthulucene', which pointed to the underworld (chthonic) sources of life. It was meant to refocus our attention on the ecological debates from geology to biology, particularly regarding extinction.²⁵ Her and Moore's interventions made it clear that any choice of terms impacts perceptions, knowledge, and politics. In her typically playful manner, Haraway expressed the problem of ideological praxis as follows:

It matters what plots plot plots [...] It matters what stories tell stories [...] It matters what ends end endings.²⁶

These words appeared in an essay directed to cultural anthropologist of science Bruno Latour, in the latter's 2020 edited volume on *Critical Zones*. Her ironic remark seems to rebuke Latour's choice of dubious reference authors and narratives for his approach to the Anthropocene. In the opening essay of *Critical Zones*, he presented the ecological connection between people and territory in terms that are reminiscent of nazi rhetoric:

[Question:] Let them [technological escapists à la Elon Musk] go to Mars, then. But, certainly, you have noticed that political parties everywhere are clamouring for a return to the land of old, protecting their identity behind closed borders. Is this really the right moment to insist on

²⁵ Haraway 2016.

²⁶ Haraway 2020, subtitles.

‘settling on land’ and ‘defending your Heimat’? This seems perilously close to reactionary *Blut und Boden*.

[Latour:] Thanks for being so blunt. Although the critique doesn’t bode well for our project, to be “perilously close” is our main point. If you think going to Mars is unrealistic, going back to the plot of land where the bones of your ancestors are buried might be even less so, after all! The reactionary turn to the comfort of the nation states, the present move back to ‘blood and soil’, might be as unrealistic as the temptation of escaping into outer space, but there is a logic in wanting to be protected. Now that the dream of living globally has vanished, you can’t reject people because they refuse to live spaceless. So, the question of what it means for a people to live in space, on land, from a soil is wide open all over again.²⁷

Latour here indicates that his ‘main point’ is ‘to be perilously close’ to the defenders of fatherland, blood, and soil. Is this a depiction of a state of affairs, or does it have normative value in his perspective? The lightness with which Latour engages with such concepts stands in strong contrast with his attitude towards the left, to which he never made concessions. Indeed, he shows no sympathy for socialism ever. Haraway’s caveat—‘it matters what plots plot plots’—points in a very different direction than Latour’s ‘perilous’ affinities: she invites us to avoid association with right-wing refrains and narratives. One could interpret Haraway as asking which kinds of narratives, plans, or schemes represent which kinds of lands, demarcated boundaries, or territories. Her repetition is evocative of how narratives and territories mutually reinforce one another. Similarly, the question about what ‘ends end endings’ raises the question of what goals lead to death or termination while also being forms of constraint that foreclose the possibility of ending otherwise.²⁸

Later in the volume on *Critical Zones*, Latour once again follows the same spirit of approximating right-wing concerns:

So, yes, we can’t avoid it: wishing to land on Earth instead of expanding globally requires taking seriously why so many people are tempted by reactionary politics. The project is indeed to focus again on people and land, but also to be prepared for a complete reassessment of the composition of soil and of people. (Latour and Weibel 2020:8)

As the French saying goes, ‘tout comprendre, c’est tout pardonner’. Latour’s concessions to reactionary politics poisons the environmental concerns that he claims to defend. It is the

²⁷ Latour and Weibel 2020:7.

²⁸ I am very thankful to Lindsay Parkhowell for this final consideration.

result of a political-epistemological trajectory from his agnostic *Politiques de la Nature* (*Politics of Nature*) of 1999 to what I would call the ‘dark ecology’ of *Face à Gaïa* (*Facing Gaia*) in 2015.²⁹ Given the influence that Latour’s thought has exerted on science studies and political ecology in recent years, in particular in the Anthropocene debate, it is surprising that the majority of scholars working on it have not perceived nor denounced his ‘dangerous proximities’, while Latour himself has been quite clear about his references and sympathies.³⁰ Here, I will approach these most disturbing aspects of his worldview as a problem of political epistemology: the ideological direction of his thought and, by extension, of important strands of Anthropocene thinking.

In his early writing on political ecology, *Politiques de la Nature*, Latour declared that his aim was to reconnect science, nature, and politics against a widespread prejudice that they belong to separate realms. He envisioned a novel ecological regime, which he later termed a *Nouveau Régime Climatique*. He originally described it as the admission of non-humans to democratic parliaments and called this opening of the political as a *parlement de choses* (parliament of things) because it moved beyond the separation of the human and the natural. However, Latour did not explain whether things and animals become quasi-humans members of his ‘parliament of things’ or, vice versa, humans become objectified.³¹ The question relates to the problem of reified social life, which looms large over Latour’s political metaphor. It should be remarked that Latour already exhibited a bias towards reified anthropomorphism in earlier publications, especially in relation to ‘actor-networks’, the foundational theory of his own cultural anthropology of science. Indeed, ANT (the acronym for his actor-network theory) pointed to the anthropomorphisation of natural entities through the reification of agency. These networks linked scientists, natural entities, and technical instruments as equal components of relational systems, thus outlining a desubjectivised ontology of alienation in which, according to Marx’s famous expression, social relations appear as ‘thing-like relations between persons and social relations between things’.³² Simon Schaffer (1991) labelled this tendency a form of hylozoism which substitutes ‘microbes as wilful actors’ for a sociological

²⁹ A clarification is here in order: I do not mean ‘dark ecology’ in Morton’s melancholic, mysterious and bittersweet sense (Morton 2016: 160) but rather according to a negative connotation that is evocative of anti-enlightenment and right-wing ideologies.

³⁰ For important critiques of Latour and the political epistemology underwriting his work (Mirowski 2017; Henning 2019; Flipo 2025).

³¹ In a recent article, Lukas Meisner and myself criticised this Latourian parliament as an assembly of reified (that is alienated) subjectivities (Omodeo and Meisner 2025).

³² Marx (2017:87): ‘sachliche Verhältnisse der Personen und gesellschaftliche Verhältnisse der Sachen.’ See Omodeo and Meisner 2025, 17. In hindsight I think that our political judgment on Latour was too charitable: we essentially saw as a neoliberal ideologist, was too charitable in the light of the far-right doctrines which he propagated, and I here discuss.

reconstruction of milieus, controversies, and political contexts, as evidenced by Latour's work on Pasteur, *Les Microbes: Guerre et Paix* (1984, Engl. tr. 1986, *The Pasteurization of France*): 'Hylozoism directs our attention towards the items whose action is in dispute [among scientists]. It directs our attention away from the forces which help close that dispute. It therefore disables understanding' (Schaffer 1991:189).

Moreover, as his political project is also grounded in a general mistrust of political representation, the admission of 'things' into the lawmaking institution is similar to the admission of Catilina's horse to the Roman Senate—that is to say, it undermines republican institutions in the name of what Latour calls an 'expanded constitution' (Latour 2004a:99). No matter how paradoxical this *reified* assembly is, Latour insists that this is a necessary step beyond the *Ancien Régime*. By this expression, he does not mean the usual reference to feudal institutions but rather to their opposite: modern states, politics, and culture, which he criticises for their exclusion of nature from the political arena. Although Latour is right to say that ecology was long neglected in dominant political debates, the situation has changed since many decades. Political ecology has increasingly become central to politics beginning with the last decades of the twentieth century. Instead of addressing the genesis of the political-scientific culture that supports his own ecological discourse, Latour proposes a complete rejection of modernity, with all that it has produced in terms of ideas and ideals from the Scientific Revolution to the Enlightenment and beyond. The immediate reason for this reaction relates to the ostensible limitations of past political theories for today's concerns. In this light, his proposal of a natural parliament militates against democratic critique and socialistic alternatives, working as a delegitimizing tactic of participation.

Moreover, his criticism of modern dualism (the nature-culture divide) is not unique but rather repeats a commonplace. The problem is often referred to as the Cartesian original sin of mind-body dualism. It remains unclear, though, why dualism should be the marker of modernity as a whole rather than of particular philosophies in different epochs and cultures.³³ He connects the rise of scientific culture and modern politics with the establishment of dichotomic vistas—first among them, the separation of the natural realm and the human sphere. He observes that post-modern thinkers suspended their judgement on dichotomic oppositions (one could think of Haraway's post-modern rejection of antagonistic politics and binary thinking in her *Cyborg Manifesto*: Haraway 2001). But he does not count himself among the post-moderns. Rather, he chooses a different option: a 'non-modern' attitude, which he also

³³ Moore (2016), for one, argues that the fundamental problem with capitalism is dualism, wherefore the criticism of such an assumption would be sufficient to remove this socio-political formation at its heart.

equates to an ‘ecological’ one (Latour argues that the two qualifications are equivalent). The main task that he sets for ecology is to re-inscribe all ‘externalities’ into the political. As already mentioned, this inclusion concerns nature in the first place. In *Politiques de la Nature*, he leaves the question open of whether there are other externalities (e.g. political and religious doctrines that were rejected in the past) that ought to be rehabilitated by the new climatic regime in opposition to scientific, philosophical, and political modernities.³⁴ However, his proposal to re-include the natural into the political is misty, as it is not clear how this could be concretely organised, especially given his suspicion of representativity. Can nature speak for itself (see, e.g., Chiaramonte and Consolandi 2025)? Moreover, one should beware of the danger of grounding political and ethical arguments on nature and its corollary, that is, the condemnation of what counts as ‘against nature’. Religious arguments of the past concerning ‘nature’ still haunt political debates on fundamental rights, especially women’s right of self-determination about their bodies.

Despite my distance from his main theses, I agree with Latour’s remark that science, more precisely epistemology, is political because ‘nature’ is neither revealed in itself nor equal to science (as could be assumed by naïve ecology). Indeed, it is always mediated (if not ‘constructed’) by knowledge (Latour 2004a:13).³⁵ As a consequence of these assumptions, Latour also points out that political ecology presupposes political epistemology (Latour 2004a:375). However, his understanding of political epistemology is quite different from the one I propose. To begin with, Latour constantly eludes questions concerning the relation between science, economic interests, political institutions, social struggles, ideology, and emancipation. He refuses to reconcile his political ecology with any ideas stemming from the Enlightenment or socialism. In 1999, his posture still looked apolitical (as paradoxical as this can be in a book on ‘politics’ of nature). Indeed, he claimed that his political ecology was located neither on the left nor on the right. Rather, as one reads, Latour was waiting for the new Leviathan to come (Latour 2004a:268).³⁶ Hence, he positioned himself outside of established politics—outside of modernity. As a rule, political agnosticism—that is, the non-positioning relative to struggles and left-right divisions—implies a conservative attitude that implicitly embraces the reasons of the stronger (Mirowski 2017).

³⁴ Latour (2004a:357): ‘Moderne.’

³⁵ ‘Sous le nom de sciences, on trouve déjà un mélange assez complexe de preuves et de travailleurs de la preuve, une Cité savante qui agit *en tiers* dans toutes les relations avec la société. Or ce tiers, les mouvement écologiques ont cherché à la court-circuiter afin, justement, d’accélérer leur progrès militants. La science reste pour eux un miroir du monde, au point que l’on peut presque toujours, dans leur littérature, prendre nature et science pour des *synonymes*.’ Cf. Latour 2004b:4.

³⁶ Cf. Latour (2004b:231): ‘This book is a work of political philosophy of nature, or political epistemology.’

Later in his intellectual biography, Latour abandoned the agnostic posture of *Politiques de la Nature* but not in order to embrace emancipatory politics. On the contrary, some fifteen years later, Latour openly declared his adherence to far-right ideology. This is best evidenced in the theses that he brought forward in the Gifford lectures, delivered in Edinburgh in 2013. The lectures were later published as *Face à Gaïa: Huit conférences sur le nouveau régime climatique* (*Facing Gaia: Eight Lectures on the New Climatic Regime*) (2015). On that occasion, Latour found it appropriate to start the book with a quotation from nazi jurist Carl Schmitt.³⁷ This was, to say the least, a bizarre manner of honouring his predecessors at the Gifford lecturers, whom he boasted to succeed—Latour mentioned William James, Alfred North Whitehead, John Dewey, Henri Bergson, and Hannah Arendt. The aforementioned quotation stems from the first of the five ‘Introductory Corollaries’ to *Der Nomos der Erde* (*The Nomos of the Earth*) (1950). It states that the foundation of law is the unity of order (*Ordnung*) and place (*Ortung*). Accordingly, all justice and law originate from the Earth (Schmitt 1974:13).³⁸ Schmitt alluded to a fundamental opposition between continental Germany and its frustrated aspirations to establish a Third Reich grounded on soil and blood, in contrast with his maritime enemies, particularly England. Readers might consider this quotation an innocent naivete on Latour’s part, but it actually reveals the source of his political epistemology and the ideology that traverses his entire book, informing its agenda in political ecology. Indeed, alongside Austro-fascist philosopher of history Eric Voegelin, Schmitt is Latour’s main philosophical reference for the New Regime that he preaches and which he euphemistically qualifies as ‘Climatic’ with an abundance of capital letters (New Climatic Regime). I will discuss this in more detail below.

6 Latour’s Far-Right Ecology

Latour’s pseudo-historical argument for the origins of the Anthropocene and a new course in political ecology goes as follows. In *Face à Gaïa*, he takes 1610 as a turning point, a date full of meanings for the historical-philosophical understanding of the Anthropocene. From his ‘ecological’ perspective, that year marked a climate optimum because the quantity of CO₂ fell to a historical minimum. Accordingly, Latour suggests considering this moment as the yardstick

³⁷ A relevant discussion of Latour’s reference to Schmitt for his political ecology is Pellizzoni 2015:88-92.

³⁸ ‘Das Recht ist erdhaft und auf die Erde bezogen. Das meint der Dichter, wenn er von der allgerechten Erde spricht und sagt: *justissima tellus*.’

for measuring anthropogenic climate deterioration. The cause of that optimum was the massive reforestation of a large part of the American continent. And the reason? Latour provides a clear answer: the reason for the climate optimum was the colonial genocide of fifty-four million natives during the sixteenth century—a natural-cultural connection that Latour endows with an exclamation mark (Latour 2015:240).³⁹ In light of such bloody costs of past climate mitigations, Latour offers the following definition of the present epoch: ‘C’est cela l’Anthropocene: l’anthropologie plus la climatologie dans une violente prise de la terre’ (Latour 2017:185).⁴⁰ It was the violent conquest of American lands by the Europeans in the previous century that produced the climate optimum that peaked in 1610.

The same date, 1610, has additional symbolic meanings (and, as we will see, also providential significance). From the viewpoint of the history of science, as Latour argues, this year coincides with Galileo’s *Sidereus Nuncius*. This publication spread novel telescopic observations of the heavens, which established a principle of cosmological homogeneity that equates the terrestrial and the celestial realms in line with Copernican astronomy. For Latour (who is rather fond of what he sees as the ‘counter-Copernican Revolution’ of the Anthropocene) that was a terrible year because, as Bertolt Brecht observed in his play on Galileo, *Sidereus Nuncius* signaled the ‘abolition of the heaven’ (*ciel aboli*)—both in an astronomical as well as a religious sense (Latour 2015:240). Far from celebrating such an abolition of cosmological hierarchies and transcendence as a positive step forward towards modern scientific culture, philosophical reason, immanentism, and secularization, Latour condemns this shift as the beginning of all that went wrong with modernity. He terms the secular tendencies of modernity a ‘counter-religion’ (*contre-religion*) (Latour 2017:252; Latour 2016:193) by projecting onto the novel scientific mindset dogmatism and intolerance—of which Galileo is for him the symbol. To be sure, this reversal of roles between victims and executioners is a dismaying version of historical revisionisms, typical of the most reactionary figures among Catholics and theo-conservatives (Omodeo 2020b). They ascribe to modern scientists and philosophical innovators the responsibility for the censorship, trials, and ecclesiastical condemnations that the scientists and innovators themselves had to endure. According to such obscurantist historiographic lines, often inspired by Catholic chauvinist Pierre Duhem, it was Galileo and not his persecutors, first among them Saint Inquisitor Robert Bellarmine, who were guilty. Galileo’s heresy was epistemological as, according to them, he

³⁹ There is no exclamation mark in the English translation (Latour 2017:185).

⁴⁰ Cf. Latour (2017:185): ‘It’s all here, defining the Anthropocene: anthropology plus climatology in a violent land grab.’

‘dogmatically’ embraced Copernican planetary theory on the basis of an inadequate knowledge theory—one based on truth rather than conventionalism *avant la lettre* (long before Henri Poincaré and Ernst Mach).

Latour neglects to mention the many instances of religious intolerance and persecution before 1610—most notably, the Catholic trials on science of the late sixteenth century and the (not only Catholic) executions of Giordano Bruno, Michael Servetus, and Giulio Cesare Vanini. Latour does not even spend a word on the religious justifications of the conquest of the American continent by Europeans. Moreover, he obliterates the Scriptural, theological, and cultural-political motivations of the Church’s opposition to philosophical novelties in early modernity. In fact, for Latour, mathematical science is a source of impiety that was embraced and disseminated by Enlightenment and nineteenth-century visions of human and social progress. In other words, Latour groups together the consequences and ideological aspects of modern science and technology—together with secular politics, philosophical reasoning, and struggles for emancipation—as the lasting effects of post-1610 ‘counter-religion’. Latour thinks that she can unveil the ‘hidden agenda of modernity’, namely an attack on religion, by radicalizing the criticism of scientific rationalism by historian of science Stephen Toulmin in *Cosmopolis* (1990).

Furthering his bizarre numerology, Latour also claims that 1610 was the year that ended tolerance owing to the murder of Henry IV of Navarre, the king who had been able to settle for some time conflicts in France. Latour’s silence about earlier dramatic events, the civil war of religion which reached its peak in the horrendous massacre of Huguenots on Saint Bartholomew’s night (1572), is functional to his argument that 1610 ended Renaissance tolerance (sic!), signified by Montaigne’s cultural relativism. For Latour, the Wars of Religion is a post-1610 event, a consequence of Henry’s murder, which (how?) unleashed the Thirty Years War (1618–1648). According to his quite simplistic account, that was a time of fundamentalisms, best expressed by modern science and rationalism (sic!). He even ventures to equate seventeenth-century wars to recent conflicts in Syria, Iraq, and Libya (thereby omitting their geopolitical framework) (Latour 2015:242). Indeed, Latour even goes as far as to argue that Islamic fundamentalism is a continuation of Galilean intolerance, resulting from the ‘abolition of the heaven’ in 1610.

To give some credibility to an argument that is so clearly flawed from the viewpoint of historical plausibility and philosophical tenability, Latour resorts to an unusual source: Eric Voegelin. Voegelin was a theorist of the Authoritarian state (1939), a supporter of Engelbert

Dollfuß's attempt at a cleric-fascist putsch in Austria (1934).⁴¹ Adolf Hitler's *Anschluss* (1938) forced him to emigrate to the United States because his Austrian nationalism, critical of the biological foundation of the state based on race theories, was not compatible with the ideology of the new regime. But Voegelin was no progressist thinker. He was a reactionary and a nationalist himself, as well as a religious conservative (Lecoutre 2021). His views clashed with those of his own professor Hans Kelsen, the theorist of universal rights who set the ground for post-WWII international law, on account of the universalism of the latter's pure jurisprudence. Thus, Voegelin can also embody the dismissal of human rights alongside liberal pluralism and democracy.⁴² Latour especially extolls Voegelin's criticism of modernity. He does so at length, without taking distance from his political background. According to Voegelin's pseudo-history, modernity has been the theatre of a clash between two spiritual paradigms: Gnosticism and Christianity. Modern gnosis coincides for him with science. In the wake of Voegelin's theses, Latour condemns modern science as pseudo-religion because it produces a widespread oblivion of the heaven and of the end of times. For Latour, the apocalypse ought to be revalued as an Augustinian way of seeing and feeling the world. Indeed, he claims that the revelation of the terrestrial city is only possible in contrast with the celestial one. This oppositional couplet is reminiscent of Augustin's vision of history as a millennial fight between Good and Evil, represented by the two cities of God and Man. As one reads in *Face à Gaïa*, modern science, secularisation, and immanence subtract humanity from an original, ostensibly positive, connection between religion, science, and politics (to express this liaison between the spiritual and the temporal, Latour resorts to Schmitt's concept of political theology) (Latour 2015:259,n. 38). The false promise of a paradise on Earth is for him the main lie of modernity because 'le Paradis en terre' (terrestrial Paradise) only produces 'la terreur' (a play of words substituting explanations, as is typical for Latour) (Latour 2015:257).

Latour even opposes religious movements if they display some emancipatory potential—for instance, the medieval messianism of heretics such as Joachim of Fiore. Rather, he favours the anti-revolutionary philosophy of history of Augustine, who, in his own time, ousted all attempts at radical political change, arguing that radical change could only be produced by God (Latour 2015:257). And here comes one fundamental paradox: Latour claims that the exclusive attention to the terrestrial realm implies its negation, as the Earth can only be understood in the light of the Heaven, immanence through transcendence. According to this

⁴¹ On Voegelin's positioning vis-à-vis the authoritarian turn in Austria, see Henkel 2000. On the context: Diamant 1957.

⁴² An interesting comparison between Voegelin and Schmitt's political theologies is Gontier 2013.

sophistic argument (for which the negation of transcendence presupposes transcendence), he argues that medieval heresies, just as modern secular culture and the natural sciences, lose contact with the Earth—that is, in Latour’s convoluted thinking, ecology. Such connection, the foundation of Latour’s political ecology and the new regime he fantasises about, ought to reestablish a contact with the divine through an apparent reversal of reason and religion: ‘L’apocalypse est un appel à être rationel, à avoir les pies sur terre’ (Latour 2015:282).⁴³ How should one achieve that? Latour’s answer is as simple as it is absurd: by rewinding history. He suggests undoing four centuries of modernity, therefore inviting his followers to go back to the pre-1610 moment at any cost.

As Latour recounts with his characteristic historical inaccuracy, the Hobbesian war of all against all depicts the pre-1610 condition in Europe, which could be toned down thanks to the colonial expansion in America (‘toned down’ only in Europe, of course, because the price for Americans was their genocide). This ‘fortunate’ condition of externalised violence on other people lasted for some centuries, but Latour decrees that such ‘armistice’ of modernity is now over. The Westphalian order of 1648, a cornerstone of international law, is not tenable anymore for him because we have entered a new historical phase, that of the wars for Gaia. The signature of the last few centuries was the separation of science, politics, and religion. These realms should now reunite. Latour sees this achievement as a move back to the expansionist Renaissance which—as one further reads in *Face à Gaïa*—inevitably comprises ‘the great discoveries’ and ‘wars of religion’ (Latour 2015:274). As we now know, those great discoveries included colonialism, genocide (*une violente prise de terre*), and, in accordance with the Schmittian principles of Latourian ecology, the climate optimum of 1610.

Latour details his agenda in the seventh of his Gaia talks. He does so by making explicit the most controversial aspects of his tribute to Schmitt. In one and the same passage in which he openly presents him as a nazi jurist—whom Latour declaredly preserves in his intellectual laboratory as a useful ‘active principle’ (Latour 2015:295)⁴⁴—he also extolls the latter’s intellectual stature as ‘a recognized master of geopolitics and international law’ (Latour 2017:232; Latour 2015:299). There is no irony in these words. Latour passes under silence that Schmitt’s geopolitics was an exaltation of Hitler’s military aggressions aimed at creating a new world order. Can he possibly ignore this? In his apparent (and possibly staged?) naivety, Latour

⁴³ Cf. Latour (2017:218): ‘The apocalypse is a call to be rational at last, to have one’s feet on the ground.’

⁴⁴ ‘Il en est du juriste nazi comme d’un poison que l’on garde au laboratoire quand il faut un principe actif assez puissant pour contrebalancer d’autres poisons encore plus dangereux: tout est affaire de dosage!’ Cf. Latour 2017:228.

does not mention that Schmitt's viewpoints count as a right-wing rejection of Kelsen-inspired universal human rights. Actually, it was Schmitt who denounced Kelsen as a Jewish colleague in Köln in order to ease his own career and climb the academic ladder up to the prospective centre of the Third Reich in Berlin. Latour's only criticism of Schmitt concerns the latter's extraordinary expectations for the Führer (exactly, the 'Führer', referred to in German in the original French text) not because the principle of authoritarian guidance is wrong but rather because Schmitt did not generalise it enough alongside his doctrine of the state of exception, according to which, in the midst of crisis, power belongs to the one who is capable of seizing control of the situation (Latour 2015:296). According to Latour, such principles should not be too narrowly applied to Hitler's Germany. Updates are possible in the name of Gaia.

Thus, Latour declaredly intends to use the right dose of this nazi medication as an antidote against 'more dangerous poisons'. By now, we know what he means by that: the threats related to everything that descends from modernity, science, the Enlightenment, emancipation struggles, and socialism. Actually, this nazi dose is not little at all: Schmitt occupies the stage of the entire seventh Gifford lecture as the most important reference in building up the political ecology that Latour envisions.

Schmitt's oppositional friend/enemy pair serves Latour's definition of politics, which he understands as an arena of existential struggle for life and death. The title of the German edition of his Gifford lectures, *Kampf um Gaia*, well renders an agenda that is reminiscent of a more notorious *Mein Kampf*. According to Latour following Schmitt, there is no politics without enemies (Latour 2015:310). Politics, as he writes, is the 'pratique de la négation existentielle' (Latour 2015:308)—that is to say, a fight for life and death. As he explains, the reason for such 'negation' is not moral, economic, religious, or aesthetic (Latour 2015:304). Politics is all about the existential threat posed by the Other (the alien, the *xenos*), no matter whether it is other humans or—according to Latour's extension—other species. His Kampf for Gaia is clear: either your life or mine. He states his xenophobic program in unmistakable terms: 'désignez vos ennemis et délimitez le territoire que vous êtes prêts à défendre' (Latour 2015:317).⁴⁵ Such a radical right-wing call for the defence of the territory against external and internal enemies echoes the nazi propaganda that led to WWII and the holocaust of which Schmitt's philosophy is an ideological expression. Naïve Latour is not aware of this—he is simply being ecological. Is he, though?

⁴⁵ In English, this invitation is toned down in the form of a question. Cf. Latour (2017:245): 'can you designate your enemies and delineate the territory you are prepared to defend?'

Latour remarks that Schmitt could not foresee the ecological application of his political doctrine because he did not include Gaia among the factors of the existential fight. And yet, biology (better: *biologism*) is not far from Schmitt's geopolitics. Latour does not mention that the roots of the doctrine of the existential threat are to be found in social Darwinism. This is why the friend/enemy opposition—whose dichotomic implications do not seem to bother Latour—is neither moral, aesthetic, economic, nor religious. The 'natural' law of the survival of the fittest is Schmitt's secret rather than a brilliant ecological reinvention by Latour to overcome the Anthropocene.

As for Gaia, Latour presents it as an anti-globalisation concept, directed against cosmopolitan nomadism and scientific universalism. Gaia is a mythical, antimodern, almost primordial entity. One could translate it as *Lebensraum* in light of the following definition:

Le Globe offre une figuration en quelque sorte géométrique de l'arbitre souveraine qui règne au-dessus de tous les conflits—et qui, par consequence, les dépolitise aussitôt. Gaia [...] peut être définie comme la multiplication des sites dans lesquels des entités radicalement étrangères pratiquent la 'negation existentielle' les unes des autres. (Latour 2015:308)⁴⁶

It should be noted that for Latour, law and peace as conditions for the mediation of conflicts are at odds with his concept of politics, which is only possible in the absence of law and in situations of generalized warfare. By that, he does not mean class struggle but aggression and murder (the pre-1610 landgrab or *prise de terre*). Behind violence, he detects the design of Providence which also backs his own mission. Among the signs, he mentions the publication of Pope Francis's Encyclic on ecology, *Laudato Si'*, in the same year of his Gaia book, in 2015 (Latour 2015:308, n. 7). Latour claims that this coincidence provides precious (divine?) support for his own argument, although he suspects that someone has been trying to suppress the pontifical message—without offering any detail of such alleged conspiracy.⁴⁷ It should be noted that Latour's Catholicism is not of the peaceful kind. He explicitly condemns pacifists because, in his eyes, they constitute a threat in the fight for Gaia (Latour 2015:311). By contrast, he preaches a crusader exegesis of the Gospel. Jesus—he argues quoting Matthew—was not a harbinger of peace:

⁴⁶ Latour (2017:238): 'The Globe offers a geometric way, as it were, of representing the supreme arbiter that reigns over all conflicts—and that consequently depoliticizes them at once. Gaia, in contrast, can be defined as the multiplication of the sites in which radically foreign entities practice mutual "existential negation."'

⁴⁷ Latour (2015:253, n. 27): 'l'encyclique *Laudato Si'* dont l'originalité se mesure aux efforts développés pour en étouffer l'impact.' Cf. Latour (2017:195, n. 32): 'the encyclical *Laudato Si'* (Francis 2015), whose originality can be measured by the efforts that have been made to stifle its impact.'

Remember the passage from the Gospel I cited earlier, and that Schmitt would have understood only too well: 'Do not suppose that I have come to bring peace to the earth. I did not come to bring peace, but a sword' (Matt. 10:34). Between the pacifiers and the 'peacemakers' to whom, alone, the '*nomos* of the Earth' has been promised, we are going to have to choose. (Latour 2017:241)

Latour sees God's Providence behind the unfolding of history. This is why he spends so much time celebrating numerologies (*annus mirabilis* 1610): 'Il y des dates de l'histoire dont la coincidence vous frappe tellement que vous êtes enclin à voir un signe du destin' (Latour 2015:241).⁴⁸

7 For an Antifascist Anthropocene

Latour's argument is as simple as it is crude. Given the dimensions of the environmental crisis and the lack of vulnerable lands for colonial conquest, on which aggressive nations could externalize their violence, he believes that humanity cannot escape a Malthusian predicament and social-Darwinist solutions. In line with the most reactionary lines of thought from the last century, he derives from crisis an argument in favour of historical positions that eventually lead to geopolitical wars and genocidal crime, which he presents as a fight for survival at the cost of other humans and species. If one were to suppose that this is just a disenchanted *description* of the present, one should be reminded that Latour's epistemology abolishes the distinction between facts (description) and values (norms).⁴⁹ He advocates a new world regime, a New Climatic Regime with religious traits (the regime he dreams of is Catholic, apocalyptic, and anti-modern). Power is allowed to decide about life and death in amoral terms.

In fact, extinction politics, for Latour, is a purely existential question, *une negation existentielle*. That is an existential struggle for life. On this point, his dark ecology is coherent, and the nefarious consequences of his political assumptions are clear. If one renounces critique (as he does in his anti-Enlightenment agenda)—especially if one renounces the criticism of social relations under capitalism—there is only one option left. Facing the old alternative set by

⁴⁸ Latour (2017:185): 'The coincidence of certain dates in history is so striking that one is inclined to see a fateful sign.'

⁴⁹ See Latour (2004a:140-148): 'Quelques inconvénients des notions de fait et de valeur.'

Rosa Luxemburg between socialism and barbarism, Latour chooses the latter. His answer to the Anthropocene crisis is eco-fascism. After indulging for so long in Latourian right-wing ecology, it is now time to consider less regressive responses to the environmental crisis as well as progressive responses, antifascist standpoints, and most importantly, eco-socialist pathways to the Anthropocene that would place justice at the centre.

For a denunciation of the old-new ties between fascism and ecology, one can begin from environmental historian of political ideas, Pierre Charbonnier. Among others, he has tried to make the ecological premises and implications of three major political tendencies explicit. These are defined in accordance with Karl Polanyi's *The Great Transformation* (1944): liberalism, socialism, and fascism (the third of which Charbonnier interprets as conservatism). According to Charbonnier, (neo)liberalism rests on the premise of unlimited resources. Conversely, the existence of large exploitable resources and productivist programs guarantees the possibility of the market-oriented democracies of the second half of the twentieth century. If 'abundance' recedes (understood in the productivist and consumerist terms), the stability of the whole system is shaken. As for conservatism, according to Charbonnier, it rests on different ideological and ecological premises, namely, the assumption that societal order is natural and localized. Therefore, anti-modernism, the criticism of globalism, and the rejection of multiculturalism constitute its typical motifs.⁵⁰ At once, eco-conservatism connects a 'legitimate concern for the health of the earth' with 'the idealization of a society submitted to the 'natural' (actually naturalised) authorities of patriarchy, race, and religion'.⁵¹ Charbonnier criticises such ideology, as well as the conservative ethos that extolls personalities from the Nazi past, such as Martin Heidegger, 'the figure of the solitary thinker, opposing his time, protected by his retreat into the forest'.⁵² He also refers to Latour's 'diagnosis' and the dire consequences of the criticism of globalization in the same section, in which he discusses conservative environmentalism, although he does not go as far as to denounce the latter's proximity to far-right politics.⁵³ As for socialism, Charbonnier observes that the politics of the left are divided between divergent tendencies: state-authoritarian solutions (an easy-to-

⁵⁰ Charbonnier (2022:24) offers a summary of Charbonnier 2020.

⁵¹ Charbonnier (2022:28): 'Celle-ci [l'histoire politique de la nature] [...] permet de ne plus confondre le souci légitime pour la santé de la terre avec l'idéalisation d'une société soumise aux autorités 'naturelles', ou plutôt naturalisées, du patriarcat, de la race, ou de la religion.' My translation.

⁵² Charbonnier (2022:23): 'la figure du solitaire pensant contre son temps, protégé par son retrait dans la forêt.' My translation.

⁵³ Charbonnier (2022:27): 'Mais comme Bruno Latour l'a récemment diagnostiqué, l'opposition au globalisme marchand et à ses conséquences environnementales catastrophiques nous projette en réalité dans un espace idéologique inconnu. On peut en effet demeurer attaché à l'universalisme des droits et à la liberté de circuler, c'est-à-dire à un certain héritage libéral, tout en souhaitant réinvestir des techniques agricoles qui prennent au sérieux cette idée d'un retour à la terre.' Own translation.

interpret reference to China), anti-institutional community-based activism, or utopianism—often connected with simple adaptation.⁵⁴

Further insights into the connection between the environmental crisis and the rise of new varieties of fascism can be derived from Andreas Malm and the Zetkin Collective's *White Skin, Black Fuel* (2021). They point to how visions of ethnic purity and ultra-nationalism inspired by twentieth-century regimes, beginning with Italy and Germany, converge with climate-change denialism (Malm et al. 2021:Chap. 1, 'The Fortunes of Denial'). Most importantly, the authors of the book argue that there is a direct relation between rising temperatures and the rise of far-right politics in Trump's USA, Bolsonaro's Brazil, and many areas of Europe. Indeed, mitigation and adaptation politics evidence a deep crisis owing to the impossibility to solve it within the political system that ensured capitalist expansion in the past. As realistic politics would require Draconian measures, beginning with regulations, right-wing agendas emerge as a defence of the entrenched interests of fossil-fuel capitalism. This creates conditions in which fascism can receive the endorsement of the same economic and political elites that earlier embraced neoliberalism as the pathway to capitalist expansion (Malm et al. 2021:Chap. 7, 'Towards Fossil Fascism'). In this respect, Malm and his colleagues refer to the concerns of historian of nazi-fascism Geoff Eley and historian of central Europe Timothy Snyder, according to whom new demagogies of blood and soil could emerge from the apocalyptic scenarios of climate change that challenge 'the possibilities for effective and accountable governance' (Malm et al. 2021; Eley 2013:217; Snyder 2015:326-327). They clearly see the conditions for fascism to emerge from the environmental catastrophe, as well as the urgency to reconnect socialist and anti-fascist environmentalism. At the same time, they limit their objections to the problem of negationism and do not reflect on the return of social-Darwinist solutions à la Schmitt, like those Latour advanced in the spirit of a political ecology of the right.

More recently, Charbonnier has reconsidered this connection between the nazi ideology of territorial expansion, existential fight, and political ecology in *Vers l'écologie de guerre* (*Towards a War Ecology*) (2024), in which he draws on Latour but also tames the latter's extremism (Charbonnier 2024:13, 30, 122). The thesis that the Anthropocene began in the mid-twentieth century and rapidly led to the Great Acceleration pushes Charbonnier to translate the correlation between the culture of peace promoted through the United Nations after the horror

⁵⁴ As an instance of the third option, Charbonnier mentions Anna Tsing, *The Mushroom at the End of the World* (2015). According to him, her perspective brings together utopianism and passive adaptation.

of WWII (which continued the Society of Nations's *tentative to criminalise war*)⁵⁵ into a causal dependency between liberal-socialist universalist arguments for peace and prosperity, on the one hand, and the deterioration of the planetary ecosystem, on the other (Charbonnier 2024:19).⁵⁶ This *non sequitur* is based on a misled causal interpretation of the correlation between the temporary establishment of peace (which actually only ideologically reflects the political and geopolitical situation of a century marked by class struggle, de-colonial and neocolonial wars, and the recrudescence of ethnic wars and cleansings beginning in the 1990s) and the exploitation of carbon fossil resources to sustain global economic growth on the various sides of the tripartite division of the world (the once-used schema of First World, Second World and Third World) before the globalisation phase of American hegemony. Charbonnier concludes that the rootedness in a territory, an ecological connection with the Earth, were lost together with the expulsion of fascist war ecology. He considers this demised ideology to be a form of realism based on the assessment that resources are limited and linked to concerns about boundaries and even nazi *Lebensraum* preoccupations (Charbonnier 2024:101-126). Furthermore, he believes that one can resume Malthusian and Schmittian imperatives in accordance with a new spirit—one less oriented to extermination, if possible, while maintaining the connection between security and environmentalism (Charbonnier 2024:304-305).⁵⁷ Charbonnier's position very much looks like a Macronist (neo-Gaullist) program. He considers the ban of Russian fossil fuel after the full-scale invasion of Ukraine an ecological opportunity for France and Europe that could trigger a security-driven ecological transition marked by geopolitical 'realism'. As ridiculous as such claims are, they at least reveal the intention to tame fascist suzerainty politics in favour of a less authoritarian nationalism. Charbonnier calls for a novel alliance between *réalisme* (the Schmittian ingredient) and *justice* (the Kantian ideal). He has no socialist alternative in sight (Charbonnier 2024:314).

⁵⁵ Charbonnier 2024:95: 'tentative de criminalisation de la guerre.'

⁵⁶ 'Parmi les raisons de l'impasse climatique, il y a la peur de la guerre.' Note that Charbonnier does not speak of the rational and political rejection of war but of a kind of emotional reaction. Cf. Charbonnier 2024:44 (*angoisse quant à la possibilité du conflit*). The following, main thesis of the book is either a tautology without meaning or a rhetoric rejection of peace as a premise of prosperity and ecology (ibid., 12): 'L'hypothèse [...] qui structure ce livre, est que la seule chose plus dangereuse que la guerre pour la nature et le climat, c'est la paix: la paix telle qu'elle a été créée et maintenue, surtout après 1945, est en effet le résultat d'une intensification énergétique auparavant inconnue.' Charbonnier repeatedly reminds his readers of the coincidence of the beginning of the Great Acceleration of the Anthropocene with the first atomic explosions in 1945, the demise of fascism, the creation of ONU and the universal declaration of human rights. Cf. Charbonnier 2024:39 and 161.

⁵⁷ 'Face aux optimistes [Kant and his followers], à leurs échecs et leurs mensonges, se trouve le clan des pessimistes, dont les figures les plus célèbres sont Malthus et Carl Schmitt. Les pessimistes considèrent la clôture physique de la Terre comme une condition indépassable, comme la raison ultime du caractère tragique des relations politiques et de la puissance [...]. L'ancrage écologique, ou pseudo-écologique, de ces théories géopolitiques doit être pris au sérieux [...].'

Differently, in his manifesto of degrowth communism, *Slow Down* (2022, in Japanese, and 2024, in English), Kohei Saito considers, among the various political responses to the Anthropocene, the despicable combination of authoritarianism and inequality that gains its momentum from deepening ecological and social injustice:

Food shortages, energy crises, immigration problems, and so on only serve to incite chauvinistic nationalism. The subsequent division of society along these lines worsens the danger to democracy. As a result, authoritarian leaders take power, bringing about a form of rule that might best be called ‘climate fascism’. (Saito 2025:29)

Saito here targets Bolsonaro- or Trump-like negationist attitudes (Saito 2025:69). However, Latour’s dark ecology and Charbonnier’s discussion of pessimistic ecological realism document the possibility of a different eco-fascism, one that accepts the environmental crisis but answers it with extermination instead of redistribution and justice. At the same time, some of Saito’s arguments against capitalist destruction of social relations and the environment offer important elements for debunking biologist assumptions in the background of the Gaia ideology and other right-wing pathways. Such is the Malthusian theory of scarcity that can ultimately lead to social Darwinism. I now turn to this old-new problem.

8 Environmentalism of the Left versus Political Malthusianism

Saito argues that scarcity is inscribed in capitalism as one of its fundamental assets. It is the prerequisite for extracting profit and is therefore constantly created and recreated through a mechanism that Marx called primitive accumulation. Capitalism is grounded on privatisation and exclusion, whereas the commons are a source of wealth—of ‘abundance’, as Saito writes, giving this term a very different meaning than Charbonnier for whom it only refers to unbridled productivity and consumption. The creation of conditions of scarcity includes the appropriation of nature and its resources by the few—be it soil, underground minerals, or water—and the subsequent selling of commodified goods (Saito 2025:Chap. 6, esp. 160-161). Not only does capitalist profit admit no limits to the exploitation of natural resources and workers, but it also benefits from deteriorating conditions. Even climate change offers opportunities for business:

From the perspective of capitalism, no disaster should remain unexploited (Klein 2007).⁵⁸ Drawing on the 'Lauderdale paradox' (that is, private riches result from the erosion of public wealth), Saito opposes capitalist exploitation from the position of a use-value economy that fosters wealth against private 'riches'. Such wealth is grounded in the abundance of the commons and their communitarian use, contrary to the exchange-value orientation of privatised riches that embodies the individualistic and deeply anti-social spirit of the free market (Saito 2025:153-154).

In this perspective, scarcity is not a natural condition posited in absolute terms but rather depends on social relations. Its extreme case is extinction.⁵⁹ In other words, the Malthusian vision of resources and population obliterates the fact that the relation between them is mediated by societal structures; therefore, assessing the ecological crisis without criticising capitalism is blind and ideological. Back in 1974, political geographer David Harvey raised this point in a paper occasioned by the UN Conference on the Human Environment in Stockholm (1972). He particularly discussed the limits to growth, a problem raised by the Club of Rome in a publication of the same year (1972) in a manner that bracketed out historical, epistemological, and politico-economic factors. Harvey's diagnosis was merciless:

If we accept a theory of overpopulation and resource scarcity but insist upon keeping the capitalist mode of production intact, then the inevitable results are policies directed toward class or ethnic repression at home and policies of imperialism and neo-imperialism abroad. (Harvey 1974:274b)

According to Harvey, a reduction of the environmental problem to a Malthusian dilemma between population and resources leads to inner repression and war as its obvious consequences. In contrast to forms of society naturalisation and social Darwinism, Harvey mentioned the provocative statement by the Chinese delegation at the Stockholm Conference on the Human Environment, that 'there was no such thing as a scarcity of resources and that it was meaningless to discuss environmental problems in such terms' (Harvey 1974:272a). For the Chinese delegates, there was neither destiny nor natural determinism behind the historical development of the natural-social relation, which cannot be reduced to one factor. From a historical-materialistic viewpoint, technology and socio-cultural praxis are constrained by

⁵⁸ Disasters also include war. Even genocide has now become an economic asset (Albanese 2025).

⁵⁹ According to Parkhowell (2025a), politics of extinction are mirrored by an episteme of dead specimens preservation, to which he opposes the perspective of a mythopoetic episteme of replenishment.

natural and social conditions that are much more complex than population alone. By contrast, naturalisations à la Malthus posit scarcity as the result of natural laws in accordance with pessimistic anthropology and reactionary economic theory. As Harvey reminds us, Malthus explicitly directed his argument against the Enlightenment expectations of universal emancipation and Jacobins' support for the ideals of the French Revolution (Harvey 1974:259a).⁶⁰

Reflecting on one of the most devastating cases of draught and famine of the last century, the Sahel in the 1960–70s, Argentinian philosopher of science Rolando García made a similar anti-Malthusian point, hinting at the social-economic and political responsibilities behind water scarcity. García, who, at the time, was the director of the research program on *Drought and Man* for the International Federation of Institutes for Advanced Study, subtitled his report 'Nature Pleads Not Guilty'. For him, human societies are not passive receivers of environmental change. Rather, they are agents of the transformation of their environments. Humans can differently organise economy, politics, and, consequently, their relation to the territory and the use of resources, in particular water and soil, depending on social structures and practices that can be more or less resilient:

We stated above that 'there is a tendency to consider climate and climatic fluctuations as a *given*' and that 'society is thus conceived as a passive receptor of the impact of climate'. In verbal discussions on these matters we have found readiness to accept this criticism, but for the wrong reasons. The usual answer is: 'of course, we must take into consideration that society in turn modifies the climate'. This may be true, but we do not mean only that. We refuse to consider society as a passive receptor of climatic 'impact', not—or not only—because society may in turn influence the climate, but because climatic phenomena are only meaningful with reference to a certain society. (García 1981:xii)

Along a similar line of thought, Harvey explained that there are path-dependencies that are determined by the way in which different societies shape the natural conditions for their own reproduction. Accordingly, ecological interventions can make the society that generated them necessary for the maintenance of those very material conditions of social life (Harvey 1996:94).

For sure, the debate of the Seventies and Eighties on Malthusianism needs to be updated in a significant manner, especially because the criticism of analyses and solutions solely based

⁶⁰ On the 'Ricardian–Malthusian paradigm', which, added to technocentrism (productive forces determinism), affects much economic history in its entwinement with the environment, see Malm 2016:Chap. 2, 'Scarcity, Progress, the Nature of the Human Species? Theories of the Rise of Steam'.

on population and resources needs an integration in terms of environmental politics—a dimension that has become increasingly important in recent years. That is to say, the rejection of arguments based on natural necessity ought to be substituted not by arguments that could promote Prometheanism independent from environmental limits but rather a geopraxis that considers social, political, cultural, and natural dimensions as mutually constrained and reinforced. Science and technology, as the Anthropocene argument about the ergo-cum-technosphere suggests, are an integral part of the possibility of a worthy and just future for humankind.

For this reason, it is important that the new planetary-oriented politics is grounded in approaches to environmental problems that reinforce communities, bottom-up participation, and ‘open technologies’. Such technologies avoid, as far as possible, centralized management and monopoly—that is, conditions of artificial scarcity, as is the case with nuclear plants and fossil fuels versus solar energy.⁶¹ A dialectics between the local and the global ought to be in place so that the commons are not alienated in the name of private interests nor for an abstract conception of the public sphere which rests on technocratic planning. Moreover, as Jean-Baptiste Fressoz has recently cautioned (Fressoz 2024), one should not connect ecological strategies with a narration of energy transition based on instances from the recent past, since the history of technology shows that all improvements in energy production have thus far evolved in concert with earlier forms of energy exploitation, without substituting them. This remark once more reinforces the view that the solutions to the ecological and climate crisis cannot be expected from technological efficiency alone. Instead, they depend on societal change.⁶² And the societal change required by the current crisis is in many ways unprecedented.

9 Ecosocialism of the Commons

Awareness of the planetary dimensions of ecology has gained growing intuitional significance in the last fifty years or so. A list of milestones looks as follows: the UN Stockholm Conference

⁶¹ Saito 2024:163-165. Andreas Malm discusses the capitalist advantages (not only technological) of the use of carbon in nineteenth-century English industrial production in *Fossil Capital* (2016). On the ideological and ecological shortcoming of narratives about the energetic transitions of the past, see Fressoz 2024:21-23. He argues that substitutions have never occurred but rather additions and integrations of new sources of energy relative to preexisting ones.

⁶² Fressoz 2024:30: ‘L’impératif climatique ne commande pas une nouvelle transition énergétique, mais oblige à opérer, volontairement, une énorme autoamputation énergétique.’

(1972); the canonisation of the oxymoronic goal of 'sustainable development' in the UN Report 'Our Common Future' (known as the 'Brundtland' report after physician Gro Harlem Brundtland, the Chair of the World Commission on Environment and Development) (1987); the creation of the Intergovernmental Panel on Climate Change (1988); the issue of the United Nations Framework Convention on Climate Change (UNFCCC) at the 'Earth Summit' of Rio de Janeiro (1992); the signature of the Kyoto Protocol with the first binding emission reduction targets (1997); and the many Conferences of the Parties (COPS) of the UNFCCC. Most significant among these institutional steps, the Paris COP number 21 held in 2015, set the agreed-upon goal to maintain 'the increase in the global average temperature to well below 2°C above pre-industrial levels' and to pursue efforts 'to limit the temperature increase to 1.5°C above pre-industrial levels'. The contrast between so many declarations and agreements vis-à-vis the lack of concrete results in terms of emissions reduction, however, is so striking that it calls for explanations.

Charbonnier claims that liberal-socialist concerns about peace are responsible for the political impotency in the face of ecological disaster; for him, a rehabilitation and domestication of *Lebensraum* ideologies would be a better solution. Naomi Klein has offered a more plausible diagnosis of the problem. Her political explanation of the conundrum does not go as far back as the beginning of the Cold War but rather points to the globalisation that followed it. She stresses that, in the last decades, the tension between ecological imperatives and economic interests has constantly been solved to the advantage of the latter. While the ecological agenda was sanctioned by international declarations, signatures, and agreements, the achievement of meaningful results was hampered by the expansion of a deregulated 'free market' and its neoliberal ideology. This became the creed that dominated the world for about thirty years. The International Panel on Climate Change was created one year before the fall of the Berlin Wall, which symbolically marks the beginning of globalisation and free-market expansion. In 1995, the World Trade Organization (WTO) was established with the aim to (de)regulate trade among the nations. China gained full membership in the WTO in 2001, consolidating the globalization agenda that characterised the first decades of the twenty-first century (Klein 2014).⁶³ The expansion of financial markets and trade, together with enhanced productivism and extractivism in the Global South, has eroded the possibility of effective politics for the protection of the planetary environment. The phase of capitalist consolidation and reinforcement spanning from the 1990s to the first two decades of the second millennium was

⁶³ Cf. Fava and Omodeo 2024.

a massive attack on the planetary commons. Therefore, alternative pathways for a socialist political ecology can emerge only from a sober understanding of the relationship between capitalist expansion and planetary degradation.

In her studies on the crisis of the commons as a direct consequence of globalization, Silvia Federici put forward a thesis that is as simple as it is crucial for emancipatory and ecological politics oriented towards equity: ecological and local communities' resilience are inextricably connected (Federici 2018:15-16). Neoliberal economic processes, whose origins can be traced back to the 1970s and which underwent an acceleration since the 1990s, have thrown people and ecosystems into circuits of commodification, market deregulation, and financialisation guided by the economic drive to maximize profit at unprecedented levels in terms of intensity and extension. In addition, money scarcity (i.e., debt) has reinforced dynamics of socio-environmental decline: financial institutions, such as the International Monetary Fund and the World Bank, lend money to countries in the Global South for the improvement of their agriculture yields (mostly via modernization programs based on technology and chemistry) while imposing structural reforms that transform ownership relations and foster the expropriation of communal land. These measures ultimately disintegrate communities, especially in the countryside (Shiva 2002).⁶⁴

The debt crisis is a systematic attempt to destroy the capacity of villages [in Africa] and the *commons* to produce life, to replace it with the capacity to produce surplus value.⁶⁵

Mass migration from the countryside to urban centres, as well as from the global South to the Global North, is one of the most dramatic consequences of these neoliberal politics, which make the economic exploitation of rootless workers easy in the first place. Hence, the defence of the commons—especially land, water, and collaborative ways of living—is part of the struggle for social and environmental justice.⁶⁶ Conversely, landgrab and privatization are detrimental to both ecosystems and the people who inhabit and take care of them.

⁶⁴ See also Benegiamo 2025.

⁶⁵ Own translation from Federici 2018:67 (this passage is different in the English translation, Federici 2019): 'La crisi del debito è un tentativo sistematico di distruggere questa capacità del villaggio [in Africa] e del *comune* di produrre vita, per sostituirla con la capacità di produrre plusvalore.' This key observation is also at the roots of Federici's historical investigation of the recurring alienation of the commons in *Caliban and the Witch: Women, the Body and Primitive Accumulation* (Federici 2004).

⁶⁶ For a recent call for socialist and bottom-up politics of the commons, especially soil and water, against commodification and destruction see Soulèvements de la terre 2025.

This tragedy—the commodification of the commons—concerns land and water not locally but globally. Even the oceans are undergoing a ‘neo-enclosures’ process: their privatization aims to make fish catch economically more efficient with the argument that this will secure sustainable development. As Longo, Clausen, and Clark (2015) have recently argued in their insightful denunciation of the ‘tragedy of commodity’, this developmental masquerade promotes the creation of monopolies, the allocation of exclusive fishing rights to private companies according to the formula of Individual Transferable Quota Programs (ITQ). The legal framework of ITQ is meant to protect water habitats and fish species, assuming that regulation and self-restraint derive from their subtraction from the public sphere. It further assumes that, if environmental conservation becomes the self-interest of the economic actors that exploit the resources, the future of ecosystems can be guaranteed through interest. This has proven to be an illusion, as it has led to the transformation of common, shared waters into commodified spaces for more efficient productivity. Thus, the ITQ program proves the extension of the enclosures logic of alienation of the commons from the land to the sea.

The ideology of private ownership as the solution to the evils that competition and free-market regimes originate is a poisonous legacy of ecologist and microbiologist Garrett Hardin’s anthropological pessimism. According to Hardin’s thesis of the ‘tragedy of the commons’, informed by the Malthusian doctrine, innate egoism and the destructive drives of humans as a species lead to resources devastation by necessity unless nature is protected by private ownership (Hardin 1968). Hardin did not (want to) see the structural reasons for social and ecosystemic decline, rooted in economic and power relations. His neoliberal followers share this blindness as they present the ‘free market’ as the solution instead of the cause of the environmental problem (Longo et al. 2015:40).⁶⁷ As a consequence of the hegemonic position they occupied during thirty years or so of globalisation, ‘much like land, fisheries became fictitious commodities and, therefore, disembedded from the social community base’, with negative social and environmental consequences (Longo et al. 2015; Dalla Costa and Chilesse 2020). Facing this attack against environmental and societal sustainability, critical thinkers have felt the urgency to denounce the ideology of the ‘creative destruction’ underpinning those positions. Their resistance against capitalist and technological colonisation is meant to protect the shelters where biodiversity and communities can thrive.⁶⁸

⁶⁷ A standard third-way criticism—beyond capitalism and ‘real-existing’ socialism—directed against the thesis of the tragedy of the commons is Ostrom 1990.

⁶⁸ Federici (2018:42): ‘È follia pensare di cancellare questi villaggi, tratti di terra, quartieri, come sacrifici necessari e in ultima istanza funzionali alla distruzione del capitalismo e allo sviluppo del proletariato ‘universale’. Universale o no, il proletariato reale (che non è eterico) deve mettere i piedi da qualche parte, deve riposare,

Inequalities grow if the measures that are implemented in order to adapt to climate change are not backed by politics directed towards social and ecological justice. The race to secure resources occurs to the disadvantage of those who are in more fragile positions. As Naomi Klein points out:

The corporate quest for natural resources will become more rapacious, more violent. Arable land in Africa will continue to be seized to provide food and fuel for wealthier nations, unleashing a new stage of neocolonial plunder layered on top of the most plundered places on earth. (Klein 2014:48-49)

More studies are required in order to readdress the question of the Anthropocene commons, especially in the Global South, in the areas that are subject to the most rapacious forms of extractivism, a key socio-ecological issue of the Anthropocene (Gómez-Barris 2017; Vindal Ødegaard and Rivera Andía 2019). The financialisation of natural resources is especially affecting the Global South, a 'great expropriation of global commons [...] justified on the grounds of saving nature by turning it into a market, thereby replacing the laws of nature with the laws of commodity value' (Foster 2022b, 5). Subaltern, marginalised, and disadvantaged areas pay the highest environmental costs of unequal exchanges; therefore, their standpoint is crucial for a 'stronger objectivity' relative to the Anthropocene conjuncture (Harding 1993). Kathryn Yusoff has proposed such a repositioning vis à vis the dominant narrative about the age of humankind:

This planetary analytic [the Anthropocene] has failed to do the work to properly identify its own histories of colonial earth-writing, to name the masters of broken earths, and to redress the legacy of racialised subjects that geology leaves in its wake. It has failed to grapple with the inheritance of violent dispossession of indigenous land under the auspices of a colonial geology or to address the extractive grammars of geology that labour in the instrumentation and instrumentalization of dominant colonial narratives and their subjective, often subjugating registers that are an ongoing praxis of displacement. (Yusoff 2018)

Unsustainable forms of economic exploitation of water, soil, and labour in the Anthropocene are deepening the 'rift' between natural cycles and industrial progress (Foster

combattere e ritirarsi da qualche parte. La guerra di classe non avviene in un contesto astratto che somma perdite e profitti, è una guerra che ha bisogno di terreno.'

2000; Saito 2022; Padovan 2003). Since such deepening imbalances are not evenly distributed among classes and countries, they also deepen geopolitical and economic asymmetries. Unequal ecological exchanges have continued in neo-colonial settings at the cost of the Global South (Foster 2020a: Chap. 1 and Chap. 10; Yusoff 2018; Jorgenson and Clark 2012).⁶⁹ ‘Power and social inequality shape patterns of land use and resources management’,⁷⁰ today on a planetary scale. Political-ecological approaches to the Anthropocene have clarified which socio-economic dynamics and politics cause environmental disorder. Behind the ascertainment of facts—the stratigraphic question for geological validation—the Anthropocene requires sound explanations of the causes connecting social and technological processes with natural ones. The ergospheric basis of the Anthropocene and political-ecological concerns requires a correct understanding and critique of capitalism, as eco-Marxist thinkers have argued for some time now (Moore 2016; Malm 2016; Fraser 2021). As Antonia Majaca has recently argued (2025) from a feminist praxeological perspective, resisting the ‘muddy’ mix of capitalist exploitation, gendered division of labour, and racialised power relations requires communal forms of dwelling, practices of localised resistance, and political epistemologies. They refuse determinist visions of historical advance and foster eco-socialist alternatives without any expectation of an ultimate synthesis as the universal solution to social and ecological problems.⁷¹

10 Conclusion: A Future beyond the Crisis

I worked on this text, its completion, and revision during the Summer and Fall of 2025. This was a time in which violence exploded and expanded in Europe and the Mediterranean Sea, resuscitating the worst ghosts of the last century. The worsening conditions in Ukraine and the devastation caused by the Russian army, the militarisation of Europe, and the violent agenda of the Trump gang for the establishment of a form of authoritarianism that normalises fascism in the United States and abroad have temporarily obfuscated the importance of social and ecological programs in the media and public debates. This obliteration of reflections on the common good has had a particularly negative impact on the environmental concerns that the

⁶⁹ According to Max Liboiron, ‘pollution is colonialism’ tout court (Liboiron 2021).

⁷⁰ This is the initial statement in Hornborg et al. 2012:1.

⁷¹ Majaca (2025:11): “Against ascendant techno-evolutionism that imagines human destiny as transcendence from earth to technosphere, we must articulate a revolutionary praxis that remains stubbornly committed to mud. Mud epistemology refuses both eco-fascist nostalgia for pure ‘blood and soil’ and new materialist attributions of agency to matter itself.”

Anthropocene has come to epitomise because they look less urgent in comparison to war and deteriorating social and political conditions. However, war, dictatorship, and the environment belong closely together. The US race for the monopoly of resources, be it the oil of Venezuela or the mines of Greenland, is a symptom of aggravating planetary conditions and constitutes a right-wing answer to climate change based on inequality, violence, and renewed colonialism.

Contrary to the consensus of the past decades on agendas aiming at development and sustainability, and contrary to ideals of human dignity and rhetoric about advancing societies, the tragedy of Gaza has cast the darkest shadow on the phase that the world is transitioning into and on the possibilities for a common future of respect and cohabitation. The Israeli government and army have committed atrocious crimes and displayed them on the world stage before apparently impotent international institutions, thus delegitimising them as the arbiters of international justice in accordance with the rule of law. The unfolding tragedy of the Palestinian people has shadowed my thoughts during this time, informing my sense of urgency to denounce reemerging neo-Malthusian justifications of murder as part of the political ecology of the far right. This has also guided my engagement with the redirection of the political epistemology of the Anthropocene towards socialist alternatives that could oust escalating barbarism. The massacre of hundreds of thousands of civilians, trapped in their country, constitutes the most palpable symptom of the degenerating tendencies in this age of ours. In this sense, the apocalypse of the Anthropocene is not a far-off mythopoetic event in the future but is already taking place across multiple domains. Given the close interconnection between politics, science, and the environment, the impending climate disaster is paralleled by increasing political devastation and ideological dissonance. Hypocrisies of the past, which hid the dispensability of large sectors of society and the world behind virtuous principles, are giving way to explicit extermination politics directed against the people, their cultures, and environments. This marks a dreadful passage from globalisation to a time of authoritarianism and war. In such a conjuncture, an adequate comprehension of the present is still lacking. This is not only a problem of reason—of conceptualising, understanding, and explaining reality and its processes. It is also a problem of representation, as no sensible and poetically graspable imagery has emerged that would allow us to mourn the losses and reclaim a pacified future. Nor has a global polity stood up to embrace sentiments of solidarity, care, and peaceful cohabitation against the Schmittian prophets of reactionary ‘realisms’.

In a recent article on artistic-political katharsis, Lindsay Parkhowell has described such a vacuum but also pointed to the potentiality of art, particularly theatre, to transform the world by giving representation to fears and sufferance that have been silenced for the sake of a

dominant social order (Parkhowell 2025b). Plays such as those of political playwright Milo Rau, inspired by his theory of 'Global Realism' that questions the boundaries between the stage and the contradictory social settings it represents, can produce sentiments of fear, pity, and empathy which in turn disclose poetic possibilities of collective reflexivity, and regeneration. 'Katharsis,' Parkhowell writes, 'emerges as a means of representing what a political reality has expelled in order to establish itself as coherent, with *postdramatic* katharsis [...]' (Parkhowell 2025b:116). In other words, action continues beyond the theatre because the representation calls for a broad societal engagement on the part of the spectators as members of a (not-yet existing) utopian global polity. I agree with him that representation—aesthetic, conceptual, and political—is the prerequisite for a change that can turn the planetary crisis of the Anthropocene away from the abyss humanity is falling in. By contrast, Latourian representativity—the parliament of things just as the Schmittian theory of struggle for life—is a mere justification of the worst self-validating violent and destructive tendencies that mark the Anthropocene condition.

As a response, the defence of the commons is ultimately societal and immediately anti-fascist. In our conjuncture of the unfolding of geopolitical tragedy, it is important to open up a perspective of comprehension, planning, and action beyond capitalist commonsense. As Schmittian viewpoints exemplify, there is a close connection between the deterioration of ecological conditions and neocolonial politics or, better, Malthusian politics. As I have argued in this essay, the scientific, geological research that has brought to the fore the question of an Anthropocene epoch marked by technological praxis produced a series of cultural transformations that respond to a predicament of deep material, natural, and social crisis. Therefore, even the initial codification of the geological term Anthropocene by Crutzen (alongside Stoermer and others) and later attempts to validate it by means of stratigraphic research are imbued with philosophical assumptions and closely connected with institutional developments. The growing awareness of the urgency to find measures to regulate and redirect the Human Environment (according to the title of the 1972 UN Conference in Stockholm) has not led to any credible solutions thus far, owing to its contrast with capitalist interests and the exploitation possibilities offered by free-market globalisation. Therefore, ideological skirmishes about disciplinary boundaries such as those exhibited by Chakrabarty and ideological perspectives such as those criticised by many are not enough. To be sure, new environmental concerns and the Anthropocene perspective on the nature-culture nexus have produced transformations in disciplines such as historiography and the humanities at large, not only in the natural sciences or scientific culture. In very general terms, the Anthropocene marks

a 'materialist event' in culture, calling for an ecological reorganisation of the contemporary world.⁷²

The philosophical problem of the Anthropocene and its spheres—those of technology, labour, and life—are waiting for more attentive scrutiny. Here, I have addressed this question from the viewpoint of historical epistemology; that is, a theory-informed reconstruction of the knowledge and practices that underlie Anthropocene assumptions concerning technological agency and knowledge economy. I drew on Renn's idea of the ergosphere as a critical response to reified conceptions of technospheric dynamics. References to machines, labour, and economy allowed me to connect Anthropocene epistemology with Marx's conceptions of technology and technoscientific progress as instruments of capitalist expansion and exploitation. I see the ascertainment of such connections as a premise for a political-economical and epistemological criticism of the Anthropocene problematic. This also led me to delve into the multifaceted politics of the Anthropocene. I devoted several pages to Latour's political ecology because his right-wing Schmittian agenda, which combines Malthusian and social-Darwinist elements, has thus far escaped the criticism it deserves and has impacted ecological debates, enthroning him as a reference author of Anthropocene studies. Yet, his support of far-right politics, based on the assumption that there is a struggle for survival at the root of all politics, especially ecological politics, is an unacceptable revival of barbarism that is consonant with the most dangerous current political trends. They ought to be contrasted, including at the level of the battle of ideas, by refuting ideological legacies of the far right, in particular Malthusian and social-Darwinian doctrines. Resistance can draw on intellectuals who have engaged with the problematic connection of biology and politics for many years now. In the concluding part of this essay, I pointed to eco-socialist alternatives, particularly those that put the commons and communal wealth at the centre against the neoliberal and neo-enclosure processes of globalisation and in opposition to returning extermination politics.

Throughout this text, I have stressed the intrinsically political importance of the Anthropocene question, especially with respect to the following: first, historiographic and ideological perspectives; second, epistemology and the philosophy of technology; and third, political theory. In my understanding of political epistemology, historiography, epistemology, and politics constitute three interconnected axes. Accordingly, this chapter maps the state of the art of the political epistemology of the Anthropocene in these three respects. The political question can be best evidenced in debates such as the ideological disagreements about terms

⁷² These are the theses presented by Guillibert 2021: esp. 20 and 31.

(about what the intellectual premises and consequences of the Anthropocene as a term are). However, I preferred to address perspectives that look at the political materiality of science and technology, those powerful instruments of organisation and transformation of society and the natural world, rather than discursive practices and ideology. In the Anthropocene moment, the perspective of *Feuerbach's Theses* on the praxeological objectivity of all knowledge is most fitting.

In scientific-natural terms, the Anthropocene appears to be a geology of the future, which is the most political of temporal dimensions. Indeed, the Anthropocene makes geologists speculate about the traces that human impact on the Earth will leave for scientists of a distant future.⁷³ Also, on a broader cultural level, the emerging paradigm, which I would call the paradigm of geoanthropology, appears to be a futurology. As historical epistemologist Thomas Kuhn observed in *The Structure of Scientific Revolutions* (1962), the choice of a scientific paradigm never depends on proof or the immediate ability of a new approach to solve all problems. The real question is to decide on the problems themselves and, more generally, on the approach a community intends to endorse:

Paradigm debates are not really about relative problem-solving ability, though for good reasons they are usually couched in those terms. Instead, the issue is which paradigm should in the future guide research on problems many of which neither competitor can yet claim to resolve completely. A decision between alternative ways of practicing science is called for, and in the circumstances that decision must be based less on past achievement than on future promise. (Kuhn 1996:157–158)

Because the epistemology of the Anthropocene is political (material, praxeological, and futurological) political theory cannot avoid dealing with natural sciences and epistemology as a theoretical and historical reflection on the scientific phenomenon. The pathways to critical thinking that isolated the social realm from the natural one, assuming human reality to be an *imperium in imperio*,⁷⁴ are gone.⁷⁵ Therefore, against an unfortunate fragmentation of the

⁷³ See for example the discussion on techno-fossils by Zalasiewicz et al. 2014.

⁷⁴ This is the formula used by Spinoza in various passages of his work in reference to the wrong understanding of the relationship between an isolated individual and reality.

⁷⁵ Neglect of the scientific and natural question by influential currents of political theory, focused exclusively on the 'normative' dimension, is a limitation that ought to be overcome. This is particularly felt in the legacy of critical theory which accepts Jürgen Habermas's rejection of science and philosophy of science due to the ideological vices of their co-optation as tools of capitalist hegemony, without alternatively developing the ideas of a predecessor such as Herbert Marcuse (to cite another Frankfurt School thinker) toward emancipated science and work (Feenberg 2017). By contrast, an articulated critical environmental approach to science studies resting on critical theory and Foucauldian epistemology, can be found in Pellizzoni et al. 2022.

cultural field, the geoanthropological paradigm requires an integration of natural sciences, history, sociology and political theory—in other words, a mobilisation of the intellectual forces that are necessary to address the political-epistemological question of the Anthropocene in its historical-material, ontological, genetic, validational, and praxeological complexity. This prompts a reinterpretation of the history of the planet as a history of science, technology, labour, and politics, that is to say, a history of the anthropic transformation of the world and a rekindling of perspectives of *longue durée* without concessions to those who would reduce human history to biological survival or an event of geological deep time. The question of adequate political praxis and geoanthropological subjectivation constitutes a topic that ought to be further explored (Omodeo 2022b).

11 Post scriptum⁷⁶

While the humanities are seeking a new ecological paradigm capable of including natural concerns in the comprehension of culture, the natural sciences call for an expanded paradigm capable of accounting for human and technological agency as a fundamental factor of the Earth and its history. Both the humanities and the natural sciences have turned to economics as a fundamental instrument for assessing and navigating the Anthropocene. However, economic models capable of making reliable predictions about key economic variables impacting natural-cultural ecosystems cannot effectively grapple with today's reality unless they engage with ecological and cultural concerns much more thoroughly. The current economic situation is marked by volatile systems, mental health crises, ecological thresholds, the concentration of income and wealth amidst wider economic decline (qua social thresholds), the breakdown in public trust and the concomitant backlash against neoliberal visions and policies. Meanwhile, promising new ideas, such as post-growth economics, remain fragmented. New economic approaches ought to bring these threads together, creating a coherent intellectual and institutional space for rethinking cultural, ecological, and economic objectives, designs, and practices. A key objective is to better understand the multiple and deeply rooted linkages between the natural world (ecology), the material world of production and distribution (economy), technological innovation and diffusion (knowledge), and the social system (culture,

⁷⁶ This concluding paragraph is a programmatic statement conceived together with Julian Karaguesian through an intense exchange of future-oriented collaborations between economists, scientists, and environmental humanists.

education, governance). A related and equally crucial objective is to seek out ways and means of rendering the economy in the service of education, culture, science, in short, in the service of people, thought alongside their ecological connections. The overall goal is to advance a new kind of ecological culture and economic thinking—resilient, humane, connected to civil society, and fit for a complex, interconnected world, balancing perspectives from the Global North with those from the Global South. Rooted in historical-philosophical complexity, systems science, and cultural imagination, new economic thinking for the Anthropocene must serve as a platform for developing bold, future-oriented paradigms for ecological culture, economic governance, and public policy.

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