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Historical Geoanthropology: Book Reviews

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Reviews of Renn, The Evolution of Knowledge: Rethinking Science for the Anthropocene*, Princeton UP 2020; Malm,* The Progress of this Storm: Nature and Society in a Warming World*, Verso 2020; Foster,* Capitalism in the Anthropocene: Ecological Ruin or Ecological Revolution*, Monthly Review Press 2022.*

1 Jürgen Renn, *The Evolution of Knowledge: Rethinking Science for the Anthropocene*, Princeton & Oxford: Princeton University Press, 2020, 581 p. ISBN: 9780691171982, $45.00.

Jürgen Renn's book *The Evolution of Knowledge*, published in 2020 by Princeton University Press and recently translated into Italian (Carocci, 2022) and German (Suhrkamp, 2022), is undoubtedly the most systematic attempt to claim the pivotal role of history of science in the debate on the Anthropocene. Renn's volume, particularly rich from a theoretical viewpoint, brings together the results of more than two decades of work on the history and theory of scientific knowledge carried out at the Max Planck Institute for the History of Science in Berlin (MPIWG). The aim of the essay is ambitious: to "build a history of science as part of a global history of knowledge" (p. 22) and to elaborate a paradigm capable of addressing, from a practical-theoretical point of view, the problems raised by the Anthropocene. The Anthropocene, i.e. the geological epoch in which human impact on planet Earth has altered the latter's overall equilibrium, is in fact in Renn's eyes "the natural vanishing point" (p. ix) to develop a study of cultural evolution, and the "the ultimate context' (p. ix) in order to trace a history of knowledge. This for two reasons. First, Anthropocene calls into question the traditional distinctions between the branches of knowledge and demands a more integrated theoretical paradigm capable of accounting for its complexity. Second, while it is true that scientific evolution and progress have played a fundamental role in propelling us into the new geological epoch, it is only by

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reconstructing its history that it is possible to understand the multiplicity of causes that provoked the transition from the Holocene to the Anthropocene.

Jürgen Renn has been the director of the MPIWG since 1996 and the first director of the new Max Planck Institute for Geoanthropology in Jena, devoted to the investigation of the entanglements of the anthroposphere and the geosphere. Under his guidance, the MPIWG has been focusing especially on, as Renn writes, the "history of mechanics" understood as "the history of mechanical knowledge" (p. x). The idea behind this path of research—and which forms the hinge on which Renn's entire volume revolves—is that the process of knowledge formation depends on material practices rooted in society. In other words, the genesis of knowledge takes place in the circular interaction between material means and the cognitive structures they produce, which mutually modify each other. The "material means […] generate a cognitive structure by determining a system of results of actions that is then reproduced in the structure's generative rules" (p. 58). In turn, "cognitive structures also shape material actions" (p. 58) and may "guide the construction of improved or novel material means that enable actions and applications beyond those encoded in the given structures (structures that have allowed for the construction of these devices in the first place) with the consequence that new cognitive structures may emerge" (p. 58).

The "pragmatic" conception of knowledge that Renn adopts in his book finds two of its main philosophical references in Jean Piaget and Karl Marx. On the one hand, Piaget provides the idea that the process of abstraction derives from practices, from the actions of the subject. On the other hand, Marx points to the centrality of the material and social dimension of knowledge. Therefore, the approach adopted by Renn is explicitly 'bottom-up', i.e. it assumes that the circulation and development of knowledge, at their fundamental level, are always mediated by the interaction between individual or collective actions and mechanical means. So much so, writes Renn: "[a]ll material contexts of action, such as the tools or media employed, the action itself, its accompanying gestures and sounds, or the places where it happens, may be considered material embodiments of knowledge" (p. 51). These preliminary considerations have two important consequences. The first is that knowledge – the backbone of which is precisely "material culture" (p. 50) – can never transcends history. Perhaps the most ambitious aim of Renn's essay is to provide a theory of this process

which is not limited to a sort of internal logic but it is inserted in a broad societal and environmental framework. The second is that knowledge is never private, but always socially mediated. The cognitive or mental ("internal") dimension of knowledge, the material ("external") dimension, and the dimension related to the circulation, transmission and appropriation of knowledge ("social") are inseparably linked. The book is divided into seventeen chapters articulated into five parts. *Part 1: What Is Science? What Is Knowledge?* questions the definition of science and knowledge. *Part 2: How Knowledge Structures Change* is devoted to the analysis of the processes of change that affect cognitive structures and knowledge systems, and thus to their profoundly historical character. *Part 3: How Knowledge Structures Affect Society and Vice Versa* deals with the social dimension of knowledge, analyzing the relationship between institutions, normative processes and knowledge, in order to show how knowledge structures influence society, and how society integrates the resources of knowledge in turn, modifying itself. *Part 4: How Knowledge Spreads* studies the processes of knowledge dissemination, transmission and transfer, questioning the role – both universalizing and complexifying – of globalization of this dynamic. This theoretical framework, outlined by Renn over the course of more than three hundred pages, addresses in *Part 5: On What Knowledge Our Future Depends* the crucial issue of the entire book: the Anthropocene. Indeed, as mentioned above, the question that has guided Renn along the path through the evolution of knowledge is: what kind of knowledge needs to be developed in order to live with and within the Anthropocene? The Anthropocene constitutes the (non-necessary) outcome of this long history, which—this is Renn's point—has not come to an end but urges humanity to reconfigure its relationship with knowledge. According to Renn, the Anthropocene is a concept linked to our epistemic evolution. It is only by virtue of the progress of science (specifically, the Earth System sciences), and by virtue of the gradual emancipation of science from cultural evolution, that it has become conceivable. As Renn rightly specifies, the Anthropocene is first and foremost a "geological *terminus technicus*" (p. 358), that is to say that its definition is tied to the standards of geology and to its own temporal classification schemes. This means, on the one hand, that the concept holds its own coherence and autonomy within the disciplinary context to which it belongs. On the other hand, it "lacks explanatory power and does not tell us what the driving forces behind the current exodus from the

Holocene are" (p. 358). This is a fundamental point. Firstly, it allows Renn to claim the necessity of the concept of Anthropocene against those who deny its usefulness by virtue of its universal or abstract character. Secondly, it reconfigures what Renn calls "the question of origins" (p. 358). The attempt to describe the trajectory of the Anthropocene has been an issue on which the debate has focused since its very beginning. According to Renn, precisely because it is a *terminus technicus*, the Anthropocene tells us nothing about the reasons and responsibilities that led to the present conjuncture. It simply describes the reality of a (geological) situation. Rather, questioning the causes of the Anthropocene's trajectory should urge for a more integrated understanding of what might be called the current "geo-historical conjuncture", in which multiple chains of causes, operating at different temporal levels, collide and influence each other. "Neither the onset of epistemic evolution nor that of the Anthropocene can easily be assigned a singular date, cause, or origin. From this perspective, the primary question is less what or who caused the Anthropocene but how humanity can live with it" (p. 365). The Anthropocene, in this sense, is certainly a scientific concept, but also, one might say, a "condition", i.e.—an expression that I borrow from the French philosopher Maurice Merleau-Ponty—a "field of possibilities" for action, governed by material constraints related to the dynamics of the Earth system, which structurally depends, as Renn argues, on scientific knowledge. If we want to understand the dynamics catapulting us into the Anthropocene, we must explore both the historical pathways that led to an increased dependency of certain parameters of the Earth system on human societies" (p. 365) and the "coupling of Earth system cycles with human activities" (p. 365). Hence, a new science is necessary, one that is capable of framing the complex dynamics—natural, social, technological—that shape our geo-historical conjuncture. Such a paradigm, according to Renn, can already be assigned a name: "geoanthropology". It is a multidisciplinary theoretical perspective capable of bringing together the results of Earth system sciences and the insight of such disciplines closer to a cultural-historical point of view. In this sense, geoanthropology should "study the various mechanisms, dynamics, and pathways that have moved us into the Anthropocene. It should deal with the coevolution of natural, sociotechnical, and symbolic environments in an integrated manner and investigate critical junctions and tipping points that endanger human civilization and much of non-human life" (p. 375). This paradigm

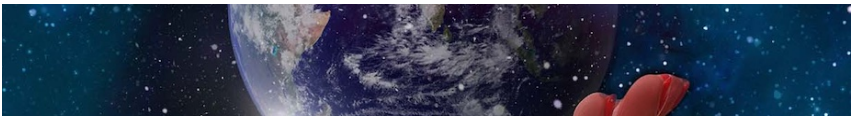
aims not only at an ever deeper understanding of the fundamental systems that regulate our planet's energy and material exchanges, but also the role of knowledge in linking all these processes. It is a reflexive insight, capable of evaluating its own position within the framework. Therefore, humanistic work—and philosophical work in particular—is just as important as the intellectual work of the natural sciences.

This commitment is well seen in the final discussion developed by Renn around the concept of the "ergosphere". One might suggest that the philosophical question that animates Renn's attempt to map the evolution of knowledge is the question of praxis. Is there, in the present, a space of action for humanity or does the current geo-historical conjuncture—the Anthropocene—mark the end of history? The philosophical proposals *à la* Bruno Latour, which advocate the necessity of allowing oneself to be shaped by the indefinite cultural/natural agencies, as well as the accelerationist solutions of ecomodernism, which instead see in the total subordination of our planet to technological management the solution of the ecological crisis, are grounded on a common theoretical presupposition: "a shared move away from engagement with the concrete and individual human agency" (p. 379). They are two sides of the same coin: the former dismisses the possibility for humans to act; the latter, disregarding the material constraints of the Earth System conceives of humankind as omnipotent, that is, capable of fully controlling the planet through technology. For the same reason, the concept of the "technosphere", coined by Friedrich Rapp and Zev Naveh and defended nowadays by Peter Haff, is also insufficient. From Renn's perspective, by conferring total autonomy to technology—which according to Haff has become a real sphere, i.e. a system on a planetary scale—it thinks humans as mere components of the technological system. On the contrary, precisely to claim the transformative power of human labour, both *vis-à-vis* the global environment and humanity itself, Renn introduces the concept of the "ergosphere", which "is meant to capture both: the transformative power of human interventions beyond their intentions and the planetary limits under which these interventions unfold" (p. 382). Only through work, then, it is possible to change not just the complex dynamics affecting the Anthropocene, but also our way of knowing them—which means, consequently, the limits imposed on work itself. It might seem that Renn introduces, as a model for his conception of knowledge, the myth of a speculative mind capable of contemplating the universe simultane-

ously at every point, looking at the future and the past as moments already inscribed in the present. But this is not the case, since "the material world of the ergosphere consists of borderline objects between nature and culture that may trigger *innovations* as well as *unpredictable consequences*. The ergosphere has a plasticity and porousness, in which materials and functions are not so tightly interwoven as to exclude the repurposing of existing tools for new applications" (p. 383; italics mine). For this reason, this concept invites us to consider ourselves as part of a co-evolutionary process in which our opportunities for action depend on the knowledge we are able to obtain. It represents the starting point in order to develop a new, more integrated conception of our present. It is no coincidence, then, that in the exergue to the chapter that ends the essay one finds Marx's famous quote from the *Manuscripts* of 1844: "Natural science will in time incorporate into itself the science of man, just as the science of man will incorporate into itself natural science: there will be one science".

Renn's essay offers a broad overview of the development and evolution of knowledge from its origins to the Anthropocene. One of the strengths of Renn's work lies in his ability to hold together a refined conceptual elaboration and a constant reference to concrete historical cases, predominantly drawn from the material history of civilization, that confirm the theoretical framework in which they are embedded. From this point of view, the idea that knowledge has a "bottom-up" genesis represents not only the theoretical backbone of Renn's work, but also the way the volume is articulated. Indeed, the amount of historical information—drawn from the history of writing, science, architecture, Western and non-Western knowledge systems, and so on—hat Renn uses to flesh out his proposal is impressive. For these reasons, *The Evolution of Knowledge* represents a first successful attempt—perhaps, to date, one of the few—to overcome the distinction between the two cultures that, in disguised forms, constantly re-emerges in the debate on the Anthropocene.

Giovanni Fava



2 Andreas Malm, *The Progress of this Storm: Nature and Society in a Warming World*, London & New York: Verso, 2020, 248 p. ISBN: 9781788739405, $19.95.

Andreas Malm's *The Progress of this Storm. Nature and Society in a Warming World* was first published in 2018. From within the normalised policies of accelerated academia, one may thus think it is a bit late for a review. Yet, whereas Malm's arguments have not lost any of their persuasive power, their relevance has even increased. That is because they illustrate why the whole bunch of what Malm calls ontological and methodological "*dissolutionism*" (p. 186)—from constructivism to new materialism, from object-oriented ontology to Actor-Network-Theory, from 'hybridism' to posthumanism—is to be refuted if one wishes to come to grips with the globally unfolding climate crisis (p. 111 ff.). Most important in Malm's study for today, therefore, are chapters 1-4 in which he debunks the fashionable ideology of dissolutionism, which may be defined as the (post-)theoretical endeavour to collapse all analytical differences between society and nature, and thus also between human agents and the agency of other 'actants' in the world.

As Malm stresses, a "genealogy of the main ideas" of dissolutionism "would take us back to the old rhizome of post-structuralism and other postmodernist thinking" (p. 217). Hence, he begins his book by arguing that the more the interrelated totalities of capitalism, globalisation and climate change became obvious in practice, the more postmodernism failed to theorise them in academia. That is, postmodernism and neoliberalism emerged in tandem, and it was the former which enabled the latter to win large numbers of a left disoriented by the failures of 1968. Arguably, the incapacity to deal with the threat of climate crisis has its roots not the least in this elective affinity. It is the *postmodernisation of the left* that brought it into the liberal arena of post- and anti-Marxism from within which the main threats facing humanity today cannot even be alleviated. Particularly relevant for the topic of climate change, then, is that the "endless cycle of turns" (p. 112)—mostly varieties of one *culturalist turn*—have denied nature its place as if it were nothing else but the remnant of some essentialist metaphysical tradition.

To be sure, the capacity to take the natural, the material, and the embodied into account was always rather weakly developed among those working with their heads alone. Yet, a few decades ago, leftist intellectuals at least used their

mental distance from the world as it is as a critical tool to question the real-politically domesticated common sense. By contrast, those intellectuals most read today—from Latour to Haraway, Plumwood or Braidotti—misuse their abstract means to replace the most basic truths left in common sense with a new form of religiosity between "mysticism and unabashed fetishism" (p. 147). Indeed, dissolutionism may be said to be the first 'philosophy of fetishism', that is, a rationalisation of neo-paganism and neo-animism alike. Behind this dissolutionist endeavour mostly stands the 'ecological' belief that everything has agency merely by being woven into natural causalities. It is mostly motivated by the comprehensible wish to dethrone human beings from their privileged position vis-à-vis other species. Yet, what dissolutionism does not deal with is the question how *pan-anthropomorphism* can at all be the opposite—and not the actual totalisation—of a theologised mankind?

Against this trend, Malm shows how the intellectuals that thought to overcome the modern in postmodernity have rather regressed into some middle-age-mentality whose locus is the ivory tower of monastic universities, whose business is a newly brewed scholasticism, and whose method is good old sophistry. Yet, in this postmodern "retrogression" (p. 221) to times long gone, a few elements stand out as brand new. For example, today, it is the neo-scholastic inhabitants of the ivory tower that love to speak the most of 'matters down-to-earth', which attests to a new level of inversion from toes to head. Also, unlike in the middle-ages, the dangers of abstaining from moral subjectivity have meanwhile become *real*: it is no longer the phantasmagorical wrath of God punishing eternal sin that brings forward the 'warming condition' of hell, but the reality of nature artificially thrown into imbalance by societal misbehaviour over generations (p. 5 ff.). Most importantly novel, however, is that the postmodern priests—unlike their premodern predecessors—do not teach blind faith and bad conscience but, *on the opposite*, the radical relativism of "epistemological nihilism" (p. 122) if not the ontological impossibility of human responsibility. And it is not only defenders of reactionary policies but those believing to be progressive—first and foremost the academic left—who fall prey to the dissolutionist gospel.

This gospel is usually understood as a necessary correction of Western thought for the sake of saving the planet. Importantly, thus, Malm reminds us that "(f)ar from abolishing it, ecological crises render the distinction between the social

and the natural more essential than ever" (p. 61). That is because, without such *analytical* distinction, the very reality of climate change as a non-naturalistic, societally induced, and thus humanly preventable phenomenon could not be approached at all. Seen from this point of view, it must even be stated that denialism and dissolutionism are interlinked. Regarding Latour's Gaia hypothesis, Malm thus corrects that "more than the revenge of nature", climate change "is the revenge of historicity *dressed* in nature" (p. 77). In turn, "insofar as the appeal is to humanity to alter its ways, it presupposes our possession of capacities by which we are singled out from other living creatures and inorganic matter" (p. 116). That is, if we are supposed to change the system instead of the climate, our very capacity for moral subjectivity and political action is to be *highlighted*. Consequently, whoever *dissolves* this capacity—by blurring the line between human and non-human agency—forsakes the responsibility we humans bear for the ways in which we organise our metabolism with nature. To stop the speciesist slaughter of non-human life undertaken by humans precisely means to stress the *differences* between human and other living beings, or between society and nature: "Maximising the prospects for survival presupposes that we become more alert than ever to the dichotomy between what people create through and through and what is not their doing" (p. 75). By contrast, if dissolutionism further undermines the analytical differences between society and nature, historical entities—including the fossil economy—are naturalised and thus immunised to the detriment of all life on earth.

Hence, the main point of Malm's book is not just that dissolutionism is *philosophically unsatisfying* but that it is *politically hazardous*. Indeed, what dresses up as the newest philosophical overcoming of so-called 'Cartesian dualism' is to be undressed politically as the main body of neo-capitalist ideology. By inferring theoretical confusions from societal inversions in historical-materialist fashion, Malm develops a splendid critique of the main branches of dissolutionist ideology: "the theoretical obliteration of nature mimics the practical attempts by capital to subsume it under the law of value" (p. 217). "New materialism, for its part, continues the postmodernist tradition of making a virtue out of the crisis of political agency" (p. 218). "Hybridism is the theoretical mirror image of the homogenising bulldozer of capital" (p. 218 f.). All these claims get substantiated throughout Malm's book in a most convincing line of thought.

Malm, for one, is clear why Latour and company cannot be allies for leftist

academia: "Latour has spent his career supplying ideological nourishment to the Western centre; indeed, his lifework can be read as one of the subtlest anti-Marxist constructions of the last half-century" (p. 154). In which sense? Let us conclude from Latour's own dissolutionist premises. If there is no difference whatsoever between non-human and human animals, then humans cannot be held accountable for their deeds and actions either. How, then, could one demand of them to prevent the effects of climate change and environmental depletion? *Can* climate change even be human-induced if humans never act alone or according to their own agenda? Even more, if the agency of humans and stones, humans and toys, humans and machines is the very same kind of agency—of no principal difference whatsoever—, is it not, in turn, emptied of any autonomy and responsibility as well? Does 'human agency' not become as irresponsibly heteronomous as any cause-effect-mechanism known from bleak causality? At the end of the day, the result of Latourian dissolutionism behind all the multiplication of agencies is a "determinism of the crudest variety" (p. 110). It begins and finishes in a contemplative stance towards the capitalist world and its Western hegemony that does not hesitate to push planet earth further down the abyss.

Hence, dissolutionism is a fatalism whose consequences may be fatal not only for humans but for many other species and eco-systems alike—at least if it is not resisted. Resistance, however, "*can be conceived solely by affirmation of the most singularly human forms of agency*" (p. 108, italics in the original), which include the capacity for long-term responsibility, self-conscious agency, and intentional self-determination (p. 146). Since dissolutionism attempts to get rid of such resistance, Latour and company's denial of human self-determination and responsibility (p. 95 ff.) may well be inferred from a 'fear of freedom' as Erich Fromm found it in the authoritarian personality of his times. Heidegger, accordingly, is not without reason the father-figure of the dissolutionist attacks on (moral, rational, political) subjectivity: in fact, as much as them, he posited in radical guise mainly to hide his reactionary political affiliations. Back then as much as today, what follows from such fear of freedom is the ontological *Gleichschaltung* ("total homogenisation") of a completely flattened world: "Whether the strategy favoured for the moment is to see intentionality everywhere (an omni-intentionalist conception of agency) or to deny that intentionality is necessary (an anti-intentionalist ditto), the product really is the night when all cows are black" (p. 89). The post-Heideggerian *jargon of inauthenticity* immers-

ing itself within the *affective Id* of the *material They* buries every human capacity for responsibility and preaches surrender not only vis-à-vis an apocalyptic future but also vis-à-vis the capitalist present inducing it. Unfortunately, the 'Germanic Ideology' known from Heidegger did not get better by being internationally invited and warmly welcomed as 'French (or Italian) Theory' in the humanities departments of the globe. What is missing today, unlike back then, is a Critical Marxist Theory that prominently deconstructs it.

This Critical Marxist Theory, precisely, is what Malm—as one of the few—is developing. For sure, the "fashion of affirmationism" (p. 223) in the background of dissolutionism can only be refuted with the powers of critique, theory, and negativity. Hence, Malm often refers to Benjamin and Adorno, to Bloch and Marcuse in the last pages of his book to counter the "dissolutionist crusade" (p. 186) that "seeks to ruin as much analytical equipment as possible" (p. 187). Against dissolutionism, Malm proposes a socialist climate realism building on a historical materialism that thinks dialectically through the metabolism of nature and society. At least as much as historical materialism stresses the interdependence of nature and society, it stresses their analytical difference, and particularly the difference between a *natural law* and a *political deed*. To stress this difference is necessary to reappropriate our futures from determinism and fatalism, or from dystopia and apocalypse. Hence, not only those that are concerned with socialism but everyone wishing to hold onto responsible behaviour—or, which increasingly amounts to the same, to the survival of humanity—should read *The Progress of this Storm*. After all, it seems that in an age of late postmodernity, even the academic left must be reminded that the way to stop this 'progress' is not prayer nor ignorance but the dialectic of Critical Marxist Theory and radical political struggle.

Lukas Meisner

3 John Bellamy Foster, *Capitalism in the Anthropocene: Ecological Ruin or Ecological Revolution*, New York: Monthly Review Press, 2022, 575 p. ISBN: 9781583679746, $29.00; 9781583679753, $89.00; ebook 9781583679760.

> Whereas past revolutionary struggles have strived for an emancipation of labour from capital, we are challenged not just to imagine, but to demand the emancipation of the earth from capital. For the earth to live, capitalism must die.
> Nick Estes (2019)

The connection between the Anthropocene and the critique of capitalism has become an imperative for many scholars and activists who have been participating in the cultural and scientific debates on the geological neologism and the future of our planet.[1] Indeed, an analysis of the economic conditions and power relations which underly the technological transformation of the Earth-system are key for a correct assessment of the present conjuncture, its origins and developments. The Marxist sociologist, Jason Moore first raised the question of the relations between capitalism and the Earth system in his writings on the 'Capitalocene' – a socio-economically informed label he has brought forward as an alternative geological term to designate the present epoch – while Andreas Malm has argued that industrial capitalism is the main agent responsible for the global environmental crisis – mainly due to CO_2 emissions and anthropogenic climate change.[2] Yet, a critical assessment of the problems of the Anthropocene that accurately uses Marxist scientific and interpretative tools has thus far been lacking. Foster's book arrives to fill the gap along with other works pointing in the same direction, for instance, Kohei Saito's up-coming *Marx in the Anthropocene*. Foster can draw on many years of thorough studies in eco-Marxism and on his numerous publications in the field, among them, *Marx's Ecology* (2000),

[1] The 'Anthropocene' has become an ubiquitous and controversial concept. In the book under review, Foster especially relies on the overview of the topic offered by Ian Angus, *Facing the Anthropocene: Fossil Capitalism and the Crisis of the Earth System* (New York: Monthly Review Press, 2016).

[2] Jason W. Moore, ed., *Anthropocene or Capitalocene? Nature, History and the Crisis of Capitalism* (Oakland: Kairos 2016); Andreas Malm, *Fossil Capital: The Rise of Steam-Power and the Roots of Global Warming (London: Verso, 2016).*

which marked a major contribution to the reassessment of the ecological dimension of historical materialism from its beginnings. In *The Return of Nature: Socialism and Ecology* (2020), he has offered a reconstruction of the history of eco-socialist thought.[1]

In *Capitalism in the Anthropocene*, Foster gathers a large collection of essays (almost 700 pages), most of which have already appeared in the *Monthly Review*, which is the journal that has established ecology as a crucial theme of the Marxist left, especially thanks to his engagement as an editor. Given the cumulative character of the volume, some redundancies are unavoidable. However, the reader never gets the impression that any of the parts are superfluous, owing to the insistent relevance of the themes as well as to Foster's analytical and didactic capacity of dealing with complex socio-environmental themes. Moreover, the unitary character of this publication of his essays, which were previously scattered as journal articles, provides persuasive evidence of the strength and systematic consistency of Foster's outlook.

The twenty-two Chapters that compose the book are grouped into three macro-sections. Part One, "The Planetary Rift" deals with the state of the art of the environmental debates relevant to the Anthropocene. Crucial concepts, like those of the 'universal metabolism' of nature and the Capital-induced 'metabolic rift' are first discussed in this section. Part Two, "Ecology as Critique," mainly deals with the theoretical instruments and intellectual strands that, according to Foster, ought to be reassessed in order to face the present challenges, which are at once theoretical and political. Foster derives eco-political concepts and insights from Marx, Engels and Weber, as well as western and Soviet environmentalists. Part Three, "The Future of History," calls for collective action to establish a new material-cultural socialist civilization that is able to overcome the catastrophic tendencies of capitalist accumulation, which are devastating the planet, killing its living species and threatening the survival of humanity.

Among the many themes of the book, I limit myself to stressing those I deem to be the most relevant in connection with the geo-anthropological theme that is the focus of this thematic issue of the *Journal of Interdisciplinary History of Ideas*.

[1] An overview of Foster's past and present research is offered in Chap. 15, in the form of an interview by Alejandro Pedregral.

The most obvious commitment on the author's part is to demonstrate that Marxism constitutes an indispensable scientific pathway to an accurate comprehension of the Anthropocene and its problems, and to detect a possible escape from the existential threat to humanity. Marx's 'universal metabolism' indicates the necessary dependence of human societies on environmental conditions (p. 49), but the capitalist 'robbery' of the working class and the soil (the two sources of wealth) has created a "metabolic rift" (p. 54), a fracture between societal processes and natural cycles, with catastrophic consequences. According to Foster, the Marxist dependency-and-rift conception of the relation between capitalist societies and the environment is a better gateway to the Anthropocene than widespread social-monistic tendencies. These include simplistic forms of the biologization of culture, the naturalization of capitalism or, conversely, the idealistic subsumption of nature to economy (Chap. 11).

Fighting against these tendencies, Foster suggests that we interpret the Anthropocene as a "dialectic of continuity and discontinuity" (according to an expression by István Mészáros, p. 83). Indeed, the capitalist "mechanism of overgrowth" (in accordance with Howard Odum, p. 87) wages a war against the planet. Hence, the ecological crisis cannot be easily solved by detecting technofixes, for instance, renewable energies (discussed in Chap. 5) or geo-engineering (Chap. 6), unless technology is also accompanied by radical societal change.

The main problem affecting the present socio-economic system lays in capital accumulation, which is the driving goal of the system (in accordance with Naomi Klein, p. 95). This logic induces both extractivism and alienation, that is, the concurring degradation of nature and labour (p. 72). The political and theoretical need to keep these two factors (the ecological and the economic) together raises questions about the separation of the so-called two cultures from a Marxist perspective. Rejecting the sterile opposition of the historical world of the humanities versus the natural explanations of the sciences, Fosters urges a reconciliation of the two poles in the form of a return to the alliance of historical materialism and the dialectics of nature. Although his invitation to overcome the neo-Kantian separation of nature and spirit is legitimate in principle – including the criticism against anti-science tendencies among 'Western Marxists' who exclude science and nature from their critique of society – his reevaluation of Engel's dialectics of nature does not look as if it has a solid-enough foundation, especially if is taken too literally. Foster here follows in the footsteps of

those (including the Marxist sociologist of science, John D. Bernal) who tried to domesticate the Hegelian jargon of expressions like "the transformation of quantity into quality" or "the negation of negation" (cf. Chap. 13).

But Foster's program is not animated by nostalgia. Rather, he uses Marxism as a basis for novel compelling arguments concerning the connection of ecology and economic injustice. The theory of unequal ecological exchange proves itself to be an important critical instrument (Chap. 10), as it brings to the fore (following Odum and the world system theorists, among others) market mechanisms of the depredation of poorer countries by wealthier ones, in which capital accumulation is entrenched. These depredations are not limited to the appropriation of the surplus value of the latter, but also of their resources and environments. They thus deepen asymmetries and dependencies as forms of externalization of costs, for instance the fact, already stressed by Marx, that "no money is paid to the environment for its extensive work" (p. 233).

The concluding part of the book looks to the future. Indeed, future-oriented historicity is a socialist perspective that goes against the blueprint of "capitalist ideology", namely, "the innate denial of the future of history" (p. 475). Although it is evident that an ecological future requires us to revolutionize the global economy, this change cannot be reduced to simplistic formulas, for instance to 'degrowth'. In fact, the prophets of this solution (such as Serge Latouche) target growth without raising the decisive questions concerning capitalist accumulation and the relations of production and consumption between the global North and the South (Chap. 16).

For Foster, by contrast, we should rather address the systemic unity of the Anthropocene. The "first global supply-chain crisis" induced by the COVID-19 pandemic has revealed these interdependencies, namely, "the interlinked ecological, epidemiological, and economic vulnerabilities imposed by capitalism" (Chap. 19, p. 410). In this light, ecological critiques should engage with the fundamental economic problem of "the treadmill of production" (p. 386) as the systemic background against which one should readdress the common triad of factors accounting for pollution: population, technology and consumption.

And yet, according to Foster, contemporary forms of mass consumption need to be studied in their functional relation to the consumerist phase of capitalism that has prevailed in the second half of the twentieth century. The growing dependency of productivity on the "demand for the superfluous" and waste needs

to be integrated in the formula of capital accumulation M-C^k-M', in which C^k means "capitalist use value" (p. 386). Because the just and ecologically sustainable society of the future ought to reestablish the priority of use value over commodification, the distinction between *actual* needs and *superfluous* needs becomes crucial.

It also constitutes a theoretical and political challenge: can we posit the existence of "genuine human requirements" as opposed to market-produced ones? Foster seems to give a positive answer to this question; he pits needs against desires in the same manner as he pits use value against exchange value, and ecology against capitalism. However, by arguing so, he risks resuscitating forms of ahistorical objectivity which rest on the problematic separation between nature and culture. Does the above distinction not reproduce that between historical anthropology and biological anthropology? It seems to me that the crucial question of the origin, legitimacy and consequences of human needs ought to become part of the critique of capitalism in the Anthropocene, in order to strengthen and develop Foster's argument.

A final doubt has to be addressed: Does the label 'Anthropocene' add anything to eco-Marxism? Foster's engagement with geology and the debates of the Anthropocene is limited to some general aspects, mainly the industrial impact of human societies on the Earth system. Although he is accurate in his use of concepts, he does not dive into the large literature, scientific and otherwise, on the Anthropocene. On the other hand, even though the geological label does not significantly reorient his eco-Marxist perspective, his views have the potential to reorient the Anthropocene debate, as he offers theoretical and political instruments for deepening our understanding of the planetary situation, and a mature reflection on the steps that we should undertake to solve the environmental crisis.

Foster depicts the just and ecologically sustainable future of humanity as one of freely associated producers. Leaving aside technocratic programs of modernization within capitalism as idle, he argues for the necessity to abandon capitalism, according to a simple but radical message: revolutionize or perish. Nick Estes's quotation, in the conclusion of the book, stresses the existing antagonism between capital and environment. Foster reinterprets the old adage of "socialisme ou barbarie" in eco-socialist terms. Indeed, the strength of his historical-materialist incursion into the Anthropocene rests in this simple mes-

sage – "ecological ruin or ecological revolution" (as the volume's subtitle goes) – supported by a sophisticated use of Marxist philosophy, sociology, economy and environmentalism.

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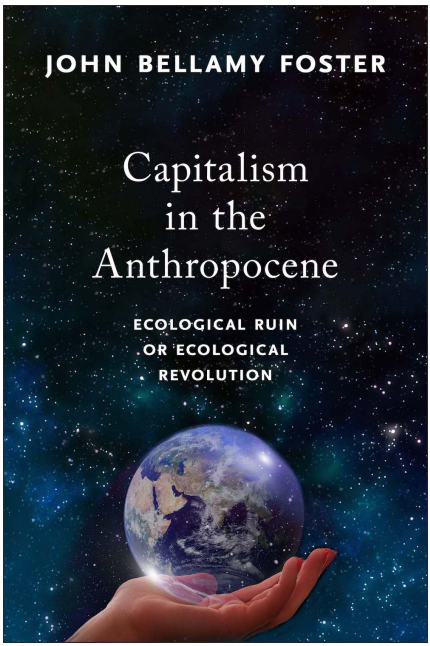

Foster, Capitalism in the Anthropocene*, 2022, cover.*