

# The Capitalocene in light of history: Or why an early Anthropocene makes more sense

Victor Court<sup>\*†‡</sup>

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## Abstract

Several researchers argue that the root cause of today's ecological disaster is not the *anthropos*, but the way we have been organizing the global economy through capitalism. It follows that we would be living in the Capitalocene rather than the Anthropocene. In this article, we demonstrate that the Capitalocene concept suffers from four intrinsic flaws, namely: (i) a fuzzy starting date, (ii) its inability to account for non-capitalist political regimes that were equally destructive to the environment, (iii) its incapacity to encompass a potential future with ecological disaster in the absence of capitalism, and (iv) the fact that the large-scale exploitation of nature and man refers to principles broader and older than capitalism. Indeed, we show that for the past two hundred years, capitalism fueled by fossil energy has only accelerated a logic of monopolization of nature whose origin coincides with that of the first empires. As a consequence, we propose to retain the Anthropocene label, but with two amendments: (i) redefining the onset of this epoch in ancient times, and (ii) making the distinction between two sub-epochs, the Agroligarkhian (from 1000 BCE to 1800) and the Thermoligarkhian (from 1800 to the present).

## Keywords

Capitalocene, early Anthropocene, domination

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\* IFP School, IFP Énergies nouvelles, 232 Av. Napoléon Bonaparte, 92852 Rueil-Malmaison, France.

† Chair Energy & Prosperity, Fondation du Risque, 28 Pl. de la Bourse, 75002 Paris France.

‡ Laboratoire Interdisciplinaire des Énergies de Demain (LIED), Université Paris Cité, 35 rue Hélène Brion, 75013 Paris, France.

## 1. Introduction

After more than 20 years of debate, the Anthropocene has not yet been formally accepted as a new geological epoch. Very different dates have been put forward to pinpoint its beginning: 8000 BCE (Erlandson and Braje 2013; Smith and Zeder 2013), 6000 BCE (Gowdy and Krall 2013; Ruddiman et al. 2020), 1610 (Lewis and Maslin 2015), 1784 (Crutzen and Stoermer 2000), and around 1950 (Syvitski et al. 2020; Waters et al. 2018).

The Anthropocene Working Group of the International Commission on Stratigraphy appears to favor the mid-20th century as the beginning of the Anthropocene (Zalasiewicz et al. 2017). Because of the first nuclear bomb tests that almost uniformly marked the Earth's surface in the middle of the 20th century, matching the onset of the Anthropocene with the onset of the "Great Acceleration" (Steffen et al. 2015) seems to be the most consistent approach with respect to stratigraphic recommendations (Zalasiewicz et al. 2015)<sup>1</sup>.

In addition, as a concept, the Anthropocene is surrounded by another controversy. Malm and Hornborg (2014) point out that the Anthropocene concept suggests that responsibility for ecological disruption lies at the level of the entire species. For this reason, many authors tend to assert that the ultimate cause of the emergence of fossil fuel-based societies corresponds to a long, and therefore natural, evolutionary process, starting with the mastery of fire by our ancestors<sup>2</sup>. On the contrary, several researchers, including Malm (2016, 241), argue that the root cause of today's ecological disaster is not the *anthropos*, but the way we have been organizing the global economy through

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<sup>1</sup> Another possibility is that the Anthropocene will never be accepted as a distinct chronostratigraphic unit. This would not prevent the concept from continuing to be used informally. As Jan Zalasiewicz, chair of the Anthropocene Working Group, points out: "there are informal but widely used and widely understood time terms, most notably 'Precambrian' and 'Tertiary'; the important thing is that these, though, informal, are clearly defined and clearly distinct episodes of history. If the Anthropocene is not to be formally defined in the near future, it still represents a clearly distinct phenomenon quite separate in many respects from the bulk of the Holocene, and this seems to warrant having its own name or label for ease of communication" (Rull 2018, 4).

<sup>2</sup> Hence the proposal of Stephen Pyne (2019) that we entered the "Pyrocene" at the time when human-induced fire began to transform the environment in unprecedented ways.

capitalism. As a result, these researchers suggest that we are currently living in the Capitalocene rather than the Anthropocene.

In this article, we will first detail the social critique developed by Malm and Hornborg <sup>(2014)</sup> against the Anthropocene concept. Then, we will see that the Capitalocene concept also has many flaws. As a result, we will propose to retain the Anthropocene concept, but with some adjustments. We will present several arguments in favor of an early Anthropocene with two sub-epochs: the first starting with the emergence of the first empires during the “axial age” some 3 000 years ago, the second starting circa 1800 with the advent of the “fossil economy”.

## **2. The neo-Marxist criticism of the Anthropocene concept**

### *2.1. Some social relationships are problematic, not mankind in general*

Malm and Hornborg (2014, 65–66) argue that to speak of the Anthropocene using generalizing categories such as “the human species”, “humans” or “humanity” is to naturalize this phenomenon, i.e., to assume that it was inevitable because it was the result of a natural propensity of our species to exploit as many resources as possible at every opportunity.

For Malm and Hornborg (2014, 63–64), this naturalization obscures the social dimension of the fossil regime of the last two hundred years. The adoption of the coal-fired steam engine, and later of fossil technologies based on oil and gas, was not the result of a unanimous decision by all members of humanity, nor was it a few representatives of humanity – elected on the basis of natural characteristics – who decided on the trajectory taken by our species.

On the contrary, Malm and Hornborg (2014, 66) argue that it has always been particular social and political conditions that created the possibility of lucrative investments for a few capital owners, almost systematically white, bourgeois, or aristocratic men. For example, being able to exploit British coal miners was crucial in the case of the steam engine in the 18th and 19th centuries,

just as the support of several Western governments has been crucial in the development of the infrastructure necessary for oil exploitation since the mid-19th century.

## *2.2. Unequal responsibility among people and throughout time*

The Anthropocene perceived on the scale of the whole of humanity obscures another major fact: the intra-species inequality in responsibility for climate and ecological disruption. Currently, of all the people in the world, the top 10% of greenhouse gas emitters are responsible for 48% of global emissions, while the bottom 50% of emitters are responsible for less than 12% of all emissions (Chancel 2021). Among the world's highest emitters, estimates highlight the richest 1% (mostly Americans, Luxembourgish, Singaporeans, Saudis, ...), with per capita emissions of more than 200 tons of CO<sub>2</sub> equivalents per year (tCO<sub>2</sub>eq/yr). At the other end of the emitters' spectrum, we find the poorest individuals in Honduras, Mozambique, Rwanda and Malawi, with emissions 2000 times lower, close to 0.1 tCO<sub>2</sub>eq/yr per person (Chancel and Piketty 2015).

This close link between wealth and carbon footprint implies a “common but differentiated responsibility” that does not fit well with the all-embracing categorization of the Anthropocene. Moreover, this criticism is even more meaningful in a historical perspective because climate disruption depends on the accumulation of greenhouse gas emissions. For example, one might say that the United Kingdom (UK) does not need to be at the forefront of the fight against climate change because it only accounts for about 1% of global carbon emissions today...this is to forget that the UK has contributed 4.5% of global emissions since 1850, making it the 8th biggest polluter in history<sup>3</sup>.

Because it defines humanity as uniform mass, the dominant discourse of the Anthropocene suggests that the whole of mankind is uniformly responsible. Should the Yanomami and Achuar of the Amazon who live without any fossil fuels and make do with what they catch hunting, fishing, or

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<sup>3</sup> Estimates made with the data of Friedlingstein et al. (2022).

gather from nature or subsistence farming feel as responsible for climate change and the collapse of biodiversity as the wealthiest industrialists, bankers and corporate lawyers (Bonneuil and Fressoz 2016, 88)?

### *2.3. Suggesting the term Capitalocene as a substitute*

If the Earth has indeed entered a new geological epoch – which remains to be confirmed by the International Commission on Stratigraphy – the responsibilities of each nation and individual vary too greatly in space and time to consider that the human species as a whole should bear the burden of guilt (Malm and Hornborg, 2014: 65). It is mainly because of this conceptual failure that Andreas Malm (2016: 241) was one of the first to propose the Capitalocene concept as an alternative<sup>4</sup>. According to him, humanity has been evolving in this epoch for the last two hundred years since “fossil capital” was established – a system that Malm (2016, 238) defines as “the production of exchange value and the maximization of profit by means of fossil energy as a necessary material substratum”. While intellectually very rewarding, this idea suffers from several intrinsic flaws.

## **3. The shortcomings of the Capitalocene concept**

### *3.1. Difficulty in pinpointing a start date*

First of all, if the Capitalocene concept is used to designate a new geological epoch that began with the Industrial Revolution, then it suffers from a naming problem because capitalism does not designate a mode of economic organization that can be restricted to the last two hundred years.

Given that Afro-Eurasian trade has had a transcontinental dimension since antiquity, and above all that private ownership of land has been proven as early as the Sumerian period in the middle of the third millennium BCE (Hudson and Levine 1996), one could legitimately argue with the

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<sup>4</sup> The neologism “Capitalocene” seems to have been coined independently by different scholars. First by Andreas Malm during a research seminar at Lund University in 2009, and then by Donna Haraway in a public lecture in 2012 (Haraway 2015, 163).

anthropologist Jonathan Friedman (2009, 88) that “capitalism of one sort or another has been around since the Bronze Age, and there is certainly a strong continuity in the forms of accumulation since then”. To reinforce such a statement, it would be necessary to prove that private land ownership in Sumer was lucrative, i.e., that it generated incomes. Interpretations on these early stages are tricky, but this is no longer the case from the Romans and the Chinese Han dynasty onwards: by the turn of the Common Era, lucrative private property was well established throughout Eurasia (Testart 2012, 407, 418, 430–34). This fact gives credit to the archaeologist Dominique Garcia (Garcia 2018, 266) when he says that “the accumulation of capital coupled with the search for profit first developed with the State apparatus and the institutions of palaces and temples”<sup>5</sup>.

Moreover, by the turn of the High Middle Ages (12th century), the concentration of economic and political power in the hands of a few merchants became a hallmark of the richest city-States in Western Europe. The economist Giovanni Arrighi (2010) believes that the ultra-militarized Republic of Venice<sup>6</sup> prospered so much at the beginning of the High Middle Ages because it was the first city-State in history to use simultaneously what had previously constituted two alternative modes of development: “territorialism”, which identify power with the extension of territory and the subjugated population, considering the search for wealth only as a possible means or collateral effect; and “mercantilism”<sup>7</sup>, which seeks wealth as an end and considers the acquisition of territory only as a means (Norel 2012b, 232). Because Venice was the first city-State to combine these two doctrines without contradicting each other, it generated the first historical occurrence of

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<sup>5</sup> Wage labor, another great symbol of capitalism, also existed in ancient times. However, it was insignificant compared to the main mode of production of that time: slave labor. Therefore, many anthropologists reject the idea of such a distant origin for capitalism. On this point, David Graeber (2004, 71) notes that: “The earliest wage labor contracts we have on record appear to be really about the rental of slaves. What about a model of capitalism that sets out from that? Where anthropologists like Jonathan Friedman argue that ancient slavery was really just an older version of capitalism, we could just as easily – actually, a lot more easily – argue that modern capitalism is really just a newer version of slavery. Instead of people selling us or renting us out we rent out ourselves. But it’s basically the same sort of arrangement.”

<sup>6</sup> With 3,000 ships and 36,000 sailors according to Scheidler (2020, 251).

<sup>7</sup> Norel (2012b, 232) uses the word “capitalism” instead of “mercantilism”, but it is difficult to see how a term could be used to define itself. For lack of a better word, “mercantilism” was therefore preferred.

“concentrated capitalism”<sup>8</sup>. The Republic of Genoa developed on the same principle of intertwining military and economic power, and concentrated capitalist power later spread to the United Provinces of the Netherlands, then to England and then to the whole world. Thus, according to several historians the existence of diffuse capital was a constant in the history of State societies, whereas its concentration in a territory and in the hands of a few was a European specificity (Norel 2012b, 231–32)<sup>9</sup>.

The question of the ancient or medieval origin of capitalism is very complex, and it is beyond the scope of this paper to attempt to answer it adequately. Nevertheless, it must be admitted that the “trading capitalism” of the High Middle Ages and the beginning of the modern period was followed from the 19th century onwards by a “fossil capitalism”. It is even clearer that from the 16th century onwards, “trading capitalism” had prepared the ground for industrial capitalism to express itself fully, notably through the colonial system of slave plantations. As expressed by historians Christophe Bonneuil and Jean-Baptiste Fressoz (2016, 254), “the Anthropocene did not emerge from the brain of James Watt, the steam engine and coal, but from a long process of linking the world

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<sup>8</sup> In ancient times, the existence of powerful merchants inevitably posed a threat to the internal political balance that State leaders wished to maintain. The strategy of ancient monarchs was therefore to delegate foreign trade to populations living outside the State territories, to those peoples who were systematically labelled as barbarian and/or tribal, for example the Bedouin nomads or the Phoenician sailors (Karatani 2018, 139–40). Similarly, in early medieval Europe, profit-making long-distance trade operations were entirely delegated to Jewish and Syrian diasporas (Norel 2012a, 43). These merchant unions were outside the State or semi-subordinated within empires. As a result of this subcontracting, trade during antiquity and the early Middle Ages never led to the formation of a powerful merchant class capable of competing with royal power (Karatani 2018, 139–40). Despite the intensity of trade, economic power could not be concentrated in the hands of a few merchants, and thus the production systems of these periods can best be described by the idea of “diffuse capitalism” (Norel 2012b, 231).

<sup>9</sup> At the beginning of the High Middle Ages, China was undoubtedly more technically and economically developed than any other region in Eurasia (Mielants 2012, 228). Its most populous cities, Kaifeng and Hangzhou, were home to almost a million people, while Cordoba and Constantinople had only two to three hundred thousand (Morris 2013, 148, 456). At that time, Chinese merchants commonly used paper money, written contracts, trade credit, cheques, and acknowledgements of debt. However, even with these sophisticated tools and the extensive trade networks of the time, Chinese monarchs were still careful to prevent the concentration of wealth and economic power in the hands of merchants. In order to continue to be able to exploit the masses without risking too many revolts, the State had to ensure that competing extraction capacity did not emanate from merchants and traders who would find themselves in a too advantageous position (Karatani 2018, 138–39; Mielants 2012, 228). In medieval times, the Chinese economy – like that of India – was still defined by a diffuse capitalism.

economically, of exploiting people and the globe, dating back [at least] to the 16th century and making industrialization possible”.

The term Capitalocene is therefore not suitable to designate the last two hundred years of fossil capitalism, as Andreas Malm and others believe. If there is a Capitalocene, it goes back to the 16th century, or even to the High Middle Ages (12th century), and perhaps even to antiquity in more diffuse forms.

### *3.2. Non-capitalist societies are also to blame*

Moreover, the term Capitalocene tends to avoid a major fact of the 20th century, namely that non-capitalist societies – or , more precisely, political regimes that did not allow private property – were extremely extractivist and polluting. Like the capitalist societies of the time, these socialist-inspired regimes, which took the form of bureaucratic and totalitarian collectivisms, made massive use of fossil fuels, while at the same time generating ecological disasters comparable to those of Western capitalist countries. Based on this observation, the philosopher Serge Audier (2019, 726) adds that:

If we decide to speak of the “capitalocene”, we should perhaps also speak, in a certain sense, of the “socialocene” and above all the “communistocene”, which, curiously, nobody dares to do. However painful it may be to recognize the major role played in the ecological crisis not only by the communist regimes, but also, much more broadly, by socialism and the left in its majority axis, this historical responsibility must be fully assumed.

Andreas Malm (Malm 2016, 240) recognizes this objection and indeed proposes to call “fossil Stalinism” the type of economic system that is defined by “the maximization of the power of the bureaucracy by means of fossil fuels”. However, Malm does not conclude that this reality invalidates his proposal to use the concept of the Capitalocene to designate the epoch in which humanity has become an active force of telluric proportions. His arguments are that “chronologically, causally,



historically, the link between the fossil economy and capitalism appears far more intimate”, and that above all “Stalinism is dead” (Malm 2016, 241).

It is true that Stalinism no longer exists, and let’s even go so far as to admit that its link with fossil energy was less intense than in the case of capitalism – which is highly debatable, or at the very least has yet to be demonstrated. This does not mitigate in any way the problem: there were fossil economies not based on (private property) capitalism in the 20th century, and one should recognize that socialist and communist doctrines have not really been concerned with ecological constraints until fairly recently. This reinforces the idea that the Capitalocene concept is inadequate to properly cover the period during which human activities lead the Earth out of the Holocene.

### *3.3. Imagine capitalism ends, but ecological destruction doesn’t*

In addition to its inability to capture the reality of the past, the Capitalocene concept may also be unapplicable to in the future. Even if it is difficult to define, capitalism did have a beginning and by extension it is likely to have an end one day – even if it sometimes seems easier to imagine the end of the world than the end of capitalism (Jameson 2003). In truth, we can be absolutely certain that the end of capitalism will come one day for a very simple reason: in a world where the physical limits are by definition finite, the infinite accumulation of capital is logically impossible. This end of capitalism will certainly not correspond to a brutal fall. Like its origin, it will be the result of a long process which will imply that, after a while, by dint of mutations, the word “capitalism” will cover a reality too different for the political scientists and economists of the future to continue to use this notion. In this hypothetical future, humans may live in non-capitalist societies, but this does not necessarily imply that human activities would no longer disrupt the environment on a global scale. In a world where property (private or public) would have disappeared – or at least would no longer be a source of domination and exploitation as it is today – it would still be necessary to prevent the implementation of other forms of savage monopolization of energy and raw materials so that humans do not continue their enterprise of mass destruction of the bio-geosphere.

Rather than thinking about this question through a journey into the future, let us try another thought experiment and turn to the past. Let us imagine that from the 16th century onwards, the world had taken an alternative turn. Instead of taking the path of modern capitalism by going to exploit the Americas and Africa, Europe had chosen the path of real communism – thus very far from the Soviet and Chinese experiences of State collectivism that we have known in the 20th century. We are talking here about a libertarian communism such as the one proposed by Murray Bookchin (2007) in the 1970s and 80s, or more recently by Bernard Friot and Frédéric Lordon (2021). We could also mention the eco-socialism of André Gorz (2014) and Ivan Illich (2001). Now, what arguments can be put forward to establish that in this kind of configuration fossil energy would not have been exploited? Of course, the thinkers we have just mentioned have formulated their proposals to help us get out of fossil fuels – and more broadly to stay within the limits of the Earth system. But are we sure that these growth objectors would have shown the same regard for climate and biodiversity if they had lived in the 18th or 19th century? And apart from these individuals, how would societies have been better positioned to deliberately choose to forgo the material abundance associated with fossil wealth? Frankly, it is hard to see how to make a convincing case. At most, one can imagine that fossil resources would have been exploited a little less frantically, and surely also with more fairness. But one can think that the result in terms of destabilization of the Earth system would have been roughly the same, the environmental disaster we know today would have simply happened a little later.

Thus, if we can be certain of the intrinsically destructive nature of capitalism – and that in this respect the wishes for “sustainable development”, “green growth” and “circular economy” that would fit into this framework can never be anything other than grotesque deceptions – there is no guarantee that a non-capitalist economy would automatically lead to a more sustainable society. Bringing capitalism to a halt is therefore a necessary but not sufficient condition for establishing human societies that would remain within the limits of the Earth system. If the geologists of the present finally ratify the exit from the Holocene and the entry into a new geological epoch that they

choose to call the Capitalocene, those of the future will find themselves in a very embarrassing situation if capitalism were to disappear but humans were to maintain their destructive hold on the planet.

### *3.4. Fossil capital is only one source of exploitation*

Finally, like the concept of the Anthropocene, that of the Capitalocene leads to a problem of identifying responsibilities. First, it could lead some people to think that it is the “capitalists” – i.e., the holders of the means of production – who are the only ones to blame. There is no doubt that through their positions of power and wealth, some, if not most, capitalists are individually responsible for many actions that are harmful to humanity.

But in any case, with the Capitalocene concept, what Malm and other thinkers wish to point to as the real root of evil is rather “capital”, i.e., the exploitative social relationship that exists between capitalists and those who do not own the means of production. The source of the destructive propensity of certain human societies would thus come, not from the fact that there are capitalists as such, but from the fact that the latter are able to exploit others, notably by remunerating their labor at a lower value than the one created by this labor, hence creating a surplus value which the capitalists monopolize (Testart 2021, 52–54).

In the end, the logic of capital refers to a wider phenomenon that everyone can observe throughout history and, above all, feel in everyday life: the protean and omnipresent existence of dominant-subordinate relationships between individuals. In this broad sense, the notion of capital aptly indicates the real source of the mismatch between the geo-ecological limits of the Earth and part of humanity’s lifestyle. But the existence of institutionalized domination that runs through the whole of society is not exclusive to the last two to three hundred years. It is a much older phenomenon whose origin will have to be identified in the next section to determine the source of the fundamental incompatibility between the functioning of present-day societies and the ecological limits of the Earth system.

To summarize, despite its many interesting points, the Capitalocene concept suffers from too many and too important shortcomings to make it a relevant substitute for the Anthropocene term. The exploitation of the majority by a minority in order to monopolize surpluses while plundering the resources of nature did not wait for modern capitalism to happen. Capitalism is therefore not in itself the ultimate cause of the destruction of our global environment, even if it must be acknowledged that it has been extremely efficient in this respect, especially over the last two hundred years and even more since the middle of the 20th century. What then should we call the geological epoch that has seen humanity become one of the most important bio-geological forces in the Earth system?

#### **4. Arguing the case of an early Anthropocene**

##### *4.1. Dominance is the root cause*

As we have seen, it is human actions – not combustion, technology, or capital as such – that are responsible for the Earth's exit from the Holocene and its entry into the Anthropocene epoch. Yes, but which humans? Which ones are setting in motion the destruction of the Earth system? And since when? We think that the answer is the following: the humans responsible for the advent of the Anthropocene are those who governed the agrarian States from the beginning of Antiquity to the end of the Middle Ages, and all those who have been driving the fossil economies for the last two hundred years, and finally those who in the future will continue to be driven by their desire to monopolize nature, whether in a capitalist system or not, and with or without the help of fossil energy.

History shows that while the extractivist ideology is obvious since the emergence of fossil capitalism, it cannot be denied that some individuals began to explicitly think of themselves as superior to nature soon after the emergence of the first States – in truth, this conception of the culture/nature dichotomy probably emerged with agriculture, but it is very difficult, if not impossible,

to prove it<sup>10</sup>. From the kings of Mesopotamia who were depicted as conquerors of a hostile nature (Beaujard 2012, 88; Garcia 2018, 266–67), to the Pharaohs who were supposed to be able to control the rise and fall of the Nile (Roberts and Westad 2018, 142), antiquity saw the emergence of a new vision of the relationship between certain humans and their surroundings. The Greeks followed this path by formalizing a science that conceived of nature as an exteriority subject to laws independent of human intentions. Later, Christianity developed around the idea of the singularity of humanity within Creation to be dominated. And finally, the scientific revolution substituted an organicist vision of nature with that of an inert mechanics that makes living beings a mere resource that humans can rationally exploit (Bonneuil and Fressoz 2016, 88). This analysis is perfectly summarized by Baptiste Morizot (2018, 67–68), for whom the founding myth of Western modernity originates from the first civilizations. Since then, humanity has reinforced its feeling of being “the product of a self-extraction from biotic communities, inventing an ‘outside’: Nature”.

It was therefore not necessary to wait for the advent of the modern era to see a part of humanity operating a major split between nature and culture, imagining that the latter should necessarily dominate the former. This ideological separation has been built up gradually, probably since the first city-States of Mesopotamia, but especially since the establishment of the first empires at the beginning of the 1st millennium before the common era. It is this “axial age”, as it is called, with its outline of the great monotheistic religions, that could constitute an appropriate date if we

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<sup>10</sup> In the absence of certainty from the archaeological remains, ethnographic knowledge allows us to clarify this hypothesis. The anthropologist Philippe Descola (1994) has shown that many Amazonian societies never domesticated the animals that lived around them because of their animistic beliefs. In these communities, plants and animals exist and live as spiritual equals of humans – and they may host reincarnations of former community members – so that it is simply inconceivable to start exercising domination over them. If the societies that started breeding thousands of years ago were previously animistic, a profound change in their spirituality had to take place first. For some reason, a kind of psychological mutation, some humans would have ceased to attribute a spiritual dimension to wild plants and animals, and it would thus have become possible to exploit them. Moreover, even if these societies were not animist, the practice of animal husbandry required that animals that had previously been identified solely as prey become the object of both domination (by surrounding them with fences and selecting the most productive individuals) and protection (by providing various forms of care) (Demoule 2018, 164). In any case, there was a significant change in the relationships that our ancestors developed with “other-than-human” living beings (Lien and Pálsson 2021).

wanted to define the beginning of the Anthropocene. About 3,000 years ago, in various parts of the world, all the elements were already in place for humanity to gradually become a geo-ecological force of global proportions: agriculture had initiated its alterative pressure on biodiversity (Ellis et al. 2021), the mastery of metallurgy made synergy possible between energy consumption and the capacity to produce manufactured goods (**Demoule 2018, 176–78; Smil 2017, 54**), exchanges between the center of States and their peripheries were structurally unequal (both ecologically, economically and politically) (Scott 2017; Wengrow 2018), religious orders legitimized the stratification into social classes (Garcia 2018, 278), and all these elements combined to satisfy the desire for omnipotence of a few. This last point is important because the concepts of exploitation and class struggle – probably the most common notions attached to capitalism – are not unique to the fossil regimes of the last two hundred years. It is with the State that a permanent stratification into social classes is formed with a truly functional role for society, for the State is “the organized political exploitation of the majority by any minority whatsoever” (Bakunin 1970, 84).

#### *4.2. Accuracy must sometimes be set aside in favor of simplicity*

The ancient Greek word for “few” is *oligos* and using this term as a prefix gives us the idea of an “Oliganthropocene”. Developed by the geographer Erik Swyngedouw (2013, 6), this term reflects the fact that we have been living for at least 3000 years in a geological epoch driven by only a fraction of humanity, rather than the whole.

Although this term is technically more accurate than Anthropocene, there are two simple reasons for continuing to use the latter. Firstly, despite its shortcomings, the term Anthropocene is now well established in the jargon of the scientific community, and it is also increasingly familiar to the public. It would be difficult in practice to drop it in favor of the more relevant concept of Oliganthropocene. Secondly, the term Anthropocene is simply more understandable to the public. It conveys the idea that the entire human species is affected by changes in the Earth system. All

members of humanity are feeling today, and will feel tomorrow, the consequences of our fossil energy madness.

Even if it is imperfect, let us retain the term Anthropocene, but let's make sure that the names of its sub-epochs indicate the differing levels of responsibility of the various members of humanity.

#### *4.3. Keeping the Anthropocene but adding two sub-epochs*

With the emergence of the first States, the access of a few individuals to supreme power pushed them "to a loss of sense of reality and an irrepressible need to push back the limits of what was possible and decent" (Todd 2020, 164). It was thus with the first States around 3000 BCE, and even more so with the first empires around 1000 BCE, that some powerful humans began to orient the trajectory of our entire species. It can therefore be proposed that the Earth system entered the first sub-epoch of the Anthropocene at this point, at the axial turn of the 1st millennium BCE. To name this Lower Anthropocene, we suggest the term "Agroligarkhian", from the ancient Greek *agrós* for field or countryside, and *oligarkhía* for oligarchy, i.e., the sub-epoch of agrarian oligarchies.

Wagreich and Draganits (2018) have shown that the mining and smelting of metals in early antiquity resulted in the first global environmental pollution of mankind, the identification of which meets the requirements of chronostratigraphy. A first regional lead contamination event in the northern hemisphere is identifiable as far north as the Arctic. It took place during the Late Bronze Age to Early Iron Age (in the eastern Mediterranean), i.e., between 1550 BCE and 850 BCE, with a peak at about 1050 BCE. From a technical point of view, it is therefore possible to match the beginning of the Lower Anthropocene with the early start of the axial turn.

Much later, the beginning of the industrial revolution marked the transition to an Upper Anthropocene, which we propose to call "Thermoligarkhian", from the ancient Greek *thermós* meaning hot, i.e., the sub-epoch of thermo-industrial oligarchies. Fossil societies are still oligarchies, whether in a capitalist system or not, and it is basically the omnipresent competition of hierarchical

systems – from the workplace to the spectacle of politics and the great game of markets – that confers their environmental harmfulness to individuals in thermo-industrial societies.

Regarding the boundary between the Lower and Upper Anthropocene, or in other words between the Agroligarkhian and the Thermoligarkhian, empirical data are also available. Indeed, atmospheric CO<sub>2</sub> concentration recovered from the ice of the poles show that the value (at 284 parts per million) reached during the Holocene Climate Optimum was exceeded in 1809 (Bonneuil and Fressoz 2016, 31). This date is therefore legitimate for separating the two sub-epochs we proposed for the Anthropocene.

## **5. Conclusion**

In this article, we explained why the Capitalocene is an inaccurate way to label the epoch we live in. First, we demonstrated that this concept suffers from four intrinsic flaws, namely: (i) its blurred onset date, (ii) its inability to account for non-capitalist political regimes that were equally destructive to the environment, (iii) its incapacity to cover a potential future with ecological disaster in the absence of capitalism, and (iv) the fact that the large-scale exploitation of nature and man refers to principles broader and older than capitalism.

Second, we showed that for the past two hundred years, capitalism fueled by fossil energy has only accelerated a principle of monopolization of nature whose origin coincides with that of the first empires. Therefore, if it is fair to say that modern capitalism is a major cause of our current disastrous situation, however this accusation is incomplete. What really needs to be questioned is the fact that for most of our species, nature is now no more than the background of a selfie (Morizot 2018, 71–72, 140). For this, we must go back several thousand years to the genesis of the cosmologies of State societies, that is, as Fabian Scheidler (2020, 50–51) notes, to the moment when:

Instead of facing forces that people relate to at eye level, such as ancestors, “spirits”, the “elements” and the like, now there was a pyramid-shaped system based on the idea of command and obedience



and the linear exercise of power. Such thinking has continued through all secularizations and democratizations as a formative idea of the cosmos up to our present technocratic civilization [...]. In both the theological and technocratic versions of omnipotence, we find the idea that nature – including human nature – can and must be controlled. Just as the king commands his subjects, and God his creatures, the engineer likewise commands nature to obey his will.

Consequently, we proposed to retain the Anthropocene label, but with two amendments: (i) defining the onset of this epoch in ancient times, and (ii) making the distinction between two sub-epochs, the Agroligarkhian (from 1000 BCE to 1800) and the Thermoligarkhian (from 1800 to the present). This second point is crucial to reflect the social origin of today's ecological disaster – thus, our view is partly aligned with Malm and Hornborg (2014, 5): climate change and biodiversity collapse are “sociogenic” rather than “anthropogenic”.

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