

# **Beyond “Geological Nature” and Fatalistic Determinism: The Socio-cultural Faces of the Anthropocene and the Political Space to Avoid Ecological Catastrophe**

**Piotr Żuk<sup>1</sup>, Paweł Żuk<sup>2</sup>**

<sup>1</sup> University of Helsinki, Finland .

<sup>2</sup> Wrocław University of Economics, Department of Sociology and Social Policy, Poland.

Corresponding author: Piotr Żuk ([piotr.zuk@protonmail.com](mailto:piotr.zuk@protonmail.com))

## **Key Points:**

- From a cultural perspective, the Anthropocene should be treated in two ways: as an ‘geological’ state and as a model of ‘social and economic’
- In the third decade of the 21st century, it is important to give social analyses and concepts of the Anthropocene a political perspective
- It is time for the Anthropocene to move permanently from academic halls to the main agenda of political challenges globally and locally

## Abstract

The commentary encourages supplementing the geological and natural concept of the Anthropocene with a cultural and political aspect. These two perspectives are not mutually exclusive but are complementary. This approach can facilitate its transition from the language of academic debate to practical and necessary actions at the societal level. According to the authors, the slightly abstract and impersonal Anthropocene should be shown in the context of cultural, economic and political dependencies and choices that created it and continue to reproduce its logic. This turn also opens up a new area for analysing the Anthropocene from the perspective of a critique of political economy (an analysis of the costs of economic policies that reproduce and accelerate successive stages of the ecological catastrophe) as well as of civic culture (research ‘anthropocentric awareness’ or ‘anthropocentric citizenship’ in entire societies). Thus, the authors suggest rejecting the fatalistic determinism of the Anthropocene as a process that, although originally caused by humans, is now often treated as a phenomenon beyond the reach of social action.

## Plain Language Summary

Can the concept of the Anthropocene, which originated in the geological sciences, but is now increasingly used by the media and in public space, be clearly defined from the perspective of the social sciences? In our opinion, the social understanding of the Anthropocene can facilitate its transition from the academic debate to the creation of a necessary and practical policy framework. We also suggest treating the Anthropocene not as an abstract idea in the geological and natural sciences, which is difficult for common people to understand, but as a phenomenon that brings political and economic consequences in the real social world. What is more, this phenomenon depends on political and economic forces that have never been anonymous. This turn breaks with the lack of political responsibility for the ecological consequences of decisions made by political and economic decision-makers, as well as for the thoughtless attitudes of all other participants in social life.

## 1 The Anthropocene Has Many Faces: Between Academic Debate and Social Action

The authors of a very interesting review of the concept and meaning of the term “Anthropocene” in various scientific disciplines, published in *Earth's Future*, have concluded:

“A situation has arisen where, as a result of different disciplinary perspectives, a widely useful term, which refers to a time when human forces are predominant in shaping nature, has evolved into overlapping but distinct concepts” (Zalasiewicz et al., 2021).

However, at least the general framework of the term needs to be accepted to conduct an academic debate. Otherwise, using the same concept, researchers might be talking about something else. Although social sciences are not the realm of unambiguity—and many of the terms used there penetrate everyday language, while terms from social sciences find their way into the language of the media and politics—social scientists cannot use concepts with a specific meaning framework completely freely and arbitrarily. To avoid conceptual confusion, it is always worth referring to the socio-historical context in which a given conceptual apparatus occurs (there have already been such attempts at contextualizing the term “Anthropocene”) (Biermann et al., 2016). On the other hand, it is worth trying to conceptualize the term for the

purposes of specific measurable and verifiable empirical research and policy recommendations. There were similar problems with defining a clear conceptual framework for the terms such as “civil society,” “civil energy,” “just transition,” “democracy” and “equality” (Žuk & Žuk, 2022). However, it is worth trying to organize the concept of the Anthropocene and to facilitate its transfer from the language of academic debate into the sphere of practical social activities. Namely, this concept, which is becoming increasingly popular in the media, has huge research and social potential. The term was popularized by atmospheric chemist Paul J. Crutzen, who declared at the International Geosphere-Biosphere Program meeting in Cuernavaca, Mexico in February 2000, “We’re not in the Holocene any more. We’re in the ... Anthropocene!” (Crutzen, 2002).

Crutzen used the term “Anthropocene” not based on stratigraphic studies, but owing to a direct perception and understanding of the Earth’s changing system. From the beginning, his concept of the Anthropocene as a new geological epoch indicated a crisis and transformation of the relationship between man and existing social systems with the Earth. Can treating the Anthropocene as an entirely human-made project make it easier to create a conscious path of departure from the socio-political model of development that leads nature and human civilization to an inevitable catastrophe?

In this short commentary, we want to: (a) show that the perspective of the social sciences does not have to be opposed to that of the natural and geological sciences, but all of them can complement each other well; (b) emphasize the need for taking a cultural and political perspective in the debate on the Anthropocene and the future fate of the Earth, its residents (both human and non-human animals) and the entire natural world; (c) reject the fatalistic determinism of the Anthropocene as a process that, although originally caused by humans, is now often treated as a phenomenon beyond the reach of social action; (d) treat the Anthropocene not as a politically neutral project, but as a phenomenon causally related to specific political and economic forces that are not and have never been anonymous. In our opinion, this perspective may accelerate practical actions to save the climate and avoid an ecological catastrophe on Earth. In this sense, we treat the Anthropocene as it deserves: not only as an academic idea, but also as a practical challenge that not only triggers geological and environmental consequences but also brings or may bring social, economic and political effects. We recognize that combining the geological and natural perspective with the cultural and political perspective can take the Anthropocene from the level of theory and put it into social practice.

## **2 The Dispute Between Naturalism and Anti-naturalism**

The different perspectives of the natural sciences and the social sciences in explaining and defining the phenomenon of the Anthropocene come down to the classic dispute between naturalism and anti-naturalism. The latter position, which was originally developed by humanistic sociology, rejects the idea that social reality is simply part of nature, and thus rejects the methodological assumption that the social world should be studied in the same way as the natural world. If we recognize the Anthropocene as a cultural reality (and not only as geological and natural processes), then we cannot be bound by the naturalistic formula of experience in our analyses. As Florian Znaniecki (1992, p. 136) claimed, cultural facts can be reduced “neither to objective natural reality nor to subjective psychological phenomena.” The Anthropocene has hard natural indicators (temperature increase, the impact of accelerating global warming on increasingly extreme weather phenomena (Papalexiou & Montanari 2019), catastrophic fires

(Senande-Rivera et al., 2022) and rising sea levels (Tebaldi et al., 2021)), yet it causes objective psychological states (“eco-anxiety” and social anxiety (Verplanken et al., 2020), the anger of young climatic activists (Svensson & Wahlström, 2023)). However, it is primarily a socio-cultural construct, not only a product of human activity and its various systems of production and domination but also a construct defined and described by and arousing numerous polemics in the socio-cultural dimension. For modern social sciences, the Anthropocene is primarily a social product that affects the quality and living conditions of the human species, all other non-human animals and the entire natural world. Nevertheless, it cannot be treated as a manifestation of determinism of impersonal “forces of nature” or anonymous geological and biological processes. Breaking with the determinism of nature does not mean ignoring the complex and almost dialectic relationship between society and the natural world: the relationship between them is permanent. All social, cultural and political models are a response to “objective” natural conditions, but at the same time they transform these “natural conditions.” In this sense, the human environment is both social and natural. As Berger and Luckmann wrote in their classic work entitled *The Social Construction of Reality*, “the developing human being not only interrelates with a particular natural environment, but with a specific cultural and social order” (Berger & Luckman, 1991, p. 68). In other words, “From the moment of birth, man’s organismic development, and indeed a large part of his biological being as such, are subjected to continuing socially determined interference” (Berger & Luckman, 1991, p. 68). From this cultural perspective, the Anthropocene should be treated in two ways: as an objective “natural and geological” state and also as a specific model of “social, cultural and economic” relations. The relationship between these two dimensions created the phenomenon of the Anthropocene in the past and continues to affect the further phases and fate of the Anthropocene. Without a perspective in which these two dimensions intertwine and interact, it is impossible to formulate political postulates and practical strategies of action that, by changing the socio-political system, can simultaneously affect the natural and geological trajectory, pushing away the vision of a self-fulfilling catastrophe.

Some contradictions within the discussion on the Anthropocene have already been questioned as they prevent the debate from developing a cultural and social perspective. As rightly claimed, “in climate change, social relations determine natural conditions; in Anthropocene thinking, natural scientists extend their world-views to society” (Malm & Hornborg, 2014, p. 66). Now, in the third decade of the 21<sup>st</sup> century, when climate change has accelerated even more, it is important to give social analyses and concepts of the Anthropocene a political perspective. This always facilitates the creation of recovery programmes and also extends the debate to circles and environments that have not participated in it so far. In this way, indifference and ignorance about the future of the Earth are also reduced. This is the last moment for the Anthropocene to move permanently from academic halls and discussion boards to the main agenda of political challenges globally and in individual countries.

### **3 Spatial and Temporal Differentiation of the Anthropocene Phases: The Political Differentiation of Systems Affecting Natural Processes**

The phenomenon of climatic migration (Nukusheva et al., 2021), the full phase of which is still ahead of us, illustrates the spatial differentiation of areas that are either more or less conducive to the life of the human species. Is this spatial differentiation only the result of climatic, geographic and natural differentiation? To a large extent, this is the case, but it is also a manifestation of the diverse socio-political systems existing on the Earth in the past. It is a cliché

to say that the quality of air, water and climate depends to a large extent on the economic, political and legal standards in force in a given country. If so, the different phases of the Anthropocene depend both on the entire Earth and in individual continents, on historical and contemporary political systems. To emphasize the meaning of this statement, it is worth asking some thought-provoking questions: Can the Anthropocene be imagined in a system of production characteristic of a slave or feudal society? Would the Anthropocene be possible in an anarchist society or one based on the dominant role of local worker cooperatives, which are not guided—like contemporary political systems and the elites of state authorities—by the logic of growth domestic product but, for example, by the complacency of their employees? These questions boil down to a fundamental question: is the Anthropocene, which was born during the industrial revolution, in fact, the history of capitalism and its impact on social and natural life?

A positive answer to this question, however, still does not exclude the diversity of capitalism itself and its various models, and thus the different degrees and manners of its impact on both people's lives and the world of nature. Namely, the dominance of global capitalism in the modern world does not mean that capitalism had the same face everywhere and exerted the same influence on the environment and the Earth (without extensive analysis, one can agree that the approach to the environment and ecological legislation were different in the neoliberal model of capitalism known primarily in the United States (US) and the United Kingdom (UK) and the model of "Rhenish capitalism" during the welfare-state period and the grassroots ecological movements in Germany of the 1970s. Hence, there is the concept of the capitalocene, which is understood as a system of power, profit and re/production in the web of life and also emphasizes the importance of a historical perspective that extends into the past, much earlier than the 20th century commonly associated with the Anthropocene. According to Jason W. Moore (2017), capitalist logic was based on a concept of Cheap Nature as a system of domination, appropriation and exploitation even at the dawn of modernity.

However, another question arises: if the Anthropocene is a product of capitalist relations of production and state political rule, would their change or rejection transform the dynamics of the Anthropocene or even offer a chance to undo the processes initiated by this epoch in the environment? This perspective has been outlined by John Bellamy Foster, who emphasizes that creating a new order is not only possible but even necessary to save life on Earth. How should this be done? Foster does not doubt:

"The new, essential ecological civilization, is nothing less than a worldwide ecological and social revolution against the capitalist mode of production—a revolution that is most likely to emerge first in the Global South, given the depth of the economic and ecological crises" (Foster, 2022).

#### **4 The Anthropocene without state and market logic?**

Although capitalist logic is dominant, there were periods in the history of the 20th century when its influence on nature was varied and nuanced. An interesting illustration of this spatial and temporal differentiation may be the fall of communism in the late 1980s in Eastern European countries. Numerous branches of industry were privatized or liquidated (this was the effect of capital accumulation; the economies constituting the core of the global capitalist system got rid of competition from Eastern Europe and, above all, total production activity largely decreased at that time) (Vukina et al., 1999), unintentionally deindustrializing the economy. And

this, in an unplanned way and somewhat as a side effect, led in the 1990s to a temporary improvement in the quality of water, air and the general condition of the natural environment in Eastern European countries. A similar effect was observed during the COVID-19 pandemic on a global scale in 2020–2021 when air quality improved temporarily (Albayati et al., 2021). Would these “emergencies” in the global economy change the trajectory of the Anthropocene if they had lasted longer? If we assume they would, we must consequently recognize that we, as people creating specific socio-political and economic systems, can change the pace and phases of the Anthropocene, and perhaps even eliminate its significance from the natural and geological perspective. If political and economic systems created a path for human development that moved the human species and the entire natural world into the Anthropocene, can political and economic systems make another shift to establish greater harmony between the social and the natural worlds? In this way, another provocative question can be posed: can breaking the rule of state logic (based on the control of people and resources of the natural world in a given territory) and/or rejecting market logic (which can commodify every natural resource and turn it into a product for sale with a certain market value) change the history of the Earth, influence the trajectory of the Anthropocene and stop the Great Acceleration? (Steffen et al., 2015) If we accept this possibility, new possibilities open up in which man and society can become the creators of the post-Anthropocene (“the Communion” as described by John Bellamy Foster) (Foster & Clark, 2021). From this perspective, both the beginning and end of the Anthropocene cease to be anonymous and it becomes possible to identify specific social and political forces that can play the role of the environmental proletariat as the main drive to stop the current catastrophic trends in the social and natural environment. Who should play this role in individual countries and on a global scale is of course one of the basic questions for social research.

## **5 Research and practical conclusions for the socially defined Anthropocene**

Should the geological concept of the Anthropocene be rejected in the context of a social perspective? Definitely not. But it is worth complementing and strengthening it with cultural and political aspects. The socially produced description of the effects of human activity has already become a legitimate and objectively existing social fact in culture. It is described, criticized and discussed as a social fact, not as an abstract idea or poetry. Therefore, the term “Anthropocene” should not be excluded from the language of the debate, but it should be specified, clearly defined in the social sciences and supplemented with the cultural, political and economic dimensions omitted from the “naturalistic concepts.” Social scientists do not have to be experts in biology and geology (just as geologists do not have to be outstanding sociologists or political scientists), but it would be good for these two perspectives to be complementary rather than mutually exclusive.

If we say A and accept the social context of the Anthropocene, then we must say B and deal with the social and political implications of this epoch. We indeed have no influence on the time and socio-historical context in which we came into the world as humans. However, if we accept the social character of the Anthropocene, it means that we recognize that the human species and the social system reproduced or changed by people are their product and a process in which they consciously or unknowingly participate. This means that not only can the Anthropocene be reproduced, but it can also be transformed by man who creates Social History and influences the History of Nature. Adopting this assumption opens up huge areas for research and several social policies.

As we have tried to show in this commentary, the socio-cultural dimension of the Anthropocene also allows us to put an end to its anonymous and slightly dehumanized character. There is a certain paradox in the original concepts of the Anthropocene: on the one hand, the human species is pointed out as a force (social, economic, industrial) influencing the condition of the Earth. On the other hand, the same human species is subjected to the process of desocialization and treated as passive beings who are not only influenced by the blind forces of nature and geology but also, and perhaps above all, by the blind and anonymous economic and political forces responsible for the current state of the Earth. In this way, the prevailing political order is almost equated with geological determinism and recognized as something “natural” and, at the same time, inevitable. This is what requires a change in the discussion about the ways and means of reaching the post-Anthropocene, understood as both a geological epoch and a social order restoring more harmonious relations between the environment and the social world.

What elements of the current debates about the Anthropocene are worth developing in this context, and which ones should be introduced into these discussions?

The global and supranational nature of the Anthropocene certainly weakens nationalist positions and attempts to enclose environmental challenges within individual nation states. In this sense, it is a useful tool for criticizing all nationalisms and national particularisms represented particularly by political forces associated with the populist right and disregarding or undermining environmental policy, climate change and global, cosmopolitan responsibility for the fate of the Earth (Kulin et al., 2021; Žuk, 2023; Žuk & Szulecki, 2020). For this reason, this supranational and transnational perspective should be continued.

However, it is worth talking openly about the economic costs of the Anthropocene in economic activity and political decisions that reproduce the present state and those that can stop the current trajectory. The critique of the political economy of the Anthropocene makes it possible to indicate the specific economic value of individual trajectories of socio-economic development resulting from additional costs related to climate change (the costs of fires and additional expenses related to health care and climate migration, the costs of saving endangered plant species and animals, etc.). This could also start a discussion about what practical actions and instruments need to be taken in the political economy to stop the dynamics of the Anthropocene. In addition to the revolutionary perspective, which aims to undermine the foundations of the logic of the Capitalinian Age (defined as the period of acceleration of global monopoly capitalism in the 1950s, which led to the era of planetary ecological crisis) (Foster & Clark, 2021), evolutionary actions are also possible. For example, the “anthropocentric tax” can be charged on the activities of large corporations or the mining industry that have a particular impact on perpetuating the framework and socio-ecological effects of the Anthropocene. It can be paid to the “global climate rescue fund.” This can be called an introduction to the discussion about the anthropocentric critique of political economy.

On the other hand, on the socio-cultural level, it is possible to research “anthropocentric awareness” or “anthropocentric citizenship” (understood as an active attitude on the individual, national and global levels to the challenges and threats related to the environmental disaster on the Earth, going beyond the current political and cultural limitations). Emphasizing the importance of the socio-cultural dimension makes it possible to break the static and anonymous foundations of anthropocentric processes. This consequently unveils the mask of neutrality and the lack of political responsibility for the ecological consequences of decisions made by political and economic decision-makers, as well as for the thoughtless attitudes of all other participants in

social life. Both these shifts—adopting a socio-cultural perspective and consequently imposing economic costs and emphasizing political responsibility—are insufficient for a radical change in the trajectory of processes taking place on Earth. However, they are necessary to break the atmosphere of indifference of the political and business establishment, as well as other social actors and individuals to the fate of the Earth. The slightly abstract and impersonal Anthropocene should be shown in the context of cultural, economic and political dependencies and choices that created it and continue to reproduce its logic.

## Open Research

Data were not used, nor created for this research.

## References

- Albayati, N., Waisi, B., Al-Furaiji, M., Kadhom, M., & Alalwan, H. (2021). Effect of COVID-19 on air quality and pollution in different countries. *Journal of Transport & Health*, 21, 101061. <https://doi.org/10.1016/j.jth.2021.101061>
- Berger, P. L., & Luckmann, T. (1991). *The Social Construction of Reality. A Treatise in the Sociology of Knowledge*. London: Penguin Books.
- Biermann, F., Bai, X., Bondre, N., Broadgate, W., Arthur Chen, C.-T., Dube, O. P. et al. (2016). Down to Earth: Contextualizing the Anthropocene. *Global Environmental Change*, 39, 341–350. <https://doi.org/10.1016/j.gloenvcha.2015.11.004>
- Crutzen, P. J. (2002). Geology of mankind. *Nature*, 415(6867), 23. <https://doi.org/10.1038/415023a>
- Foster, J. B. (2022). *Capitalism in the Anthropocene: Ecological Ruin or Ecological Revolution*. New York: Monthly Review Press.
- Foster, J. B., & Clark, B. (2021). The Capitalinian: The First Geological Age of the Anthropocene. *Monthly Review*, 73(4).
- Kulin, J., Johansson Sevä, I., & Dunlap, R. E. (2021). Nationalist ideology, rightwing populism, and public views about climate change in Europe. *Environmental Politics*, 30(7), 1111–1134. <https://doi.org/10.1080/09644016.2021.1898879>

- Malm, A., & Hornborg, A. (2014). The geology of mankind? A critique of the Anthropocene narrative. *The Anthropocene Review*, 1(1), 62–69. <https://doi.org/10.1177/2053019613516291>
- Moore, J. W. (2017). The Capitalocene, Part I: on the nature and origins of our ecological crisis. *The Journal of Peasant Studies*, 44(3), 594–630. <https://doi.org/10.1080/03066150.2016.1235036>
- Nukusheva, A., Ilyassova, G., Rustembekova, D., Zhamiyeva, R., & Arenova, L. (2021). Global warming problem faced by the international community: international legal aspect. *International Environmental Agreements: Politics, Law and Economics*, 21(2), 219–233. <https://doi.org/10.1007/s10784-020-09500-9>
- Papalexiou, S. M., & Montanari, A. (2019). Global and regional increase of precipitation extremes under global warming. *Water Resources Research*, 55(6), 4901–4914. <https://doi.org/10.1029/2018WR024067>
- Senande-Rivera, M., Insua-Costa, D., & Miguez-Macho, G. (2022). Spatial and temporal expansion of global wildland fire activity in response to climate change. *Nature Communications*, 13(1), 1208. <https://doi.org/10.1038/s41467-022-28835-2>
- Steffen, W., Broadgate, W., Deutsch, L., Gaffney, O., & Ludwig, C. (2015). The trajectory of the Anthropocene: The Great Acceleration. *The Anthropocene Review*, 2(1), 81–98. <https://doi.org/10.1177/2053019614564785>
- Svensson, A., & Wahlström, M. (2023). Climate change or what? Prognostic framing by Fridays for Future protesters. *Social Movement Studies*, 22(1), 1–22. <https://doi.org/10.1080/14742837.2021.1988913>

328 Tebaldi, C., Ranasinghe, R., Vousdoukas, M., Rasmussen, D. J., Vega-Westhoff, B., Kirezci, E.  
 329 et al. (2021). Extreme sea levels at different global warming levels. *Nature Climate Change*,  
 330 *11*(9), 746–751. <https://doi.org/10.1038/s41558-021-01127-1>

331 Verplanken, B., Marks, E., & Dobromir, A. I. (2020). On the nature of eco-anxiety: How  
 332 constructive or unconstructive is habitual worry about global warming? *Journal of*  
 333 *Environmental Psychology*, *72*, 101528. <https://doi.org/10.1016/j.jenvp.2020.101528>

334 Vukina, T., Beghin, J. C., & Solakoglu, E. G. (1999). Transition to markets and the environment:  
 335 Effects of the change in the composition of manufacturing output. *Environment and*  
 336 *Development Economics*, *4*(4), 582–598. <https://doi.org/10.1017/S1355770X99000340>

337 Żalasiewicz, J., Waters, C. N., Ellis, E. C., Head, M. J., Vidas, D., Steffen, W. et al. (2021), The  
 338 Anthropocene: Comparing its meaning in geology (chronostratigraphy) with conceptual  
 339 approaches arising in other disciplines. *Earth's Future*, *9*(3), e2020EF001896.  
 340 <https://doi.org/10.1029/2020EF001896>

341 Znaniecki, F. (1992). *Nauki o kulturze. Narodziny i rozwój*. Warszawa: PWN.

342 Żuk, P. (2023). “Eco-terrorists”: right-wing populist media about “ecologists” and the public  
 343 opinion on the environmental movement in Poland. *East European Politics*, *39*(1), 101–127.  
 344 <https://doi.org/10.1080/21599165.2022.2055551>

345 Żuk, P., & Szulecki, K. (2020). Unpacking the right-populist threat to climate action: Poland’s  
 346 pro-governmental media on energy transition and climate change. *Energy Research & Social*  
 347 *Science*, *66*, 101485. <https://doi.org/10.1016/j.erss.2020.101485>

348 Żuk, P., & Żuk, P. (2022). Civic energy and the traditions of the idea of civil society: Dilemmas,  
 349 frames and discussions. *Energy Research & Social Science*, *92*, 102798.  
 350 <https://doi.org/10.1016/j.erss.2022.102798>