

Podušelová, Katarína

Identifying the possible implications of the concept of the Anthropocene for the philosophical-anthropological thought

Pro-Fil. 2024, vol. 25, iss. 1, pp. 39-52

ISSN 1212-9097 (online)

Stable URL (DOI): <https://doi.org/10.5817/pf24-1-37798>

Stable URL (handle): <https://hdl.handle.net/11222.digilib/digilib.80418>

License: [CC BY-NC-ND 4.0 International](#)

Access Date: 29. 11. 2024

Version: 20240822

Terms of use: Digital Library of the Faculty of Arts, Masaryk University provides access to digitized documents strictly for personal use, unless otherwise specified.

IDENTIFYING THE POSSIBLE IMPLICATIONS OF THE CONCEPT OF THE ANTHROPOCENE FOR PHILOSOPHICAL-ANTHROPOLOGICAL THOUGHT

KATARÍNA PODUŠELOVÁ

Department of Environmental Philosophy, Institute of Philosophy SAS, Bratislava, Slovakia,
katarina.poduselova@savba.sk

RESEARCH PAPER ▪ SUBMITTED: 1/2/2024 ▪ ACCEPTED: 18/2/2024

Abstract: The paper focuses on identifying the possible, and assumed, implications of the concept of the Anthropocene for thinking about the human in a philosophy that accepts the transition from Holocene to Anthropocene thinking. The aim of the paper is to produce a systematic treatment of the philosophical-anthropological presuppositions of the concept of the Anthropocene. Illuminating the relationship between the concepts of the Earth System, the planetary boundaries and the Anthropocene has to be the focus if we are to delineate the basic anthropological issues so that they can be further conceptually elaborated from a philosophical-anthropological perspective. Such an approach aims to highlight the various interpretive disagreements not only in understanding the concept of the Anthropocene but also in understanding the meaning of the concept of humanity as a geobiophysical force.

Keywords: Earth System; Anthropocene; planetary boundaries; human as geobiophysical force; anthropocentrism

Introduction

Extensive natural science research into geological and climatic change, fueled by technological advances, has led to the production of concepts like the Anthropocene and the planetary boundary. The primary function of these concepts is to render these changes, describe them, and predict their future direction. These theoretical concepts found a new worldview and also provide premises for different ontological, epistemological, and anthropological assumptions, requiring philosophy to reflect as well if it is to remain relevant. The focus of this paper is a philosophical-anthropological approach to these concepts. The basic question is: Do these theoretical concepts, derived from the natural sciences, have an impact on how we think about the human? The question can be further extended. We need to ask, in light of the new sources of understanding provided by these concepts, about the relevance of the theoretical concepts of the human that we use, theoretically and in praxis. The basic question arises from the assumption that philosophical-anthropological thinking has not yet worked through the semantic relations and field, the discursive space, in which these concepts locate categories relating to the human.

In the concept of the Anthropocene, humans are understood as a causal factor of climatic and geological changes on a planetary scale. In the context of the Earth System approaches, “humans are no longer just a part of the biosphere, a passive observer, but have become a geobiophysical force qualitatively altering the regulatory capabilities of the Earth System” (Pođušlová 2023, 96). The concept of planetary boundaries goes further, arguing that humans have become a threat to the reproduction of the global ecosystem, other species and themselves. According to Rockström, the planetary boundaries “define the safe operating space for humanity with respect to the Earth system and are associated with the planet’s biophysical subsystems or processes” (2009, 472). In other words, these boundaries establish conditions necessary for the survival of the human species. Humans must keep their own activities within boundaries that do not exceed the limits determinative of the Earth System's functionality. The above statements indicate that the sphere of the human has become a problem on at least two levels, based on the findings of the natural sciences. The human sphere acts upon the natural order, changing the basic conditions of life on planet Earth, and, also, this sphere is reflexively affected by the effects of the changes it engenders.

This view is highly problematic. If one considers Lovelock's Gaia hypothesis, which posits that life itself participates in shaping its environment (Lovelock 2007), then humanity, as a biological life form, should naturally participate in the functioning of the system. The problem arises if we start to understand the Gaia hypothesis as a criterion for Earth as a self-regulating system. For example, Zalasiewicz and Williams state: “Hypotheses to explain the Earth’s climate stability [that has allowed *inter alia* a continuous lineage of living organisms] have included such as the Gaia hypothesis, in which the totality of the Earth’s biota operate to maintain optimum conditions for their existence” (2009, 131). According to the preceding argument, humans as living organisms, without being directly aware of it, should contribute to the system's stability and, thereby, support the conditions necessary for their continued existence on planet Earth. However, if we add to this concept not only humanity as a biological life form but also the institutional systems (cultural, social, economic and others) and their technological supports, the stability of Gaia dissolves (Latour – Lenton, 2019). It is the concepts of the Anthropocene and of planetary boundaries that point to this destabilising aspect. This leads to the question: what does this paradoxical position of humanity say about humans themselves?

In this paper, I will respond to these approaches and address issues that should be reflected in the philosophical-anthropological field. Furthermore, I draw on the academic discussion of the Anthropocene, which is based on the assumption that rapid changes in the geological-climatic conditions of the Earth have an impact on how we understand human relations to the world, to nature, to non-human entities, to society, and ourselves. Against this background, I pose the fundamental question: What are the theoretical implications of the concepts of the Anthropocene and planetary boundaries for philosophical thinking about humans? Given that the issue of the concepts of the Anthropocene and of planetary boundaries, in conjunction with philosophical reflection on humans, is a difficult one, I will concentrate on those aspects that might serve as a basis for further reflection in this area. Before turning to anthropological aspects, I will focus, in the first part of the paper, on clarifying the meaning of the concepts of the Earth System, of planetary boundaries, and of the Anthropocene, and upon what, precisely, their relationship is. In the second part, I will focus on anthropological assumptions because several questions arise from this dimension, for example: What is human in the Anthropocene? What is human’s place in the Anthropocene? Is the Anthropocene an affirmation of the arrogance of the anthropocentric

position? What is the meaning of being human in the Anthropocene? The above orienting questions help to direct the Anthropocene discourse in terms of philosophical reflection on the human.

The Earth System, the Planetary Boundaries, and the Anthropocene

Exploring the implications of the concepts of the Anthropocene and planetary boundaries for thinking about humans requires first drawing attention to how the concepts can be understood. In particular, the concept of the Anthropocene has more than one meaning from which its conceptualisation arises (Podušelová 2022). From the point of view of thinking about humans, I consider it more appropriate to focus on the concept of the Earth System, which allows for a better understanding of the geological-climatic changes that humanity is currently facing. I will also point out that the Earth System is currently in a state that is caused by human activities or so-called anthropogenic activities. It should be noted that it is the concepts of the Anthropocene and of planetary boundaries that are being used to render this state of affairs.

The Earth System

The basic definition of the Earth System comes from the Earth System Science Report, which states that it is: a "view of the Earth System as a set of interacting processes operating on a wide range of spatial and temporal scales, rather than as a collection of individual components" (National Research Council 1986, 15). The concept of the Earth System *as a whole* is considered important in this area of thinking (Steffen et al. 2005). This is a shift away from viewing planet Earth as a collection of Earth systems consisting of individual components (atmosphere, lithosphere, hydrosphere, cryosphere, and biosphere). The concept of the Earth System, as it is understood today, with a strong emphasis on human activity, was preceded by several important theoretical postulations and philosophical assumptions. Many of these could only later be accepted within science thanks to interdisciplinary research and technological advances.

Research concerned with the Earth System is the primary focus of Earth System Science (ESS). This research area originated in the 1970s at NASA, as a project of the Earth System Sciences Committee (ESSC). The original intent of the ESSC was to develop interdisciplinary Earth system research across the disciplines of the Earth sciences (Barton 2022). Currently, "Earth System Science (ESS) is a rapidly emerging transdisciplinary endeavour aimed at understanding the structure and functioning of the Earth as a complex, adaptive system" (Steffen et al. 2020, 54). The ESSC also produced the Bretherton diagram (1986) which, for the first time, depicted the Earth system and its interactions between the geosphere and the biosphere. This diagram also showed, for the first time, that the human factor is a key force influencing these systems (Steffen et al. 2020). The International Geosphere-Biosphere Programmes (IGBP) and the *2001 Amsterdam Declaration on Earth System Science* have both promoted the adoption of the Earth System approach. The Amsterdam Declaration states:

The Earth System behaves as a single, self-regulating system comprised of physical, chemical, biological and human components. The interactions and feedbacks between the component parts are complex and exhibit multi-scale temporal and spatial variability. The understanding of the natural dynamics of the Earth System has advanced greatly in recent years and provides a sound basis for evaluating the effects and consequences of human-driven change (Moore III 2001, para 3).

Understanding the workings of the Earth System is challenging, if not impossible, without the involvement of technology and artificial intelligence. A systems approach allows scientists to model the Earth System in order to further their understanding as to precisely how different aspects of the system work so as to appreciate the functioning of biochemical processes on planet Earth, supporting life itself and, thereby, sustaining human existence (Steffen et al. 2005). A systems approach, according to Steffen et al., "must encompass complex interactions, synergies between system components, non-linear responses and multiple feedbacks. It must also embrace both biophysical and anthropogenic drivers of change, not as separate influences but as closely interwoven and interactive processes" (2005, 2).

Another important aspect that is emphasized is the time span between which interactions and changes occur. In a generalised way, it can be said that on the one hand, in the long term, the Earth System is largely stable and generates life-supporting conditions. According to Lenton: "These conditions include an equable global temperature, enough atmospheric carbon dioxide to fuel photosynthesis, and sufficient nutrients for growth. Furthermore, for at least the past 370 million years, there has been enough atmospheric oxygen to support complex, mobile animal life" (2016, 54). On the other hand, "the present climate system is unusually unstable—at least on relatively short timescales—providing an important backdrop for thinking about our own planet changing activities as a species" (Lenton 2016, 70). Stability, not constancy as Lenton points out, is ensured precisely by negative feedback mechanisms. Understanding the temporal aspect of feedback I find very important also from an anthropological point of view because human activity momentarily creates an amplification of positive feedback in the system in a relatively short period of time. On what negative and positive feedbacks are, I give Lenton's definition:

Positive feedback is an amplifying loop of causal connections — meaning that an initial perturbation to any part of the loop will trigger a response that amplifies the initial change. Negative feedback is a damping loop of causal connections — meaning that an initial perturbation to any part of the loop will trigger a response that damps the initial change. Thus, negative feedback tends to maintain the status quo, whereas positive feedback tends to propel change (2016, 26).

Further, the example of temporal understanding of processes and events creates pressure to change our "linear" way of thinking, because our intuitive logical procedures may be wrong in this case. Self-regulation of the system is based on the idea that if something causes the system to deflect, negative feedback loops will ensure a return to the original state. However, non-linearity means that if the positive input is too fast and too large, the system cannot react to it anymore and does not return to its original state, it literally "jumps" and changes its properties. Lenton argues: "Selfregulation is not immutable — it can break down" (Lenton 2016, 27). The Earth System can also be described linearly, but only to a limited extent. What is important to scientists are nonlinear changes, which cannot be predicted with complete accuracy and are, therefore, much more dangerous. They can lead to 'tipping points', which occur when there is strong positive feedback in the system, and the system's response is then to move to an alternative stable state (Lenton 2016). However, this alternative state may no longer support the complexity of life. Humans need to recognize that it is only necessary to move within a certain range to avoid such tipping points in the whole Earth System.

The Planetary Boundaries

The concept of planetary boundaries was proposed by Swedish scientist Rockström together with a group of internationally renowned scientists. Their results were published in the article *A safe operating space for humanity* (2009). Research on the Earth System has made it possible to identify a period of stability that overlaps with the so-called geological-climatic period of the Holocene. This period provides ample data on what conditions are suitable for complex life forms on planet Earth, including conditions for the emergence and development of human civilizations. At the same time, as Richardson et al. state: "This is also the only Earth system state civilizations have historically known" (2023, 2). Using the Holocene as a reference point, scientists have identified thresholds called planetary boundaries, the crossing of which would lead to a tipping point. Rockström et al. define these boundaries as "the safe operating space for humanity with respect to the Earth system and are associated with the planet's biophysical subsystems or processes" (2009, 472). These boundaries also acknowledge that: "This could see human activities push the Earth system outside the stable environmental state of the Holocene, with consequences that are detrimental or even catastrophic for large parts of the world" (Rockström et al. 2009, 472).

The first draft of the planetary boundaries identified nine processes that are essential to maintaining the stability of the Earth system: climate change; rate of biodiversity loss (terrestrial and marine); interference with the nitrogen and phosphorus cycles; stratospheric ozone depletion; ocean acidification; global freshwater use; change in land use; chemical pollution; and atmospheric aerosol loading (Rockström et al. 2009). In the first report in 2009, the scientists cited exceedances of the three: climate change, rates of biodiversity loss, and interference with the nitrogen cycle (Rockström et al. 2009). As I pointed out above there are non-linear processes in the Earth System. This forces scientists to continually specify these boundaries. Progressive research shows that the rate of disruption of these critically necessary processes is increasing. In the study *Earth beyond six of nine planetary boundaries* (2023), scientists point out that six of nine planetary boundaries have already been crossed (Richardson et al. 2023).

The anthropological background of the concept of planetary boundaries points to the fact that humanity faces a huge challenge. Before the concepts of the Earth System and the planetary boundaries, humanity had some awareness of adversely affecting environmental conditions. However, the discussions and activities were locally focused. More prevalent, as Rockström illuminates is the fact that: "Ever since the industrial revolution, we've had this crazy idea that our actions are without consequences. That we can take nature or leave it" (2015, 21). At the same time, every ecological disaster was considered unintentional or was perceived more as a natural disaster. I argue that once the concept of planetary boundaries is established delineating human space as a dimension of the Earth System, it is no longer possible to understand human activities as unintentional. As Lenton states:

Whilst human transformation of the planet was initially unwitting, now we are increasingly collectively aware of it. This poses a challenge to Earth system science because we humans have conscious foresight and a sense of purpose that (as far as we know) has never been part of the Earth system before. This changes the Earth system fundamentally, because it means that one species can consciously, collectively shape the future trajectory of our planet (2016, 115).

Therefore, I think that any activities that contribute to reducing our chances of maintaining the stability of the Earth System should be taken as intended. In this way, the concept of planetary boundaries also takes on a normative dimension.

The Anthropocene

Thanks to the collaboration that has developed between scientists within the disciplines of Earth sciences and Earth System Science, an article by Paul Crutzen and Eugene Stoermer was published in the IGBP *Global Change Newsletter* in 2000. This short article brings the concept of the Anthropocene to the fore for the first time in connection with the idea of a change in geological epoch from the Holocene to the Anthropocene. In the article, the authors emphasized the consequence of the many profound changes that humans have wrought on the planet by burning fossil fuels and releasing carbon dioxide into the atmosphere (Crutzen – Stoermer 2000). Subsequently, the Anthropocene became the unifying category for a new geological epoch and the different aspects of the Earth System as a feedback system model. As reported by Steffen et al: "Contemporary Earth System science has benefited greatly from evidence generated by the geosciences, particularly stratigraphy, the primary geoscience that has developed the "book of records" of the Earth through time. The relationship between stratigraphy and Earth System science has been symbiotic" (2016, 326). However, the interdisciplinary collaboration of scientists to which the quotation refers does not mean that the concept of the Anthropocene is universally accepted and understood.

From a philosophical-anthropological perspective, it should also be considered that both the Anthropocene and the planetary boundary are concepts that work with a mathematical model of the Earth System. Hence, scientists work mainly with quantifiable aspects of human activity. Thus, humans are represented by the traces of the impacts of their collective behaviours in anthropogenic impact data. That is, the human is reduced to the quantified traces of anthropogenic impact data. Lenton, therefore, points out that feedback (positive and negative) is primarily mathematical representations, not evaluative (2016). These data do not express anything about whether the actions of humanity, as a form of biological life, are good or bad nor do they imply moral edicts concerning what they should be: they do not, that is, imply a model of the human, necessary for theoretical thinking in the humanities, or the actual human individual. In the natural sciences, 'humanity' is only a presupposition and a conceptual tool. Therefore, it now, once again, becomes a primary problem for philosophy. The interpretation of claims from the natural sciences by humanists and social scientists is influenced by the fact that the natural sciences often resort to the use of the concept of humanity in their discourse instead of speaking only of anthropogenic changes, factors, influences, or data. It is precisely such generalisations about humans, or the use of the concept of 'humanity' construed via mathematical indices, that has been the subject of severe criticism from the humanities and social sciences. On the one hand, the generalization of humanity in relation to changes in climatic and geological conditions on planet Earth does not allow for any statements to be drawn regarding responsibility, justice, or any normative statements (Malm – Hornborg, 2014, Bonneuil – Fressoz 2016). On the other hand, natural science discourse, based on data and other aggregates, lacks any human dimension.

The Anthropocene and Human's Place in the Earth System

In a very simplistic view, it should be the task of philosophers to ask about the world as a whole and human's place in it, to search for meaning, unity, and the wholeness of the human, or else to try to penetrate the veil of human nature. As late as the 20th century, insights from the empirical anthropological sciences sparked extensive philosophical discussions about humans in Europe, especially in the German-speaking world, leading to the establishment of a separate discipline in the form of philosophical anthropology. Some important questions about humans were raised again, including: What is human's place in the cosmos? What is human's place in nature?

However, the development of new schools of thought and methods in philosophy, along with scientific and technological advancements, have also worked in the opposite direction, and have shown the limits of any attempt to create a unified theory of the human. The multiplicity of scientific knowledge and philosophical approaches made it impossible to form a systematic view of the human, or to create a synthesis that would lead to a coherent view of the human or a search for its essence. Even the search for the essence of humanity or any substantive approach to the human realm was rejected. It seemed more meaningful to reflect on the human by capturing and theoretically stabilizing the manifestations of its relation to the world via itself. The project of philosophical anthropology receded into the background, and philosophers abandoned what Kant had already emphasized, that philosophical thought should deal primarily with the problem of the human. The constant increase in the specialization of the sciences also pointed to another phenomenon that made it impossible to grasp the human in its entirety, namely, the epistemological and ontological fragmentation of the world. I think that a scientific approach to reality does not strictly imply the abolition of certain ontological and epistemological philosophical assumptions. Many of those persisted, despite advances in scientific knowledge, in the ways in which humans have understood reality and, thereby, improved their position in the world or legitimized their handling of natural resources. In terms of the discourse of the Anthropocene, dualism (subject-object, human-nature) and the anthropocentric stance have become the most debated topics. One might assume that the specialization of the sciences and the increasing inclination towards materialism alongside its implied naturalistic understanding of reality would abolish the historically based, privileged position of humans in nature and the dualistic order of being that legitimized human supremacy. Williams points this out: "Therefore, the painful conclusion: man presumes arrogantly when he talks about his place in the world with absolute certainty; that place is incompletely conceived and very likely will remain so in the foreseeable future" (1964, 82). When Williams wrote his paper 60 years ago, he argued that: "Over the past four hundred years decisive blows have been leveled at man's sense of privileged status in the universe" (1964, 85). Little did he know that the natural sciences themselves would bring humanity back to the center of philosophers' attention, if, sadly, in a very different and, possibly, frightening way. According to Palsson et al.: "In a rapidly evolving environmental context, the human condition is more unique than ever before" (2013, 5). The philosopher, therefore, can no longer remain indifferent to the claims that come precisely from the scientists from the Earth System Science: "Human beings, their societies, and their activities are an integral component of the Earth System, and are not an outside force perturbing an otherwise natural system" (Steffen et al. 2005, 7); "The planet is now dominated by human activities" (Steffen et al. 2005, 81); "Humans are now the dominant force driving the trajectory of the Earth System" (Steffen et al. 2020, 62);

These statements implicitly indicate that humans have regained a certain privileged position in the world, which is again understood as a certain unity and is no longer conceived incompletely but as the Earth System. It is safe to say that the world became both a system and a whole in the epoch of the Anthropocene. It is possible to take different attitudes to the above statements or interpret them differently. In the analysis of these statements, I will mainly focus on the part that says that humanity has become the dominant force in the Earth System. I suggest that the above has implications for how we should think about the human in philosophy.

Humans as a Geobiophysical Force

The fundamental anthropological question in philosophy surrounds a constellation of aspects surrounding a discursive cluster, concerned with what it is to be human. Throughout the history of this pattern of thought, the question directed to the reflection on the human by humanity itself has been answered in various ways. It has even been dismissed as unanswerable or ill-posed. Leaving aside the legitimacy of this question, what I want to draw attention to is that it can be methodologically grasped differently, via different constellations of significance, and different contexts. By the above, I am pointing out that when I ask a question about a human being I do not expect a simple answer in the sense of 'a this'. Asking about humanity must reflect its complexity, and its multi-dimensionality. It involves both a hermeneutic preunderstanding of the question itself and the set of relations and conditions that constitute the human and in which the human is expressed. The question 'What is the human?' is now set in the new context of the Anthropocene, which is encountered for the first time in philosophical reflection on humanity. In this context, it is possible to ask: 'What does it mean to be human in the Anthropocene?' and, also, 'What does it mean to be human in the Earth System?'

The first answer should mirror the above statements, humans have become *a force* that can be compared to the forces of nature or expressed by saying that humans have become a geobiophysical force. First, I am basing this on the original claims made by scientists in the Earth System Science: "Anthropocene, the current epoch in which humans and our societies have become a global geophysical force ... Human activities have become so pervasive and profound that they rival the great forces of Nature and are pushing the Earth into planetary *terra incognita*" (Steffen – Crutzen – McNeill 2007, 614); "Global change is real and it is happening now. Human-driven changes to Earth's land surface, oceans, coasts and atmosphere, and to biological diversity, are equal to some of the great forces of nature in their extent and impact" (Steffen et al. 2020, 57).

On the one hand, for scientists, the human realm represents a complex natural, and thus explorable, even quantifiable, phenomenon. From a naturalistic point of view, it again fits into the assumed order of the physical world. Just another natural phenomenon. On the other hand, there is the question of how to interpret humans in relation to the forces of nature: How can we make sense of the way these forces impact the human realm?

How to interpret these claims is a task for thinkers in the humanities and social sciences, who agree, criticize, or reject them. For example, Emmett and Lekan find an assenting stance in Chakrabarty's thoughts. As they put it:

Once we have accepted the scientific evidence that human activities are re-shaping the Earth's atmospheric patterns and geochemical cycles, he argues, we are compelled to recognize that human beings have, collectively, become a geophysical force capable of determining the course of climate for millions of years (2016, 7).

The criticism of the claims does not deny the influence of human activity on the Earth System. Rather, it points out that we have anthropomorphized natural forces in order to explain the cause of changes by allusion to human characteristics (Malm – Hornborg, 2014). Against these two positions stands a rigorous response to the above claims. It is not only a rejection of human dominance, but also of the naming of the epoch of the climatic crisis by the term Anthropocene. For example, Haraway proposes a new name, Chthulucene, in which she criticizes images of humans (*Homo sapiens*, *Anthropos*, Modern Man) based on human exceptionalism and bounded individualism (Haraway 2016). According to her: "Humans in History and the Earthbound in the Anthropocene are engaged in trials of strength where there is no Referee who/which can establish what is/was/will be" (2016, 42). In her critique, she goes so far as to object to the Anthropocene discourse's generalizing of humans as a biological species or philosophical conceptualizations of humans as *homo faber* (Haraway 2016). She comments on the understanding of the human as a species in the Anthropocene as follows:

Species Man did not shape the conditions for the Third Carbon Age or the Nuclear Age. The story of Species Man as the agent of the Anthropocene is an almost laughable rerun of the great phallic humanizing and modernizing Adventure, where man, made in the image of a vanished god, takes on superpowers in his secular-sacred ascent, only to end in tragic detumescence, once again (Haraway 2016, 47).

In my view, all three attitudes implicitly or explicitly express a certain assumption about humans. Its different grasp and the reaction to its indirect definition in the Anthropocene by the natural sciences shows, above all, that the boundary between the natural sciences and the humanities has broken down. At least in what the critique points out – that not only scholars in the humanities but also a significant number of natural scientists seek to interpret facts through the narrative of the biological species or the social, cultural, or economic sphere of humans. I think that this is where the intersection, or the zone, where philosophy's reflection on humans should enter arises because we have built a new Tower of Babel in this period of the climate crisis. All the fields, from the natural sciences through the humanities and social sciences to religion and the arts, say 'human' but do not understand each other.

Another way of looking at humans, which became a geobiophysical force in the Anthropocene, is perhaps through the way that humanity's relationship to nature was understood and how it came to superiority or dominance. In philosophy, most considerations of humanity have been based more on its relationship to society or culture. Nature played more of a backdrop against which human history unfolded (S'ahel 2023). Humanity initially understood the forces of nature as something outside itself and attributed them more to the gods. Nature and its power exceeded humanity's abilities and rendered humanity powerless against it. The forces of nature were beyond human reach until humanity began to explore and learn about them. Humanity began to trust its own reason more than transcendent principles. Suddenly there was nothing divine in the world of matter and physical entities, nor anything that could not be explained by its own laws. The arrogance of modern humanity, that Williams spoke of, was manifested in the power of its reason, leading to the anthropocentric conclusion to regard humanity as something exceptional and superior. For humanity, the natural forces of evolution meant that it was the result of natural progress and development towards higher forms of life. Hence the questions: Is the Anthropocene an affirmation of the arrogance of the anthropocentric attitude? Is anthropocentrism the result of misinterpretation

of humanity's egocentric belief in its own capacities and potentialities? Or does the concept of the Anthropocene invalidate humanity's anthropocentric position? From my point of view, the debate on these questions has split into two camps.

I cannot say of the first camp that it unequivocally agrees with the anthropocentric background of the Anthropocene. Rather, the point is that humanists and social scientists uncritically turned their gaze to the notion of the human, or as Malm – Hornborg says, "attracted by the idea of the anthropos as centre and master of the universe (be it productive or destructive)" (2014, 5). Rather, thinkers took advantage of the opportunity that the Anthropocene offers through its name and content. This has been reflected in the fact that discussions of the Anthropocene have begun to give rise to demands for the reconceptualization of the concept of the human or the emergence of a new philosophical anthropology (Raffnsøe 2016, Latour 2013, Latour 2017, Chakrabarty 2021).

The second camp strongly criticizes any privileging of the human. Katz's critique points out that the concept of the Anthropocene, "legitimizes the idea that the human domination of the natural world is the normal state of affairs" (2020, 23). In his view, the concept of the Anthropocene is representative of an epistemological anthropocentrism for which the non-human world is merely a tool to further human ends (Katz 2020). His premise points directly to the problem of trying to instinctively address climate change so that human interests are not undermined. Such efforts include effective governance of climate, science-informed management, and planetary stewardship (e.g., geoengineering) (Katz 2020, Morton 2016; Baskin 2019; Kostigen 2020).

The question of how to address climate change or how to intervene in Earth System processes has divided Anthropocene discourse. On the one hand, there is a significant portion of those who hold the view that humans without technology and AI are no longer capable of affecting climate change on a planetary scale. This implies that solutions to ensure the stability of the Earth System should be predominantly technological. On the other hand, a sceptical and critical attitude has developed towards this position. The Anthropocene, it points out, is a matter primarily of political and social decisions (Sfahel 2023). The problem I see is that technology is already an intrinsic part of the human world. It is one of the ways in which humanity relates to the world. Philosophical reflection on the human in the Anthropocene must take this assumption into account. In this reflection, the environmental paradox of technology should not be overlooked, because, on the one hand, it plays an important role in controlling the stability of the Earth System, even if we cannot accurately predict the actual impact of its use and, on the other, it is itself a causal factor in the disruption of the Earth System because its production, use, and disposal contribute to positive feedback.

Further, I can also approach the understanding of the human as a geobiophysical force from the perspective of problematizing the notion of force. It is a matter of thinking about what does not make humanity a force of nature rather than starting from what does make them such a force. Natural forces such as earthquakes, volcanic eruptions, lithospheric plate movements, or tornadoes are processes that arise naturally within the Earth's feedback system. I would argue that there is a difference if we say that humanity, or the results of humanity's actions, act as a force. Natural forces act linearly or non-linearly, but above all, there is no deliberate conscious force behind the turning on of negative feedback loops. However, humanity is also characterized by conscious action. Humanity reshapes the environment based on its needs rather than adapting to environmental conditions. Its action, whether conscious or not, is decidedly different from the forces of nature. This objection is also raised by Hamilton when he, similarly, points out, in relation to humanity, the requirement that: "This new "force of nature" contains something radically

different – the element of volition" (2017,15). In this respect, I find it more fruitful to think of humans as a geobiophysical power rather than a geobiophysical force. I have derived from Hamilton's proposal. As he puts it: "Humankind is perhaps better described not as a geological force but as a geological power, because we have to consider its ability to make decisions as well as its ability to transform matter. Unlike forces of nature, it is a power that can be withheld as well as exercised" (2017, 15). Katz makes a similar point: "My criticisms of the process of ecological restoration have rested primarily on my claim that the imposition of human design onto a natural system produces a human-based artifact rather than a natural entity or system" (2020, 24). Humanity as a geobiophysical power is rather a matter of the ability to make choices and the ability to act and reshape matter in a purposeful way (Hamilton 2017). Considering humanity as a geobiophysical power within the Earth System leads me to further philosophical-anthropological questions: What is the meaning or purpose of being human in the Anthropocene? Is human purpose in the Anthropocene a choice? What choice does the reality of the Anthropocene offer us when we know that the stability of the Earth System depends on our choices, and our existence depends on that stability? These ontological-anthropological questions also refer again to the problem of the anthropocentric position of humans in the Anthropocene.

Hamilton defends his critical stance on postmodernism and posthumanism, arguing that postmodernism mainly responds to, and rejects, a "monstrous anthropocentric stance". Therefore, he will focus on explaining this misunderstanding of humanity's position in the Anthropocene. He takes the position of a so-called new anthropocentrism for the Anthropocene, which articulates humanity's unique position in the Anthropocene on the basis of a recognition of the interdependence of the human and the Earth System. He assumes that it is too late to step out of the anthropocentric position, given that we have acquired a new dimension of responsibility. It is planetary responsibility for the Earth System. Further, the new anthropocentrism rejects the hasty exercise of power that results from the superior position, the arrogance of humans, and the Promethean reliance upon technology. The new anthropocentrism is based on the Anthropocene mindset, which abandons the position of the Holocene mindset because the two concepts are incommensurable. It is against exploitation and control (Hamilton 2017). According to Hamilton: "Rather than shunning or deflating human agency by embedding it in something much larger than we are, the obligation now is to embrace it, to own it. This is what I mean when I say the problem is not that we are anthropocentric but that we are not anthropocentric enough" (2017, 45).

Through Hamilton's concept of new anthropocentrism, I want to point out that it is very similar to the concept of environmental anthropocentrism that emerged in the 1990s within environmental thinking in Slovakia (St'ahel 2021). Although it originated earlier than the concept of the Anthropocene, it similarly focuses on the issue of responsibility. The explanation it provides is that in dealing with environmental crises, it is necessary to maintain a certain moral status for humans if we are to derive any normative requirements or responsibilities.

Philosophical reflection on humanity in an Anthropocene context requires extensive investigation. To ask about the purpose of human existence in the Anthropocene we should, in my view, adopt the assumption that purpose is already given to us by the Earth System itself and humanity's relationship to it. Some may argue that our purpose is to leave this planet or become extinct. However, I would argue that the purpose of humanity on planet Earth is to draw attention to maintaining the stability of the system and to foster the conditions for complex life for both human and non-human entities. At the same time, in this purpose, consideration of humans and humanity

itself cannot be lost. In relation to what has preceded, philosophical reflection on the human in the Anthropocene has a lot to contribute.

Conclusion

In this paper, I have highlighted selected assumptions that a philosophical reflection on humanity in the context of the Anthropocene could work with. The first section points to important connections between the concepts of the Earth System, planetary boundaries and the Anthropocene. To inquire about humanity in the Anthropocene requires an understanding of these concepts. The interdisciplinary collaboration of Earth System scientists with other areas of the natural sciences provides a wealth of insights that the planet Earth understood as a unified Earth System is a new assumption that has not yet been incorporated into a philosophical-anthropological perspective. Humans and their systems are included in the whole Earth System in a way that creates new questions. Mainly these are questions of the relevance of the dominance of humanity on planet Earth and its role in the Earth System.

Acknowledgements

This work was supported by a Grant programme for SAS PhD students n. APP0438, and VEGA no. 2/0110/24 Tasks of Political Philosophy in the Context of the Anthropocene II.

References

- Barton, J. (2022): Branding the Earth: Selling Earth system science in the United States, 1983–1988. *Social Studies of Science* 53(1), 49–80. available at:
< <https://doi.org/10.1177/03063127221122436> >.
- Baskin, J. M. (2019): *Geoengineering, the Anthropocene and the End of Nature*, Cham, Switzerland: Palgrave Macmillan.
- Crutzen, P. J. – Stoermer, E. F. (2000): The “Anthropocene.” *Global Change Newsletter*, (41)17–18. available at:
< <http://www.igbp.net/download/18.316f18321323470177580001401/1376383088452/NL41.pdf> >.
- Moore III, B. (2001): 2001 Amsterdam Declaration on Earth System Science – IGBP, *igbp.net* [online], 2001-07-13 [accessed 2023-11-13], available at:
< <http://www.igbp.net/about/history/2001amsterdamdeclarationonearthsystemscience.4.1b8ae20512db692f2a680001312.html> >.
- Bonneuil, C. – Fressoz, J. (2016): *The Shock of the Anthropocene: The Earth, History and Us*. London, NY: Verso Trade.
- Emmett, R. – Lekan, T.(eds.) (2016): Whose Anthropocene? Revisiting Dipesh Chakrabarty’s “Four Theses”. *RCC Perspectives: Transformations in Environment and Society* (2). Munich: Germany.
- Hamilton, C. (2017): *Defiant Earth: The Fate of Humans in the Anthropocene*, Sydney, Australia: Allen & Unwin.
- Haraway, D. (2016): *Staying with the Trouble*, London: Duke University Press.

Chakrabarty, D. (2021): *The climate of history in a planetary age*, Chicago: University of Chicago Press.

Katz, E. (2020): Anthropocentrism and the Anthropocene: Restoration and geoengineering as negative paradigms of epistemological domination, in Henning, B. G. – Walsh, Z. (eds.) *Climate change ethics and the Non-Human World*, London: Routledge, 23–32.

Kostigen, T. M. (2020): *Hacking Planet Earth: How Geoengineering Can Help Us Reimagine the Future*, New York: Penguin.

Latour, B. (2013): *An Inquiry into Modes of Existence: An Anthropology of the Moderns*, London: Harvard University Press.

Latour, B. (2017): Anthropology at the Time of the Anthropocene: A Personal View of What Is to Be Studied, in Brightman, M. – Lewis, J. (eds) *The Anthropology of Sustainability Beyond Development and Progress*, New York: Springer Nature, 35–49.

Latour, B. – Lenton, T. M. (2019): Extending the domain of freedom, or why Gaia is so hard to understand. *Critical Inquiry* 45(3), 659–680, available at: < <https://doi.org/10.1086/702611> >.

Lenton, T. (2016): *Earth System Science: A very short introduction*, United Kingdom: Oxford University Press.

Lovelock, J. (2007): *The Revenge of Gaia: Why the Earth is Fighting Back—and How We Can Still Save Humanity*, London: Penguin Books.

Malm, A. – Hornborg, A. (2014): The geology of mankind? A critique of the Anthropocene narrative, *The Anthropocene Review* 1(1), 62–69, available at: < <https://doi.org/10.1177/2053019613516291> >.

Morton, O. (2016): *The planet remade: how geoengineering could change the world*, UK: Princeton University Press.

National Research Council (1986): *Earth System Science: Overview: A Program for Global Change*, Washington, DC: The National Academies Press.

Palsson, G. et al. (2013): Reconceptualizing the ‘Anthropos’ in the Anthropocene: Integrating the social sciences and humanities in global environmental change research, *Environmental science & policy* 28, 3–13. available at: < <https://doi.org/10.1016/j.envsci.2012.11.004> >.

Podušelová, K. (2022): Man and the Anthropocene. in Mendes, J. R – Leão, P. I. – Bertolami, O. – Mendes, C. M. – Mendes, P. R. – Gonçalves, D. C. (eds): *Green Marble 2022: estudos sobre o Antropoceno e Ecocrítica Studies on the Anthropocene and Ecocriticism*, Braga: INFAST-Institute for Anthropocene Studies, 12 –135, available at: < <https://doi.org/10.21814/1822.81362> >.

Podušelová, K. (2023): The Anthropocene and the problem of anthropological constants, *Studia Philosophiae Christianae*, 59(1), 91–110, available at: <<https://doi.org/10.21697/spch.2023.59.a.05>>.

Raffnsøe, S. (2016): *Philosophy of the Anthropocene: The Human Turn*, New York: Palgrave Macmillan.

Richardson, K. et al. (2023): Earth beyond six of nine planetary boundaries, *Science Advances* 9(37), 1–16, available at: < <https://doi.org/10.1126/sciadv.adh2458> >.

Rockström, J. et al. (2009): A safe operating space for humanity, *Nature* 461, 472–475, available at: < <https://doi.org/10.1038/461472a> >.

Rockström, J. (2015): *Big world, small planet: Abundance Within Planetary Boundaries*, Yale: Yale University Press.

Steffen, W. et al. (2005): *Global change and the Earth system: A Planet Under Pressure*, Berlin: Springer Science & Business Media.

Steffen, W. – Crutzen, P.J. – McNeill J.R. (2007): The Anthropocene: Are humans now overwhelming the great forces of Nature? *Ambio* 36(8), 614–621, available at: < https://openresearch-repository.anu.edu.au/bitstream/1885/29029/2/01_Steffen_The_Anthropocene%3A_Are_Humans_2007.pdf >.

Steffen, W. et al. (2016): Stratigraphic and Earth System approaches to defining the Anthropocene, *Earth's Future* 4, 324–345, available at: < <https://doi.org/10.1002/2016EF000379> >.

Steffen, W., et al. (2020): The emergence and evolution of Earth System Science. *Nature Reviews Earth and Environment* (1), 54–63. Available at: < <https://doi.org/10.1038/s43017-019-0005-6> >.

Stáhel, R. (2021): The Roots of Slovak Critical Environmentalism, *Pragmatism Today* 12(1), 73–89, available at: < <http://www.pragmatismtoday.eu/summer2021/The-pragmatic-Roots-of-Slovak-Critical-Environmentalism-Richard-Stahel.pdf> >.

Stáhel, R. (2023): Industrial and Environmental Democracies as Models of a Politically Organized Relationship Between Society and Nature, *Studia Philosophiae Christianae* 59(1), 111–130, available at: < <https://doi.org/10.21697/spch.2023.59.A.06> >.

Williams, L. (1964): The Scientific Perspective on Man's Place in Nature, *Bios*, 35(2), available at: < <http://www.jstor.org/stable/4606531> >.

Zalasiewicz, J. – Williams, M. (2009): A geological history of climate change, in Letcher, M. T. (ed): *Climate Change: Observed Impacts on Planet Earth*, 127–142, available at: < <https://doi.org/10.1016/b978-0-444-53301-2.00006-3> >.



This work can be used in accordance with the Creative Commons BY-NC-ND 4.0 International license terms and conditions (<https://creativecommons.org/licenses/by-nc-nd/4.0/legalcode>). This does not apply to works or elements (such as images or photographs) that are used in the work under a contractual license or exception or limitation to relevant rights.
