Transversal
International Journal for the Historiography of Science

Transversal: International Journal for the Historiography of Science, 2025 (19): 1-12
ISSN 2526-2270
Belo Horizonte – MG / Brazil

Special Issue
Paul Feyerabend and the History and Philosophy of Science

The Anthropocene Goes

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Abstract:
The Anthropocene, a newly proposed geological event, continues to provoke debate across the sciences, humanities, and arts. While its stratigraphic status remains uncertain, the Anthropocene has already transformed scholarly and cultural imaginaries by entangling earth history with social history. To navigate this controversy, this paper mobilizes Paul Feyerabend's notion of epistemological anarchism, summarized in the phrase "anything goes", as a way to rethink the methodological and epistemic pluralism demanded by the Anthropocene. From "anything goes" to "anthropocene goes", the argument here emphasizes that no single disciplinary lens or universal method can adequately capture the complexity of planetary transformations. Instead, pluralistic approaches must recognize multiple temporalities, causalities, and lived experiences of the climate regime, while also confronting the exclusion of underrepresented communities from epistemic participation.

Keywords: Anthropocene; Epistemic pluralism; Epistemological anarchism; Feyerabend; Multidisciplinary

Received: August 30, 2025. Reviewed: November 20, 2025. Accepted: November 30, 2025.
DOI: http://dx.doi.org/10.24117/2526-2270.2025.i19.03

Introduction

"We might officially enter the Anthropocene epoch in 2024", as Chen Ly reported in Newscientist (December 26, 2023). As far as we know, the discourse on the Anthropocene has been a critical discussion among scientific communities. The Anthropocene was first popularized by Paul Crutzen in the 2000s as a new geological epoch, marking the impact of humans on fundamental planetary change. Humans are now considered a geological force and a new agency in the future of Earth's trajectory (Waters and Turner 2022).

The recent debate in the Anthropocene concerns the location and timing of "the golden spike" of the Anthropocene. The rationale for geological time scale-transition ratification is essential to place the Anthropocene as a new geological epoch, following the Holocene. According to recent findings from the Anthropocene Working Group (AWG), the selected Crawford Lake in Canada may be a potential site with the best geological evidence

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(see Gushulak et al. 2022; McCarthy et al. 2023). The proposal will highlight plutonium isotopes from nuclear weapons tracing at the very bottom of the lake. However, several researchers also disagree with the proposal that the Anthropocene began in the early 1950s because there is very limited significant evidence over at least 70 years, and it is more likely an ongoing process of the human age.

In response to these concerns, the AWG submitted a formal proposal in October 2023 to the Subcommission on Quaternary Stratigraphy (SQS). Suppose this proposal is accepted in the first round. In that case, further voting will be held by the International Commission on Stratigraphy (ICS) and the International Union of Geological Sciences (IUGS) before it is officially declared a new geochronological unit, marking the first anthropogenic impacts on Earth. However, the formalization of the Anthropocene within the International Chronostratigraphic Chart remains a contentious issue. Critics argue that while human influence is undeniable, its temporal onset (e.g., post-Industrial Revolution vs. mid-20th century "Great acceleration") and stratigraphic distinctiveness require further empirical validation (Smith and Zeder 2013; Waters and Turner 2022).

Nevertheless, the Anthropocene debate transcends geology, intersecting with environmental ethics, policy-making, and socioecological resilience (Holland 2016). Recognizing it as an epoch could institutionalize humanity's role in Earth's trajectory, reinforcing calls for planetary stewardship and sustainable transitions. Yet, its scientific legitimacy hinges on robust stratigraphic criteria, often excluding cultural and political narratives from consideration.

Unfortunately, the formal rejection of the Anthropocene as a ratified geological epoch by the International Commission on Stratigraphy (ICS) in March 2024 underscores a critical tension between popular environmental discourse and stratigraphic rigor (Witze 2024). Central to the debate was the absence of an unambiguous Global Boundary Stratotype Section and Point (GSSP, or "golden spike"), a physical reference layer that globally demarcates the start of a new epoch (Summerhayes et al. 2024). While human impacts (e.g., plutonium isotopes from nuclear tests, microplastics, or carbon particulates from industrialization) are undeniably pervasive, their stratigraphic synchronicity and preservation remain contested. Unlike the Cretaceous-Paleogene (K-Pg) boundary, defined by a globally distributed iridium anomaly linked to a single catastrophic event, proposed Anthropocene markers exhibit temporal and spatial variability, ranging from the Industrial Revolution's CO_2 rise (~1800 CE) to the "Great acceleration" of mid-20th-century industrialization (Steffen et al. 2015; Zalasiewicz et al. 2015).

Furthermore, the discourse of the Anthropocene has garnered significant attention in numerous scientific communities in recent years, encompassing fields such as natural sciences, social humanities, philosophy, and the arts (Castree 2014). This moment has led to the introduction of a "pluralistic turn" as a renewed concept that could potentially explain the Anthropocene's nature from various perspectives, both formally and informally. As a potential transdisciplinary field, it seeks to bridge epistemic gaps between various disciplines to understand the complex and holistic new ecological interactions between human culture, non-human ecology, and Earth itself. In general, this approach faces multiple challenges in verifying the abundance of information or proofs from many fields, specifically non-geological findings.

It is essential to avoid focusing solely on or overgeneralizing the Anthropocene within a narrow discipline and instead adopt a multidisciplinary or transdisciplinary approach. Thus, I attempt to explore Paul Feyerabend's epistemological anarchism, which proposes that there is no single methodological guideline, but rather many, for deeply understanding the nature of the Anthropocene. Embracing the transdisciplinary nature of the Anthropocene reveals how its patterns can lead to diverse perspectives on deeply rooted issues. Consequently, emphasizing epistemic pluralism could also foster broader discussions about epistemic diversity within this planetary crisis, something that positivist inquiries may

overlook, as they often focus solely on recognizing marginalized communities or alternatives from non-geological disciplines. Meanwhile, a search for the onset of the Anthropocene as a constituent body of knowledge is a key step toward future ratification of a new epoch design. This article opines that the term Anthropocene has become very diverse in its normative evidence, meanings, and methods in response to new evidence of anthropocene goes.

By embracing a transdisciplinary approach to the Anthropocene, it is possible to develop greater collaboration and exchange ideas across diverse fields. This view enables us to transcend traditional disciplinary boundaries and strive for a more comprehensive and nuanced understanding of the complex challenges presented by the Anthropocene. Simultaneously, it is essential to recognize the limitations and complexities of embracing a transdisciplinary perspective. The integration of diverse methodologies, theories, and perspectives can present challenges in synthesizing and reconciling conflicting viewpoints. However, it is precisely through this process of engagement and dialogue that we can begin to uncover new insights and approaches to address the multifaceted issues of the Anthropocene. This approach not only enriches our scholarly endeavors but also has the potential to provide more effective and sustainable solutions to the complex challenges that lie ahead.

Paul Feyerabend on "Anything Goes"

Paul Feyerabend (1924-1994) is often caricatured as a common enemy in the philosophy of science due to his proposal of epistemological anarchism. Despite many disagreements regarding the elucidation of epistemological anarchism, it commonly suggests the rejection of a single methodological rule governing scientific progress. Feyerabend's stance on pluralism faced considerable contention, especially when the philosophical vision that was mainstream when the epistemological anarchist vision was proposed was one in which a unified vision dominated the philosophy of science. This vision presumed scientific work to be cumulative and assumed that each scientist operated within a singular framework governed by a unified theory. Consequently, advocating pluralistic discourse became a challenging proposition, as it conflicted with the prevailing belief in a unified scientific vision. According to Feyerabend (1981), in *Realism, Rationalism, and Scientific Method*, its pluralistic vision can be represented by the text below:

> Knowledge so conceived is not a process that converges towards an ideal view; it is an ever-increasing ocean of alternatives, each of them forcing the others into greater articulation, all of them contributing, via this process of competition, to the development of our mental faculties. (Feyerabend 1981, 107)

Recent interpretations of this pluralistic commitment, based on that passage, have sought to render its structure more precise. In particular, Oliveira (2021) has argued that Feyerabend's vision is best understood as a form of "cosmologically divergent proliferation" an epistemic dynamic in which scientific theories do not merely multiply but diverge into increasingly heterogeneous conceptual lineages. On this reconstruction, plurality is not accidental but constitutive of scientific growth. Proliferation expands the theoretical and ontological "cosmos" by generating distinct and sometimes incommensurable alternatives, while divergence ensures that these alternatives branch away from established paths rather than converging upon a single dominant framework. Importantly, this divergence is coupled with a form of tenacity – selective retention and sustained articulation of competing lines of inquiry – so that pluralism does not collapse into arbitrariness but instead forms a structured ecology of rival yet interactively productive perspectives.

This pluralistic vision strengthens the slogan "anything goes" and its potential implications in addressing Anthropocene challenges. Before delving into these issues, I will

initially provide clarification on the meaning of "anything goes" and its significance in highlighting the importance of a diverse methodological framework.

Epistemological pluralism that is commonly represented in the slogan "anything goes" could be interpreted in two variant positions. In the negative interpretation, "anything goes" could be understood as Feyerabend in *Science in a Free Society* (1978), not proposing any substantial theoretical claim. By lack of a substantial claim, it could be interpreted only as a "tactic" in order to show the incoherence claim that is contended by embracing the accorded rule of rationality. In this interpretation, "anything goes" is not a dogmatic position that is universally embraced, nor is it considered an absolute rational rule that must be adhered to. The following retrospection supports this interpretation:

> *But "anything goes" does not express any conviction of mine, it is a jocular summary of the predicament of the rationalist*: if you want universal standards, I say, if you cannot live without principles that hold independently of situation, shape of world, exigencies of research, temperamental peculiarities, then I can give you such a principle. It will be empty, useless, and pretty ridiculous – but it will be a "principle". It will be the "principle" "anything goes". (Feyerabend 1978, 188)

The negative interpretation of "anything goes" could also be or as a form of *reductio ad absurdum* argument.

According to Oberheim (2006), "anything goes" meant that as a *reductio* argument to contend that there was not any satisfactory account for rationalism. Also, Shaw (2017) argues that this interpretation is quite problematic. In several counterarguments, Feyerabend demonstrates the need for a positive account, such as the principles of tenacity, proliferation, falsification, and revision. In what sense could this positive account be adhered to while still interpreted negatively as not proposing anything? It might still be possible to interpret those accounts as being embraced conditionally as their antecedent.

In accordance with Hasok Chang's (2021) interpretation, Feyerabend's stance on "anything goes" can be understood as a rejection of both monism and absolutism. This argument is based on both historical grounds and a charitable interpretation of Feyerabend, who was often criticized for the lack of tidiness in his thoughts. Feyerabend's critique of "scientific realists" stems from his disdain for their hegemonic view of modern science, which he had previously expressed in works such as *Against Method* and other writings from the 1970s. Feyerabend believed that one should avoid forcing a particular mode of inquiry or way of life upon others and that such actions should only be taken with great reluctance. Further, Chang (2021) argued that this was a rare occurrence and that people often underestimate the need for it. This view was outlined by Feyerabend in the final sections of *Against Method* and expanded upon in his work, *Science in a Free Society*.

There are two interpretations of the idea that "anything goes" (Shaw 2017). The first interpretation is that scientists must be opportunists, selecting rules that suit their needs. This view is widely accepted because Feyerabend often equated methodological opportunism with anarchism. In the second interpretation, Shaw argues that "anything goes" is a conclusion derived from the principles of tenacity and proliferation. This defense echoes Feyerabend's approach by advocating for the inclusion of alternative theories, such as hidden-variable theory, to provide a more open and unobstructed environment for exploring diverse perspectives within the scientific community, without being limited by established views such as the Copenhagen Interpretation in Quantum Mechanics.

Concerning the first interpretation is followed by the argument of the contingency of psychological conditions of scientists at certain historical points. According to his view, each scientist has a psychological condition that might affect their hostility toward their contender. Following Shaw (2017), this interpretation of "anything goes" is limited to the local level rather than the global level. However, this interpretation would lead to

incoherence, as this form of pluralism only operates at the local level but is operationally limited to a tentative amount of time. The second difficulty is that opportunism requires us to have foresight of all necessary knowledge that will be required in the future, which would be costly because a lack of foresight would lead to failure.

The second interpretation, which from now on will be called the pluralist view of "anything goes", is followed by adherence to the principle of proliferation and tenacity. In this view, instead of testing theory with available evidence, the theory could only be compared to another theory and complemented by its adherence to the principle of maximal testability.

Following Wray (2021), facts and theories play an intricately pivotal role in order to evaluate theory. What apparently false could also play a vital role in theory evaluation. This position, further discussed as the principle of counterinduction, draws attention to accommodate what appears to be a false theory. This endorsement to support false theory drawn from our incapability to differentiate between theoretical and observational sentence, so what supposedly unnoticed facts – the fact which is undetectable without the aid of an alternative theory – would initially been ignored. Commonly when we find the new facts that are against our proposed theory, we either accept the new theory that exposed the new facts or develop the accepted theory in order to accommodate the new facts. Engaging with the fact, according to Feyerabend, requires a principle of tenacity and proliferation. In his principles of proliferation-tenacity, as mentioned Oliveira (2021) that Feyerabend's view is that the principle of proliferation is never operative on its own but is always coupled with the principle of tenacity (attractiveness, fruitfulness, and retainment), making them two sides of the same coin.

The *principle of proliferation* urges us to invent and elaborate theories that conflict with the accepted point of view, even when that view is highly confirmed and widely accepted. The *principle of tenacity*, by contrast, directs us to select from among competing theories the one with the most attractive and fruitful features and to hold on to it even when it conflicts with evidence or faces significant difficulties. Although Feyerabend never explicitly combined these rules into a single pluralistic methodology, he consistently returned to them throughout his work. Taken seriously, this methodology requires us not to rely on a single plausible theory but to work with "a whole set of partly overlapping, factually adequate, but mutually inconsistent theories" (Feyerabend 1962, 72).

From this point, it is suggested that when faced with multiple theories, the principle of tenacity advises us to choose the one with the most appealing qualities and the greatest potential for fruitful outcomes. It advises us to stick to this chosen theory, even if it contradicts evidence or faces significant challenges. The principle of proliferation, as Feyerabend (1965) explains it, is the idea that "(One should) invent, and elaborate theories which are inconsistent with the accepted point of view, even if the latter should happen to be highly confirmed and generally accepted" (Feyerabend 1965, 105). This point invites us "to invent, elaborate, and retain theories no matter how inadequate they are" (Preston 1997). In this view, the interaction between the principle of tenacity and proliferation has a pivotal role in preventing the premature abandonment of particular theory theories against early signs of deficiency.

However, this account of adherence toward the principle of tenacity and proliferation could still be presumed as a commitment toward absolute rationality constraint. Rather than considering a rational constraint toward its pluralistic vision, it is important to articulate what the "principle" when Feyerabend introduces this term.

Those principles in the principle of tenacity and proliferation should be understood only as a matter of "rules of thumb" rather than being interpreted as an absolute rule of rationality (Shaw 2017). Complementation between rules of tenacity and proliferation in this regard should not be rational rules and there is not any context in which both of these rules are considered rational. As Feyerabend contends in *Against Method*:

> A naive anarchist says (a) that both absolute rules and context-dependent rules have their limits and infers (b) that all rules and standards are worthless and should be given up. Most reviewers regard me as a naive anarchist in this sense, overlooking the many passages in which I show how certain procedures aided scientists in their research. For in my (historical) studies. I not only demonstrate the failures of familiar standards, but I also try to show what not-so-familiar procedures have actually succeeded. Thus, while I agree with (a), I do not agree with (b). I argue that all rules have their limits and that there is no comprehensive "rationality", I do not argue that we should proceed without rules and standards. (Feyerabend 1975, 242)

The Anthropocene Goes

The Anthropocene refers to a proposed geological epoch that emphasizes the profound influence of human beings on Earth's ecosystems, particularly in light of the significant transformations brought about by industrialization and other human activities over the past few centuries. From a scientific standpoint, the Anthropocene marks a critical juncture in the planetary history. Recently, this concept has been used to describe a variety of concepts and evoke a range of human emotions. For instance, it can be seen as the beginning of a new era of human exceptionalism or a new geological agency in terms of anthropocentrism orientation, where humans have a profound impact on the structure of the ecological equilibrium of the Earth.

Discussing the Anthropocene, Feyerabend challenges us to consider the diverse and sometimes conflicting viewpoints that arise from different disciplines. By incorporating Feyerabend's epistemological anarchism into our transdisciplinary exploration of the Anthropocene, we can foster an inclusive and nuanced understanding of this complex phenomenon. In addition, it is crucial to adopt Feyerabend's concept, which urges us to recognize the limitations of traditional scientific frameworks when confronting the challenges of the Anthropocene. This challenges us to question the authority of established scientific methodologies and encourages us to consider alternative ways of knowing and interpreting the world around us. It is well known that the *[a]nthropocene goes*.

The term "Anthropocene", when written with a capital "A", designates the current geological epoch in the field of geology. In contrast, when written with a lowercase "a" for *anthropocene goes*, it signifies various alternative perspectives beyond the geological context that expand our understanding of the planet. These perspectives convincingly demonstrate that we surpassed the Holocene epoch. As a result, the Anthropocene plays a crucial role in shaping our subjective perception of our relationship with Earth's natural ecosystems.

This assertion aligns with Feyerabend's epistemological anarchism, which asserts that no single methodological perspective can be considered definitive or universal. Consequently, established rules about a singular definition of the Anthropocene have become obsolete. Instead, a return to diverse interdisciplinary approaches is proposed, which would render the Anthropocene as multifaceted as the epoch.

The concept of the Anthropocene has sparked extensive debate and scrutiny across various academic disciplines (Malhi 2017). The impact of human activity on the planet has propelled a re-evaluation of our relationship with the environment, leading to a shift in perspective from a purely anthropocentric viewpoint to one that encompasses the interconnectedness of all life forms on Earth. In addition, the concept of the Anthropocene challenges traditional understandings of human-nature relationships and raises questions about our role and responsibility in shaping the Earth's future (Folke et al. 2021; Lövbrand et al. 2015). The Anthropocene challenges traditional notions of human-nature relationships and prompts an examination of our role and responsibility in shaping the Earth's future.

The prospect of adopting the Anthropocene has raised several critiques within the natural sciences, most prominently in the geological sciences. The most dismissive critiques label the Anthropocene as a mere item of "pop culture", subject to the vagaries and fashions of environmental politics (Autin 2016). A more focused critique is that the Anthropocene, being a time in which we are immersed, is a fundamentally different entity from the previous chronostratigraphic units.

The prospect of adopting the Anthropocene has raised several critiques within the natural sciences, most prominently in the geological sciences. The idea of buzzwords, such as the Capitalocene and Plantationocene, has been suggested as an alternative nomenclature to fragment and contextualize human impacts on Earth's systems (Haraway 2015). A more focused critique is that the Anthropocene, being a time in which we are immersed, is a fundamentally different entity from the previous chronostratigraphic units. During the Anthropocene, humanity experienced a global impact that opened up new perspectives.

By accelerating knowledge in applied science, such as technology, humans can re-engineer the structure of nature. Nonhuman existence is tamed for civilized reasons. Simultaneously, it brings back the conversation on the assumption about the stability of human-nature relations implied in ontological dualism, separating nature and culture. This signals the domination and exploitation of everything that is positioned under human governance. Unfortunately, this notion is no longer applicable to the Anthropocene epoch. An unknown crisis emerging from the Anthropocene era will force human exceptionalism to become a new subject, as it should be reevaluated, and existential anxiety post-crisis becomes inevitable.

The Anthropocene has transformed the trajectory of human history and our understanding of our relationship with nature (Lewis and Maslin 2015). The Anthropocene marks a turning point on the geological timescale, in which humans are considered both the subject and object of geological factors for the current epoch (Steffen et al. 2011). The changes that occurred during the Anthropocene epoch primarily signified a shift in the outermost geological structure inhabited by humans. Humans have become the center of geo-engineering. Interestingly, debates regarding the status of the Anthropocene have been ongoing for approximately the last two decades (Rosol et al. 2023; Waters et al. 2023). These debates were initiated by geologists attempting to determine the timescale and location of the so-called Anthropocene golden spike, while non-geological approaches implied the Anthropocene as a new discourse on humanism in the post-Holocene path.

I have examined the Anthropocene debate from three distinct viewpoints: the Good Anthropocene, the Bad Anthropocene, and the Uncanny Anthropocene (Lewis and Maslin 2015). The Good Anthropocene perspective emphasizes the mastery of science and technology, as well as the control of civilization, as a means to overcome the Anthropocene crisis. Ecomodernism subscribes to this belief (Dalby 2016). The idea that advancing science and technology is crucial to modernizing the "wilderness" is often celebrated. This perspective tends to be characterized by an overly optimistic and utopian outlook, as it involves organizing and manipulating nature.

The second interpretation is dominated by eco-Marxism, focusing on the ecological rift (or metabolic rift) approach to understand the acceleration of the Anthropocene (Martín 2023). This critical approach supports the rejection of the exploitation of nature and the alienation of value, which has been fostered by late capitalism (Saitō 2022). This expanded reading of the Anthropocene can be seen through the assumption of the Capitalocene, which correlates with ecological damage during the Anthropocene crisis (Moore 2016).

Moreover, I suggest a third discourse by exploring the weird, strange, and mysterious dimensions through a combination of readings from the Uncanny Anthropocene. Appreciating the unusual and marginalized becomes a unique way to uncover different aspects of the Anthropocene (Bubandt 2018; Stark, Schlunke and Edmonds 2018). In this

view, both the Good Anthropocene and Bad Anthropocene perspectives tend to negate nonhuman relations. Even in critical Marxist readings, the consideration of nature's value within the production system may not be strong enough to reinterpret Anthropocene history in a profound way. To formulate an alternative approach, this article introduces a third discourse by exploring the dimensions of weirdness and strangeness, combining readings from the Uncanny Anthropocene.

The struggle for the recognition of the Anthropocene is not solely about the extent to which evidence can be found or determined, but also about how important the Anthropocene is for human understanding in the context of ongoing and future crises (Mahaswa and Purbandani 2023). Rejecting the geological interpretation of the Anthropocene, which tends toward anthropocentrism, serves as a starting point for re-examining the history of the Anthropocene by investigating the concepts of posthumanism and new materialism as references for exploring speculative-philosophical dimensions (Ulmer 2017). Of course, this approach is subject to further debate, but it can also be developed as an alternative framework for understanding the Anthropocene that is not influenced by strong anthropocentrism. This approach aims to demonstrate that the history of the Anthropocene is not only about human-centric changes in the geological timescale but also about the coexistence of various non-human species in constructing a new "ecological politics".

If the subject "human" refers to a person or individual, then human subjectivity involves how the human subject constructs, constitutes, and mediates its understanding of itself, the Other, and the world simultaneously – coherence in uniformity. Unfortunately, the subject failed to articulate the totality of the matter. Naturally, presenting the Other will not become problematic. However, this is a challenging task. It is not an obligation to interpret the Other, as they do not demand a singular recognition of their existence at a certain level. After repositioning multispecies relations as the Other in the context of intentional material involvement in the historical movement of the Anthropocene, another issue is revealed. Modern subjectivity is often closely tied to *multispecies collectivity* in shaping the configuration of anthropocentric status (Ogden, Hall and Tanita 2013). However, the process of human decentralization plays a crucial role in actively forming *transversal collectivity* where they coexist, not just adapting but forming a *new collectivity* while embracing "the strangest of others, the Other". This is because there is no fixed subjectivity in understanding and inventing epistemic pluralism when discussing the Anthropocene. Thus, *the anthropocene goes* means becoming-towards-many worlds in one and only Earth.

Inventing Epistemic Pluralism: Many Anthropocene(s) in One Earth

One of the following tenets of epistemological anarchism is its endorsement of interaction between opposing theories which allows the possibility to accommodate alternative "rules" that are not commonly accepted. I have explained that this strong adherence to diversity of perspectives usually leads to abundance because most scientific theories are not well supported by available data; therefore, if we only embrace theories that are well supported by the best available facts, it would lead us to not believe anything (Niaz 2020). Epistemological anarchism, which is concluded from a positive account of the principle of tenacity and proliferation, fosters competition and diversity of perspective. One of Feyerabend's well-known examples is Brownian motion first observed by Robert Brown in 1827. Decades later, the theoretical analyses of Einstein and the experimental confirmations by Perrin turned the phenomenon into a significant challenge to classical thermodynamics and strong evidence for the existence of atoms.

This form of unruliness can be found in Anthropocene research, which draws on Earth and environmental science, but its application has been extended to various fields beyond the geological sciences. Malhi (2017) examined several employments of the term "Anthropocene" from many different perspectives, for example, from an Earth system science perspective, related to human imprint on a planetary scale. The biosphere perspective emphasizes the centrality of human activities, such as capitalism and colonization, in shaping the biosphere, which is evident in the homogenization of species. An increase in biological activity would benefit humans and domesticated animals, the centrality of humans in leading the evolution of species, and the interaction between the biosphere and the technosphere. In geological perspectives, focusing on stratigraphic definition concerning "the placement of human-caused environmental changes in the context of Earth history" (Malhi 2017, 85). In addition, Mathews (2020) proposed that the Anthropocene presents a problem that invites anthropologists to adopt a new way of seeing beyond their own fields, reinvigorating their attention toward various systems of thought, such as considering the "the ghost" of modern ruins and sociotechnical assemblages.

Multiple perspectives on the Anthropocene have also been discussed by Toivanen et al. (2017). This new approach to Anthropocene research invites transdisciplinary discourse by examining how it challenges Earth science and how the Anthropocene is approached in various disciplines, including geological, biological, social, and cultural studies. For example: the "geological Anthropocene" is defined based on stratigraphic evidence; the "biological Anthropocene" focuses on anthropogenic changes in the biosphere; the "social Anthropocene" is defined in the context of social and historical-material processes; and the "cultural Anthropocene" relates Anthropocene toward various cultural representations such as creative writing and speculative fiction.

The following pluralist epistemology, in the context of the openness of the Anthropocene world, challenges the traditional understanding. Furthermore, future geophilosophy in the Anthropocene will offer multidimensional frameworks for addressing the challenges of climate change and other global crises by embracing the complexities and uncertainties of Earth's dynamics and encouraging us to explore new possibilities for sociality, life, and adaptation in an ever-changing world. However, what if our future were at the end of the Anthropocene world? This question can be addressed by further exploring catastrophic thinking (Sepkoski 2020).

With limited subjectivity, the Earth highlights its immanent nature and functions as a realm of forces that surpass the subject. They contend that Earth's dynamic materiality fundamentally predates the significance attributed to a world, both in terms of time and ontology, and cannot be confined within the scope of a subject's phenomenal "world" (Roberts, Lapworth and Dewsburyet 2022). This standpoint challenges conventional phenomenological views, which often reduce the "geo-" to a phenomenological concept of "world", and instead present the Earth as an assertive inclination towards unsettling thought and an immanent reshaping of subjectivity.

Zwier and De Boer (2023) interpreted the Anthropocene as a metaphysical event that marks the emergence of a new, nonmodern world. Thus, the emergence of the Anthropocene prompted metaphysical rethinking of the world, highlighting the need for new ways of understanding and engaging with Earth as a complex, dynamic, and interconnected system. This reconsideration ultimately leads to a shift in our perception of the Earth, transforming it from a passive object of study to an active participant in shaping the new world of the Anthropocene. This notion is also mentioned by Benčin (2024) "the multiplicity of worlds and inter-worldly phenomena" to think the concept of the Anthropocene world.

Furthermore, several paradoxes arise when attempting to care for oneself as an ecological being. This paradox arises because it is difficult to define the boundaries of Earth and the world, and to determine what constitutes a world and what does not. However, this

uncanny notion illustrates the need to reclaim our adherence to the law of the Earth to care for our end of (many) worlds, which are inherently fuzzy and cannot be easily defined or categorized. In doing so, Feyerabend's principle of "Anything goes" extends beyond the Anthropocene discourse, even if we can only consider and imagine it speculatively.

Conclusion

The notion of epistemological anarchism, which centers on its endorsement of interaction between opposing theories, allows for the possibility of embracing contradictory normative rules in order to foster diversity and transdisciplinary cooperation. By accommodating Feyerabend's approach, which serves as a rejection of a monolithic understanding of the Anthropocene, it can open the way to formulating the Anthropocene as a global problem that is not confined to a single scientific disciplinary divide. The conditions of the Anthropocene, which have taken concrete root in the environment, affect various layers of life from biological phenomena to socio-cultural relations. Based on the pluralistic vision adopted in anarchist epistemology, the Anthropocene is a collective project that necessitates solutions that must also be developed collectively. The formulation of the Anthropocene cannot be singular, as the emergence of new problems – whether social, political, or environmental – can present new answers without attempting to cancel out conflicting evidence. This allows the Anthropocene to become a holistic discourse without falling into a monolithic account.

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