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Anthropocene – Perspectives from the Environmental Humanities

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Abstract

Originating from the geosciences, the concept of the Anthropocene is also the subject of lively and often controversial discussions in the humanities and social sciences. The aim of this paper is to present particular perspectives on the recently established Environmental Humanities on the Anthropocene, in order to outline the background behind the establishment of the Environmental Humanities, and to explain the central features and intentions of this inter- and transdisciplinary field. The emerging Environmental Humanities can be seen as the humanities seeking to contribute to the study, understanding and management of the ongoing global environmental crisis, i.e. a theme that has long been – and still is – dominated by the natural sciences. Drawing on concepts, theories and methods from not only the humanities, but also from social sciences, Environmental Humanities address "fundamental questions of meaning, value, responsibility and purpose" (Rose et al. 2012: 1) in relation to the environment and environmental crises in a time of accelerating change. In doing so, environmental problems are seen as inseparable from social, cultural and human factors. At the same time, the Environmental Humanities pursue a normative claim to advance a responsible approach to the environment, in order to preserve a liveable world. Against this backdrop, broader questions open up on the concept of the Anthropocene, which not only go far beyond the question of the beginning and quantifiable extent of human influence on the geosphere, but also include questions on the causes, consequences, perceptions and interpretations, as well as responsibilities and outcomes, of the environmental crisis.

Zusammenfassung

Das aus den Geowissenschaften stammende Konzept des Anthropozäns wird auch in den Geistes- und Sozialwissenschaften lebhaft und oft kontrovers diskutiert. Das Ziel dieses Beitrags besteht darin, die spezifischen Perspektiven der Environmental Humanities auf das Anthropozän darzustellen, die Hintergründe zu skizzieren, die zur Gründung der Environmental Humanities geführt haben, sowie zentrale Merkmale und Intentionen dieses inter- und transdisziplinären Feldes zu erläutern. Die sich etablierenden Environmental Humanities können als Beitrag der Geisteswissenschaften zur Erforschung, zum Verständnis und zur Bewältigung der anhaltenden globalen Umweltkrise gesehen werden, d. h. eines Themas, das von den Naturwissenschaften dominiert wurde und wird. Unter Rückgriff auf Konzepte, Theorien und Methoden nicht nur aus den Geisteswissenschaften, sondern auch aus den Sozialwissenschaften befassen sich die Environmental Humanities mit „grundlegenden

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Fragen nach Sinn, Wert, Verantwortung und Zweck" (*Rose* et al. 2012: 1; Übersetzung durch Autoren) mit Bezug auf die Umwelt und auf Umweltkrisen in einer Zeit des beschleunigten Wandels. Dabei werden Umweltprobleme als untrennbar von sozialen, kulturellen und menschlichen Faktoren betrachtet. Zugleich verfolgen die Environmental Humanities den normativen Anspruch, einen verantwortungsvollen Umgang mit der Umwelt zu fördern, um eine lebenswerte Welt zu erhalten. Vor diesem Hintergrund eröffnen sich mit dem Konzept des Anthropozäns weitergehende Fragen, die nicht nur weit über die Frage nach dem Beginn und dem quantifizierbaren Ausmaß des menschlichen Einflusses auf die Geosphäre hinausgehen, sondern auch Fragen nach den Ursachen, Folgen, Wahrnehmungen und Interpretationen sowie Verantwortlichkeiten der Umweltkrise einschließen.

Keywords Anthropocene, Environmental Humanities, environmental crisis, transdisciplinarity, culture, narratives

1. Introduction

The debate about the Anthropocene, and the use of this neologism in publications and discussions, is so intense and diverse that its geological origins could almost be forgotten. After initially receiving widespread approval, it is currently experiencing severe criticism from various directions but continues to receive increasing attention. The Anthropocene concept radiates far beyond the geosciences and seeps into many other disciplines (c.f., *Palsson* et al. 2013; *Bai* et al. 2016; *Clark* and *Yusoff* 2017; *Hornborg* 2017; *Luke* 2017; *Toivanen* et al. 2017; *Davis* et al. 2019; *Hourdequin* 2021; *Neckel* 2021; *Antweiler* 2022; Zapf 2022).

In its original sense, the Anthropocene relates to human actions on planet Earth having reached such a magnitude that they will be inscribed in the Earth's strata and geology in the long term and will thus still be stratigraphically detectable many millions of years from now (*Crutzen* and *Stoermer* 2000). Accordingly, stratigraphers are currently striving to demarcate the beginning of such a geological era in a definite and argumentatively resilient way, in order to place the 'golden spike' accordingly.

The massive and damaging interventions of humans on geomorphology, ecology and the climate have been studied and debated for a long time, at least since the middle of the 19th century (cf., *Marsh* 1864; *Sherlock* 1922). The fact that human activities have led to serious – even irreversible –changes and damage to flora and fauna, as well as to landscapes, water bodies and the atmosphere, has also been postulated many times over the past decades and centuries (cf., *Thommen* 2020). These accounts always focus on local environments, while the debate about the Anthropocene draws attention to the irreversibility and extent of anthropogenic activities and disturbances in *all* physical Earth systems and on all scales. The concept has therefore been – and continues to be – readily and eagerly taken up, be it to attract attention with a popular term, be it to compare one's own findings with geological findings or be it to emphasise the risks and dangers of humanity's unhindered exploitative actions. For this reason, the Anthropocene is also well received in social sciences and the humanities, i.e. in those sciences in which humans and their associated actions, interactions and products, as well as their perceptions and interpretations of the world, are pivotal.

For a long time, questions about environmental change, on landscape transformations, toxic emissions, species extinction or climate change, have been the domain of the natural sciences; however, the social sciences and humanities are increasingly dealing with these phenomena, too. In several disciplines, such as sociology, economics, human geography, political science and law, philosophy, history, theology and literary studies, sub-disciplines and approaches have emerged that explicitly address the anthropogenic transformations of Earth and the accompanying environmental crisis, namely environmental philosophy, environmental history, environmental law, environmental sociology, environmental ethics, ecocriticism or political ecology among many others. Both the social sciences and the humanities participate in their own ways in this inter- and transdisciplinary reframing of their traditional orientations and methodologies. The latter rely on interpretative methodologies and hermeneutics, while the social sciences mainly work empirically with quantitative and qualitative data derived from experiments, field research, questionnaires, interviews or observations, and which are processed by various analytical and interpretative methods, such as discourse analysis.

Bringing together these different approaches and knowledge cultures, and challenging the humanities and social sciences to find common ground in focusing on environmental problems, can be considered the fundamental motivation and goal of the Environmental Humanities (EH), a field that has recently been gaining attention and importance worldwide. As the unchecked and unrestrained environmental crisis demonstrates, it is not enough to explain phenomena purely in terms of the natural sciences. Instead, research into their causes and the development of possible solutions necessarily includes the study of their political, economic and social dimensions, as well as of their reflection in language, art and literature. Environmental research on an appropriate level of complexity therefore urgently requires perspectives from the humanities and social sciences. In this sense, the Environmental Humanities deal with the human-caused environmental crisis, its reception, its imagination and its spillover into politics, the economy, society and culture.

The aim of this article is to trace the development and essential core concerns of the Environmental Humanities and to demonstrate their relevance and contribution in the context of the Anthropocene debate. The article is structured as follows. In the following chapter, early research from the humanities and social sciences is presented, concentrating on human intervention in the biosphere. Then, starting from earlier environmental debates in the humanities, the development of the EH is outlined, followed by a summary of the institutional consolidation thereof. The need for contributions from the humanities and social sciences in contemporary environmental (crisis) research is outlined in Chapter 4. Finally, Chapter 5 highlights aspects in which the specific perspective of the EH can inform the Anthropocene debate.

2. Humans influencing the biosphere: early research

Human interventions in nature, exemplified in the reshaping of landscapes, the destruction of habitats or the spreading of toxins, are not new phenomena or processes, but their intensity and harmful effects have increased significantly with the ongoing domestication of Earth and reached a scale that can definitely be considered irreversible in the sense of the Anthropocene. In science, too, these phenomena are being analysed and discussed with increasing interest and intensity. Nevertheless, science and technology contributed to the environmental crisis in the first place, since it was only in the wake of industrialisation that the feeling of human powerlessness in the face of a dominant nature gave way to a claim of supremacy and a sense of complete mastery over it. This hubris led to the environmental problems with which we are familiar today. In the following, we present some of the central researchers (and their works) who have recognised and highlighted the increasing human influences on the biosphere and the accompanying threats to nature, and who can in some ways be seen as early pioneers of the Anthropocene debate.

One of the first appeals came from the US philologist and diplomat *George Perkins Marsh* (1864), who, in "Man and Nature, or, Physical Geography as Modified by Human Action," pointed to the increasingly powerful forces exerted by humans to transform Earth's environment and appealed to protect the planet for the future. Only one decade later, the Italian geologist *Antonio Stoppani* (1873) even saw in human activities a new telluric power comparable to the great forces of the Earth and already spoke of an "Anthropozoic era". The British geologist *Robert Sherlock* (1922) analysed the amount of sediment displaced in Great Britain up to 1914 and concluded from this and other examples that man had become a "geological agent", as the title of his long-forgotten book claimed. The Russian geochemist *Vladimir I. Vernadsky* (1926/1998) came to a similar conclusion regarding the increasing power of humanity as part of the biosphere, stating: "Civilized humanity has introduced changes into the structure of the film on land which have no parallel in the hydrosphere. These changes are a new phenomenon in geological history, and have chemical effects yet to be determined. One of the principal changes is the systematic destruction during human history of forests, the most powerful parts of the film" (ibid.: 143, § 151). *Vernadsky* thus defined the term "noosphere", the "sphere of reason," as the new state of the biosphere formed by humanity's rational activities.

Such voices, however, were only partially heard, as environmental determinism dominated geography and human-environment research (cf., *Friedrich Ratzel*, *Elsworth Huntington, Halford Mackinder*) at the end of the 19th and the beginning of the 20th century. Accordingly, the environment was seen to determine human action, as well as economic, social and cultural activities, to a decisive degree. Human beings were thus confronted with a dominant and determining nature

limiting their actions. This notion relativised by *Vidal de la Blache's* (1922) concept of possibilism, while more explicit criticism of environmental determinism derived, for example, from the French geographer *André Cholley* (1942), who quite explicitly emphasised the increasing power of humans to reshape nature and landscapes. Similarly, the economic geographer *Edwin Fels* (1935) changed the perspective, analysing explicitly not the influence of nature on human economy but the converse relationship in this regard (i.e. climate, vegetation, animals, earth surface, water bodies).

From the second half of the 20th century onwards, damage caused by human economic activities became increasingly visible, either in terms of threatening the health and well-being of people or revealing the obvious destruction of natural areas. The balance of interacting factors described in ecology seemed to be out of kilter; thus, the question regarding humans' control of nature entered the focus of interest. For example, the volume "Man's Role in Changing the Face of the Earth", edited by *William L. Thomas* et al. (1956), contained studies on the processes and effects of anthropogenic interventions on seas and waters, the climate, soils, fauna and flora in various landscapes, on urban-industrial demand for natural resources as well as on waste problems. Another milestone in critical environmental research was "Silent Spring" by the US biologist *Rachel L. Carson* (1962), who warned of the environmentally harmful effects of pesticides. The book triggered a fierce political debate in the USA and ultimately led to the subsequent ban of the insecticide DDT. Nevertheless, under the influence of a technologically-based positivism and belief in progress in the 1950-60s, the view manifested itself that modern technology and science had enabled humans to operate largely independently of nature and natural constraints.

At the same time, alarming treatises on the exploitation of the planet and environmental degradation gained increasing attention. In addition to "The Limits to Growth" by *Meadows* et al. (1972), "The Population Bomb" by the US biologist *Paul Ehrlich* (1968) and "The Sinking Ark" by the British environmental scientist *Norman Myers* (1979) are worthy of mention here, as they warned with apocalyptic titles of imminent ecological catastrophes, especially in what was then called the 'Third World'. The authors explained the decline of forests, the spread of deserts and the loss of species through misuse, overuse and mismanagement by the local populations in these so-called 'developing' countries. The theoretical basis was provided by neo-Malthusianism, according to which unbridled population growth was the main cause of environmental destruction. However, such arguments led to simplistic and reductionist explanations of environmental degradation and to the implementation of rational planning and technocratic approaches by Western-trained specialists.

3. Humanities' environmental turn

The environmental problems caused by certain collectives of humans have also received – and continue to receive – growing attention in the humanities, with greater attention being paid to human ideas, expressions and perceptions. As already noted herein, the humanities deal with questions relating to meaning and significance, in order to determine what meaning, value and sense people give to the world and thereby shape it. They are concerned with interpretation, intersubjectivity and the situatedness of life, especially in relation to existential, ethical and aesthetic questions. And they ask how people perceive the biophysical world, and why they behave in this or that way towards it. *Helen Small* (2013: 23) notes that the "humanities study the meaning-making practices of human cultures, past and present".

The environmental problem has been taken up in the humanities since the 1960s on a broad front, although some philosophers and historians warned of environmental destruction much earlier (*Michelet* 1861). In "The Historical Roots of Our Ecological Crisis", for example, the historian *Lynn White* (1967) speaks of an ecological crisis that would be triggered by the transformation of land and water. He points out that "what people do about their ecology depends on what they think about themselves in relation to things around them" (*White* 1967: 1207). In this way, he accentuates that science and technology are by no means neutral but are carriers of anthropocentric thinking that devalues the non-human world. In "Wilderness and the American Mind", the historian *Roderick Nash* (1967) deals with the perception of the physical environment and the ways it is charged with meaning, while *Alfred Crosby* (1972) illustrates in "The Columbian Exchange: Biological and Cultural Consequences of 1492" how European colonialism reshaped ecosystems worldwide. The philosopher *Richard Routley* (1973) asks, "Is there a need for a new, an environmental ethic?" It is argued that philosophical and legal ethics are very an-

thropocentric and never really address the question of whether non-humans have a right to proper ethical consideration. In this vein, *Christopher Stone* (1972) provocatively asks, "Should trees have [legal] standing?".

As such voices gained wider resonance, cultural studies and the humanities as a whole began to shift in the later 20th century in a direction which could be described as an 'environmental turn'. Next to the fields of environmental history and environmental ethics, literary studies played a pioneering role in this development. 'Ecocriticism' became the new umbrella term for environmentally-oriented literary studies, which originated in the United States and Britain but quickly gained international significance (*Garrard* 2014). Ecocriticism was also one of the core domains from which the interdisciplinary EH emerged. It examined the hitherto neglected relations between literary texts and their concrete bio-physical environments (*Buell* 1995) as well as the more fundamental contribution of imaginative literature and other forms of cultural creativity, i.e. ecological knowledge and communication. As the approach of a cultural ecology of literature emphasises, the historically changing relation between culture and nature has been at the heart of literary narratives since the beginnings of culture, representing a sensorium for imbalances in and disruptions to human-environment relations that has become especially relevant in the Anthropocene (*Zapf* 2016).

This environmental turn in the humanities accompanied the foundation of various academic organisations, such as the American Society of Environmental History (1977), the International Society for Environmental Ethics (1990), the Association for the Study of Literature and Environment (1993), the International Association for Environmental Philosophy (1997), the European Association for the Study of Literature, Culture and Environment (2004) and the Society of Environmental Law and Economics (2009). These foundations clearly demonstrate the growing importance of environmental issues in the humanities, which ultimately led to the establishment of the inter- and transdisciplinary field of the EH. Initial ideas and institutional consolidation, as well as the main characteristics of EH, are briefly presented in the following chapter.

4. Institutional consolidation and characteristics of the Environmental Humanities

Under the banner *Environmental Humanities*, a certain pooling and stronger conceptualisation of the environmentally-oriented approaches and concerns of the humanities, often including the social sciences, has been taking place for some years now. In 2000, a research initiative concentrating on 'ecological humanities' was formed and first met at the Australian National University (*Nye* et al. 2013). In 2013, the *Humanities for the Environment* project was launched, initially involving the University of Sydney, Trinity College Dublin and Arizona State University.

The steadily growing interest in EH is reflected in lively research and publication activity. Research centres and degree programmes have been launched in the 21st century at more and more universities across the globe, with the aim of bringing together the humanities, social sciences and natural sciences to respond creatively to the environmental crisis. Among the leading EH centres in the German-speaking world, for instance, are the Rachel Carson Center in Munich, the Environmental Science Center Augsburg and newly established hubs in Freiburg, Bern, Cologne, Würzburg and Vienna. In 2012, the journal *Environmental Humanities* was founded, whilst in 2014, *Resilience: A Journal of the Environmental Humanities* was launched, followed by *Ecocene: Cappadocia Journal of Environmental Humanities* in 2020. Additionally, scholarly companions (*Heise* et al. 2017), introductory volumes (*Emmet* and *Nye* 2017) and several anthologies (e.g., *Oppermann* and *Iovino* 2016) and research-level edited collections (e.g., *Adamson* and *Davis* 2017; *Schmidt* and *Zapf* 2021) have been published, and various book series have been launched by publishers such as Metzler, Brill, Routledge and Bloomsbury, among others.

The question of whether the EH represent an overarching scientific discipline, a theory, a school of thought, a new approach or a movement, or whether the concept is more an agenda with a political-strategic significance in order to counter the perceived dominance of the natural sciences by combining forces, cannot be answered unequivocally. We are of the opinion that we should not understand the EH as a new discipline but instead see its interdisciplinarity, as well as its transdisciplinarity, as a major characteristic and opportunity. Their intention is to bring together, confront and interrelate cultural, historical, social and scientific dimensions of ecological think-

ing (*DeLoughrey* et al. 2015) and to consider differences between disciplines as productive rather than divisive (*Bergthaller* et al. 2014). Concepts, theories and methods from the humanities and social sciences form the basis for questions of meaning, value and responsibility in the face of environmental crises in a time of accelerating change. *Rose* et al. (2012: 2) see the EH as a response to "the need for a more integrated and conceptually sensitive approach to environmental issues", and a way of "enrich[ing] environmental research with a more comprehensive conceptual vocabulary".

It is an aim of the EH to bridge the classical division between disciplines dealing with either 'nature' or 'culture' and to develop solutions that lie beyond such a dichotomous understanding of society and the environment (*O'Gorman* et al. 2019). In this sense, *Neimanis* et al. (2015: 70) see the EH as "a term for a range of multifaceted scholarly approaches that understand environmental challenges as inextricable from social, cultural and human factors." A particular concern of the EH is to encourage the humanities, social sciences and natural sciences, as well as partners from outside the academy, into dialogue in order to respond in transdisciplinary and creative ways to the challenges posed by the environmental crisis from different perspectives and with unique approaches (*Bergthaller* et al. 2014; *Schmidt* et al. 2020). At the same time, the EH pursue a normative claim to advance an ethically responsible approach to the environment in order to preserve a habitable environment. As *Heise* (2017: 2) states, the EH "envision ecological crises fundamentally as questions of socioeconomic inequality, cultural difference, and divergent histories, values, and ethical frameworks". Furthermore, *Sörlin* (2016: 18) views them as a "symptom" of a "transformation to a new research policy regime giving more space to responsibility, risk and complexity". Nevertheless, the boundaries, objectives and research fields within the EH should by no means be regarded as sacrosanct but rather as an open format with a clearly recognisable core concern.

5. Environmental Humanities' contribution to environmental research

Since the late 19th century, the natural sciences have usually been seen as central institutions addressing the concerns of the environment or the non-human world. This assignment solidified the epistemological separation between nature and society and resulted in the dominance of the natural sciences in all environmental issues. Consequently, central expert bodies on environmental topics were – and still are – strongly dominated by the natural sciences to this day, such as the Intergovernmental Panel on Climate Change (IPCC), the International Geosphere-Biosphere Program (1987-2015), the International Human Dimensions Programme on Global Environmental Change (IHDP, 1996-2014) and Future Earth (since 2015) (*Castree* 2021). At global environmental conferences such as the Earth Summit in Rio in 1992 and its follow-up conferences, or the United Nations Climate Change Conference in Paris in 2015, it is mostly the geoscientists, climate scientists and other representatives of the natural sciences who are heard as experts. The much-discussed concepts of the "Anthropocene" (*Crutzen* and *Stoermer* 2000) or of the "Planetary Boundaries" (*Steffen* et al. 2015), which warn that too many planetary boundaries are being crossed, irreversibly limiting or endangering life on our planet, also originate from the geosciences.

It is the dominant narrative of the geoscientists and natural scientists that human activities have triggered and are driving global environmental change, which is associated with great dangers for both the planet and its human population – a 'global environmental crisis'. But can the natural sciences also provide an answer to *what* and *who* caused this crisis and whose responsibility it is to solve it? Certainly, the sciences can calculate scenarios and propose possible solutions, but these are usually limited to technological answers. In order to answer questions such as how to shape the future or who is responsible, for example, for the growing concentrations of carbon dioxide in the atmosphere (or other environmental issues), the humanities and social sciences are needed. They reveal that it is not enough to claim that 'human' activity has changed the face of the Earth, since that would be equivalent to naturalising the whole problem. The EH ask which political agents and communities are responsible and are driven by which cultural representations of nature. They further discuss which normative and political goals guide the future. In this sense, the EH demand to re-culturalise the problem, because only then we will get in touch with reality.

Accordingly, major expert panels and environment-related research projects increasingly involve humanities scholars and social scientists to provide answers to the causes of and solutions to the environmental

crisis. However, proposed answers are still often limited to economics: prices and taxes are supposed to solve these problems and promote a greener future. This underestimates that there are other questions, means, ways and goals beyond money, profit and consumption (*Castree* 2021). The EH can show other ways in this regard and ask elementary questions about the existence, value and status of humans and non-humans. The EH emphasise the need to not only scientifically and technically determine the materially manifest causes of anthropogenic environmental change, in order to measure damage and to forecast consequences, but also to take into account political intentions, social constraints and cultural world views when researching causes and assessing consequences. A shift in focus from mere technical problem-solving to a more complex awareness of the need to find resilient ways to live with the crisis, and with the ongoing task of ecological change as a long-term project, can be helpful and fruitful (*Robin* 2018).

Furthermore, it becomes clear that the findings and warnings of geoscientists and natural scientists have been given far too little consideration by governments, business and civil society, and they have not been translated into the necessary political actions. This is where the humanities and the social sciences see their role in offering strategies, arguments, information, discourses, metaphors, images and stories through which people seriously reconsider the ways in which they deal with the environment. There are still striking differences between knowledge about environmental problems and the actions that need to be derived from it. This in turn affects decision-makers in politics, business and society – as well as every individual citizen or consumer. More than often, other aspects and arguments are prioritised, or the feeling of powerlessness inhibits corresponding activities, frequently against better knowledge. Translating scientific facts or environmental problems into literature, music or art often makes them more vivid and can provoke completely different reactions. Likewise, emotions and feelings are often neglected in scientific environmental research or in the communication of political measures, albeit they actually shape debates very intensively and steer or at least influence actions. These are both fields of research and action for the EH.

6. The Anthropocene in the Environmental Humanities

The Anthropocene and EH both contain terms relating to humans (*anthropos*, *human*). Geology highlights humans' impact on the planet by proclaiming a geologic epoch of its own, while the humanities take up the environment as part of their studies, i.e. the environment as influenced by humans, as processed and interpreted by humans. The German term *Umwelt* (environment) implies in a certain way a boundary between humans and the environment. Umwelt is that which surrounds the human being, which therefore makes it separate from the non-human world. However, current structures and processes in the fabric of the animate and inanimate parts of the ecosystem cannot possibly be considered without humans. Nature untouched by humans no longer exists. Humans are part of this ecosystem, of the environment, and must be considered accordingly. In this sense, the EH are a logical reaction to the Anthropocene.

The EH deal with, frame and interpret the Anthropocene concept in different ways than the geosciences. They are less about data or measuring the human influence on the physical environment, and more about interpretation and subsequent implications. Furthermore, they emphasise the need to not only scientifically and technically determine the quantifiable causes of anthropogenic environmental change, in order to measure damage and to model consequences, but also to take into account political intentions, social constraints and cultural world views when researching causes and assessing consequences. In this sense, the EH may contribute to the Anthropocene research in various important ways, which will be outlined briefly in the following.

Conceptual ambiguities

The EH point out the internal ambiguities and paradoxes of the Anthropocene concept. *Dale Jamieson* (2017) sees in the Anthropocene the apparently contradictory idea of both superiority and powerlessness. On the one hand, it illustrates not only the power of humans in terms of their ability to carry out large-scale transformations of planetary ecosystems, but also their powerlessness, because many consequences of these transformations are unintentional and difficult to reverse, especially by individuals or small communities (*Jamieson* 2017). Consequently, the EH debate whether the Anthropocene represents the ecological apocalypse or the triumph of human

mastery over nature, or whether it should be seen as an opportunity and a call for new ecological possibilities. At the same time, the idea of the Anthropocene may continue to overestimate the human factor and underestimate existing natural forces that remain unaffected by human influences, such as earthquakes or solar radiation, as well as the ecological processes and relationships between species that shape and reshape human bodies, minds and communities (*Heise* 2017: 4). In this context, multi-species and post-humanist perspectives have become increasingly influential in the EH, along with new materialist approaches that integrate not only living systems, but also objects and inorganic matter into their ecological research agendas (*Bennett* 2010; *Zapf* 2022).

Situated histories and possible futures

The EH argue that environmental problems or problems in human-nature relations are closely linked to culture, and they are based on certain ideas, beliefs, attitudes, habits, values and practices that are cultural (*Toivanen* et al. 2017). Pathways for the future depend on understanding culture and history, because the future is not just technical but cultural (*Appadurai* 2013; *Robin* 2018). In this sense, constructive and critical thinking, as well as analytical and synthetic perspectives, are pivotal for the EH (*Bergthaller* et al. 2014; *Heise* 2017). History, or even the perception and assessment of crisis phenomena, is always context-bound and dependent on the corresponding perspective. As scholars from the Global South, such as *Whyte* (2018), have shown, the looming catastrophe associated with climate change and global environmental change is perceived as new and existential only for societies in the Global North. For indigenous peoples and colonised societies in the Global South, this catastrophe has been in full swing for centuries. Thus, it is important to help shape the necessary transformation from such a culturally and historically informed perspective. Awareness and sensitivity of cultural history, and the creative anticipation of possible futures, must go hand in hand, while short-term developments must be contextualised in longer-term processes of culture-nature interdependence.

Political critique and environmental justice

One important line of critique of the Anthropocene concept in the EH is directed against the apparent shifting of responsibility for the current environmental crisis to all people on this planet. A differentiation of societies and people into those who have mainly contributed to the issue and those who are particularly affected by it is necessary. Environmental justice and postcolonial perspectives (cf., *Davis* et al. 2019) are therefore key concerns of the EH, which go beyond the epistemic range of geological research. There is no doubt that certain lifestyles and consumption habits of particular social groups in the past and present, as well as economic practices and exchange processes, are the main causes of anthropogenic environmental change. Holding all of humanity responsible, as the Anthropocene concept seems to do, does not therefore do justice to this fact and is perceived as highly unjust. There is thus a need to speak not of *the* people, or of what the species has done to the planet, but of the inequalities and injustices in terms of causation by and the consequences of the activities of specific groups and people. As *Hoelle* and *Kawa* (2021) point out, the question arises as to whether such a crisis can really be addressed in a promising way, without seriously tackling the forms of social and ecological inequality that caused this situation in the first place. Indigenous voices and narratives of the Global South (cf., *Whyte* 2018) are therefore especially important sources of knowledge that the EH seek to integrate into their transdisciplinary models of interpreting the Anthropocene.

Science and narrative

For the EH it is particularly important to emphasise that not only evidence of ecological degradation or species extinction, but also strategies to increase resilience or ecological improvement are translated into narrations in which ecological facts are interfused with cultural histories and value judgments (*Heise* 2017: 6). The EH see the Anthropocene as a scientific term and a rhetorical tool, a metaphor, which does not merely describe the state of the planet, but also involves a call to the ecological transformation of society. The value of this metaphor lies not solely in how accurately the world is portrayed but in the insights, stories and emotions it offers (*Rickards* 2015: 281). These stories and emotions can range from shock and disillusionment to perspectives of "slow hope" (*Mauch* 2019). Understanding the Anthropocene in this sense as an action-oriented concept makes it possible to criticise dominant interpretations of environmental crisis and change, as well as to develop more equitable and sustainable alternatives. It also indicates that language, narrative and the imagination play an indispensable role in the ways in which the EH deal with the environmental challenges of the Anthropocene.

7. Conclusion

The Anthropocene concept is debated in numerous disciplines, from the geosciences and natural sciences to the social sciences and humanities. With their 'environmental turn', the humanities have accepted the necessity to focus on the challenges of the global environmental crisis. As a new inter- and transdisciplinary field, the Environmental Humanities can broaden perspectives on the Anthropocene. This includes the demand for a stronger consideration of social, political and cultural aspects, as well as the inclusion of perceptions, emotions and interpretations. In a time of increasing emotionalisation of political and social debates, widespread scientific scepticism, as well as multiple crises, the EH can contribute in indispensable ways to a critical reflection, ethical interrogation and effective communication of transdisciplinary ecological knowledge. The EH combine the insights of environmental science with the political, social, and cultural insights that are essential for the successful ecological transformation of society and the creation of a more sustainable future.

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