

Environmental humanities: an emerging field of transdisciplinary research

Humanity is facing a global crisis that has been brought about by the domestication, exploitation and degradation of the natural environment. This crisis is closely interconnected with social structures and processes, and with cultural representations – thus with history and politics, too. Therefore, historically, politically, aesthetically, and ethically reflective approaches that require the expertise of the humanities and social sciences are essential. This is precisely where the environmental humanities come into play, and in this paper, we outline their potential and their contribution to environmental research.

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The environmental crisis has become an important field of research, particularly in terms of climate change. However, despite innumerable scientific findings, the environmental crisis continues, and politicians, the economy and society are reacting hesitantly and inadequately. It is therefore high time to pay more attention to environmental research, including in the humanities and social sciences. This is what the emerging field of the so-called environmental humanities (EH) is aiming to do. EH has recently been established at various universities and is becoming increasingly visible through a lively publication activity. The new research field is also receiving increased attention and gaining in relevance in German-speaking countries.

Different from what the denomination might suggest, however, EH are not restricted to the humanities but often also include contributions and methodological components of the social sciences. Herein, we address the EH in this broad sense as a field that encompasses both the humanities and the social sciences and which is open and connectable to other scientific fields (e.g., ecology, environmental sciences) and to non-academic society and culture. This is why we treat the field as transdisciplinary.

The aim of this article is to give a historic overview of the EH research field and to illustrate its potential for the environmental sciences, using as an example our own institution, the Universi-

ty of Augsburg (see box 1, p. 226). First, we outline the origin of EH and present some common definitions. We then relate it to the environmental crisis of the Anthropocene, before analysing the strength and added value it can provide to the field of environmental studies.

Development and definition of environmental humanities

In 1998, the biologist and sociologist Hana Librová¹ offered a programme entitled *Humanitní environmentalistika* at the Faculty of Philosophy at Brno University, Czech Republic, which was probably the first use of the term environmental humanities. This pioneering effort was independently followed by the establishment of research centres and teaching programmes labelled as EH, and it continues as an ongoing process across the globe. The Royal Institute of Technology in Stockholm founded an Environmental Humanities Laboratory in 2012, seeing EH as one of the most dynamic fields in the human sciences.² The first European MA course for EH was launched at Bath Spa University, United Kingdom, in 2016 with the aim of bringing “humanities and sciences together to build creative responses to environmental challenges”.³ In Germany, the University of Augsburg founded an interdisciplinary research network in EH in 2015 (see box 1), while the Rachel Carson Center in Munich is currently establishing a Master’s degree in the field.

Numerous papers and books have been published in recent years, and even journals have been founded, such as *Environmental Humanities* in 2012 and *Resilience: A Journal of the Environmen-*

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1 www.muni.cz/en/people/630-hana-librova

2 <https://www.kth.se/en/abe/inst/philhist/historia/ehl>

3 <https://www.bathspa.ac.uk/courses/pg-environmental-humanities>

BOX 1: Environmental humanities at the University of Augsburg

The interdisciplinary research network on environmental humanities (EH) at the University of Augsburg primarily relies on the following interrelated approaches:

Cultural ecology is a literary and cultural-theoretical approach that addresses the interconnection between culture and nature and analyses the processes and products of cultural and literary creativity as transformations of this reciprocal interrelation. Fictional stories serve as a point of departure to discover new facets of the interconnections that exist between humans and nature, as well as the changes within the human-nature relationship. This not only applies to contemporary modes of climate fiction and environmental literature, but it also demonstrates an intrinsic cultural-ecological potential of literature and other forms of cultural expression that manifests itself in critical counter-discourses and aesthetic alternatives to an instrumental perception of nature (Zapf 2016a).

Material ecology focuses on material histories and investigates the relationships that exist between societies and their material and ecological environment by means of tracking the social-historical biography of certain substances such as carbon dioxide, DDT and nitrogen, as well as coffee, dirt, aluminium, milk, wood, rare earths, phosphorus and others. Published in a multivolume book series, the concept of *Stoffgeschichten* combines natural-scientific analysis with a narrative method to assess the economic, political and cultural significance of such substances. Operating at the interface between agential matter and its transformations in various contexts of society and culture, substance histories critically explore the networks of representations and interactions between societies and substances as an important dimension of EH research (Soentgen 2019).

Political ecology analyses the connections between environmental change and political processes, as well as conflicts regarding resource utilisation and environmental degradation (cf., Benz 2020, in this issue). The common commitments of political ecology include the theoretical reference to critical social theory and a post-positivist understanding of nature and knowledge production, a plurality of methods with a focus on qualitative empirical research methods, the consideration of the historical dimension, as well as the normative commitment with the aim of bringing about social justice and structural political change by taking the interests and needs of marginalised groups of the population into account (Schmidt 2013).

In addition to this triad, which is extensively represented in interdisciplinary events and research projects, other disciplines also contribute to the Augsburg EH, such as environmental history (cf., Schliephake 2020, in this issue), philosophy, sociology, theology, economics, media and communication studies or environmental ethics. What is currently emerging is an ever-expanding and intensifying exchange between these disciplines within the common EH framework, which proves to be enormously productive by providing new inter- and transdisciplinary perspectives while also bringing the specific strengths of the participating disciplines into the research process. The Augsburg EH combine critical awareness of ecological theory and methodology – including media-ecological, biosemiotic, new materialist, post-colonial and gender-oriented approaches – with a strong orientation on environmental practice. They increasingly cooperate with other environmentally-oriented centres such as the Rachel Carson Center for Environment and Society in Munich, EH at the universities of Freiburg and Cottbus (both Germany), Berne (Switzerland) and Tallinn (Estonia) to establish regional, national and transnational networks.

tal Humanities in 2014. Meanwhile, a scholarly companion (Heise et al. 2017), an introduction (Emmet and Nye 2017) and several anthologies (e. g., Oppermann and Iovino 2016) have been published, and the publishers Brill and Routledge have been contributing book series on the subject since 2014.

In the first issue of the journal *Environmental Humanities*, Rose et al. (2012, p. 2) understand EH as a response to “the need for a more integrated and conceptually sensitive approach to environmental issues [...] an effort to enrich environmental research with a more extensive conceptual vocabulary.” Similarly, for Neimanis et al. (2015, p. 70), EH is “a term for a range of multifaceted scholarly approaches that understand environmental challenges as inextricable from social, cultural and human factors”.

By means of using the expertise of the humanities and the social sciences, EH aim at extending environmental sciences to more comprehensive environmental studies, as well as developing politically and socially relevant arguments in the larger environmental debate. By supporting research that seeks to solve complex environmental problems, EH can be more than a defence strategy of the “soft sciences” in an age dominated by a logic of immediate economic utilisation (Belfiore and Upchurch 2013).

Epistemic premises and the anthropocene as context

Given the vast amount of publications and numerous institutionalisations that have already been implemented, we will only be able to delineate some key aspects of EH, which requires certain observations in regard to the expertise of the human and social sciences. As the name suggests, this field of research concerns itself with humans – as beings, who act and reason rationally (or irrationally) – as well as their activities and material and immaterial outcomes. The humanities and social sciences aim to comprehend, elucidate and anticipate not only human actions (past and present), but also human interpretations and representations of the world and of themselves (Beiner 2009, pp. 104–116). They are linked to the natural sciences by means of their shared experiential approach, whereby text analyses, interviews, participatory observations, etc. take the place of laboratory experience or experiments.

The core focus of the EH falls on humans as individuals and as a collective, as well as their works, that is, their history, their culture, their economy, legal systems, religions, documents and monuments, their art or their music, their representations of the world. In this context, not only our representations of nature, but also many parts of present-day material nature (even so-called wild, untouched nature) are intentional or unintentional results of human action. We find the history of past interventions of humans in every detail of the natural world, in every single organism; even the emotions of the supposed wild animals are to a considerable degree affected by past and present human persecution (Soentgen 2018). Here, the competence of the humanities and social sciences comes into play, inasmuch as they analyse the evolution of pre-

vailing views and representations of nature, which not only shape emotional attitudes towards the nonhuman world, but also guide human activities. EH challenge the widespread assumption that the humanities and social sciences merely concern themselves with the act of communicating research findings of the natural sciences to the public (Rose et al. 2012).

EH are critical of the radical culturalism prevalent in certain areas of cultural studies, given that it puts “nature” at risk of becoming a mere construct. Acting in this manner will eliminate any chance of productive cooperation with the natural sciences from the very outset, and given the current grave environmental problems, a cooperative strategy is crucial, as the key to ultimately life-saving changes lies in the collaboration of different knowledge cultures (on problem-solving see also Kueffer et al. 2018). One of the central tenets of our understanding of EH is that the world or nature exists independently, outside of our knowledge, and that human understanding thereof is based on patterns of perception and representation. The fact that the concept of nature is also a cultural construct and, incidentally, capable of numerous variations remains just as indisputable as the cultural appropriation of the polar bear cub that is imagined as “cute”.

The necessity of interdisciplinary collaboration between the humanities and sciences for EH arises from the common observation that the biosphere exists both independently of humans and at the same time is being transformed and shaped to an unprecedented extent by humans. This alteration of the environment, its structures and the political, societal and cultural causes and consequences thereof constitute the core focus of EH. On the one hand, this is a matter of cultural representations of an altered nature within the scope of language, literature, music, film, etc. On the other hand, it is also a matter of very specific events, their history and their future.

Undoubtedly, human societies and economies are the central causes of environmental change and fundamentally shape the face of the earth, which is why Crutzen and Stoermer (2000) speak of the Anthropocene, the geological epoch of the human. Consequently, what we refer to as nature can no longer be examined and explicated exclusively via natural scientific approaches. As the name itself implies, the Anthropocene can only be understood if researchers include concepts and findings from the humanities and social sciences. Evolutionary theory cannot explain why the blue whale species nearly became extinct and yet still succeeded at surviving. Cultural representations and political factors must be taken into account, including shifts in the economic use and cultural perception of whales, literary representations of them as co-creatures of humans, such as in Melville’s *Moby-Dick*, indigenous tales of human-whale encounters or, more recently, the adaptation of whale songs into popular and western avant-garde music, as well as worldwide political initiatives, which have hitherto protected the blue whale from imminent extinction (Soentgen 2018, pp. 116–127). Global environmental topics such as species extinction, climate change, toxic emissions and depositions obviously cannot be captured by the sole means of scientific methods, as they require historical and socio-scientific methodological ap-

proaches in order to be understood and solved (Palsson et al. 2013). It will only be possible to identify, explain and predict the global processes that characterise the Anthropocene if the humanities and social sciences become much more involved in environmental research and contribute their own specific potential of ecological knowledge to the ongoing inter- and transdisciplinary discourse.

The contribution of the environmental humanities to environmental research

What, then, can EH specifically contribute to urgently needed, multifaceted environmental research? EH are not only essential for the comprehension of contemporary nature and its representations, but they are also highly relevant for the analysis of historical processes as well as for the anticipation of future developments. A purely technological approach to global greenhouse gas emissions cannot explain why society and governments have so far failed to curb emissions, even though technological solutions have been in place for quite some time. An adequate assessment, and more promising strategies, will only become possible once social, historical and political realities are taken into account.

We propose that the contribution of EH toward multifaceted environmental research should include, among others, the following topics.

EH analyse and reconstruct environmental changes that have been brought about by individual and collective actions or their unforeseen side effects. Manifold environmental changes may be the result of natural processes such as volcanic eruptions, storm surges or epidemics. Today, however, environmental changes, even on a global scale, are mainly the result of human actions. The drying-up of Lake Urmia in Iran (Schmidt et al. 2020), the extinction of the Tasmanian wolf and global climate change are all attributable to humans, and they can only be methodically investigated in conjunction with the human and social sciences. Such phenomena can also only be elucidated and made comprehensible if they are understood as social disasters, whilst promising solutions must take into account the social, cultural and political dimensions of these crises.

EH analyse cultural representations of environmental change and their impact. The described environmental changes occur especially within the context of cultural representations within literature, art, film and language. For example, fear of the wolf in certain cultures evolved not so much through direct encounters with the animal but through stories such as fairy tales taught to children, which had a stark effect on the representation of this animal, as in media and law, regarding its resettlement. One of the objectives of EH is to explore such representations and their interconnections with scientific, social, historical, technical, etc. constellations, and in this regard, narratives are an important study object, since our knowledge of nature is often mediated through them (Heise 2017).

Narratives are like theories, albeit they appear to be less systematic. As research in literary studies illustrates, narration is characterised by a highly developed sense of complexity (Köller 2006). Through the application of complex narration techniques, such as on the level of perspective, narratives possess representational powers that stimulate thought processes, for instance regarding the development and transformation of the term carbon dioxide over the past 200 years. Narratives are of course not identical to the events to which they refer, just as a theory is not simply determined by the data to which it refers (Rothermund 1994). However, since narratives also thrive on allusions, contradictions and ambivalences, they are well suited to bringing phenomena – both their conflictual potential as well as their manifold layers – to life. Fictional variants especially develop their own independent validity and significance.

EH analyse and reconstruct norms that guide the way in which the environment is handled. The notion that EH deal with the relations between reflection and action means that they inevitably also concern themselves with societal norms and behavioural expectations. Historical and systematic studies concerning the concept of sustainability, for instance, have elaborated on its strengths and weaknesses (Kment 2019), on its multidisciplinary meanings (Kluwick and Zemanek 2019) and on its specifically cultural dimensions (Meireis and Rippl 2019). Moreover, numerous other norms implicitly govern our interactions with nature, and they need to be critically reflected – and further developed – by means of analysis and reconstruction. These approaches include the prioritisation of issues concerning environmental policy as well as nature and climate protection. It is the task of EH to question existing priorities – such as between the agendas of climate change and of biodiversity – to draw attention to alternative possibilities.

EH are inherently self-reflective. When observing and analysing environmental issues, EH remain aware that they themselves are also products of a specific human culture and are consequently bound by both a particular perspective and a historical point of view. The humanities possess a distinct culture of reflection that not only persistently reflects upon applied concepts, their backgrounds and potential alternatives, but also continuously scrutinises the theoretical basis of the employed methods. This reflexivity is essential for EH research, because it prompts scholars to perceive central notions such as “human”, “environment”, “nature” and “biodiversity” not as simply given but rather as products of conceptualisations which – like all instances of human activities – possess alternatives, in addition to existing in a perpetual state of development and cultural negotiation.

EH advocate interdisciplinary cooperation with the natural sciences. From our point of view, it remains the task of the natural sciences to describe, measure, count and model natural phenomena, to explore their causes and to predict their future development. This certainly does not mean that the scientific concepts of nature, sustainability or the environment are unquestioningly adopted

(Kraemer 2008); on the contrary, the historically and systematically well-founded criticism thereof is an imperative function of EH. Both sides will benefit from such collaboration, provided, of course, that they are willing and able to overcome any reservations that may exist in regard to terminology and methodology outside of one’s own field of expertise.

EH recognise the significant contribution of the arts concerning the human understanding of environmental issues. Diverse, historically developed and culturally-specific forms of creative expression are not merely subjects of investigation for EH, they are instead regarded as autonomous partners and integral components of the field of research. From a historical point of view, literature and painting in particular have had an immense influence on the human perception of, and interaction with, the ecological environment (Twelbeck 2020, in this issue). Technical innovations such as photography, film and digital media have had their own increasing impact and have undergone an intense and rapid development in a short time.

As current directions such as land art, performance art, climate fiction and nature writing illustrate, the arts often perceive themselves as active participants in the critical and creative response to the challenges posed by the Anthropocene. Contemporary artists frequently collaborate with the natural sciences, humanities and social sciences and rely on their findings, and in doing so, they go above and beyond simply conveying science in a tangible manner, using instead their own creative possibilities to reflect, analyse and initiate changes. Thus, by conceiving of art and literature as an area of research in its own right, EH regard the arts as an indispensable interlocutor for the analysis of culturally evolved awareness and patterns of perception, conditions of understanding and cultural norms (Westley et al. 2015, Zapf 2016b).

Concluding remarks

Due to the plurality of theoretical models in the humanities and social sciences, no single approach can be expected to nor should it become dominant in EH. On the contrary, plurality should ensure a degree of diversity that is productive regarding society’s notion and understanding of itself. Therefore, our own understanding of EH and our approach at the University of Augsburg is only one possible model among others. Many more are possible; moreover, many more should be implemented in order to strengthen EH and to realise the potential we have tried to outline here.

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All our best to you this holiday season—with an extra wish for health and happiness in the new year!

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