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The Anthropocene

Key Issues for the Humanities

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 **Routledge**
Taylor & Francis Group
LONDON AND NEW YORK

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1 Introduction

February 2000, Cuernavaca, Mexico. By the afternoon session of the annual meeting of the International Geosphere-Biosphere Programme, the vice-chairman has had it. All day long, the atmospheric chemist Paul Crutzen, who won a Nobel Prize in 1995 for his work on the ozone layer, has been listening to his colleagues lecturing on the profound changes that the Earth is currently undergoing. They keep referring to the present as the Holocene. Crutzen finally interrupts them: ‘Stop using the word Holocene. We’re not in the Holocene anymore. We’re in the ... the ... the Anthropocene!’ His outbreak is met with puzzled silence. But during the following coffee break, the scientists talk of nothing else. Shortly afterwards, Crutzen publishes a brief, programmatic paper with Eugene Stoermer, a freshwater biologist who has already been using the term informally for some time. Two years later, Crutzen publishes another much-quoted article in *Nature*. The two pieces not only describe the end of the Holocene; they also identify humans as a ‘geological force’ whose impact can be observed on a planetary scale (Crutzen and Stoermer 2000, Crutzen 2002).

Crutzen’s intervention came at the right time and in the right place. The International Geosphere-Biosphere Programme (IGBP) had been established in 1987 to study the human impact on the biological, chemical and geophysical processes of the Earth system. It was the most important international forum for the development of the new and rapidly developing field of Earth system science, focused on what was then innocently called ‘global change’. If the purpose of the program was to establish a whole new way of looking at the Earth, this had been achieved by the time it came to an end in 2015. But the discussion which started during that coffee break in 2000 is still going on, and drawing ever wider circles.

The propagation of the term ‘Anthropocene’ is not only the result of an interruption. It is *itself* an interruption. The concept encapsulates an ecological state of affairs which, in many of its fundamental aspects such as climate change, had been widely recognized for decades, but had been drowned out in the cacophony of bad news. It gives a name to the insight that humans are profoundly changing the ecology of the planet, and that they are doing so on a global scale. More than just a *crisis* which may come

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to an end at some point in the future, the Anthropocene—the ‘new’ (καινός) brought about by the ‘human’ (ἄνθρωπος)—designates an ecological *threshold*. It encompasses a vast number of different factors and locations, ranging from global climate change to disruptions in oceanic and atmospheric currents, the disturbance of the water cycle and of other important chemical cycles (e.g. of phosphorus and nitrogen), soil degradation, the rapid loss of biological diversity, pollution with toxic and non-degradable substances, all accompanying a continuous growth in the number of humans and their domesticates. Human activity moves more earth, sand, and stone worldwide than all natural processes together (Wilkinson 2005). Plastic has spread throughout the world, not just in the form of towering garbage dumps and plastic waste in the seas and rivers, but also in the form of microplastics which suffuse soil, water, and the entire food chain (Waters *et al.* 2016, Orb Media 2017). Since the Industrial Revolution, the carbon dioxide content of the atmosphere has increased by 44%, causing not only climate change but also the acidification of the oceans, profoundly transforming the living conditions of all marine organisms (Hönisch *et al.* 2012). Populations of wild fish, birds, reptiles, and mammals have shrunk by an average of 58% over the last 40 years (WWF 2016), and there is considerable evidence that the number of insects has also plummeted (Hoff 2018). Wildlife today accounts for only 3% of the biomass of terrestrial vertebrates, the rest being composed of humans (30%) and livestock (67%) (Smil 2012).

It has become more and more obvious that the Earth is entering a ‘no-analogue state’ (Moore *et al.* 2001)—a state for which there is no precedent in geological history. Many of the signs that we are crossing a geological threshold, however, are far from being recent discoveries. Since the 1960s, there have been frequent warnings that modern industrial societies were headed for ecological catastrophe. The public at large has known about climate change for more than 30 years. The ecological movement’s mantra has long been that ‘we cannot go on like this’, but even if environmental politics has more or less successfully tackled some of the symptoms of the crisis, the last few decades have shown all too clearly that things *could* and *did* go on as before. Our present is the future that the environmental movement has been warning us against. And today there is no going back.

This is why the Anthropocene is more than just a crisis—it is a radical break: a break from the unusually stable ecological conditions that characterized the Holocene. The Holocene provided the environmental conditions for everything we have come to call human civilization: sedentariness, agriculture, cities, trade, complex social institutions, tools and machines, as well as all of the media that are used to store and disseminate human knowledge. The Holocene, in other words, was the well-tempered cradle of civilization. And this inevitably leads to the question: What will a departure from these conditions mean for human civilization—for human culture, social organization, and technology, and, in a more fundamental sense, for

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humankind's relation to the world? The Anthropocene heralds a future for humanity, the contours of which we are only just beginning to apprehend.

Ironically, although the Anthropocene concept was launched in the context of Earth systems science and is epistemically based on it (see Ch. 2: Definitions), the first discipline to take it on in systematic fashion was geology—a discipline that deals with the deep past of the Earth's history. If the Anthropocene is to be defined as a new geochronological epoch which follows the end of the Holocene, stratigraphic markers must be found to demonstrate the impact of human activity in a range of locations across the planet. In order to investigate these markers, the Anthropocene Working Group (AWG) was founded in 2009, under the direction of the renowned British geologist Jan Zalasiewicz. As a research group within the Subcommission of Quaternary Stratigraphy, the AWG's main goal is to examine the evidence for formalizing the Anthropocene as a geochronological epoch. In August 2016, it presented its recommendation in favor of a formalization of the Anthropocene to the International Commission on Stratigraphy (ICS). This was unique in the history of the discipline: never was an epochal threshold set *in the present*, rather than with a delay of at least a few millennia. Predictably, the AWG's recommendation (which is only a first step along the way to formal acceptance) was hotly debated among scientists in the field. Some geologists went so far as to argue that by formalizing the Anthropocene, geology would be giving up on its scientific standards and surrendering to politics or, worse yet, pop culture (Autin and Holbrook 2012, Finney and Edwards 2016).

Another unique characteristic of the AWG is its interdisciplinarity. The group includes not only geoscientists (in particular stratigraphers and sedimentologists), but also atmospheric chemists, oceanographers, biologists, archaeologists, historians of science, environmental geographers, environmental historians and lawyers. Clearly, it is not only the geochronological formalization of the Anthropocene that calls for an approach which transcends traditional geological practice; the concept as such demands a new form of transdisciplinary exchange. Even if the AWG's ongoing research is of paramount importance for a deeper understanding of the Anthropocene, its defining factors and starting dates, the relevance of the concept does not hinge solely or even primarily on whether it is adopted into official geological nomenclature. In the past ten years, the Anthropocene has become much more than just a specialized topic for scientists. The questions the term raises will not go away even if the geologists ultimately decide against its formalization. It has become a shorthand for some of the most pressing and most wickedly complex issues of our time.

That is why the term—despite its unwieldiness—rapidly entered popular usage. In 2011, *The Economist* dedicated its title page to the topic with the headline: 'Welcome to the Anthropocene.' *National Geographic* and *Nature* soon followed suit. *The Economist's* editorial began: 'Humans have changed the way the world works. Now they have to change the way they think about

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it, too' (*The Economist*, 26 May 2011). This neatly encapsulates the challenge presented by the Anthropocene: it is about taking stock of the present and redefining our relationship to the world. Since the 2010s, a rising tide of popular and scholarly publications on the subject has swept across many different fields, encompassing the natural sciences, the social sciences and the humanities.

The humanities in particular have enthusiastically embraced the Anthropocene, along with the arts, film, and literature. The term not only attracts artists and curators, but also a growing lay audience. Exhibitions revolving around the concept have drawn huge crowds: the two-year *Anthropocene Project* at Haus der Kulturen der Welt in Berlin, the *Anthropocene* exhibition at Deutsches Museum in Munich 2014–16, Bruno Latour's curated 'thought exhibition' *Reset Modernity!* 2016 in Karlsruhe, *The Anthropocene Project* conference at Tate Modern, London, in 2015, Ed Burtynsky's *Anthropocene* exhibitions in Toronto and Ottawa, the *Museum of the Anthropocene* project in Indianapolis—to name just a few. Universities have started to include the topic in the curricula of diverse academic disciplines—not just in history and literary studies, but also in geography, law, architecture, and economics. They are also forming their own networks and research groups on the Anthropocene. While in the art world the term Anthropocene has become a buzzword signaling topicality and political relevance (see Ch. 7: Aesthetics), in academia it has not only opened up new perspectives within individual disciplines, but has been received as a call for a new, transdisciplinary order of knowledge. Tellingly, it was financial support from a cultural institution, the Haus der Kulturen der Welt in Berlin, as well as from the Max-Planck-Institut in Mainz, which provided the initial funding for the stratigraphic work of the AWG.

What the arts, academia and politics share in common in their engagement with the Anthropocene is the awareness of 'living on a damaged planet' (Tsing *et al.* 2017). This entails a consciousness of the present as the moment of crossing a boundary or facing a common danger. The historian Dipesh Chakrabarty, one of the first scholars to open up the Anthropocene debate for the humanities (Chakrabarty 2009), set out to capture the specificity of this consciousness in his 2015 Tanner Lectures. Drawing on the term 'epochal consciousness' coined by the German philosopher Karl Jaspers, Chakrabarty sought to develop 'a shared perspectival position that can inform—but not determine—competitive and conflicted actions by humans when faced with the unequal and uneven perils of dangerous climate change' (Chakrabarty 2015, p. 143). An epochal consciousness for the Anthropocene is the consciousness of a threat common to all humans, or, more precisely, a communality that derives from a global threat affecting all humankind. By definition, it precedes all cultural, political, and economic differences. Such an epochal consciousness does not offer solutions but rather tries to articulate their preconditions. It indicates a shared destiny, an ethical challenge

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which defines our situation and sets the stage for political action: ‘it is what sustains our horizon of action’ (ibid., p. 146).

An essential part of this epochal consciousness is the realization that many of the categories used to grasp the relationship between humans and nature have become obsolete. ‘Sustainability’ or ‘environmental conservation’ have long been seen as political issues among many other, seemingly more pressing, concerns, such as social welfare and economic or political stability. The Anthropocene requires us to rethink these priorities, along with the terminology we use in order to articulate them. A ‘politics of nature’ (as Bruno Latour puts it) is not just one political issue among others but deals with the very foundations on which any political community can exist. What is nature when it is fundamentally transformed by human impact? What is culture when it can no longer be understood as a human-made and locally circumscribed environment but has to be seen instead as something that interferes with the forces of nature at a planetary scale? What is humankind, if it is understood as a dominant species whose behavior profoundly affects the Earth system? What is human consciousness if it has endowed humans with a power that eludes conscious control? And what is politics if it must deal with these problems not on a national but on a global level? This book maps out some of the most important questions and ongoing debates revolving around the Anthropocene. But mapping an object that is changing so rapidly is like surveying an avalanche in full fall. What we offer, therefore, can be little more than a snapshot—albeit one that highlights structural elements and thus provides a guide for readers trying to find their way into Anthropocene thought.

In contrast to many recent books authored by members of the AWG (Zalasiewicz 2008, 2019, Ellis 2018, Lewis and Maslin 2018), this book does not come from a natural science perspective but addresses the Anthropocene from the point of view of the humanities. We nonetheless start from the assumption that the insights of the natural sciences form an indispensable basis for an adequate understanding of the Anthropocene. Quite a few contributions from the humanities tend to either ignore the scientific debates or even reject the sciences as inherently technocratic and hegemonic. Yet without some models and concepts from the sciences, neither ‘nature’, nor ‘history’, nor the human impact on the planet can be adequately grasped. Nature, for instance, can today no longer be conceived of as ‘wilderness’ or as being in a ‘natural balance’; it must be understood as a *self-regulating* system in a *dynamic* (and therefore fragile and ever-changing) equilibrium, as first outlined in Lovelock and Margulis’s Gaia Hypothesis and further elaborated by Earth system science. Likewise, a historical approach to the Anthropocene as an epochal threshold needs to take into account geostratigraphic data and debates about the starting date of the epoch which, in turn, draw heavily on environmental and colonial history (see Ch. 2: Definitions). Without models from Earth system science such as ‘planetary boundaries’ (Rockström 2009), or a basic understanding of scale

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problems in biology, ecology, and physics, some of the essential difficulties of thinking the Anthropocene must remain incomprehensible.

The Anthropocene therefore also challenges the traditional separation between the ‘sciences’ and ‘humanities’, famously encapsulated in the catchphrase of ‘the two cultures’ (Snow 1959). It calls for a new cooperation between academic fields, be it in the form of a mutual exchange of data, concepts and hypotheses, or in the form of complementary approaches to shared problems. As Jürgen Renn has argued, we need a new ‘knowledge economy’ which would be able to integrate heterogeneous forms of knowledge beyond disciplinary boundaries (Renn 2018). In this regard, the Anthropocene Working Group, although dominated by geologists, provides a model with its inclusion of historical and legal perspectives, and by being explicitly open to cooperation with the humanities. (As we write this, for example, the geologist Jan Zalasiewicz is co-authoring a book with the historian and Japanologist Julia Adeney Thomas.)

In the humanities, a similar move towards more interdisciplinary perspectives is underway under the banner of the ‘environmental humanities’. The ascendancy of the term runs almost exactly parallel to that of the Anthropocene: the publication of a manifesto on the ‘ecological humanities’ by a group of Australian researchers in 2001 marks a point of origin, but only over the last decade has the concept begun to spread at a rapidly accelerating pace, such that today many of the most prestigious universities around the world host research programs which bring together scholars from history, literature, philosophy, art history, anthropology and geography who study the cultural dimensions of ecological change (Bergthaller *et al.* 2014). Underlying these efforts is the fundamental insight that in order to grapple with the ecological effects of human behavior, one must also understand the systems of belief and the social structures which condition that behavior, and which play a decisive role in how societies react—or fail to react—to developments in the sciences. Much more than traditional forms of humanities scholarship, the environmental humanities are also oriented towards a general public, because they recognize that the ‘global environmental crisis demands new ways of thinking and new communities that produce environmental solutions as a form of civic knowledge’ (Emmett and Nye 2017, p. 7).

So the Anthropocene is forcing both the natural sciences and the humanities out of their comfort zones. While the natural sciences traditionally define themselves by an apolitical production of ‘matters of fact’, those in the arts and humanities see their task as addressing ‘matters of concern’. While scientists tend to be blind to the political impact of their findings, the humanities tend to view their objects as mere ‘discourse’ or contingent ‘social constructions’, thereby entrenching themselves in cultural relativism, as Bruno Latour has famously pointed out (Latour 2004). Today, both attitudes have become untenable. The sciences have to accept and embrace the fact that their findings—as in the case of climate science—can become eminently

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contentious, and thus political. The humanities, meanwhile, need to acknowledge the ecological and material foundations of cultures, societies and cultural artifacts. They need to see their work within the larger framework of the Earth's history, i.e. the long-term history of humankind and its cultures, its energy sources and forms of biological coexistence. The Anthropocene thus opens up new research possibilities both for the sciences and for the humanities by compelling the 'two cultures' to talk to each other.

This book focuses on the epistemological challenges of the Anthropocene for the humanities. While we aim to provide basic orientation for readers new to the debate in our early chapters, in the later chapters we expound some of the more complicated issues at work in thinking about the Anthropocene. As a guiding structure for this endeavor, we borrow three concepts from geology: *stratigraphy*, the investigation ~~into~~ historical sediments; *metamorphism*, the transformation of older rocks under the pressure of tectonic forces; and *fault lines*, the fractures and discontinuities produced by movement of tectonic plates. The first part, *Stratigraphies*, deals with the historical layers of the concept. Chapter 2: Definitions not only introduces the fundamental models that have been crucial in defining the Anthropocene, but also presents the various theories and narratives put forward to explain its causes and to demarcate a starting point. These range from theories of an 'Early Anthropocene', to the 'Columbian Exchange' or the Industrial Revolution, to the 'Great Acceleration' of the 1950s (which is the starting date suggested by the AWG). As the Anthropocene, since its introduction to a wider audience, has been subjected to strong criticism, we also review alternative terms which have been proposed such as 'Capitalocene', 'Plantationocene', 'Anglocene'—and many more. Each of these terms accentuates a different narrative about the causes and pathways that have led to the current situation. Basically, these alternative propositions (mis)understand the concept as one which names a culprit, in this case a generalized humanity. As they reject the generalizing of human responsibility implied in the 'Age of Humans', they propose alternative culprits, such as capitalism, colonial plantation economics, or the type of industrialization that originated in England.

No less contentious than the term itself is the question of its intellectual history or genealogy which we outline in Chapter 3: Genealogies. A genealogy of the Anthropocene concept must not only review predecessors such as, for example, Antonio Stoppani's *era anthropozoica*, it also has to present, as Christophe Bonneuil and Jean-Baptiste Fressoz have argued, a history of 'environmental reflexivity'. It must be an intellectual history of an understanding of the *Earth as a system*, but also a history of the many debates revolving around environmental degradation. Yet such a genealogy is itself controversial: historicization can, on the one hand, show that the Anthropocene is the result of contingent decisions that were violently contested in their time and could have turned out differently (Bonneuil and Fressoz 2016); on the other hand, such a search for 'antecedents' of the Anthropocene

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concept could deflate its radical novelty and thereby ~~deprive the concept of~~ its political impact (Hamilton and Grinevald 2015).

The second part of the book, *Metamorphisms*, deals with the way in which thinking about the Anthropocene involves taking up, but also fundamentally transforming, concepts and questions which have always been central to the humanities. Just as tectonic processes imprint a new structure on geologically older rocks, the debate about the Anthropocene forces us to rethink traditional topics, such as the distinction between culture and nature, the exceptionality of the human species, the foundations of political order, or the aesthetics of nature. As nature is transformed by human action on a planetary scale, the relationship between nature and culture has to be rethought, as we show in Chapter 4: Nature and culture. The new model of the planet as a complex system of self-regulating processes suggests that humans must be understood as an integral part of that system. But this raises a host of questions: Who exactly is this ‘*anthropos*’ from whom the Anthropocene takes its name? Who is the ‘human’ who is now to be conceived of as a ‘geological force’ (Crutzen and Stoermer 2000)? And what are the distinctive qualities which enabled our species to attain such a dominant position on the planet? This is the topic of Chapter 5: The *anthropos*. As Chakrabarty has pointed out, such questions are caught up in the tension between two very different conceptions of the human: humans as culturally differentiated beings, on the one hand, and, on the other, humans as a biological species among other forms of life, albeit with a metabolism impacting the entire planet. Current debates about humankind as the eponymous author of the Anthropocene tend to often focus either on one or the other conception. We argue that the paradoxical quality of human agency in the Anthropocene—the combination of an immense power with a frightening loss of control—can only be explained in the light of this tension.

This dual conception of the human is also fundamental to the political problems the Anthropocene raises, discussed in Chapter 6: Politics. The geological force of humanity is a cumulative effect of innumerable uncoordinated individual actions across the globe. Collective human action, in contrast, is only possible in culturally and politically differentiated groups. However, this differentiation of humanity into groups with conflicting interests also constitutes the chief obstacle to the measures which are necessary in order to limit human impact on the Earth system. The Earth thus threatens to fall victim to what Garrett Hardin has described as ‘the tragedy of the commons’ (Hardin 1968). The core problem of a politics of the Anthropocene is to develop forms of cooperation that escape this self-destructive logic. Last, but not least, a central concern of a humanities approach to the Anthropocene is that of aesthetics. Beyond the inflationary use of the term ‘Anthropocene’ in the art world, Chapter 7: Aesthetics is devoted to possible aesthetic strategies attuned to a post-natural world. We believe that an ‘Anthropocene aesthetics’ must address the problem of aesthetic *form*. The question to be asked is how new (and old)

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forms can represent what Thomas Friedman has aptly called the ‘global weirding’ of our life world (Friedman 2010).

While *Metamorphisms* emphasizes the continuities between traditional humanities scholarship and Anthropocene thought by tracing the transformation of long-established problems, the chapters in the third part of the book focus on *Fault lines*, areas in which the Anthropocene forces us to break with established terminology because they pose entirely new epistemic challenges. Here, we present new perspectives for research, but also point to some of the epistemic difficulties of thinking about the Anthropocene. Chapter 8: Biopolitics addresses an aspect of the Anthropocene that is often excluded from polite conversation: population growth had been a central concern of the early environmentalist movement, but has since been declared taboo. The Anthropocene requires a new take on this issue which focuses not only on human populations but on questions of coexistence and symbiosis with non-human species. Another perspective that has rapidly been gaining ground in the humanities is addressed in Chapter 9: Energy. It considers the energy regimes at the foundation of human cultures. The replacement of the ~~agrarian-solar~~ energy regime by fossil fuels in the course of the Industrial Revolution not only enabled new forms of technology, but also propelled changes in social structures, ethical values and subject formation. ‘The mansion of modern freedoms’, notes Chakrabarty, ‘stands on an ever-expanding base of fossil-fuel use’ (Chakrabarty 2009, p. 208). Cultural history, but also literary and art history, ought to take this base into account in order to be able to grasp the historical path that led us into the Anthropocene. It will also help us to understand the social and individual resistances we face in the restructuring of our energy systems.

The two final chapters in the section *Fault Lines* deal with a fundamental epistemological difficulty in thinking about the Anthropocene: the collision of different quantitative, spatial, and temporal magnitudes. Indeed, Timothy Clark has argued that the ‘Anthropocene is itself an emergent scale effect’ (Clark 2015, p. 71). This problem, we argue, presents itself in two different ways. Firstly, as a question of quantitative and spatial scales, to which Chapter 10: Scales I: The planetary is devoted. Such problems arise in the disjunction between the individual and the cumulative consequences of human action. The notion of the planetary, often invoked in relation to the Anthropocene, implies a tension between spatial scales: the singularity of the local and abstractness of the global. A second, and separate, question is that of the temporal magnitudes invoked by the collision of Earth history and human history. While the former involves the ‘deep time’ of very long, relatively event-less time periods, human history is based on the ‘shallow time’ of human generations. How can a historiography attuned to the Anthropocene fold these scales into each other? In Chapter 11: Scales II—Deep time, we deal not only with the challenges large temporal scales pose for historiography, but also those of a ‘deep future’ that radically exceeds the horizons of modern strategies for managing the future.

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In our concluding outlook we ask how ‘Western’ the Anthropocene concept really is. The relative lack of interest in the term in regions such as Asia or Africa does not ~~necessarily~~ mean that these regions are not affected by it. On the contrary: the shape of the new geological age will depend crucially on developments outside the ‘West’, and particularly on the economic and technological dynamism of Asia. In the final chapter, we examine how the different ways in which modernity was experienced outside the old industrial nations shape different responses to the Anthropocene, and what these responses might bode for the future.

This book joins an already very large body of publications on the Anthropocene, many of which take wildly divergent positions. Needless to say, the approach we have followed in this survey is not the only one possible. There are, however, a few basic conceptual decisions that have guided our considerations.

(1) First, we consider the historicization of the Anthropocene—both as a phenomenon and as a concept—to be indispensable. While cataloging the competing ‘narratives’ of the Anthropocene is a useful exercise insofar as it helps to understand some of the concept’s crucial implications (Bonneuil 2015, Dürbeck 2018), it cannot be more than a starting point. Rather, current debates must be understood as the culmination of a long history of ecological reflexivity, as Bonneuil and Fressoz (2016) have argued. Such a history includes, on the one hand, the conceptual forerunners of modern Earth system science, from Buffon’s *Epochs of Nature* ([1778] 2018), to George Perkins Marsh’s *Man and Nature* (1864), to the *Limits to Growth* (Meadows *et al.* 1972) and the Gaia theory (Lovelock 1979). On the other hand, it traces the continuing struggle to understand the practical significance of this knowledge. To historicize the Anthropocene also means to create a new perspective on the cultural and species history of humanity—from the paleoanthropological ‘deep history’ of *homo sapiens* to the energy sources and inter-species relations on which cultural evolution is based. Rather than reject any historicization of the Anthropocene (Hamilton 2015), we are concerned with unfolding the historical implications of the term. This involves new forms of historiography which are able to make sense of the rapid ascendancy of our species from a mid-sized, omnivorous primate into a geological force.

(2) Secondly, we are not convinced that thinking about the Anthropocene necessarily calls for a new ‘flat’ *ontology* (Bryant 2011). Theorists such as Timothy Morton, Graham Harman, Bruno Latour, Donna Haraway, Jane Bennett, Anna Tsing and others have argued that the Anthropocene is first and foremost to be understood as an *ontological* shock—‘a quake in being’ (Morton 2013, p. 1). According to Morton, the idea of ‘the world’ as a stage or container of human existence and experience can no longer be maintained in the Anthropocene: ‘the world as such—not a specific idea of world but “world” in its entirety—has evaporated’ (*ibid.*, p. 101). Such a position means abandoning the classical distinction between subject and object, as

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well as the epistemic dichotomy between a human observer and an observed world of things which Latour views as the core of the ‘modern’ mode of being-in-the-world (Latour 2017). The ontological approach to the Anthropocene also calls for the attribution of ‘agency’ not only to humans but also to things: non-human forms of life, the Earth system, or the material world in the broadest sense. Such a conception of agency erases the distinction between purposive, intentional action and causal efficacy (see Ch. 5: The *anthropos*). As a consequence, it also downplays the distinction between beings endowed with consciousness and cognition, and beings which lack these faculties. The traditional ‘anthropocentrism’ of Western metaphysics is countered with a ‘strategic anthropomorphism’ (Bennett 2010, pp. 98–9), and the issue of coexistence with non-human beings moves to the center of ethical and political debates (Haraway 2003).

There is no doubt that a modern epistemology that sees ‘nature’ or the ‘world’ merely as the passive and stable background of human action has become untenable in the Anthropocene. It is equally clear that the human power to affect the Earth system cannot be understood merely in terms of the intentional actions of conscious agents. Nonetheless, we do not believe that one can do justice to the epistemological, political and ethical challenges of the Anthropocene by leveling out human and non-human qualities and capacities. The focus on ontology, in our opinion, distracts from more urgent problems, such as *ethical* questions regarding human responsibility and *political* questions of collective action (see Ch. 5: The *anthropos*, and Ch. 6: Politics), *epistemological* questions regarding incommensurate scales (see Ch. 10: Scales I, and Ch. 11: Scales II), or the question of *aesthetics* in times of an unnatural nature (Ch. 7: Aesthetics). The indiscriminate use of the term ‘agency’ has a tendency to obscure or even negate human responsibility for past and future actions.

(3) This brings us to the third point. The calls for a new ontology for the Anthropocene usually locate the ‘original sin’ of modernity in an anthropocentric ontology which elevated the human to the center of creation, or, in the more secular versions of this narrative, to the position of a privileged external observer and demiurgic transformer of nature. The arrogant belief in human exceptionalism is supposed to be the wellspring of ecological destruction. In order for the Earth to have a future, this belief must therefore be rooted out. Yet the sympathetic image of a different, ‘non-anthropocentric’ human being as it is sketched in some of the new ontologies—one who is symbiotically entangled and striving for respectful coexistence with non-human beings (Haraway 2016)—ultimately cannot be anything other than precisely that: an *image* which is addressed to humans themselves, appealing to their unique capacity to regulate their behavior in accordance with ethical norms. Anthropocentrism is not so easily overcome. But thinking about what makes humans ‘special’ in comparison with other living beings does not automatically imply a normative claim to human superiority (Hamilton 2017, p. 43). On the contrary, the question of what enabled

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humans to become a dominant species and geological force points to the indefinite, ambivalent nature of humans. Humans thus are *at once* natural *and* cultural beings. On the one hand, they are one biological species among others, a product of evolutionary history, entangled in mutual dependencies, with needs, behaviors, and a genetic code that differ only marginally from those of other living organisms. On the other hand, they are capable of, and condemned to, self-reflection. Lacking instincts and adaptations which would fit them to a particular ecological environment, humans are perpetually compelled to secure their own being through images, stories and social institutions that tell them what it means to be who they are—men or women, rich or poor, citizens of this or that country, rational beings, bearers of universal rights, and, finally, merely one biological species among others.

In several of his writings, Dipesh Chakrabarty has emphasized the tensions integral to the Anthropocene: a humanity that is *at the same time* culturally and economically differentiated *and* a unitary species; a history that is *at once* a history of the Earth *and* a history of human societies; an active power that is *both* a blind geological force *and* a consciously exercised capacity. We share Chakrabarty's perspective. In ancient philosophy, the 'epoche' referred to a suspension of judgment, a holding-out in uncertainty. To think about the Anthropocene as an epoch in this sense means not to resolve but rather to recognize and work through the tensions, the contradictions and aporias of the present. We are less interested in naming culprits—be they 'capitalism', 'modernity', or 'Western thought'—than in tracing these fault lines of the Anthropocene. They have served us as points of orientation in negotiating this difficult terrain.

Ever since Crutzen's intervention at the turn of the millennium, the Anthropocene has been a disruption. It is also—as we became painfully aware in the course of writing this book—a disruption of the intellectual routines of the humanities. It involves dealing with unfamiliar bodies of knowledge and with scientific data that can no longer simply be analyzed as 'discourse' and filed alongside other discourses. It requires that we familiarize ourselves with problems that are alien to established traditions of humanistic inquiry, such as the non-negotiable ecological and energetic foundations of culture. It also means that subject matter which stood at the center of the humanistic enterprise—local, relatively homogeneous cultural traditions and short, hyper-differentiated historical periods—is cast in a strange and unfamiliar light, perhaps sometimes even consigned to irrelevancy. In all academic disciplines, as well as in politics and the arts, the Anthropocene demands that we look at 'the bigger picture'. It calls for the development of a different, systemic perspective, and the rethinking of the relations between the particular and the universal; between the 'shallow' history of culture and the 'deep' history of life; and between local, individual practices and their cumulative impact on the planet. While the natural sciences work towards a description of a world whose complexity always remains elusive, the humanities are tasked with the formulation of an epochal consciousness. In the face of a multitude of life

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forms, divergent world-views and conflicting interests, they must articulate communality. More than ever, the epochal consciousness of the Anthropocene is pervaded by fractures, tensions and contradictions. The challenge is not to resolve them, but to account for them as precisely as we can. This book is a cartography of these fault lines.

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