Our One and Only Planet

Dipesh Chakrabarty: *The Climate of History in a Planetary Age*. The University of Chicago Press, 2021.

The Ambiguity of Temporalities

Human existence is tied to the biosphere of the planet Earth. The precursors of current humans showed up on the planet in the course of biological evolution a few million years ago. The biosphere was already there, in pretty much the same shape as today; humans arrived at a table that was well set up.

Earth has its own life cycle that extends some 4,5 billion years into the past and perhaps a similar time span into the future. Humans have been around during a vanishingly short slice of the recent planetary history. Nevertheless, as we have recently realized, human activities on Earth are drastically changing the conditions on this planet.

Dipesh Chakrabarty is a historian who has struggled to understand what the planetary perspective means for the humanities. Something new is brewing: Earth, as our material abode, is something more than just an inanimate object to adore from a far, as it were. But it turns out this novel and enriched perspective opens up a whole range of complications. I will explore these using *ambiguity* as my methodological perspective.

Ambiguity is an invitation to clarify a situation in which two (or more) apparently conflicting interpretations present themselves. Thus, ambiguity can serve as a valuable tool to find clear formulations for the available alternatives. A good model is the well-known visual ambiguity of the duck/rabbit figure: you cannot perceive both figures simultaneously, they can be seen only in turns, one after the other. A conceptual ambiguity can be as gripping; if an ambiguity is heavily laden with metaphysical preassumptions like ‘nature’ vs ‘nurture’ in developmental psychology it may have a paralyzing effect. [1]

Chakrabarty entered the discussion on the current human condition by publishing a widely read essay entitled ”The climate of history: four theses” (Chakrabarty 2014); a revised version of the essay is reproduced as the first chapter in *The Climate of History in a Planetary Age*. [2] He describes his own intellectual awakening when coming face-to-face with the current environmental crisis (p. 25):

> As the crisis gathered momentum in the last few years, I realized that all my reading in theories of globalization, Marxist analysis of capital, subalterm studies, and postcolonial criticism over the last twenty-five years, while enormously useful in studying globalization, had not really prepared me for making sense of this planetary conjuncture within which humanity finds itself today.

The book is a report on what Chakrabarty has found out on the intellectual journey that followed; literally, as each one of the chapters of the book draws upon texts that he has published while on the road. As a consequence, Chakrabarty's argumentation is convoluted: he repeats the main message several times in different chapters, framed somewhat variably, and perhaps most confusingly, the introductory chapter draws the key claims together in yet another mood.

In the Introduction Chakrabarty formulates the goal of the book as follows (p. 1):

> This book is about this emergent object-category of human concern, the planet, and how it affects our familiar stories of globalization.

The crux of the formulation is that the planet is a new *object-category*. For Chakrabarty, a historian, this formulation opens up a new perspective on the layering of historical temporalities; as he explains (p. 18-19):

> The category ”planet” allowed me to see, and ultimately to say, that contemplating our own times requires us to behold ourselves from two perspectives at once: the planetary and the global. The global is a humanocentric construction, the planet decenters the human.

The terms *Anthropocene* and *Great Acceleration* form the background of the argument. Atmospheric chemist Paul Cruzen originally suggested that human-induced modifications have pushed the planet into a new geological epoch that he called *Anthropocene* (Crutzen 2002). The suggestion has created an unending flow of commentary and elaboration; to specify the idea, I cite a definition from the introductory paragraph in Steffen et al. (2018):

> The Anthropocene is a proposed new geological epoch based on the observation that human impacts on essential planetary processes have become so profound that they have driven the Earth out of the Holocene epoch in which agriculture, sedentary communities, and eventually, socially and technologically complex human societies developed.

This formulation has a subtext: when entering the Anthropocene we face such upheavals in the planetary conditions that the viability of complex human societies is endangered. [3] *Earth System Science* (ESS) has grown up as a multidisciplinary research effort to chart the geophysical dynamics of the planet Earth and find out how much humans have messed up things. Steffen et al. (2007) adopted the term *Great Acceleration* to refer to the decades following WW2 during which human influence intensified; the term has stuck.

Earth System Science provides the background for Chakrabarty's discussion; he summarizes the message he reads out of the research field as follows (p. 68):

> Earth System Science (ESS), the science that among other things explains planetary warming and cooling, gives humans a very long, multilayered, and heterotemporal past by placing them at the conjuncture of three (and variously interdependent) histories whose events are defined by very different timescales: the history of the planet, the history of life on the planet, and the history of the globe made by the logics of empires, capital, and technology.

This tripartite division is an important element in Chakrabarty's argument; he repeats it in several chapters in variable phrasings. The division brings the multiplicity of historical temporalities onto the agenda. However, I think the transitions between different temporal layers are more ambiguous than the phrasing implies.

To begin with, the two earlier histories that Chakrabarty takes up are intimately connected together: life originated on Earth very soon after the planet had stabilized as a geophysical entity, and life has decisively molded the face of the planet. As is widely agreed nowadays, the conditions necessary for life on Earth were not ”originally” there, the favourable conditions were created by life itself. Lenton and Watson (2011) offers an overview of the revolutions Earth has gone through in its planetary history, and Wilkinson (2023) places global ecology into the whole picture. Thus, it is questionable to what extent these histories can be distinguished at all.

Secondly, while there is no doubt that the history of human societies, the most recent layer in Chakrabarty's scheme, has taken shape under predetermined constraints set by the planetary history, human-scale histories are modifying those constraints; this is at the core of the notion of Anthropocene. An essential question is, in my view, how strict the distinction between planetary constraints and human-induced modification of the constraints actually is.

This specific question is at the focus of Chakrabarty's work. His perspectival move is to draw a distinction between *global* and *planetary* as attributes that frame the historical trajectories of human societies (p. 86):

> The global, as I have said, refers to matters that happen within human horizons of time – the multiple horizons of existential, intergenerational, and historical time – though the processes might involve planetary scale of space. Planetary processes, including the ones that humans have interfered with, operate on various timetables, some compatible with human times, others vastly larger than what is involved in human calculations.

Chakrabarty proposes new ways to articulate the normative standards that correspond to these attributes. The well-established term 'sustainability' is, in Chakrabarty's view, firmly human-centered; it articulates the aim to maintain such conditions on Earth that are favourable for human sustenance. By contrast, he claims, the perspective focusing on the planet requires something else (p. 83; emphasis in the original):

> The key term in planetary thinking that one could contrapose to the idea of sustainability in global thought is *habitability*. Habitability does not reference humans. Its central concern is life – complex, multicellular life, in general – and what makes *that*, not humans alone, sustainable. What, ask ESS specialists, makes a planet friendly for complex life for millions of years? … The question at the center of the habitability problem is not what life is or how it is managed in the interest of power but rather what makes a planet friendly to the continuous existence of complex life.

This distinction implies that human sustenance on Earth depends on such constraints that are totally off our normal horizon of experience. Such boundary conditions, or parameters in Chakrabarty's terms, are independent of the structures of society that we create (p. 41):

> These parameters are independent of capitalism or socialism. They have been stable for much longer than the histories of these institutions and have allowed human beings to become the dominant species on earth. Unfortunately, we have now ourselves become a geological agent disturbing these parametric conditions needed for our own existence.

This argument is grounded in the contrast Chakrabarty constructs between the respective temporal scales. He repeats the contrast in a different wording on p. 151: "deep pasts and

futures are not amenable to human-centered political thought and action”. This contrast is, no doubt, true in a literal sense, but when pondering upon the current situation, there is a mediating element. The very idea of Anthropocene implies that ”humans have interfered with” critical planetary processes (see the citation above). Doesn’t this imply that some of this interference, at the very least, is amenable to decisions made today and tomorrow? In other words, politics matter. Chakrabarty locates the preconditions of politics within a pair of contrasts, as follows (p. 91):

> Any theory of politics adequate to the planetary crisis humans face today would have to begin from the same old premise of securing human life but now ground itself in a new philosophical anthropology, that is, a new understanding of the changing place of humans in the web of life and in the connected bur different histories of the globe and the planet.

The first contrast is between the security of human life and the position of humans in the web of life; the second is beween the (anthropocentric) *globe* and the (nonanthropocentric) *planet*. Both contrasts are described as ontological in nature, i.e., as being grounded in the material reality that faces us.

In the citations above Chakrabarty emphasizes carefully that the temporal scales he distinguishes are in interaction, but the bottom line is an assumption of ontological contrast. The notion of ambiguity that I took up above provides a fruitful perspective to make sense of such contrasts. No ready-made solutions are on offer such that could be deduced from either of the alternatives; we need ways to explore the interconnections. For us humans pondering upon the conditions of existence of the human society, both the global and the planetary temporal horizons are important, but they are in interaction; we ought to understand how different temporalities mingle together.

We get a better understanding of the dilemma by taking a closer look at the background of ’the Anthropocene’.

The Anthropocene and Its Discontents

Where did the notion of the Anthropocene come from; what does it mean; what does it do? These questions may sound obscure, but I am pursuing a thought expressed by literary scholar William Empson (1951, 39) as follows:

> A word may become a sort of solid entity, able to direct opinion, thought of as like a person; also it is often said (whether this is the same idea or not) that a word may become a “compacted doctrine”, or even that all words are compacted doctrines inherently.

This characterization implies that concepts of a high level of generality such as ’the Anthropocene’ have agency: when a powerful concept gains a position in publicity, its scientific validity and reliability are taken as self-evident, and the term itself begins to tell a story as a synecdoche. This should not happen automatically; the scientific background of generalizing concepts requires scrutiny. Two mutually complementary perspectives are on offer for this endeavour: First: How firmly is the concept supported by empirical evidence?; second: How stable is the framing of the concept in the theoretical landscape in which it is situated?

The empirical backing of ’the Anthropocene’ has two branches: on the one hand, stratigraphy, i.e., the traces of planetary history detectable by geological means; on the other hand, the actual consequences of human-induced changes on the face of Earth. Chakrabarty seems inclined to keep these dimensions separate; he values the stratigraphic part of the empirical backing higher that the actual traces of human-caused upheavals. The distinction he draws between ’sustainability’ and ’habitability’ reflects this inclination. An explicit formulation of this duality is In the chapter ”Anthropocene Time” where he laments that in the public discussion, the ’sustainability’ concern tends to roll over what he calls ’planetary’ (p. 156):

> [I]n most discussions of the Anthropocene, questions of geological time fall out of view, and the time of human world history comes to predominate. This one-sided conversion of earth-historical time into the time of world history extracts an intellectual price, for if we do not take into account earth history processess that out-scale out very human sense of time, we do not quite see the depth of the predicament that confronts humans today.

Earth System Science provides the conceptual anchor of Chakrabarty’s argument. Using an approach he borrows from Bruno Latour, Chakrabarty promotes Earth System Science to a kind of ’subject position’ in the debates concerning the Anthropocene (p.177):

> If we imagine Earth system scientists as – in a Latourian vein – spokespeople for the ”Earth System,” the act of folding back into the world-historical time of humans the

> geobiological time of the planet's history effects another fascinating shift. It is as if the Earth system, the planet, were saying to the conscious part of its constituents, humans – to borrow again from Lacan's language – "you never look at me from the place from which I see you." [4]

This is a complicated thought, but well worth looking at closer. The context is Chakrabarty's distinction between two levels of agency: *global* which is anthropocentric, and *planetary* which comprises "the distributed agency of the earth processes" (p. 176) and is way beyond human powers of influence. In other words, the thought reproduces Chakrabarty's distinction 'global' vs 'planetary'; human-centered world history is encapsulated in an immensely more potent process of planetary history. [5]

What elevates Earth system scientists to the position of "spokespeople"? In an earlier chapter Chakrabarty ponders upon this question noting that "[a] nonanthropocentric view of the world … is integral to Earth System Science" (p. 100). Thus, by promoting a "nonanthropocentric view" Earth System Science gives a reliable perspective on what the fundamentally nonanthropocentric planetary constraints on the existence of complex societies are.

So far so good; science is the only game in town able to make claims that carry sufficient weight to become meaningful (as my late colleague and friend Chuck Dyke used to say). However, I find the view that the challenge of the Anthropocene can be characterized without specific reference to human affairs completely unconvincing. We face an ambiguity; on one side are planetary constraints that are out of reach of human actions, on the other side are meaningful decisions we humans can actually make. The ambiguity is about how to connect these points together; the poles can be specified as follows:

[A] On *the constraints*: the Anthropocene perspective eliminates certainty as regards the preconditions of human existence on Earth. The material progress of industrial societies that has culminated in the 'Great Acceleration' of the post-WW2 decades has supported a view that we can trust on the continuity of material conditions suitable for human cultures and civilizations; 'ontic certainty' is the phrase Chakrabarty quotes from Husserl (p. 179). This view is completely outdated.

[B] On *the domain of human actions*: As denizens of this planet we humans have acquired powers to influence such aspects of the environment that are immediately significant for us; not all of them, certainly, but quite a good portion. These aspects are not completely

uncoupled from the planetary constraints. Take the warming of the climate: the very idea that human actions increase warming implies, as its counterpart that human actions can mitigate warming. The horizons of planetary time that Chakrabarty holds separate are in intimate interaction. When ’ontic certainty’ is rejected, the question is: How to acquire such an understanding of the relevant temporalities that alternative means to enhance human sustenance can be articulated?

Let’s look closer at how an awareness of the global scale of human-caused detruction has taken shape; the history is interesting and makes the current situation more comprehensible. At the distant background are journeys and explorations that helped various human communities to spread to all continents of Earth except the Antarctica; this happened tens ot millennia ago. Every established society has been surveying its surroundings ever since; ultimately, the European series of conquests known afterwards as the ”Age of Discoveries” lead to the conclusion that Earth is a ”closed space”; Clarence Glacken (1967) is a masterful history of the intellectual and cultural dimensions of this process.

Citing environmental historian Donald Worster Chakrabarty notes (p. 82) that ”the very idea of the earth as something finite belongs to the family of certain deeply anthropocentric ideas of which environment and sustainability are two important members.” This is a credible claim: the disoveries were driven by an urge to exploit and appropriate for human purposes. However, the brutality of the real history does not negate the novelty of the conclusion on the finiteness of Earth as a human abode.

Most crucially, this was a conclusion backed by experience. Pure conquest and plunder were gradually complemented with aspiring geographical, geological and biogeographical exploration and, as a consequence, an increasing understanding of what kind of place Earth actually is. Glacken (1967, 373) names Jesuit-trained scholar Giovanni Botero (late 16th century) a major promulgator of a novel ”theory of the total environment” which viewed ”the earth as a limiting factor, in contrast with the older environmental theories used mainly to explain cultural differences.” In the early Renaissance scholars whom Glacken calls ”physico-theologists” developed theories of the earth as a habitable planet. He particularly values the work of George Hakewill [6] (Glacken 1967, 383):

> [N]o other book enables us to see so clearly, in these formative periods of modern science, the gropings toward an understanding of the nature of the earth, using

evidence from geography, geology, earth and natural history, for it is a book of interpretation and synthesis, not of original research.

The very notion that Earth is a planet enclosed by layers such as atmosphere, hydrosphere, geosphere, cryosphere, and biosphere was gradually stabilized during the next couple of centuries. Another fascinating part of the story is how an awareness gradually grew up that humans had brought about fateful disturbance in the regions they invaded. American polymath George Perkins Marsh was the pioneer who concluded in the mid-19th century that humanity is changing the face of Earth on the scale of a geological force (Marsh 1965). David Lowenthal notes in his Introduction to the 1965 edition (p. xxiii) that ”Man the Disturber of Nature’s Harmonies” was the title Marsh originally proposed for the book. [7]

The relevance of the historical legacy arises from its close connection with the actual human sustenance practices, both at their worst and their best. Earth System Science was built upon the achievements of previous geological and geographical research, after new methodological and technical skills were acquired; Chakrabarty notes (p. 172): ”[I]t took all these technologies and discoveries for scientists to think into being the ”Earth system” as an object of study.” This step was possible thanks to a basement that had been erected before. [8]

But then we get a reason to ask: What sort of novelty does the notion of the Anthropocene bring about, really? I suspect this question still lacks a definitive answer, and will probably lack for some time. We can certainly, by and large, trust the conclusions drawn by the Earth system scientists, but the Anthropocene perspective is still hazy because of the huge generality of the notion itself: a new geological epoch is a big thing. Furthermore, the notion bifurcates into two: on the one hand stratigraphy, on the other hand human-caused upheavals observed in the dynamics of the Earth system. – This pair forms an obvious ambiguity.

The former horn, stratigraphy offers, in principle, clear criteria; only in principle, though, as is attested by the unending search for actual cut-points that could offer clear criteria observable in the recent geological record.[9] It seems stratigraphy does not suffice and the actual human-caused upheavals have to be foregrounded. Thus, it is somewhat strange that a main proponent such as Jan Zalasiewicz insists on keeping the stratigraphy-criterion pure.

But actual environmental upheavals do not offer clear criteria either. As an example I take the following list that Chakrabarty presents of the negative consequences of ”political thought since the seventeenth century … grounded in the idea of securing human life and property” (p. 90-1):

> The harder we ”work” the earth in pursuit of the wordly flourishing of a great number of humans, the more we encounter the planet. If human institutions, technology, and profit seeking that have so far worked in tandem to ””secure” human life expanded to a point where planetary cycles broke down, the seas got warmer and more acidic, forests vanished, biodiversity was stressed and species extinction fastened, the number of refugees in the world (now calculated to be around sixty-five million) likely trebled, the frequency of ”extreme weather” events increased, and the labor of humans and animals got displaced by the work of artificial intelligence, then a profound and tragic irony would reveal itself in such a course of human history. The institutions humans have used so far to secure human life have reached a point of expansion and development whereby that very fundamental premise of human politics – securing human life – is undermined.

The list includes a very heterogeneous collection of projections toward the future, several of them such that it would be difficult indeed to assess them reliably. Two examples: I have no idea about what ”planetary cycles broke down” might mean; and secondly, ”forests vanished” is way beyond what could realistically happen unless the world blew up in a nuclear war. It is, no doubt, possible that Earth might slide toward a nightmarish trajectory in the future, but clarifications are needed. Any disastrous projection needs to be backed by an idea concerning a potential mechanism that might trigger such a fateful process. An idea of possible mechanisms allows the construction of a *baseline scenario*, analogously with what is done in climate change research. A baseline scenario offers a standard to use for monitoring actual trends as well as for exploring what sort of measures might mitigate most fateful threats.

Chakrabarty seems to suggest that the causal effect would be due to the intensification of human-caused pressures abetted by increasing human numbers. While such an argument is certainly credible, its proposed agent is aggregated on a high level: humanity as a whole. We have to unpack, and then we have to draw distinctions using such concepts as capitalism, socialism, colonialism, neocolonial extractivism, and so on – that is, notions that Chakrabarty sidetracks as irrelevant.

I think *planetary ecology* is an important mediating element of this ambiguity. The ecological order of the planet, molded by life itself is precisely the sphere humanity depends on and is tampering with, but should focus on. The primary driver of destructive ecological change is climatic warming, but specific harms are also due to human sustenance practices that exploit key processes of life directly and damage indirectly. Chakrabarty basically passes over the ecological linkages; key terms such as ’biosphere’ and ’ecosystem’ lack real introduction, let alone elaboration in the book. [10] – True, in his presentation of the Earth system (Ch. 2) he emphasizes the interconnected nature of the system and thus indirectly includes ecological processes, too, but the presentation lacks specific references to specific processes. The global ecological network is interconnected in multiple ways, but understanding specific processes in such a system requires the identification of specific causal pathways. [11]

Chakrabarty’s handling of the relations between the critical temporal horizons suggests that in his view planetary history is somehow ”essentially” different from the evolution of life and the history of humanity. These are different temporalities for sure, but they are effective *simultaneously in the present*. It is not the case that long-term changes were somehow going on ”behind” what happens on the short term; instead, everything that happens happens at present.

Alfred North Whitehead’s (1861-1947) *process philosophy* offers an important albeit poorly known approach to this curious nature of time. S*imultaneity* is a key term in his conception: ”[T]here is a definite whole of nature, simultaneously now present, whatever may be the character of its remote events.” (Whitehead 1964, 194). Whitehead’s preferred term for ’time’ was *the passage of nature* (p. 54, ibid.]; with this term he placed the question ”What happens?” up front. Processes are primary, and ’time’ is not a Newtonian stationary background in which things stay put; ’time’ is created and maintained by the ongoing processes. [12]

How can we fruitfully explore the interpenetration of different temporalities in the simultaneity of the present? Since the 1970s or so this question has been commonly approached from the perspective of evolutionary hierarchies. The idea is backed by the observation that life actually is organized into a hierarchy in which entities on ’lower’ levels gather into organized collections that form entities on ’higher’ levels. An organism is a good model. Multiply interacting macromolecules are organized into cells, cells form tissues that make up the multicellular organism which is a member of larger units such as

populations and ecosystems. A hierarchical and modular structure facilitates the temporal stabilization of the system as a whole. Evolutionary biologist Stanley Salthe (1993) has clearly depicted the contours of the view.

Salthe suggests that it be sufficient to focus on three levels to analyze the relations of different temporalities (his 'triadic' scheme). If we take human social history as the *focal process* we are interested in, the slow change on the planetary scale (one level up) acts as a *constraint* that is stabilized on the short term as a background, and the fast change in what people actually do (one level down) acts as *initiating conditions*. – Thus, schematically, the use of fossil energy brought about a change in the 'initiating conditions' and thus facilitated the 'Great Acceleration' on the focal level, and this eventually brought about the warming of the climate, i.e., a change in the upper-level constraints that determine the stability conditions of societies. Salthe's 'triadic' scheme specifies what we need to observe at present in order to become better aware of the conditions that drive change on different temporal scales; this supports both mitigation and adaptation.

Overall, much depends on how firm a trust we place on specific conclusions drawn by Earth system scientists. Chakrabarty does not bring the inherent uncertainties in the science into attention to the extent they deserve. The big picture is reliable – that is not at issue; the key uncertainties are more specific. We need to distinguish factual claims from projections, and decide which projections are reliable enough to justify particular measures. The conceptions of geoengineering offers a good demonstration of this dilemma. Chakrabarty cites on several occasions scientists who dream of a human-dominated 'favourable' Anthropocene; he notes that geoengineering offers tentative projections which are much more uncertain than what the promulgators admit.

History // Philosophy

Chakrabarty's argument is about philosophy of history as much as, if not more than about history per se. In this, the book is a continuation of his earlier work that received plenty of well-deserved attention: *Provincializing Europe: Postcolonial Thought and Historical Difference* (Princeton, 2000). The aim of the previous book was to create a turnabout in the previous firmly Eurocentric perspective on world history: Europe should be viewed not as the centre of the world but as a "province" in relation to the other continents which in the past were "provincial" colonies. The journal *Subaltern Studies* was the harbinger of this

transformative perspective in the humanities, and Chakrabarty was a main actor promoting this shift in perspective. In *The Climate of History* he utters a criticism of his previous emphasis (p. 19):

> These new intellectual directions in the humanities produced revelatory insight but remained, if I may say so without putting too fine a point on it, environmentally blind.

Chakrabarty articulates his interest in the relationship of human history to the history of Earth in the thesis #1 in ”Four Theses”: ”Anthropogenic explanations of climate change spell the collapse of the humanist distiction between natural history and human history”. He elaborates upon the thesis by an extensive review of how historical scholarship has neglected the relevance of the natural background for human affairs; the same theme continues in a the chapter on ”Anthropocene Time” in the book. These overviews of the background are very useful for non-historians.

However, Chakrabarty’s critical perspective includes an element that I find difficult to grasp. It gets expressed in the thesis #3 in ”Four Theses” (p. 35): ”The geological hypothesis regarding the Anthropocene requires us to put global histories of capital in conversation with the species history of humans”. What Chakrabarty actually means with ”the species history of humans” remains hazy. In the introductory chapter he takes up the problem by specifying our need to ”put geological time and the biological time of evolution in conversation with the time of human history and experience” (p. 7) and continues (p. 8):

> Humans in everyday lives can be forgetful of their evolved charecteritics, but the design of all human artifacts, for instance, will always be based on the assumption that humans have binocular vision and opposable thumbs. Having big and complex brains may very well mean that our big and deep histories can exist alongside and through our small and shallow pasts, that our internal sense of time – that phenomenologists study, for instance – will not always align itself with evolutionary or geological chronologies.

This note is incomprehensible. What is the phrase ”our small and shallow pasts” supposed to mean? We humans are what we are as a result of such events and processes in the past that have molded us. I feel Chakrabarty’s comment grows out of a dualistic view of our past such that the ancient past seems to carry on a weighty heritage that overwrites what has happened in a more recent past. I doubt the adequacy of this view.

We face our current problems from the position of our own humanity, in the present. As a species we are no more nor less unique than any other species on Earth, but our position includes aspects that are unique to our species. A particularly significant difference is the human type of sociality that is enhanced by our symbolic language as well as the symbolic force carried by the various types of cultural artifacts we build our lives with. Philosopher Marjorie Grene has clearly articulated the view that *artificiality* is a specific form of human nature produced by our evolution; as she writes (Grene 1974, 358):

> We become human, not just by being born *Homo sapiens*, but by relying on a complex network of artifacts: language and other symbolic systems, social conventions, tools in the context of their use – artifacts which are in a way extensions of ourselves, but which in turn we actualize in our personal lives. It is our nature to need the artificial, art in the broadest sense of that term, or, indeed, poetry in the broadest sense of that term: making and the made. We cannot become human beings without this.

We modern humans have to eke out our sustenance from what nature affords just as our ancestors had to. Our means are vastly more effective than what the ancients had, and potentially disastrous. However, humanity has also learned by experience to adapt to the necessities set by the natural conditions in the surroundings – and shared experience is the only means to learn. The huge material success of humanity testifies that our ancerstors were able to do quite a lot right, and to learn in the process. The crisis we are in shows that much more remains to be learned, but the neccessary learning happens, if it happens, today and tomorrow, not in the past.

Chakrabarty's distinction between the 'global' and the 'planetary' names two loci that the historical learning process has brought into a sharp focus. The inspiration offered by Bruno Latour's work has obviously been very important for him. The planetary crisis raises the need to reinterprete modernism itself. In Latour's terms, we should "land down to Earth"; if we fail, the consequence may be "a rebarbarization of the world" as Chakrabarty notes (p. 91).

With this commentary Chakrabarty drifts toward politics. He takes political challenges up in several connections in the book and offers good leads. He emphasizes that "we need the Enlightenment (i.e. reason) even more than in the past" (p. 34), but notes also that reason alone is not sufficient. In particular, sharp inequalities make the world a more complicated

place than what we are prepared to cope with. Hence another emphasis: the planetary perspective has to be integrated into a concern for justice ”that cannot any longer be about humans alone, but we don’t yet know how to extend these concerns to the universe of nonhumans (i.e., not just a few species)” (p. 178).

Really important points are brought up in the epilogue of the book, a discussion of Chakrabarty with Bruno Latour. [13] The parts of the discussion that circle around politics navigate to the theme of ’agency’: Chakrabarty’s aim, a shift from ’global’ thinking to ’planetary’ thinking calls for a new type of agency that ties together human and non-human, but nobody seems to know where it could come from. What sort of agency might inspire processes that have an effect on the horizon of centuries or millennia?

’Posthumanism’ is to be welcomed as an intellectual attitude that acknowledges the fundamental human dependence on nonhumans. However, ”[p]osthumanism by itself cannot address the political” while politics addressing the planetary crisis ”woulld have to begin from the same old premise of securing human life” (p. 91). – But maybe posthumanist imagination can pave the way for a new type of politics and political agency. This is still an open question which Chakrabarty asks from several different perspectives.

Furthermore, I like to add, the question has to be articulated on as concrete terms as possible, accepting the sitution as it is, and drawing necessary distinctions. Jane Bennett (2010, 116) offers an inspiring example in a work Chakrabarty also cites:

> Admit that humans have crawled or secreted themselves into every corner of the environment; admit that the environment is actually inside human bodies and minds, and then proceed politically, technologically, scientifically, in everyday life, with careful forebearance, as you might with unruly relatives to whom you are inextricably bound and with whom you will engage over a lifetime, like it or not. Give up the futile attempt to disentangle the human from the nonhuman. Seek instead to engage more civilly, strategically, and subtly with the nonhumans in the assemblages in which you, too, participate.

Mutualism is a promising perspective from which to elaborate the challenge further. Mutualism has plenty of models in symbiotic relationships among different organisms. Furthermore, human historical subsistence offers as many models as you wish; the point of Bruno Latour’s slogan that ”we have never been modern” is that human sustenance has for ever built upon ’hybrids’ formed by intermingling of human and nonhuman actors. –

Chakrabarty, unfortunately trivializes this prospect by using the term ’mutuality’ on purely individual level; mutualism is a collective phenomenon.

What Next?

Chakrabarty’s main achievement is that he has brought up the question of planetary time that we are facing when getting immersed into the multidimensional global change known as the Anthropocene. There is no denying that despite the critical comments I presented above, Chakrabarty has pointed with his work at a critical dilemma.

I referred above to Whitehead. I think he expressed an essential dimension of our dilemma in his book *Concept of Nature* in the following words (Whitehead 1964, 49):

> This general fact [that ”something is going on”] at once yields for our apprehension two factors, which I will name, the ’discerned’ and the ’discernible.’ The discerned is comprised of those elements of the general fact which are discriminated with their own individual peculiarities. It is the field directly perceived. But the entities of this field have relations to other entities which are not particularly discriminated in this individual way. These other entities are known merely as the relata in relation to the entities of this discerned field. Such an entity is merely a ’something’ which has such-and-such definite relations to some definite entitity or entities in the discerned field. As being thus related, they are – owing to the particular character of these relations – known as elements of the general fact which is going on. But we are not aware of them except as entities fulfilling the functions of relata in these relations.

This paragraph describes an ambiguity: Whatever we are aware of is embedded, or immersed in something else that we cannot directly apprehend. The implication is that this ’something’ is bigger and of longer duration that what we are aware of (’duration’ is one of the terms Whitehead used to express the ’simultaneity’ which brings together different temporal and spatial horizons; Ibid., p. 53).

I think it is possible to read Whitehead’s paragraph as an advice to reverse Chakrabarty’s temporal ordering: We have to start from our present condition, from an enriched understanding of ’sustainability’, not from the historical background setting which Chakrabarty calls the ’planetary’. The basic problem is to tie together the human abode and the constraints set by the planet. These coincide here and now, and on the most

concrete level. The problem for us to explore is: How do our actions that respond to different temporalities *in the present* differ – or do they? How does sensitivity concerning the ’global’ differ from sensitivity concerning the ’planetary’?

My aim with the formulation ”Our One and Only” in the title is to bring this ambiguity into the focus. While there are zillions and zillions of planets in the whole universe, Earth is the only one that is really significant for us, the denizens of this planet. No matter what an odd techno-utopist thinks, humanity will never migrate away and flourish somewhere else. Yes, somebody has landed on Moon and returned back to Earth, and somebody else will probably do the same again. This is a technological feat but does not teach much concerning our chances to build sustenance on our one and only planet. [14]

Chakrabarty opens a path for an intellectual journey; we had better join him in the search for reliable signposts. Unfortunately, though, there is a snag: The personal pronouns ”we” and ”us” restrict the perspective throughout. Who are the ”we”?

We should be able to disaggregate so that significant components of the common humanity could be separately recognized. Somewhat paradoxically, the ”nonanthropocentric” Earth System Science tends to reproduce this dilemma. Humanity is usually included as ”one” in the modeling of ESS. As a hopeful note, though, we can add that ESS is still at its infancy. Science does not follow a logical order. Quite to the contrary, scientific thought is ’path-dependent’ in that the original conceptual and experimental innovations remain at the background if they are not further scrutinized.

Earth System Science has brought about important concepts that have captured public imagination, such as the *Anthropocene* and the *Great Acceleration*. These terms work on an enormously general level, but also offer space for a plethora of different interpretations. The literature on these themes is huge and growing fast, as is attested by the richness of references Chakrabarty offers. We have to continue further, for instance, by developing sensible disaggregations.

Footnotes

[1] Literary scholar Michael Wood (2005, 98) offers the following characterization of ambiguity: “In its broadest description it is a way of believing two contradictory things at once; in daily practice it offers a way of making choices and remembering what the

alternatives were.” Wood’s book is basically a homage to William Empson's (1930) *Seven Types of Ambiguity,* the classic elaboration of the theme in literature.

[2] In the follwing I refer to the essay as ”Four Theses” and use the version included in the book.

[3] In March 2024 the International Union of Geological Sciences rejected the initiative to add ”the Anthropocene” to the chronostratigraphic chart of geological periods, but the term stays very much alive as a descriptor of the dramatically increased human influence on Earth. Ville Lähde (2025) describes the variety of ”-cene”’s that the idea has breathed into life.

[4] The Lacan reference is: ”The Line and Light” in his *Four Fundamental Concepts of Psycho-analysis* (Penguin 1977).

[5] Geologist Jan Zalasiewicz is Chakrabarty’s crucial reference in support of this view; on p. 169-70 he presents the following citation from Zalasiewicz: ”in terms of the definition of a ’stratigraphic Anthropocene’ [at issue is] … change to the Earth system rather than a change to the extent to which [we] are recognizing human influence.”

[6] *An Apologie, or Declaration of the Power and Providence of God in the Government of the World*, first edition published in 1627.

[7] A famous conference paying homage to his work was held in 1955 at the Princeton University (Thomas et al. 1956); another overview of the human-brought upheavals on Earth’s ecology was put together at a conference at Clark University in 1987 (Turner et al. 1990). Both volumes offer excellent data-based reports on how human activities have changed various features of the face of Earth.

[8] Steffen et al. (2020) provides an overview of the recent phases of ESS, written from the ESS perspective.

[9] Chakrabarty demonstrates these problems by referring to the choice made by geographers Simon L. Lewis and Mark A. Maslin on whether an appropriate starting year would be 1610 or 1964; they preferred 1610 (p.167-8). Such a choice brings into the picture political and social concerns which should not influence stratigraphic criteria. – Lähde (2025) includes a good discussion of the problem.

[10] The index is indicative: ’biosphere’ gets three mentions, two of them with the questionable attribute ”dominated by humanity” (who believes that humanity really *dominates* the biosphere?); ’ecosystem’ gets none.

[11] ”Gaia”, the idea that the biosphere is to some exten maintained in a stationary state by feedback processes arising in the biosphere itself (the original reference: Lovelock 1979; Wilkinson 2023, Ch.12 offers a good summary) is a complicated parallel to the notion of the earth system. Chakrabarty does not really elaborate the question of Gaia – a highly complicated theme, indeed – but cites a comment by the inventor of Gaia, James Lovelock (p. 268, footnote 51) that understanding Gaia ”requires an instinctive familiarity with the

dynamics of systems in action, and this is not a normal part of Earth or life science” (a strong cirticism of mainstream science by Lovelock!).

[12] For a closer acquaintance with Whitehead, Stengers (2011) is the work to pick up; it leads to a difficult but rewarding journey.

[13] Originally published in Bruno Latour and Peter Weigel (eds.): *Critical Zones. The Science and Politics of Landing on Earth*. MIT Press (2020).

[14] Those among us who are old enough can remember that when Yuri Gagarin spent a few hours circling around Earth in a tiny little space capsule, the achievement was called ”conquest of space”. Indeed …

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