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## Section IV

# Societies Caught between Prometheanism and Post-prometheanism

Nathanaël Wallenhorst and Christoph Wulf

The concept of the Anthropocene that comes from Earth system science and has become consolidated in the field of geology through the use of stratigraphic methodology, has gradually shifted into the humanities and social sciences where it has become the subject of many studies: the critical reception of geo-scientific works, the philosophical and political conceptualisation of the Anthropocene and also the vulgurisation of the scientific and philosophical aspects of this concept. These atlases, dictionaries, collections and other works have an important function, in that they gradually permit disciplinary boundaries to be crossed in the collaboration between different disciplines, and explore a variety of consequences in the areas of anthropology, society, economy, psychology and education.

The term “Anthropocene” is a neologism which spread like wildfire and became a global success. The reason this term is finding such notoriety in scientific circles – as much in Earth sciences as in the humanities and social sciences, amongst militant ecologists as well as in the media, is because it is inextricably bound up with the existence of each and every one of us. The Anthropocene is a new geological epoch resulting from the impact of human activity on the whole Earth system. This neologism means that we have changed the habitability conditions of the planet in a permanent way. Basically, the Anthropocene asks what we are doing to ourselves, to others and other things, and to all that connects us together. The Anthropocene does this with a power that is unprecedented, all of a sudden revealing what our civilisations are founded on, with the building up of agricultural surplus, the changes in the

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modern industrial, capitalist world, the acceleration in human population growth coinciding with the growth of consumerism with its built in obsolescence, the prodigious progress of technoscience – starting with the invention and explosion of nuclear bombs. The Anthropocene is telling us that we have the capacity to destroy ourselves. The Anthropocene illuminates the dark face of our adventure, in the very place where we have sometimes been tempted to see advances for humanity.

We can currently identify four great controversies concerning the Anthropocene. The first concerns the notion of responsibility. Who is responsible for the Anthropocene? Is it humanity as a whole or just part of it? The fact that today's debates concerning dating the beginning of the Anthropocene are so lively is because they introduce this question of responsibility. The concept of the Capitalocene (Bonneuil & Fressoz, 2013; Malm & Hornborg, 2014; Haraway, 2015; Moore, 2016) was constructed, for political purposes, to put the spotlight on this question of responsibility that the concept of the Anthropocene masks. The second controversy, which is less common in scientific debate, takes place in the public arena between the catastrophe theorists (a huge disaster or *collapse* is about to come and we must change everything with immediate effect) and the conservative attitudes which deny that anything is changing (*climate deniers*), or who minimise the role of human beings or the consequences of climate change (*climate delayers*). The third controversy is more recent and also takes place in the public arena. The climate strikes of younger people, initiated by the young Swede Greta Thunberg, brought about a polarity never seen before. Here the issue of the climate and the Anthropocene was presented as a conflict between generations, the young being the accusers. They take on board directly the notion of intergenerational justice that is practically non-existent in democracy. The *Manifesto for climate justice* (Notre affaire à tous, 2019) or the *Manifeste étudiant pour un réveil écologique* (*Student manifesto for ecological awakening*) (2018) are illustrations of this.

If we study what has been written about the Anthropocene in Earth system science as well as in the humanities and social sciences, it is clear that there is a fourth controversy that we can see as a polarisation between Promethean and post-Promethean ideas, which Bruno Latour calls humans versus terrestrials (2015). This controversy is the departure point for the articles in this section. Political Promethean ideas are a result of the ideas of geoengineering developed by certain research scientists, which are heavily technical and rather pessimistic as to the possibility of humanity being able to survive the Anthropocene other than by taking control of the Earth system (which is known as “Earth system management”). Political post-Promethean ideas question the effects of the human adventure on Earth in order to change its direction. We find here ideas about changing the way we live and a kind of anthropological change (Meadows, 2013; Malm & Hornborg, 2014; Löwbrant et al., 2014; Eckersley, 2017; Wallenhorst, 2019, 2020, 2021, 2022; Hétier & Wallenhorst, 2022; Wallenhorst & Wulf, 2022; Testot & Wallenhorst, 2023; Kamper & Wulf, 1989; Kamper & Wulf, 1994; Wulf & Zirfas, 2014, 2020; Wulf, 2013, 2022).

## Promethean Ideas

The Swedish political scientist highlights the the fact that radical measures must be taken to survive the upheavals of the Anthropocene in the way human societies are organised. The first of these two options is to research other planets that are hospitable to human life and to develop the cutting edge technology required to get there and render these spaces favourable to life. It is, therefore, a case of crossing planetary boundaries. The second option, on the other hand, amounts to respecting these boundaries in a very clear way. He uses two metaphors to describe these two strategies of sustainability - StarTrek and Ecotopia. We would put forward the adjectives Promethean and post-Promethean as the best way to encapsulate these directions our societies can take in the Anthropocene. Promethean refers to the myths of Prometheus and is to be understood as the search for power founded on transgressions. In contrast, post-Promethean, refers to changes in the way we live that rest on finitude, founded on not transgressing boundaries. We should say here that the current use of the term Promethean may suggest the Faustian figure of twentieth century technological man and the way technology is used in the West. Building on the analyses of the French intellectual Jacques Ellul, the adjective Promethean may be associated with the techno-scientific adventure. Using the adjective Promethean adds here an additional dimension to the technical use: the search for power in the context of transgression.

Whereas most of the thinking in the field of political ecology emphasises the need for us to change the way we live, in the last few we have seen the emergence of modernist political thinking, promoting constructivist ecology, acknowledging that we have entered the Anthropocene and proposing a resolutely Promethean stance. Worthy of mention here is the *Accelerate Manifesto* by Srnicek and Williams (2013). Then the *Ecomodernist manifesto* (2015) appeared, in the same techno-scientific, Promethean vein, but from a liberal, capitalist angle (and not post-capitalist like the *Accelerate Manifesto*), inspired by the ecomodernism of the Breakthrough Institute, which advocates a form of ecological Prometheanism and is critical of political post-Promethean ecology. The Breakthrough Institute puts forward a vision of the Anthropocene in which the way we live is not put into question. We are dealing with a form of hypermodernity and a re-evaluation of technical progress which can be directed towards permitting humanity to continue to live on planet Earth. This perspective suggests that it is up to Earth system scientists to use their ability to be particularly creative in experimenting with techniques on a global scale for the planet.

One of the first authors to have used the expression “good Anthropocene” is the American biologist Erle C. Ellis in an article that appeared in 2011 in the *Breakthrough Journal* (Ellis, 2011). This terminology does not mean that the environmental conditions of the Anthropocene are “good” or favourable to human life or any other form of life. It refers to a positive, enthusiastic view of the *anthropos* having become a geological force through mastery of his techniques. The “good Anthropocene” involves a narrative that “celebrates the death of nature as

something external to us” and finds reconciliation in the concept of green growth, which was developed by those who Christophe Bonnet identifies as post-environmentalist technophiles. In this narrative, nature, and also the human species, are conceived of as a social -technical-economic construct opening the door to trans-humanism. The Anthropocene, which follows on from the acquisition of power by humanity, is “good” because this power will allow us to improve the world and the human condition. The tone is positive and technophilic, along the lines of the *Ecomodernist manifesto*. This group of authors underlines that our entry into the Anthropocene can be a catalytic event which will mobilise humanity: “A good Anthropocene demands that humans use their growing social, economic, and technological powers to make life better for people, stabilize the climate, and protect the natural world” (*Ecomodernist manifesto*, 2015, p. 6). The aim of the 18 intellectuals in this group is to describe their vision “for putting humankind’s extraordinary powers in the service of creating a good Anthropocene” (*Ecomodernist manifesto*, 2015, p. 7). In their view, the slowing down of climate warming is first and foremost a question of technology. Their supporters go as far as envisaging “terraformation”, or, in other words, the transformation of the atmosphere of Mars in order to create a planet that is hospitable to human life. A characteristic of ecomodernism is that it espouses modernist logic as well as depoliticising the modern age and naturalising the process of technological modernisation. Technological evolution is therefore seen as being inevitable. Once progress is possible, it is invested as something to be explored without human beings having had the chance to ask whether it is desirable.

Within the Promethean conception of politics in the Anthropocene there is a great deal of research into technological progress in the field of geoengineering, which can be defined as “the deliberate manipulation or ‘engineering’ of an Earth System process” (Steffen et al., 2011, p. 752). The term geoengineering appeared for the first time in the first number of the review *Climatic Change* in a study by the Italian physicist Cesare Marchetti, on the modalities of regulating CO<sub>2</sub> in the atmosphere. In the same year, the Russian climatologist Mikhaïl Budyko further developed this theme, considering that it is our human responsibility “to develop a plan for climate modification that will maintain existing climatic conditions, in spite of the tendency toward a temperature increase due to man’s economic activity” (Budyko, 1977, p. 244). Several contributions from Earth system science on the subject of the Anthropocene envisage the possibility of using geoengineering on a world-wide scale (Crutzen, 2002, p. 23; Steffen et al., 2007, 2011; Ellis, 2011).

Having coined the term Anthropocene in 2002, Paul J. Crutzen addresses the field of environmental rehabilitation. In fact he mentions that the Anthropocene “will require appropriate human behaviour at all scales, and may well involve internationally accepted, large-scale geo-engineering projects, for instance to ‘optimize’ climate” (Crutzen, 2002, p. 23). At a conference at the University of Yale, reported in an online article of 2011, he goes still further, saying “It is no longer us against ‘Nature,’ it’s we who decide what Nature will be” (Crutzen & Schwägerl, 2011).

Will Steffen, Paul J. Crutzen and John R. McNeil (Steffen et al., 2011) make a plea for humanity to control the Earth system as “stewards”. These three authors

believe that the coming decades will be crucial for the consequences of the Anthropocene. Over the last few years we have seen the emergence of the concept of planetary stewardship, which refers to us taking control of the Earth system and its main regulatory mechanisms (Steffen et al., 2011; Crutzen & Schwägerl, 2011). This stewardship involves technical intervention in the biogeochemical cycles, or geoengineering. For many authors, deploying climate engineering techniques is a solution that should only be a last resort. Moreover, the question of feasibility, the problem at the heart of using geoengineering as a cure, is aptly summarised by Schneider who fears the “cure could be worse than the disease” (Schneider, 2008, p. 14).

There are two major types of mechanisms of geoengineering that are envisaged. The first involves controlling greenhouse gases through intervention in the carbon cycle – CDR (or Carbon Dioxide Removal). The second is solar radiation management (SRM) through controlling the amount of heat entering the atmosphere. One of the big questions geoengineering poses is that of who is in charge. Who can make the decision to bring about such effects on life within the whole of the biosphere? Before we can begin to imagine such geoengineering projects is it not more worthwhile to study in depth the social, economic and political systems set up by human beings and to see the Anthropocene as a saving grace to make us change the way we live?

## Post-Promethean Views

The second type of approach for our societies in the Anthropocene can be categorised as “post-Promethean”. *The Convivialist Manifesto* which has now been signed by more than 3700 intellectuals, the first version of which was the work the French sociologist Alain Caillé and which is in the spirit of what is known as the MAUSS movement (*Mouvement anti-utilitariste en sciences sociales*). A similar approach is that of the British economist Kate Raworth, who proposes a model of human survival that she calls the “doughnut” model. In this visual image she has a space of safety and justice for human beings, seen as being at the centre of all the planetary boundaries that must not be crossed (an extension of Rockström’s nine planetary boundaries, 2009), and, in between, the “social foundation” – the standards for humans and society, without which human life is no longer possible – access to water, to work, to energy, to an income, to social equity, to education, to health, to democratic participation, to social resilience (Raworth & Economics, 2017).

The term “post-Promethean” covers numerous articles about the Anthropocene. In recent years we have seen the appearance of a number of manifestos, most of which have been written by academics. They have been edited by one or two or signed by the whole group as “think tanks”. Their emphasis is on demanding, denouncing, opposing and on the dream of seeing the emergence of alternatives to the current economic, hegemonic ways of life that are founded on capitalism. These manifestos tell us that it is possible for the world to be different. Or in any case we

should hope for a different world. These contributions, each one being a new voice in the public debate and presenting itself as a new political path, are all part of a renewal in political thinking, because all areas of social life (health, industry, education, the military, leisure, transport, food, etc.) are suffering from the consequences of the major changes brought about by the Anthropocene. In addition to the *Convivialist Manifesto* we must also mention (and this list is by no means exhaustive) the *Manifest für das Anthropozän* (*Manifesto for the Anthropocene*, 2015), the *Animalist Manifesto* (2017), the *Manifesto for Climate Justice* (2019) and *Ecologie intégrale: Le manifeste* (2019). They explicitly mobilise the concept of the Anthropocene and what it involves, the changing of the Earth system in an anthropic way. Each has its own point of view, each tries to unravel the concept of possible global change: the implementation of politics and poetics for life (*Manifesto for the Anthropocene*), recognising animals as being political subjects (*Animalist Manifesto*), the struggle against productivism (*Manifesto for Climate Justice*), the possibility of revitalising politics (*Ecologie intégrale: Le manifeste*) or taking control of our *hubris* through recognising the way we live together (*Convivialist Manifesto*).

The political responsibility for preparing for the future is certainly one of the major challenges posed by the Anthropocene. In fact, the Anthropocene “prompts us to contemplate the possibility and meaning of the unthinkable: an Earth without us” (Eckersley, 2017, p. 15). Our entering the Anthropocene makes us realise how eminently problematic is the trajectory of our civilisation (Bourg, 2013, p. 70). We now have how to think of our future in the consciousness that our power is finite (Villalba, 2015, p. 59). The responsibility that has now devolved to us is not by any means individual but concerns the whole of humanity, who have become responsible for the Earth and who now have the power to irreversibly change nature (Bourg, 2013, p. 69). For the American philosopher Roy Scranton the choice is a clear one: “We can continue acting as if tomorrow will be just like yesterday, growing less and less prepared for each new disaster as it comes, and more and more desperately invested in a life we can’t sustain. Or we can learn to see each day as the death of what came before, (...) If we want to learn to live in the Anthropocene, we must first learn how to die” (Scranton, 2015, p. 3).

Faced with the boundaries of the biosphere and the prospect of a collapse of the ecosystems causing a decrease in global food production, researchers have put forward the concept of *Earth system governance*. This is different from stewardship of the planet in that the repertoire of actions which may allow the human adventure to continue in the Anthropocene is different from that of geoengineering. In political science the idea of Earth system governance has emerged as a reaction to the concept of the Anthropocene, accepting it both on an analytical and a normative level. It was put forward in 2007 by the Dutch political scientist Frank Biermann and is a resolutely political reaction to the Anthropocene with no technically oriented solution. It involves working on five challenges concerning the changes brought about anthropically in the Earth system: the “persistent uncertainty” about the Earth system, the new intergenerational dependencies; the interdependencies of the subsystem and the system; the spatial interdependencies with their global environmental



and social consequences (a deterioration in one part of the world can have social consequences right across the world) and a heightened possibility of the whole of humanity being affected. The concept of “Earth system governance” does not signify the governance of the Earth, nor does it signify the governance of biogeochemical processes of the Earth system. It refers to the human impact on the Earth system and the governance of human societies, giving particular weight to the long-term effects of these on the Earth system (Biermann, 2014, p. 59).

The concept of Earth system governance has similarities to Dominique Bourg’s proposal of “long-term governance”. This is an alternative to the concept of stewardship by geoengineering. He proposes examining current scientific data on changes in the Earth system and looking at their implications for human life and our societies, so that we can prepare ourselves to face the dangers that are awaiting us. His approach is political and does not advocate the use of technology or geoengineering. On the contrary, it presupposes the capacity for anthropological evolution. The concept of long-term governance re-establishes politics rather than replacing it by the technoscience of Earth system management. “Long-term” here refers to the great physical and biological parameters of the Earth system, those that are referred to by the idea of the planetary boundary (Bourg, 2017, p. 5). Several elements that are currently undergoing change will have an effect for the next millennia: this is the case for the mean temperature that will be reached over the course of the next century, the amount of CO<sub>2</sub> in the atmosphere, the disruption of biogeochemical cycles, the level of the seas, the acidification of the oceans and the extinction of species, the use of land, etc. Our long-term future is determined by biogeophysical elements which will continue to be present for millions of years to come, of that there is no doubt. In this way the “long-term” defined by Bourg differs from the forecasts of scenarios of societal structures for the coming decades. From the information that we have at our disposal regarding the long-term, it is important to establish our political priorities.

## **Rethinking the Structures of Politics – Finding a Middle Way Between Democracy and Authoritarianism**

One of the big questions posed by the concept of the Anthropocene to our societies is how to know if it will be a source of democratic renewal or if it will be a danger to democracy (Eckersley, 2017, p. 4). The controversies surrounding the Anthropocene have been popularised to a certain extent by the media which has led to the concept becoming more widely known in the public and political arenas. This concept allows us to re-examine political ecology and forms a basis for social criticism. The Anthropocene “has clear implications, not only in the way we grasp the complexity of the world in theory, but also in the modalities according to which we must think its political transformation” (Deléage, 2010, p. 23).



In view of the long-term challenges presented above, on the political scene the present seems preferable to the future. Politics often give the impression of reacting to events rather than preparing for a future that is getting ever harder to predict (Kemp, 2013). The relationship between politics and time-scales leads us to the question of responsibility. Responsibility towards the future is a central theme in the work of the German philosopher Hans Jonas. Jonas views it as an “ontological imperative”. His “ethics of responsibility” take into consideration the long-term effects of how we live and act with regard to future generations, i.e. to persons who do not yet exist but who we know will exist. In a way, human beings must feel responsible for what is to become of humanity. Hans Jonas does not have the slightest hesitation in turning democratic values upside down by proposing solutions that are in part authoritarian and which restrict individual freedoms when these freedoms threaten the survival of the human adventure. In his view, the democratic system would not be sufficiently capable of taking those decisions early enough to manage the urgency of the ecological situation. It is only an authoritarian power that can address this challenge and respond to this imperative in a limited amount of time, and that is capable of putting science and experts at the centre and acting in our long-term interests. (Nevertheless, of course we cannot say of Hans Jonas that he does not distance himself critically from authoritarianism, since he has not inspired authoritarian factions and his thinking is not part of the authoritarian school; Bourg & Whiteside, 2017, p. 7).

The responsibility of politics to prepare for the future is certainly one of the fundamental challenges posed by the Anthropocene. In contrast to authoritarian controls, the Anthropocene can also be accompanied by a reform of institutions in order to achieve democratic renewal. Environmental questions generate acts of violent repression, in democratic countries as well, as the journalist Élisabeth Schneider shows in her reports of the increase in assassinations of militant ecologists across the world (22 per year, or 4 per week) (Schneider, 2018).

Our entry into the Anthropocene, the fact that it is taken into consideration in the structure of political life in the light of the harmful long-term effects on the way we live, may make us think differently about democracy and give it a new dynamic. A number of authors foresee the creation of a third chamber that would be characterised by deliberation methods and would have as its mission the protection of future generations. In 1991, in *We Have Never Been Modern* (Latour, 1991) Bruno Latour sketched out an idea of democratic reorganisation around a higher and a lower chamber. He developed this idea further in 1999 in *Politics of Nature (Politiques de la nature)* (Latour, 1999). American political scientist John Dryzek and Australian political scientist Simon Niemeyer propose the establishment of a “chamber of discourse” which would allow citizens to be better represented and to devote themselves to environmental challenges (Drysek & Niemeyer, 2008). The British philosopher Rupert Read also proposes the idea of a chamber devoted to long-term challenges and to the protection of future UK citizens (Read, 2012). Dominique Bourg and Kerry Whiteside introduce and develop the idea of a “chamber of the future” on several occasions (Bourg & Whiteside, 2011, 2017; Bourg et al., 2017).

Recently, in *Inventer la démocratie du 21<sup>e</sup> siècle* (*Inventing democracy of the twenty-first century*), this third chamber was presented by Dominique Bourg and his co-authors as a “Citizens Assembly of the Future”, consisting of a place for reflecting on all the citizens’ initiatives, evaluating the contribution of citizens to ecological transition and for experimenting in a democratic way with paths leading to the desired future (Bourg et al., 2017, p. 43). This Citizens Assembly of the Future aims to let everyone have their say and to produce specific sociological profiles of regular participants “super enlightened citizens” (Dufour, 2012, p. 33) or individuals who have a personal interest in taking part in the debate by randomly drawing lots. The idea is to shape, educate and document citizens. In any case, the advice of the Citizens Assembly of the Future is purely consultative, which seems problematical – we are all too aware of the frustration felt by citizens which arises from the consultative process, where their views are often misconstrued or paid little heed in the flow of the debate. The citizens participate and think that the time they are devoting to these debates will in fact give them the opportunity to have a powerful impact on the decision. When they realise that that is not the case, that their opinion is purely consultative, they distance themselves from the formal situation and may end up contesting views in more violent and perhaps radical ways (Mazeaud & Talpin, 2010). Is there not a risk that citizen participation will be seen as an empty shell, without any real impact on decisions? In the many citizen participation schemes, citizens deliver an opinion to which the elected representatives pay little attention without taking the trouble to try to understand it, which increases even more the frustration of those who have taken the trouble to take part. It is necessary for there to be more transparency about how decisions are taken. This Citizens Assembly of the Future, even though it appears utopian in parts, gives back to citizens their key place in the debates on the Anthropocene.

Societies, with their communities and institutions, now form an integral part of the Earth system. It is up to us to determine whether the way in which we function and structure our lives impedes or promotes the future of human life in society within the biosphere. It is this that unites the different articles in this section.

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**Part XV**  
**Societies and Life**