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Section III

Human Beings: Bridging Nature and Culture

Nathanaël Wallenhorst and Christoph Wulf

The scientific data emerging in recent decades are evidence of how human activity has disrupted the climate and the balance of life. Thus, the Anthropocene is marked, among other phenomena, by collapses in ecosystems. The current geological problem is that we are launching a trajectory which is very rapidly taking us away from the glacial –interglacial cycle which controlled the functioning of the Earth system for the last million years. If human activity has become the prime geological force governing the very functioning of the Earth system, the main consequence of our actions is to have “forced” (to use the sacred geological expression) numerous sub-systems of the Earth system which is at the edge of a new threshold where humans will no longer be the prime geological force. The time is coming when the Earth system will run the risk of entering a transition period that is independent of human actions. In other words, in the Anthropocene, contrary even to the etymology of the term, human actions are not the prime geological force, apart from during a short period (not even a century if see the Anthropocene starting in 1950).

We should also link up our biological knowledge of living things and the biogeochemical knowledge of the Anthropocene with our philosophical tradition. The articles in this section re-examine certain basic elements of the human adventure (culture, religion, art, etc.) and shed new light on what the Anthropocene reveals about our humanity – we understand the extent to which our humanity is dependent on our relationship with the non-human (living as well as cosmic). In fact, the encounter between the long history of the Earth and the short history of the human adventure makes us question what we are. “Something” deep is happening in the relationship between what is cultural and what is natural, impacting directly on the

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way in which we, as humans, are going to continue to live sharing a terrestrial space with “other inhabitants of the Earth”, i.e. non-humans.

Thus, the importance of the concept of the Anthropocene lies fundamentally in the way in which it comes to reconfigure the nature/culture or nature/society dualism that is central in the development of western thinking. Now we can no longer think within the confines of this dualism, since it is clear that a fundamental idea of humanity, of humanity as a geological force (the idea at the heart of the Anthropocene) has now been slowly establishing itself for almost two centuries. In fact, it is important here to note that the question of the impact of human activity on the biosphere as a whole largely precedes the coining of the concept of the Anthropocene. Awareness of the impact of human activity on the climate or the Earth as a whole has a long history, and this idea has been developed by several scientists over two centuries. In the concept of the Holocene itself (the previous geological epoch) we find suggestions of the idea of the global impact of humanity. Initially, this concept involves the idea of the presence of humans on the Earth. In fact the term Holocene, the etymological meaning of which is “entirely recent” was popularised by the French geologist Paul Gervais, who picked up and changed slightly the term “recent epoch”, proposed by the Scottish geologist Charles Lyell (1833), who established that the end of the glacial period coincided with the development of human civilisations (Lewis & Maslin, 2015, 172). After dating the start of the geological Quaternary Period as the time when *Homo habilis* appeared, the concept of the Holocene marks the second time that the human race is involved in geological dating. The Anthropocene will be the third occurrence of humanity playing a role in geological dating.

In 1778 the French naturalist, Count Georges-Louis Leclerc de Buffon published an article in *Des époques de la nature*, saying that the whole face of the Earth today “bears the imprint of the power of man”. In particular, this makes humanity capable of changing the climate by impacting their environment – “Man can change the influences of the climate in which he lives, and finally set the temperature at the point that suits him” (Buffon, 1778, 237). A few centuries earlier, in July 1494, Christopher Columbus already sensed the capacity of humanity to affect the climate based on the management of deforestation - he is pleased that humans are able to control the climate. After that, between 1830 and 1833, the British geologist Charles Lyell defined the contemporary epoch in *Principles of Geology* as the “human epoch”; 20 years later the English geologist and philosopher William Whewell wrote that “the Human Epoch of the earth’s history is different from all the preceding Epochs” (1853, 88). In 1854, the Welsh geologist and theologian Thomas Jenkyn was the first person to identify a geological epoch marked by humanity (1854) which he defines as “the human epoch”. Two years later the English intellectual William Adams described his geological epoch based on his intuition of there being traces of human activity in sediments: “The Modern or Human epoch is illustrated by alluvial deposits, which are the effects of atmospheric and other more powerful causes: these still continue in operation, imbedding remains of man and inorganic matter.” (1856, 247) About a dozen years later, in 1865, the Irish Reverend Samuel Haughton published his *Manual of Geology*, in which he defined the

Anthropozoic epoch as the “epoch in which we live” (138). From the 1880 edition of his manual, Federau (2016, 64) picks up on one of the consequences that Haughton draws from this geological power: “humans should be at the ‘head of the system of life’, because of their spiritual nature and their power to progress indefinitely [578–579]”. In 1863 the American geologist James Dwight Dana also published a *Manual of Geology* in which he referred to “the Age of Mind and the Era of Man” (130). Then the Italian geologist and priest Antonio Stoppani also described his contemporary period in the same way (1873), using the expression “Anthropozoic Era” (1873, vol. 2, 732). Next, the Russian geologist Aleksei Pavlov (1854–1929) towards the end of his life (the late 1920s), used the expression “Anthropocene” or “Anthropozoic Era” when speaking of his epoch, as mentioned by Vernadsky or Shantser (1973, 140).

In the second edition of *Man and Nature* in 1874 (10 years after the first edition) which the American diplomat and ecologist George Perkins Marsh entitles *The earth as modified by human action*, Marsh refers to the works of Stoppani and his idea of the Anthropozoic Era and concludes that there is an intrinsic incompatibility between industrial societies and the balance of nature (Federau, 2016, 61). In fact, for Marsh “The Earth is fast becoming an unfit home for its noblest inhabitants” (Marsh, 1874, 44). The works of Marsh had quite an impact – although in 1833 Lyell considered that human beings were capable of transforming geography but only played a minor role, after reading Marsh’s book 30 years later he changed his mind and modified his assertions (Federau, 2016, 60–62). In *La pensée écologique – Une anthologie*, we also learn that in 1915 the German geologist Ernst Fischer considered “man to be a geological factor” (Bourg et Fragnière, 2014, 137), with the capacity to change the climate. In 1922 in his work *Man as a geological agent*, the British geologist Robert Lionel Sherlock developed this same idea of humanity as a geological force. All these precursors analysed the impact of humanity on the Earth system one or two centuries before it became a theory in the years just after 2000.

Next, at the beginning of the twentieth century, the Ukrainian geochemist and naturalist Vladimir Vernadsky developed the concept of the biosphere, taking up the ideas of the Austrian geologist Eduard Suess who invented the word and for whom it simply meant the space which shelters life in Earth. Vernadsky went on to make this concept more complex. He put forward the idea of there being a relationship between the biosphere and human intelligence by way of the concept of the noosphere (from the Greek for spirit), a concept which has at its base the power of the human spirit. For Vernadsky (1945), the spirit is able to affect its future by altering its environment. Vernadsky does not interpret the geological power of humanity in a religious or spiritual way, but he has great confidence in science being able to good care of the planet (Federau, 2016, p. 71). He has a profound belief in progress – and yet is aware at the same time of humanity’s capacity to destroy itself. We can identify this idea of the noosphere as being the predecessor of the concept of the Anthropocene (Steffen et al., 2011). In developing the idea of the biosphere (and then that of the noosphere) which he studies from a biogeochemical perspective also introducing a holistic element, Vernadsky made a seminal contribution to the development of Earth system science, within which the concept of the Anthropocene emerged in 2000.

After that, the evolution of the idea of humanity being a geological force was interrupted by two world wars, only to reappear in 1955 at a conference at the University of Princeton. This was then published by the American geographer William M. Thomas (1956) as *Man's role in changing the face of the earth* (Steffen et al., 2011, p. 844; Robin et al., 2014). Finally, more recently, as spotted by Steffen et al. (2011), a similar term, “*Anthrocene*”, was used in 1992 by the American science journalist Andrew C. Revkin, “Perhaps earth scientists of the future will name this new post-Holocene era for its causative element—for us. We are entering an age that might someday be referred to as, say, the Anthrocene. After all, it is a geological age of our own making.” (1992, p. 55). Other terms have been used to refer to the global importance of human activity (without referring to the geological power of humanity). For example, Michael Samways, a South African entomologist, invented the term “Homogenocene” to denote the world becoming more uniform, and the American biologist Michael Soulé referred to the cotemporary period as the “Catastrophozoic” era (Kolbert, 2015).

As the history of the idea of humanity as a geological force shows, i.e. this encounter of nature and culture, it is now important to be aware of the need to go beyond this dualism (Wallenhorst, 2019, 2020, 2021, 2022; Wallenhorst & Wulf, 2022; Liebau et al., 2003; Gil & Wulf, 2015; Wulf, 2022, 2013). The work of the contemporary German biologist and philosopher Andreas Weber illustrates this particularly well. His thinking fits into the framework of an anthropology of immersion in nature, through his biological interpretation of life and his reading of the geoscientific works on the Anthropocene. He develops a particularly radical way of thinking which breaks with one of the paradigms of Promethean modernity: it is marked by the distinction between a silent, non-human world and a human world which alone is capable of speech. For Weber it is essential to discover, or rediscover, our relationship with the non-human. “We should conserve nature because it is all that we are not.” (Weber, 2007, 294) Andreas Weber, by maintaining the singularity and uniqueness of the subject, shifts the boundary between subject and world by showing that the subject is also the world. He bases his theoretical framework on the sharing relationship between world and subject, which is necessary and vital, from breathing to food. Breathing, for example, is regarded as sharing with the biosphere – ecosystems being dependant purely on exchange. It is not only that we incorporate the elements that surround us, but following this same very simple principle of biophysical exchanges, Andreas Weber goes further: we become transformed as we return to what surrounds us. Indeed, we are the Earth.

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Part X
Humanity as Birth