STUDIA UBB. PHILOSOPHIA, Vol. 71 (2026), 1, pp. 25-42
(RECOMMENDED CITATION)
DOI:10.24193/subbphil.2026.1.02

The New Lexicon of the Anthropocene and Some Divergent Narratives

Constantin STOENESCU*

ABSTRACT. Surprisingly, although the term "Anthropocene" belongs to a geological taxonomy, it was categorically rejected by the scientific community of geologists. Their verdict was that we cannot grant the human species a geological force. However, the wider group of Earth Sciences has proposed a conceptual scheme starting from the "Anthropocene" as a keyword and several narratives have been developed, the best known being that of climate change as an effect of human activities. But the new lexicon of the Anthropocene has been developed spectacularly in the humanities, so we can already talk about an environmental humanities focused on this topic. My goal in this paper is to clarify the epistemologically distinct ways in which these three frameworks of thought work narratively.

Keywords: Anthropocene, lexicon, narratives, geological taxonomy, Earth Sciences, Environmental Humanities

The Anthropocene lexicon and its uses

The term "Anthropocene" has been used in recent decades to designate the geological epoch we are currently living in, in the vocabulary of scientists, in philosophical and cultural narratives, and in specific contexts of common language. Since the debate is still ongoing, and the temptation to postpone a verdict on the legitimacy of this linguistic use is sometimes assumed[1], I will try to consider from

* Faculty of Philosophy, University of Bucharest, constantin.stoenescu@filosofie.unibuc.ro

[1] Carlos Santana, for instance, ultimately argued „that formal recognition of the Anthropocene should be indefinitely deferred" (Carlos Santana, "Waiting for the Anthropocene", *The British Journal for the Philosophy of Science*, 70, 2019, p. 1073).

a unitary and strongly philosophical perspective the various reasons invoked so that we can at least identify the main problems and categorical divergences at the scientific, philosophical and cultural levels.

Broadly speaking, we can identify three main divergent contexts in which the term "Anthropocene" is used in different narratives. First of all, although the term apparently belongs to a specifically geological taxonomy, it was ultimately rejected by the scientific community of geologists, but not by the wider group of Earth Sciences that gave it a privileged place in a conceptual scheme that describes natural phenomena in relation to anthropogenic effects, such as climate change. However, it is spectacular how this lexicon has been integrated into common language, the term "Anthropocene" becoming almost colloquial not only in popular science literature, but also in fields of citizen science, such as ecology, biology and conservation. The idea of the Anthropocene has proven all the more vigorous and expansive in the area of humanities, as well as in literary creativity, exciting the imagination to seek new exploratory science fiction adventures. Therefore, viewed with suspicion by geologists, the term "Anthropocene" is accepted by Earth scientists and friendly used by the humanities and literature.

Before going into the details of each of these approaches, it is necessary to clarify the sense in which we are talking about lexicon (lexicons) here. I have to mention from the very beginning that I am taking up the thesis developed by Thomas S. Kuhn in his later philosophy, when he tried to provide an answer to the challenges posed by the concept of paradigm and the idea of semantic incommensurability. Kuhn gave a new and complete definition:

> A lexicon or lexical structure is the long-term product of tribal experience in the natural and social worlds, but its logical status, like that of word meanings in general, is that of convention. Each lexicon makes possible a corresponding form of life within which the truth or falsity of propositions may be both claimed and rationally justified, but the justification of lexicons or of lexical change can only be pragmatic.[2]

It is easy to recognize in this definition certain influences from the later Wittgenstein's terminology[3]. A lexicon has the logical status of a convention and it

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[2] Thomas S. Kuhn, *The Road Since Structure. Philosophical Essays, 1970-1993, with an Autobiographical Interview*, edited by James Conant and John Haugeland, The University of Chicago Press, Chicago, 2000, p. 244.

[3] See Wittgenstein, *Philosophical Investigations*, paragraph 241, where he asserts the idea of forms of life: "So you are saying that human agreement decides what is true and what is false? It is what human beings say that is true and false and they agree in the language they use. That us not agreement in opinions but in form of life" (Ludwig Wittgenstein, *Philosophical Investigations*, translated by G. E. M. Anscombe, Basil Blackwell, Oxford, 1953.p. 88).

is connected with a "form of life" as frame of reference within which the truth or falsity of different linguistic statements is claimed and rationally justified. But, on the other hand, Kuhn added, the justification of lexicons and of lexical change is a matter of pragmatic assessment. This means that a lexicon can't be appraised just theoretically, but we need to consider the practical consequences.

Moreover, we accept that different cultures or different historical phases of the same culture are related with different lexicons and different uses of the same words. Kuhn mentions the phenomena of "change in descriptive language" and the "alteration (...) of the lexicon which one uses"[4] to describe the world, both phenomena implied by the development of science. The main practical consequence of these phenomena is the incommensurability between different lexicons and the incapacity to understand why some narratives are developed. Even if we may grasp or catch what the members of a past community or of other community than ours try to communicate with their statements, it is impossible for us to obtain a complete understanding. In terms of lexicons, we will say that a statement made in our lexicon will always be a different one from the statement made in an old or foreign lexicon, even if we use the same vocabulary. The only way for us to understand the old or the foreign statement is to learn the incommensurable parts resting at the core of that linguistic expressions[5]. But the consequence of such a move is the effective placement in another narrative.

Moreover, each lexicon defines the boundaries of our world descriptions and represents the frame of reference for any meaningful discourse about world performed in our linguistic community. Kuhn argues that the terms in which are expressed the beliefs of a community "carry the community's ontology, supplying names for things which its world can and cannot contain"[6]. Thus, the language sets what can or cannot be meaningfully stated and it determines what enters into our world-description and what remains outside of it. Therefore, the acquisition of a lexicon is a process that determines how knowledge claims are assessed, namely, what can be counted or not as "knowledge".

The choice between lexicons necessarily depends on social goals because "lexicons are instruments to be judged by their comparative effectiveness in promoting the ends for which they are put to use"[7]. Or, to put it another way, the choice between lexicons is interest-relative. Each scientific world-description is just

4 Thomas S. Kuhn, *The Last Writings of Thomas Kuhn. Incommensurability in Science*, edited by Bojana Mladenović, The University of Chicago Press, Chicago, 2022, p. 15.

5 Ibidem, p. 114.

6 Ibidem, p. 47.

7 Ibidem, p. 78.

a set of sentences that serve practical purposes and whose truth-value depends on the frame of reference determined by the structured lexicon.

Finally, even if incommensurability means untranslatability, there remains a possibility of some overlaps between different lexicons**:**

> To possess a lexicon, a structured vocabulary, is to have access to the varied set of worlds which that lexicon can be used to describe. Different lexicons – those of different cultures or of different historical periods, for example – give access to different sets of possible worlds, largely but never entirely overlapping.[8]

Therefore, the Anthropocene lexicon offers a new taxonomy and moves us in another world, the new world of the Anthropocene. In Hacking's terms[9] to live in a new world is nothing but a taxonomic problem: all that happens is that we produce another narrative about the objects we know, just as the Copernicans tell us a different story about the celestial objects that the Ptolemies saw. The Earth becomes a planet for the Copernicans, falling from its position as the center of the universe, while the Moon becomes a satellite of the Earth, and the planets Mercury, Venus, Mars, Jupiter, and Saturn retain their previous status. Similarly, the Anthropocene produces various narratives and by accepting them we place ourselves in one possible world or another according to certain pragmatic and cultural criteria.

Consequently, to understand these alternative narratives we must judge them contextually and relate them to the various purposes of discourse. It is not a question of different types of rationality or divergent criteria of truth, but one of the adequacy of our narratives to contexts that are pragmatically different. For example, if the natural scientist asks himself the question of criteria of scientificity that would legitimize a new taxonomy of geological eras so that the Anthropocene would be accepted, the writer will propose a coherent fiction whose goal will be to generate emotional or aesthetic experiences regarding the supposed Anthropocene.

I will further investigate these different narrative contexts to identify virtues and limits of the Anthropocene lexicon in each of them.

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[8] Thomas S. Kuhn, *The Road Since Structure. Philosophical Essays, 1970-1993, with an Autobiographical Interview,* edited by James Conant and John Haugeland, The University of Chicago Press, Chicago, 2000, p. 61.

[9] Ian Hacking, "Working in a new world: The taxonomic solution", in Paul Horwich (ed.), *World Changes. Thomas Kuhn and the Nature of Science,* MIT Press. Cambridge, MA: Bradford. 1993, pp. 275—310.

Geology first. Is the Anthropocene a new geological epoch?

It is obvious that human activities are transforming the planet and the changes are visible, even from space. The question is whether these anthropogenic effects, comparable in magnitude to natural processes such as the evolution of life or catastrophic natural phenomena, entitle us to grant the human species the status of a geological agent and thus attribute to it the geological force to transform the planet decisively and irreversibly.

There is a consensus within the geological community that we are currently in the Holocene as a geological epoch, beginning approximately 11,700 years ago, after the Last Glacial Period, that the Holocene was preceded by the Pleistocene and that together they form the Quaternary period. The word "Holocene" was formed from the Ancient Greek words, "Hólos" (ὅλος) which means "whole" and "Cene" (kainós/ καινός) which means "new", so that the meaning of the word "Holocene" is that of a "entirely new epoch".

The term "Anthropocene" was proposed by people outside of the geological scientific community, but was later taken into consideration by geologists, albeit with some delay. The Anthropocene Working Group (AWG) of the Subcommission on Quaternary Stratigraphy (SQS) of the International Commission on Stratigraphy (ICS) voted in April 2016 to proceed towards a formal proposal to define the Anthropocene Epoch in the Geologic Time Scale as a formal unit. The group presented the proposal to the International Geological Congress in August 2016 and since then an intense scientific debate has erupted.

The main task undertaken by the research group was to identify certain geological phenomena, persistent and with long-term effects on the Earth System, that can be associated with human activities and which would thus justify the geological demarcation of the Anthropocene epoch as a new sequential unit of geological time. The main categories of geological phenomena brought into discussion were the increase of erosion and sediment transport as an effect of urbanization and agriculture, perturbations of the natural cycles of some basic chemical elements such us carbon or nitrogen, environmental changes, including climate changes and ocean acidification, changes in the biosphere as a result of human invasion in the natural habitats, proliferation of new materials and the waste resulting from them, including concrete and plastic.

The Anthropocene Working Group developed a proposal to formalise the Anthropocene on the following basis:

1. It is being considered at series/epoch level (and so its base/beginning would terminate the Holocene Series/Epoch as well as Meghalayan Stage/Age);

2. It would be defined by the standard means for a unit of the Geological Time Scale, via a Global boundary Stratotype Section and Point (GSSP), colloquially known as a 'golden spike';
3. Its beginning would be optimally placed in the mid-20th century, coinciding with the array of geological proxy signals preserved within recently accumulated strata and resulting from the 'Great Acceleration' of population growth, industrialization and globalization;
4. The sharpest and most globally synchronous of these signals, that may form a primary marker, is made by the artificial radionuclides spread worldwide by the thermonuclear bomb tests from the early 1950s.[10]

Thus, in order to be accepted as a formal geological time term, the Anthropocene has to fulfil two necessary conditions, the first, to be scientifically justified, and the second, to be useful to the scientific community.

One of the issues discussed by the scientific community of geologists regarding the use of the term "Anthropocene" was whether by it we designate an epoch on the geological time scale or just a geological event. Thus, a group of researchers notes that although the term has begun to be used widely, within and beyond the scientific literature, including in public space, it is not yet well defined and requires attention in this regard. They agree that a "formal definition of the Anthropocene as a chronostratigraphical series and geochronological epoch following the Holocene"[11], with a fixed horizon and a precise global start date at the mid-20th century, synchronized with the thermonuclear bomb tests, fails to account for the anthropogenic effects generated since the appearance of *homo sapiens* on Earth and materialized into a major impact on different systems of global environment during the late Quaternary. They argue that a definition of the Anthropocene as "an ongoing geological event" reflects more closely both the historical human-environmental interactions, and the social processes related with the anthropogenic environmental changes. Therefore, by contrast with the strictly geological definition, the concept of an Anthropocene Event incorporates altogether anthropogenic environmental and cultural effects.

The difference between the two approaches is given by the wider context offered by the concept of Anthropocene as an Event. Anyway, the term was already used in non-chronostratigraphic contexts so that it became an informal term or at

[10] See Subcommission on Quaternary Stratigraphy, Anthropocene Working Group, https://quaternary.stratigraphy.org/working-groups/anthropocene, accessed 2 of March 2025

[11] Philip Gibbard, Michael Walker, Andrew Bauer, Matthew Edgeworth, Lucy Edwards, Erle Ellis, Stanley Finney, Jacquelyn L. Gill, Mark Maslin, Dorothy Merritts, and William Ruddiman, "The Anthropocene as an Event, not an Epoch", *Journal of Quaternary Science*, 37(3), 2022, p. 395.

least a non-rigid designator. In this larger sense it denotes a cluster of possible interpretations of the diachronic anthropogenic impact on the planet. I also think that the non-chronostratigraphic interpretation of the Anthropocene, although it no longer identifies the Anthropocene with a unit of geological time, but defines it as a process or interaction between humans and their global environment, may be analogous to the geological interpretation supposed by the lithostratigraphical framework, were the geologists discuss about the stratified rocks based solely on their physical characteristics and not on their geological age.

This alternative approach of the Anthropocene received a reply from a large group of geologists. They classified the definition of Anthropocene as a geological event as a time-transgressive one based on the decoupling of the Anthropocene from the geological stratigraphic characteristics and major planetary perturbations. The group claims that the Anthropocene as a geological event is really an interdisciplinary concept "in which historical, cultural and social processes and their global environmental impacts are all flexibly interpreted within a multi-scalar framework"[12]. They concluded that although this new concept is very different from that based on the stratigraphic method and on the designation of a temporal unit as a geological epoch, it covers an anthropogenic phenomenon and it may be considered a complementary one. Thus, it might be useful, but with the necessary condition to be separately defined and differently named.

The main argument for considering the Anthropocene as a geological epoch was that the humans are "the most significant global geomorphological driving force".[13] One of the phenomena taken into account was the transformation of the Earth's surface as a result of mineral extraction and of great infrastructure. According to the different data on a scale of measurements, the effects of these human activities are much greater than the natural erosive geological processes, so that we may speak from a geological point of view about the significant size of anthropogenic sediment flux.

But despite these arguments**,** in March 2024 the International Commission on Stratigraphy (ICS) and the International Union of Geological Sciences (IUGS)

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[12] Martin J. Head, Jan A. Zalasiewicz, Colin N. Waters, Simon D. Turner, Mark Williams, Anthony D. Barnosky, Will Steffen, Michael Wagreich, Peter K. Haff, Jaia Syvitski, Reinhold Leinfelder, Francine M.G. McCarthy, Neil L. Rose, Scott L. Wing, Zhisheng An, Alejandro Cearreta, Andrew B. Cundy, Ian J. Fairchild, Yongming Han1 Juliana A. Ivar do Sul, Catherine Jeandel, J.R. McNeill, Colin P. Summerhayes, "The Anthropocene is a prospective epoch/series, not a geological event", *Episodes*, 46, 2023, p. 229.

[13] Anthony H Cooper, Teresa J. Brown, Simon J. Price, Jonathan R. Ford, Colin N. Waters, "Humans are the most significant global geomorphological driving force of the 21st Century", *Anthropocene Review*, 5 (3). 2018, p. 222.

rejected the Anthropocene Epoch proposal for inclusion in the Geologic Time. Their motivation was that it is not correct to talk about humans as a new geological force. The IUGS statement explained the rejection and concluded:

> Despite its rejection as a formal unit of the Geologic Time Scale, Anthropocene will nevertheless continue to be used not only by Earth and environmental scientists, but also by social scientists, politicians and economists, as well as by the public at large. It will remain an invaluable descriptor of human impact on the Earth system.[14]

The results are the same if we consider the possible expectations of a future geologist as to what he might discover relative to our own era. This approach from the past to the present, made in terms in which we now relate from the present to the past, is a heuristic approach through which we can learn how to better understand the problematic context created by the claim to reclassify geological time. Carlos Santana.[15] proposed such a thought experiment and reached conclusions that close the discussion in a philosophical way and explain why we are not yet justified to proclaim the Anthropocene:

1. Many present human geological impacts can be mitigated by future human behaviour. Therefore, for a future geologist, these anthropogenic effects might become insignificant or treated as anomalies.

(2) There are some major anthropogenic activities that are best conceived as processes originated in Holocene, so that it will be nonsensical for a future geologist to search for a demarcation line between Holocene and Anthropocene as a post-Holocene epoch.

(3) The future geologist will view the present cases of human impact as local catastrophes rather than global and long-term geological events. Or, it is clear that from a geological point of view an epoch is defined by such global and long-term events, not by local and momentary (on the scale of geological time) catastrophic changes.

Earth and Environmental Sciences. Anthropocene and the human impact

I would say that by rejecting the Anthropocene as an epoch on the Geological Time Scale the geologists have done their job well and have reached a coherent decision in relation to the scientific criteria internal to their field and have also

[14] Raymond Zhong, "Are We in the 'Anthropocene', the Human Age? Nope, Scientists Say", *The New York Times*, 5 March 2024.

[15] Carlos Santana, "Waiting for the Anthropocene", *The British Journal for the Philosophy of Science*, 70, 2019, p. 1078.

achieved a dialogical opening with other sciences and society at large. We are not living in the Anthropocene from a geological point of view, but the Anthropocene is a process that must be considered from the broader perspective of Earth and Environmental Sciences and public discourse because the anthropic effects on the Earth cannot be neglected, on the contrary, by their size they compete with the natural processes. Although the discussion about the Anthropocene at some point became a geological issue, it did not begin in this field, and the connotations of the term are not nullified by rejecting its geological significance in the strict sense. On the contrary, I believe that its original meaning did not concern the later attributed claims regarding the revision of geological time, but the obvious issue of anthropogenic effects on the environment.

The term "Anthropocene", used with a different sense by the ecologist Eugene F. Stoermer in the 1980s, was launched in 2000 by atmospheric chemist Paul J. Crutzen and again Eugene Stoermer himself in a short paper published in *Global Change Newsletter*[16] and then two years later the same Crutzen brought in *Nature* journal some extensions and intensional clarifications[17]. The two scientists talked initially about the influence of human activities on Earth's atmosphere in the last centuries after the beginnings of The Industrial Revolution around the year1750 and the invention of the steam engine, but then the meaning was enlarged to all the Earth systems.

The semantic "hard core" of the concept is the idea of anthropic effects on the environment and it wasn't reduced in no case just to the problem of Geological Time Scale. The main extensions are related with different views regarding the beginning of the Anthropocene, a useful triple model being the following:

1. 300 000 years ago homo sapiens emerged as a species and secures his food from nature, hunting and fishing. Some of the effects are the biodiversity loss and the anthropogenic extinctions because each species has its biological niche and humans displaces them from their native places.

2. 12000 years ago began The Neolithic Revolution and its effects were the rise of agriculture and a new way of life based on habitation. We have to talk now about biogeography, changes in natural landscapes, and evolution towards the urban life.

3. Around the year 1750 The Industrial Revolution began and since then we have to talk about climate change and greenhouse emissions, a symptom resulting from the increase of atmospheric carbon dioxide (CO_2) as a result of human activities.

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[16] See Paul J. Crutzen, Eugene J. Stoermer, "The Anthropocene", *Global Change Newsletter*, 41, 2000, pp. 17-18.

[17] See Paul J. Crutzen, "Geology of Mankind", *Nature*, 415 (6867), 2002, p. 23.

4. In the last decade the effects on the global environment escalated. The analyses of air trapped in polar ice showed the accelerated growing of global concentrations of carbon dioxide and methane

The result of these extensions of the Anthropocene meaning are some ambiguities and some overlaps if our main aim is to use the term "Anthropocene" as a name for a geological epoch. Thus, we prefer to talk about Anthropocene as a process related with the increased effects of human activities on all Earth systems. If we follow this hypothetical idea then it is easy to discover a concern for these aspects among scientists since the nineteenth century**.**

Here are some of the most telling examples given by Crutzen and Stoermer.[18] George P. Marsh published already in 1864 a book with the title *Man and Nature*, more recently reprinted as *The Earth as Modified by Human Action*[19], in which he expresses this concern for the effects of human activities in the new lexicon of pragmatic concern and urgency. His assumed aim is to describe the changes produced by humans in the conditions of the earth and to point out the dangers of this imprudence and the necessity to act for the restauration of disturbed natural harmonies. It is obvious that human activities are described as a geomorphological force. Few years later, in 1873, the Italian geologist Antonio Stoppani, who has used the expression "Anthropozoic era", described mankind's activities as a new telluric force which in power and universality may be compared to the greater forces of the earth.

The main transforming factors in relation to the initial terrestrial conditions that are mentioned in the literature of the last century are the growth of population and food needs, urbanization and deforestation, the intensive use of water resources, the increase in energy needs and the use of fossil fuels, but also of other toxic substances. Crutzen's conclusion is the same formula that began to take shape in the nineteenth century with Marsh:

> Unless there is a global catastrophe - a meteorite impact, a world war or a pandemic - mankind will remain a major environmental force for many millennia. A daunting task lies ahead for scientists and engineers to guide society towards environmentally sustainable management during the era of the Anthropocene. This will require appropriate human behaviour at all scales, and may well involve internationally accepted, large-scale geo-engineering projects, for instance to 'optimize' climate. At this stage, however, we are still largely treading on terra incognita.[20]

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[18] Paul J. Crutzen, Eugene J. Stoermer, "The Anthropocene", *Global Change Newsletter*, 41, 2000, p. 17.

[19] George P. Marsh, *The Earth as Modified by Human Action*, Belknap Press, Cambridge, Massachusetts, 1965.

[20] Paul J. Crutzen, "Geology of Mankind", *Nature*, 415 (6867), 2002, p. 23.

Therefore, from the perspective of Earth and Environmental Sciences, the meaning of the discussion about the Anthropocene is given by the recognition of the impact of human activities on nature, with all the indirect consequences that these anthropogenic effects produce in society. The Anthropocene is nothing but a record of the shaping presence of humans in the world or universe as a transformative force. Although the validity of Anthropocene as a scientific term for a geological epoch remains disputed, its underlying premise, *i.e.*, that humans have become a geological force, or rather, the dominant force shaping the Earth, first of all, its climate, has become a commonplace, almost a truism, for the academic field of Earth and Environmental Sciences.

Literary narratives, between documentary and fiction

It can be claimed without any doubt that the literature dealing with the topic of the Anthropocene predates the appearance of the term in the 2000s. The framework narrative in which the new lexicon of the Anthropocene is valued is focused on anthropogenic effects or on catastrophic natural events that radically change the way of life on Earth. The two major fields are documentary literature, from reportage to popular science, and science fiction literature, the latter predominantly dystopian, full of pessimistic scenarios about the future. Adam Trexler notes the abundance of literature on these issues, both in the areas of non-fiction and fiction, from independent journalism and academic works to novels of various genres, from narratives close to scientific truth to post-apocalyptic perspectives that are combined with mystical visions. The main subjects of these are the effects of climate change, the causes of this phenomena, the capacity to struggle and to resist as a civilization, what has been done by our institutions so that to avoid a disaster. Trexler expresses his own worries "that the rest would be preachy, politically partisan in the worst sense, apocalyptic rather than scientific, or, yet worse, craven rehearsals of the facts", but also notes that fiction can play a decisive role in shaping consciousness because non-fiction works lack by "the novel's capacity to interrogate the emotional, aesthetic, and living experience of the Anthropocene".[21]

A selective inventory is instructive and illuminating. A genre of science fiction is the post-apocalyptic literature that describes a limit situation for humanity as a result of natural or human-made catastrophes. A subgenre of it is devoted to global warming and climate change. One of the first and the best novels about a post-apocalyptic world on Earth is *The Drowned World* by J. G. Ballard, published in 1962,

[21] Adam Trexler, *Anthropocene Fictions, The Novel in a Time of Climate Change*, University of Virginia Press, Charlottesville, VA, 2015, p. 6.

a story about a post-apocalyptic future in which global warming is caused by increased solar radiation and, as a result, it is very difficult to live on the surface of the earth. A group of scientists are conducting environmental research in London, which has become a flooded city. The topic is successfully repeated by the Australian writer George Turner in his novel *The Sea and Summer* (1987), also known as *Drowning Towers*, with the mention that the novel also marks the turn towards a social issue. Sometime in the future the Melbourne city is affected by climate change with the sea slowly flooding the coastal urban area. Unemployment reached huge proportions, and the poor were ghettoized in two skyscraper towers, a symbol of a possible social rupture as a result of the ecological crisis. Maggie Gee in *The Flood* (2004), adds other cultural and ideological dimensions and the tone becomes much more sceptical, because instead of scientific expertise that could lead to a rescue, complex situations such as the selfishness of the rich people, religious fanaticism or civil violence are brought to attention.

Another pack is represented by novels that discuss not only the effects, but also the causes of climate change, with all the consequences that result from it. The novel *Heat* by Arthur Herzog, published in 1977, is one of the first to draw attention to the effects of increasing carbon dioxide in the atmosphere, the immediate catastrophic effects being devastating hurricanes and unbearable heat waves in urban areas. Despite the evidence and the warnings from experts, government authorities are not taking preventive action. This type of hesitation of public decision-making authorities will become the way in which, as a rule, the institutional behaviour and that of political leaders will be depicted in literature, thus shaping an extremely critical literature against them. A new narrative stage is aimed by ***A*** *Friend of the Earth* (2000), a novel by T.C. Boyle. In the year 2025, as a result of global warming and the greenhouse effect, the climate has severely changed, and, as a consequence, the environment was destroyed and the biodiversity was practically extinct Deforestation and overpopulation are other phenomena which have gotten out of control and are causing serious social problems regarding habitation and the health system. Finally, Saci Lloyd offers in the *Carbon series*[22] a soft vision that excludes catastrophe, but we still arrive at an apocalyptic future through a persistent crisis. Laura, a teenager who sings in the band Dirty Angels, is so convincing to Vanessa Thorpe, a columnist at *The Guardian*, that she writes: "Forget Harry Potter: Saci Lloyd thrills teenagers with a heroine who battles climate change and extremism"[23].

[22] *The Carbon Diaries 2015* was published in 2009 and *The Carbon Diaries: 2017* in 2010.

[23] Vanessa Thorpe, "Forget Harry Potter: Saci Lloyd thrills teenagers with a heroine who battles climate change and extremism", *The Guardian*, 17 January 2010, https://www.theguardian.com/books/2010/jan/17/carbon-diaries-saci-lloyd-television

Another science fiction subgenre that addresses the issue of anthropogenic effects is that of the political novel, in which political actions that are mainly caused by climate change are related to a geopolitical context Matthew Glass's *Ultimatum* (2009) seems to me to be a pioneer in this regard both in terms of acuity and topicality. In November 2032 Joe Benton is elected as president of the United states and he is immediately informed that the effects of global warning were underestimated. Benton's option is to abandon the multilateral negotiations at the Kyoto-4 summit and begin secret negotiations with China, as if other smaller nations could be neglected when it comes to a global issue.

Truth and choice. The idea of a 'dynamic lexicon"

From what has been stated so far, it becomes justified to conclude that the Anthropocene has emerged as a popular scientific term used equally by scientists from different domains, especially Earth and Environmental Sciences, by the scientifically engaged public concerned with knowledge of nature and also by the media to designate the period of Earth's history during which humans have a decisive influence on the actual state, dynamics and future of the Earth System. Also, many writers and artists from different areas, as it would be cinematography, photography, fine arts, or music, have been inspired by the Anthropocene issues and have developed new subgenres in their fields. We may conclude that the term "Anthropocene" is "increasingly penetrating the lexicon of not only the academic socio-sphere, but also society more generally."[24]

I believe that the multifaceted approach I have proposed makes it clear that the use of the term Anthropocene has a dual character in that it concerns both the problem of establishing a truth and that of certain choices or conventions that we can make or establish during research. Shortly speaking, the Anthropocene is not only a question of scientific truth, but also one that involves certain choices. Thus, if the debate about is also a matter of choice, then it means that we must take into account the social context and involve in our research the social sciences, from anthropology to sociology. Therefore, we accept the claim that the causes of Earth's transition from one state to another are both natural, human and social. From a social and anthropological standpoint we agree without any doubt that the anthropic influences on the Earth should be recognized, but remains the question to find a good criterion or the so called markers for a demarcation on the scale of geological time. It seems that if no marker is privileged then we have no other

[24] Rodolfo Dirzo, Gerardo Ceballos, Paul K. Ehrlich, "Circling the drain: the extinction crisis and the future of humanity", *Philosophical Transactions of the Royal Society* B, 2022, p. 2.

solution than to go back from the 1950s of thermonuclear tests to the 1750s of the beginning of the industrial revolution and the use of the steam engine and from there back to the Neolithic agricultural revolution or even to the use of fire for food preparation by homo sapiens. But this is a Eurocentric and technocratic narrative which we are not entitled to extend to all the civilizations that have succeeded one another. Therefore, without a strong criterion or marker, the risk of a definitional "slippery slope" is obvious. The correct choice is to agree that "the Anthropocene was not made in a day, nor was it created uniformly: the material records of human alterations of Earth are thick, deep and heterogeneous. They highlight huge social, cultural and technological differences across time and space."[25]

I believe that a consensus is emerging within the philosophical community regarding the different approaches to the Anthropocene, both from a descriptive and a normative perspective. Sébastien Dutreuil, and Pierre Charbonnier[26] proposed to distinguish from an epistemological standpoint between three contexts in which the Anthropocene is discussed, first the most general one of the Earth Sciences, then the particular one of Geology, and the last, that of the Human and Social Sciences. This third level would be necessary because the Earth Sciences and Geology have different epistemological regimes that are intertwined with two different normative registers related with the political decisions focused on the issues of global environment. Earth Science have from the beginning a normative position, while Geology, by contrast, is more caution to engage in this kind of political debate. Anyway, the result is the development of a highly politically charged level of reflection in the social and political sciences and, by extension, in the humanities.

But I think we can go even further than that, so that to take into account and to develop new topics of philosophical reflection[27] concerning the humans in the Anthropocene, beginning with the recognition of the human dependence from the environment that itself depend form the humans in the form of a closing circle. Some of these topics are the human precariousness, the finitude, the responsibility, or the emotional interactions between humans and nature with the biotic community. At the same time, complementary to the philosophical discourse and in conditions of full legitimacy, the narratives of the Anthropocene can be identified at the

[25] Erie Ellis, Mark Maslin, Nicole Boivin, Andrew Bauer, "Involve Social Scientists in Defining the Anthropocene", *Nature*, 540, 2016, p. 193.

[26] Sébastien Dutreuil, Pierre Charbonnier, "Philosophy of the Anthropocene", Oxford Research Encyclopedia of Environmental Science, Oxford University Press, published online 24 May 2023, https://oxfordre.com/environmentalscience/display/10.1093/acrefore/9780199389414.001.0001/acrefore-9780199389414-e-

[27] See as a good example for this strategy Sverre Raffsnoe, *Philosophy of the Anthropocene. The Human Turn*, Palgrave Macmillan, London, 2016.

pragmatic level of environmental management. I'm thinking about Friske's paper, "Towards an Anthropocene Narrative and a New Philosophy of Governance: Evolution of Global Environmental Discourse in the Man and the Biosphere Programme"[28] (2021), where the lexicon of the Anthropocene is used according to the historically dominant narratives of conservation and sustainable development.

Therefore, if we accept that we have some different or even divergent narratives of the Anthropocene that are based and lead to different contextualizations of the vocabulary elements, then we implicitly admit that our choices are expressed through preferential uses of the Anthropocene lexicon. Traditionally speaking, the relation between a lexicon as a vocabulary and truth depends on the words meanings stability and their truth conditions. I think that the question is if this dynamic changes from one lexicon to another, in the case of the Anthropocene from the narrative of Geology as a science to the narratives of literary fictions, is compatible with the traditional truth conditional semantics as it was developed form Tarski to Davidson as a standard approach.

As we have seen, in the case of the Anthropocene lexicon the meanings are not fixed but open to debate and negotiation at the level of different communities, scientific or not, so that it is possible to produce new taxonomies and reclassifications. I think that we may use Ludlow's idea of a "dynamic lexicon"[29] to explore this unstable relation between our lexicons as vocabularies and ttruth conditions. We'll agree that the meanings of the lexical terms are opened to changes and negociation among the speakers of a linguistic community so that the vocabulary is semantically adapted to the different new discoveries and approaches. If we return to Kuhn's research we may mention his ideas about the shifts in meaning and truth in the time of Copernican Revolution when the word "planet" was more correctly applied to the celestial bodies[30]. Ludlow also mentions the recent debates regarding the meaning of the word "planet" so that to include or not Pluto in its extension[31].

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[28] Desirée Friske, "Towards an Anthropocene Narrative and a New Philosophy of Governance: Evolution of Global Environmental Discourse in the Man and the Biosphere Programme", Journal of Environmental Policy and Planning, 24 (1), published online: 03 August 2021 https://www.researchgate.net/publication/363304784_Towards_an_Anthropocene_Narrative_and_a_New_Philosophy_of_Governance_Evolution_of_Global_Environmental_Discourse_in_the_Man_and_the_Biosphere_Programme

[29] See Robert Ludlow, *Living Words: Meaning Underdetermination and the Dynamic Lexicon*, Oxford University Press, Oxford, 2014.

[30] See Thomas S. Kuhn, *The Copernican Revolution: Planetary Astronomy in the Development of Western Thought*, Harvard University Press, Cambridge MA, 1995.

[31] Ludlow extracted this fragment from a report of IAU Working group: "Rather than try to construct a detailed definition of a planet which is designed to cover all future possibilities, the WGESP has agreed to restrict itself to developing a working definition applicable to the cases where there already are claimed detections . . . As new claims are made in the future, the WGESP will weigh

Undoubtedly, this idea of a "dynamic lexicon" will lead to much stronger contextual commitments and will challege us to take into account some traditional topics in analytic philosophy regarding the so-called rigid designation.

All these developments confirm the need for a space of reflective balance between conceptual research (searches) and practical applications. First, the institutionalization of a narrative is not a clear-cut process, second, the Anthropocene narratives express the need for introspection, but also urgency and uncertainty in light of ecological changes, and the third, the Anthropocene lexicon transforms global environmentalist philosophy, revealing a gap between theoretical commitments and practice of sustainable development. But the idea of sustainable development continues to steer its ideological power, revealing another gap between philosophy as a *Weltanschauung,* the divergent narratives related with the Anthropocene, and the ways in which the practices oriented towards sustainability are institutionalized. This paper may be considered an attempt to harmonize and understand all these choices.

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their individual merits and circumstances, and will try to fit the new objects into the WGESP definition of a 'planet', revising this definition as necessary. This is a gradualist approach with an evolving definition, guided by the observations that will decide all in the end". (*Apud* Robert Ludlow. *Living Words: Meaning Underdetermination and the Dynamic Lexicon*, Oxford University Press, Oxford, 2014. p. 77).

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