1. Introduction

The Anthropocene is an appealing title for the global scale of current environmental crises when it suggests the problem is one of a nature-human conflict with the responsibility placed on one protagonist of the Anthropocene, the *anthropos*. It probably makes sense to discuss a biological species' global impact on the environment within the natural sciences where also competing categories exist (Vernadsky 1945; Steffen et al., 2011; Lewis & Maslin 2015; Bonneuil and Fressoz 2016), but it is problematic in philosophical, social and political contexts because both "nature" and "human" are generalising and ambiguous. As such they are more of a political and ideological character than a descriptive.

I share a concern about the Anthropocene voiced from more sides – for example, by Françoise Vergès who writes that the Anthropocene's "apocalyptic narrative is an ideological strategy that blames out-of-control forces rather than structures of power" (Vergès 2017, n.p.). The blindness to structures of power gives a false perspective that preconceptualises the problem (Moore 2017, I, 621). As Jason W. Moore writes, "The Anthropocene has become the most important – and also the most dangerous – environmental concept of our times" (Moore 2018, II, 237). A danger is that it frames some of the post-anthropocentric responses that identify human exceptionalism as responsible for environmental crises which is a reductive understanding of the nature-human relation. Different approaches, such as the Plantationocene, Capitalocene (Haraway 2015) and the Racial Capitalocene (Vergès, 2017; Loscialpo 2023) will point out that it is not humanity as such we must approach but a specific human activity.

With inspiration from these discussions, I suggest changing focus from what we do to the environment – which undeniably is a problem – to what we do when we determine what it is to be a human being. This is not to deny that the nature-human relation in Western thinking is problematic, but it is to question a single narrative of that relation which reduces the different practices that form the relation to a single and also extreme narrative then used as representing Western thinking as such. This is more of a political act than a scholarly or philosophical one. When one does philosophy with the belief that it is philosophy but is blind to the political implications, one's work is ideological. Neither nature, nor human can be unambiguously characterised, and one should be careful about confusing biological agency of human (*singular*) as a species with political agency concerning humans (*plural*).

The problem with the Anthropocene can be demonstrated by contrasting how it states that coal transformed the world to the Capitalocene saying that capital and sciences transformed coal, i.e. turned nature into a mere resource for human activity. If coal were the only source of transformation, one would need to ask why the use of coal in medieval China did not become a transforming event (cf. Wagner 2001; Hartwell 1966, 56 f.). It is changes in practices that lead to changes in our interpretation of nature and human, and we do not find a single narrative about centuries of practices in Europe and consequently no simple diagnosis for managing – a revealing notion used in the Anthropocene discourses – the nature-human relation.

The aim in the following is to focus on changes in structures important for what makes sense to us as humans, including for our understanding of what it is to be human. The latter points at the central role of education which is about what we believe is implied in becoming human. The first part of the paper, consisting of two sections, raises some critical issues about the Anthropocene and some forms of post-anthropocentric thinking. It points at how a reductive understanding of nature and human conceals complexities in this relation, and, consequently, it becomes ideological in form. The second part, also in two sections, addresses practices that form our view on human and nature in relation to social roles, production and capital which problematise the line drawn between human and nature and points at how "[t]he question of who is – and who is not – Human is therefore at the core of the climate crisis" (Moore 2022, 14).

Part I.
1. Anthropocene preconceptualisation

The Anthropocene preconceptualises the discourses of environmental problems by reducing the geological Anthropocene to a timeline where "[p]opulation, urbanization, economic growth are all reduced to empirical "indicators" of an abstract globalization" (Moore, 2021, 4). Complex events become a simple narrative in which the invention of the steam engine and the use of coal are the causes of climate changes due to the emission of CO_2 thus framing further discussion by stating *that* something is the case without asking *how* it has come to be the case. With a logic of problem-solution we stumble into discussing solutions before critically investigating what makes the problem the problem it appears to be, i.e. by ignoring if it is what it appears to be. The Anthropocene conceals the complexity of the

matter and appears as an ideological notion.

The Anthropocene narrative explains that climate changes are the result of human activities and the outcome of a process beginning when our hominid ancestors began to master the art of making tools and the control of fire which helped grow a larger brain allowing for the development of language (Steffen et al. 2011, 845 f.). The trick of argument here is to use "one framework (geology and climatology) to make universal claims about the world—it helps make *only one world* possible" (Vansintjan 2016, n.p., emphasis in original). This is a huge simplification that allows simple recommendations for policy makers about how to manage populations as we are all in it together, all sharing the same responsibility.

One world has one narrative in which James Watt's patented steam engine is set to be the defining mark of the Anthropocene (Crutzen 2002). Even though it points at the industrialization of Europe, the blame is on humanity. Why call it the Anthropocene if it only includes some *anthropoi* (Malm & Hornborg 2014, 63)? In the narrative of one world, it is only accidentally that the innovative steam engine appeared in England.

The inclusion of all humans distributes a responsibility for specific activities to everyone on a planetary scale. Critics pointing out that OECD countries have been responsible for most of the global environmental impact are swept aside with reference to how the increasing impact of the developing countries is the price for bringing people out of poverty (Steffen et al., 2015, 11 f.). Third-world countries will pursue the same course as the first world; consequently, the problem is not Western but the global development we know as the Great Acceleration displayed in hockey-stick diagrams of human-driven changes to the Earth System (Steffen et al. 2011; 2015). Because everyone is believed to pursue the same goals, it becomes a mere matter of the number of individuals and the impact of their activities. In a one-world view, the task is to manage side-effects of technical driven accelerations by more technical innovation including considering the use of geo-engineering (Crutzen 2002; Steffen et al. 2011), thus emphasising "humanity's responsibility as stewards of the Earth" (Crutzen & Schwägerl 2011, n.p.).

A trick of argumentation here is to combine scientific models, social matters and political administration: a crisis caused by population growth and scarcity of resources requires administration of the resources to prevent social instability. Crisis-management is the

answer to what is considered a necessary outcome of humanity's development, and the Anthropocene proves to be "one Environmentalist expression of neoliberal dogma: *There is no alternative*" (Moore 2021, 5, emphasis in original). The general notion of humanity conceals that there are specific activities we should announce as problematic, and it ignores recent years' studies – for example, post- and decolonialism, that have problematised the talk about human and humanity in singular (Bonneuil and Fressoz 2016, 71 ff.; cf. Chakrabarty 2012). The single narrative of the Anthropocene discourse becomes instrumental in suggesting models for management of humans, and we must say "that the inauguration of the Anthropocene is thoroughly ambiguous, and thoroughly political" (Davison 2015, 299). It reveals itself as an ideological notion when the managing of specific practices is for these practices, i.e. legitimating them. Abstractions such as "human" as well as "nature" are not neutral; they are "ruling abstractions", i.e. they have material force and become "building blocks of hegemonic ideologies that trickle down to the folk concepts of everyday life" (Moore 2023, 10).

Instead of human stewardship, others suggest humanity – we also find generalisations in post-anthropocentric thinking – should have "loved nature enough to restrain a fatal technological lust" (Davison 2015, 300). The lack of love can be seen as the result of an idea of human exceptionalism, the idea that there is "a difference in kind between humans and non-humans and not just a difference in degree" (Descola 2015, 14). Such a belief in human uniqueness is supposed to blind us to the perspectives of other beings. To understand humans, we use specific attributes considered "distinctive to humans – language, culture, society, and history" in a process in which "the analytical object becomes isomorphic with the analytics" (Kohn 2013, 6). A shift to a more-than-human perspective is suggested to enable us to break "open the circular closure that otherwise confines us when we seek to understand the distinctively human by means of that which is distinctive to humans" (Kohn 2013, 6), and to acknowledge the multiple other agents in the Earth System. This perspective should enable a different understanding that "links human cultures with nonhuman natures" (Åsberg 2017, 186) which is needed because we "can no longer afford the modern divide of non- or subhuman and human, nature and culture" (Åsberg 2017, 194). The more-than-human becomes here an umbrella term for including non-human agencies, the human entanglements with ecosystems and establishing multispecies justice (Fieuw et al. 2022, 2; cf. Lawrence 2022).

Human exceptionalism is seen as related to a Cartesian dualism that places the human subject, culture and reason against objects, nature and matter (Conty 2018, 74). Such a confrontation is the occasion for ideals of knowledge through a rational representation of the world in and by a human mind seen to form "the basis for privileged ontological status" (Benson 2019, 259). However, this only suggests *that* exceptionalism and the ontological dualism are keys to the environmental crises, not *how* they have come to appear as such. It merely says dualism instead of coal transformed the world and that the solution is to close the gap between humans and other beings with, for example, a new materialism.

New materialism is an example of post-anthropocentric thinking. New materialism covers more variations, for example, negative, vital, and performative new materialism (Gamble et al. 2019; cf. Conty 2018; Rosa et al. 2021, 2 f.; Truman 2019), but common is the claim that matter is not "dead" and exists to be manipulated by a human agent, a view seen to come from Descartes' epistemology and Newton's mechanistic view on nature (Barad & Gandorfer 2021, 16; Benson 2019, 257; Truman 2019). Instead we must understand matter has agency that is distributed indiscriminately between all there is, and the exceptional position of humans is thus eliminated by understanding how we are, in a world of vibrant matter, "*an array of bodies*, many different kinds of them in a nested set of microbiomes," paving way for a hope that we will start asking questions of the following kind: "if we were more attentive to the indispensable foreignness that we are, would we continue to produce and consume in the same violently reckless ways?" (Bennett 2010, 112 f., emphasis in original; cf. Benson 2019, 260). However, it raises a precarious question. If we are more of an assemblage of bodies with agency, a consequence seems to be that "[m]any contemporary Earth dynamics may be inherently human in origin, but they are not thereby exclusively human, […] Contemporary climate change, then, is anthropoflected, not anthropogenic" (Davison 2015, 303). Furthermore, an increased awareness of the environment seems to presuppose the subject that the environment is environment for and an acting subject capable of changing attitude.

Some forms of new materialism pursue the Anthropocene's crisis-management when they propose the solution to the problem is to regulate interpretation, thus emphasising "humanity's responsibility as stewards of the Earth". It comes without investigating the competences of the reason issuing this interpretation, and some will argue that this is a return to pre-Kantian thinking (cf. Cole 2015), i.e. a neglect of a critical reflection on the

capacity and legitimacy of our faculties of knowledge which should prevent us from confusing epistemic thinking with wishful thinking. New materialism criticises the Kantian critical reflection for fostering human exceptionalism because it should imply that a correlation between being and the human subject makes only what the subject can think of matter. However, this ignores that Kant was motivated by investigating reason to establish the limited competences of scientific knowledge and preventing the intellectual harm of materialism, along with fatalism and atheism (*Critique of pure Reason* B XXXIV) leading to false and dogmatic views of the world. In fact, it is New materialism that is in danger of subscribing to an immodest confidence in human knowledge issuing claims about the character of nature (cf. Boysen & Rasmussen 2023, 12 ff.). Kant wanted to save the world from reason's imperialism insisting on limiting reason to what is reasonable; New materialism, unhappy with not engaging us in the world beyond human capacities, embarks on a conquest of the world with uncritical postulates of what it is.

Hence, a peculiar consequence is that post-anthropocentric critique of an exaggerate belief in human agency can propose an immodest intellectualistic solution to manage and empower human agency. To avoid the ideological blindness and philosophical inconsistency in such proposals, we should instead give more attention to how changes in practices – such as engineering techniques, accounting, mapmaking, juridical practices, mining, trade, medicine etc. – gradually formed a modern Western world-view and required interpretations that could explain and legitimate these practices along with making explicit their implicit assumptions. Among them is a dualism of nature and man/spirit to which we may ask for "not the metaphysical mystery of conjunction, but rather the practical and political mystery of separation" (Agamben 2004, 16). We must ask for what made coal become a resource and not merely stating that the use of coal is the cause of climate changes to which the answer is new technology to manage human production maintaining the very same system of production. Likewise, we must ask what made dualism an interpretation of the nature-human relation and not dogmatically state it is a false worldview only to offer an alternative in form of a universal idea to manage the mindset of humans globally.

2. New practices, new world-interpretations

This section is a brief interlude to add nuances to the Anthropocene narrative of the scientific revolution and the birth of modernity in the 17th century as the cause of

transformation of nature into resources to exploit and of the human subject into an exceptional being confronted with nature represented in a human mind. While we can say *that* such views appeared although there are competing interpretations of both nature and human to be found, we also have to say how it has been possible to understand nature as a resource and to discard a view on nature as God's creation in which we also found moral guidance.

Changes in interpretation of world and nature cannot be simply dated to the scientific revolution and to specific discoveries, debates and writings. The changes must be interpreted in relation to several practices that required new explanations. Among them were social changes emerging from crafts people and merchants like when the introduction of bookkeeping in late 14th century moved from merchants' organisation of their commerce and into the management of the political world: "In the past seven centuries bookkeeping has done more to shape the perceptions of more bright minds that any single innovation in philosophy or science" Alfred Crosby writes (1997, 221). Peter Sloterdijk suggests that the main protagonist of modernity is not Copernicus but Magellan; what forms the modern world is not the idea that the Earth circulates around the sun, but that money circulates around the Earth (Sloterdijk 1999, 56; 856). The entrepreneurs of European trade and colonial expansion, he writes, are no longer rooted in a world with historical points of orientation and in their natal landscape with its significant locations; they move in the abstract places of points and lines on paper, in a m*appamundo* in which the making of maps transform the concrete world into abstractions where every point is a potential for capital (Sloterdijk 1999, 828). The practices of new sciences also accommodate new institutions and political culture as we can learn from, for example, the debate between Thomas Hobbes and Robert Boyle (Shapin & Schaffer 1985).

The modern sciences discarded a worldview where natural phenomena were signs making something absent become present. The language was one of similitude and resemblance, like in a *Wunderkammer*, and the Bible the key to interpret the signs. When, "by the end of Renaissance Humanism, language had withdrawn from the world, closing itself up in the abstract space of representational signs" (Esposito 2015, 74) because new sciences offered an ideal language of geometry, resemblance was substituted with representation of order (Foucault 1966/1994, 50 ff.), an order with its own structure and logic representing by "standing for" what is absent instead of "making it present". Representation now became an

independent model, a copy of the original where what connects signs was "a bond established, inside knowledge, between the *idea of one thing* and the *idea of another*" (Foucault 1966/1994, 63, emphasis in original). The legitimacy of knowledge was no longer in the order of resemblance in the world, but in the models of representation (Foucault 1966/1994, 78; cf. 218 and Arendt 1958/1998, 290 f.); in the order of a logical structure guaranteed by clear and distinct concepts and secure methods.

However, the limits of this model of representation revealed a new problem and with it a new change in the mode of thinking at the end of the 18th century. We cannot represent the *act* of representing in a representation. The subject which is the foundation *for* representation cannot itself be represented *in* the representations. The subject reflects the world, but the mirror reflecting cannot reflect itself. The sciences about human life, wealth and language – biology, economy and philology, i.e. the topics of what produces the human subject – view the human subject as an object, but the conditions for these sciences reside outside representation (Foucault 1966/1994, 239; cf. 244). Human sciences are no longer about what "man is by nature" (Foucault 1966/1994, 353), but about what enables the concrete forms of human existence. Hence, human sciences are for the analysis "of norms, rules, and signifying totalities which unveil to consciousness the conditions of its forms and contents" (Foucault 1966/1994, 364). Consequently, *should* this way of thinking disappear, its object, man, will disappear with it (Foucault 1966/1994, 387).

To "unveil to consciousness the conditions of its forms and contents" – to make us conscious about what it is to be conscious and what we are conscious about, or, to know what the subject that cannot represent itself in a representation is, are philosophical questions that have occupied a large number of philosophers since the end of 18th century. This interest in subject and subjectivity gives priority to studies of the human subject but does not necessarily imply man has an exceptional position against nature – nature appears along with the interest in subjectivity in more forms including as drives, feelings, and sentiments that are challenging any idea of an exceptional position. It is not false to say there is a conflict between nature and human, but it is a very reductionist view of Western history of ideas to see human entrepreneurship and its technical use of natural resources as the only characteristics of humans. This only suggests *that* there is a false understanding of nature and human without explaining how such an interpretation has appeared.

Part II
1. Cheap nature

It is insufficient to say that the environmental crises today are caused by the introduction of fossil fuels with the industrial revolution in the 19th century and that other defining events are the scientific revolution in the early 17th century and an ontological dualistic view on nature. These components are not insignificant but must be accompanied by explaining how they have come to play the role they do. The Anthropocene suggestion of managing human activities globally can have an effect, but the neglect of the structures causing the environmental problems and of the political premisses of this management reveals the ideological character of the management of the planet's population. Moreover, regulating the exploitation of nature to avoid collapse is still exploitation.

A study that explains what has led to current environmental crises must address the complexity of causes for changes in practices. This requires comprehensive empirical studies and only two significant suggestions can be made here: (a) new technical inventions caused different practices that were articulated and enhanced by the new sciences, leading (b) to changes in economic structures necessitating a devaluation of nature and the relocation of large numbers of humans into a cheap nature.

(a) The transition from medieval to early modern world in the 15th century witnessed "the greatest landscape revolution in human history" with respect to "speed, scale, and scope" (Moore 2016, 91). It not only transformed the landscape but caused "a new pattern of environment-making" (Moore 2016, 97). New machines, new agricultural methods, new chains of production appeared in the outgoing Middle Ages and made, over centuries, machines, like the steam engine, accelerators of this process. It has led to how we today find that "[a]griculture is now the mechanized food industry" (Heidegger 1977 [*Die Frage nach der Technik*], 15).

The technological innovation transformed nature from something we work with to something that works for us (Moore 2017, I, 613). A nature put to work is not only a nature domesticated through deforestation and expansion of agricultural land; nor is it one of providing different means for specific products such as metals for tools. It is a nature that can be subject to planning and control through division of labour, where a process of

production can be reduced to a number of specialised partial events distributed in a chain of production where each part can be optimised for their contribution to the total outcome – a nature of which regulating and securing are chief characteristics (Heidegger 1977 [*Die Frage nach der Technik*], 16).

Such a view on nature corresponds to the new sciences of the 17th century that discarded a view on nature as one that reveals a meaning for our existence in a language of resemblances, analogies, allegories, and other literary figures for one that subsists human existence. The nature of sciences is described in a language of mathematics compatible to a mind of accounting, map-making and administrative technologies (Moore 2016, 112), and it is beneficial for practices such as the trans-Atlantic expansion with its monoculture and slavery that emerged in the 16th century. Likewise, it relates to productive aspects of intellectual investigations opening a field of research "through the projection within some realm of what is – in nature, for example – of a fixed ground plan of natural events" (Heidegger 1977 [*Die Zeit des Weltbildes*], 118). Not experience, but models of representation conceiving conditions for experiments constraining "the anticipatory representing of the conditions" (Heidegger 1977 [*Die Zeit des Weltbildes*], 121, cf. 124 and 129 f.) characterises the modern sciences. The methodological investigation of nature through experiments matters, not experiences (Koyré 1973/1992, 169).

The success of modern sciences is not merely due to beneficial explanations of phenomena, but also to their use for productive and administrative purposes explaining how to construct artefacts that make nature work for us. The explanations correspond to changes due to, for example, new agricultural technologies and medicine, new instruments for measuring and discovering the world, and new inventions transforming daily living. New practices discarded the metaphysical interpretation of the world that guided human existence and emphasised a responsibility for what we have been given a user right to but no ownership of. Instead, they could offer means of intervention through models of representation.

Simultaneously with the landscape revolution of the 15th century, feudalism was confronted with becoming economically and ecologically unsustainable because of decreasing revenues due to an increasing population on exhausted soil causing deforestation, geographical expansion and urbanisation which put further pressure on land (Moore 2003, 106 ff., also pointing at how different structures made Europe and China develop differently 121 ff.;

Federici 2014, 61 ff.). An answer to the crisis was “land privatization and the commodification of social relations” (Federici 2014, 66); hence, the modern age “began with the expropriation of the poor” (Arendt 1958/1998, 61; 254 ff.) when the commons that had served as social security were privatised. With the commons disappearing, more people were forced to work for money. Substituting an economy of product-exchanges with money-economy changed social relations by creating an abstract relation of value separated from the direct production, and transformed “human activity into labor-power, something to be “exchanged” in the commodity system” (Moore 2016, 85; cf. 2003, 130 f.). Instead of land productivity for sustaining life, labour productivity for accumulation of wealth became central, and with it “an irresistible tendency to grow” (Arendt 1958/1998, 45) enhanced by transforming consume into something non-satisfied (Arendt 1958/1998, 124; cf. 143 and Böhme 2017).

(b) The economic crisis of feudalism in late medieval times made it of importance that labour, food, energy, and raw materials were devalued to accumulate value (Moore 2017, I, 611; cf. 2016, 101 f.). A central component in the relation to nature since late 15th century has thus been to make it cheap “understood as work/energy and biophysical utility produced with minimal laborpower” (Moore 2016, 99). A nature made cheap is one of “relocating many – at times the majority of – humans into Nature, the better to render their work unpaid, devalued, invisibilized” (Moore 2018, II, 242; cf. Vergès 2019; Schmelzer 2023). One group relocated were women confined to the unpaid or cheap labour of reproduction; another group the increasing number of enslaved people. Along with relocation came a need for regulation and control. A mean is through social norms, like the sanctuary of the family, and political regulations, such as criminalization of contraception (Federici 2014, 92). An extreme form was the witch hunt that Silvia Federici explores for its role “in the development of the bourgeois world, and specifically in the development of the capitalist discipline of sexuality” (Federici 2014, 197).

The Anthropocene assumption of a nature-human conflict and human exceptionalism ignores this relocation. The mastering of the environment through human enterprises does not place humans as such against nature as exceptional beings, but it addresses a perpetual question in Western philosophy of who is – and who is not – human which is a matter of social position and power. When ignoring this, the idea of human exceptionalism becomes itself an instrument for these powers, a ruling abstraction, i.e. ideological.

The prevalent definition in Western philosophy of man as animal rationale, as a synthesis of the living being and reason, expresses a relation and a task of balancing the necessities of life such as to liberate reason and live accordingly, i.e. not to enslave reason to necessities. The task is educational; it is to learn to become human, and it is expressed in legal discourses of recognising another as human. Labour provides us with the material conditions for our existence and is thus, traditionally, related to the necessities of nature, i.e. to the animal element different from the distinctively, or exceptional, human activity: the political, the sphere of the free. One is free from necessities when one owns things necessary for providing for one's existence. The opposition of freedom and necessity appears related to practical matters, to how we must learn to deal with necessities because they qua necessities cannot be dealt away with. Thus, the composition, or relation, of animality and rationality poses a constant challenge as to what composition it is. Answers are multiple, whether a Roman of thing and person, a Christian of flesh and spirit or a modern of (physical) body and (psychological) soul (Esposito 2015). "In our culture, the decisive political conflict, which governs every other conflict, is that between the animality and the humanity of man" (Agamben 2004, 80). The conflict is political as it is decisive to how we relate to another – who is considered true human and who is not.

2. Being human, an educational task

Relocating some, i.e. many, humans into nature captures well the ideological implication of reducing the nature-human conflict to one of a simple dual opposition of an active human spirit confronting a passive material world constituting human exceptionalism. Not only does this reductive view of exceptionalism (a) miss the complexity of the nature-human relation, it also (b) misses the different mechanisms of including and excluding individuals into an understanding of what human is.

(a) The standard reference to a dualism of Cartesian philosophy is reductive in the sense that it pays little attention to other influential traditions in the 16th to 19th century with different views on human existence and capabilities, for example Christian meditations like Ignatius Loyola, Renaissance humanists such as Lucrezia Marinelli, and Baroque thinkers like Baltasar Gracián. Thus, Pascal: "What a chimera is man, what novelty, what monster, what chaos, what subject of contradiction, what a prodigy, judge of all things, feeble like a worm, disposing of truth and a cesspool of uncertainty and error, the glory and the scum of

the universe! […] Know then, proud man, what a paradox you are to yourself! Humble yourselves, impotent reason! Be silent, ignorant nature! Learn that man is only man and hear from your Master your true condition that you do not understand. Listen to God!" (Pascal 2000, §164, my translation) – not exactly a praise of exceptionalism. The new sciences did also not display a unison picture. For example, Alexander von Humboldt wrote in 1844 (*Entwurf einer physichen Weltbeschreibung*) how his treatise was motivated by an effort to understand the appearances of physical objects in their coherence and to conceive nature as a living entity moved by its inner forces out of a concern for how partial investigations of nature would make us forget the human endeavour of contemplating the spirit in nature (Ritter 1989, 152). His contemporary, Auguste Comte, described the sciences as only a tool for humanity: "Science unassisted cannot define the nature and destinies of this Great Being with sufficient clearness. […] it leaves inevitable deficiencies which esthetic genius must supply" (Comte 1848/1865, 360). The "fundamental doctrine of Positivism" we read is "that the Heart preponderates over the Intellect" (Comte 1848/1865, 340).

This is only to exemplify the complexity of the nature-human relation in modern philosophy that inherits Greek philosophy, Roman law, and Middle Eastern, notably Christian, theology all often intertwined in modern mind where to new sciences add yet another perspective. We cannot reduce this complex narrative to only a human-nature conflict. We have to pay attention to the components in forming relations to the world implying both changes in the physical environment through new practices and new ways of perceiving nature and humans.

(b) A persistent element in understanding humans as humans is the necessity-freedom conflict. A true human is considered to be one who is not enslaved to external conditions, in particular the necessities of nature. Considering that many individuals have been relocated into nature like women, indigenous (cf. German *Naturvolk*, i.e. nature people) and enslaved people, we must ask for the logic of relocation to understand who is included into being human and who excluded. Because we are (also) animals it matters how we differentiate human from non-human, what Giorgio Agamben (2004) calls the anthropological machine. It is obviously a question with political implications as it implies how to recognise fellow beings' humanity.

To be human in a Western philosophical tradition is to be something different from nature, but it is not to reject nature, only to reject being nothing but nature. It is a matter of balancing natural drives with spirit, and of finding guidance regarding humanity. Classical metaphysics integrated man into nature in the belief of an affinity between the world's order and mind, the premise questioned in late 18th century. New experiences were of environment-changing interventions into nature followed by a question of how to understand new world-transforming practices of material accumulation and destruction of the environment. Following Marx, capitalist production developed the technique and combination of social process of production that undermined the sources of wealth: the soil and the worker (Marx 1962, 529 f.).

Soil and worker, i.e. the physical environment made cheap, and some humans relocated and made invisible enable excessive accumulation of wealth. Made invisible is an equivalent to necessity – some are made invisible because their work is a necessary evil for providing services for others, for example the, often brown, people cleaning the spaces and maintaining households for the "neoliberal and finance capitalism to function" (Vergès 2019, 1). There is a remarkable parallel to the ancient anecdote of the Roman senate turning down a proposition that slaves should dress uniformly in public as too dangerous, not because they would "be able to recognize each other and become aware of their potential power," but because of the "appearance as such" (Arendt 1958/1998, 218n), i.e. the visibility of what is not worthy to be seen.

To conclude, let me return to the end of the introduction where Moore was quoted for stating that "the question of who is and who is not human is at the core of the climate crisis." This inclusion and exclusion is driven by different motives – above Agamben was quoted for the importance of asking for "the practical and political mystery of separation" in dualism rather than for a conjunction. Therefore, ideas of healing or ending a nature-human division by turning to more-than-human approaches in non-Western traditions may prove to be wishful thinking if it is not accompanied with awareness of what it is that creates the separation. We may find that inclusion and exclusion is also at work in some of the interpretations considered as more-than-human.

Take, for example, an Amerindian perspectivism, a cosmology that builds on a spiritual unity and corporeal diversity, a view in which people see animals as ex-humans. This is contrasted

to a common Western idea of a natural unity and different cultural manifestations (Viveiros De Castro 1998, 472). When animals are ex-humans, a differentiation must exist to avoid "confusing hunting with warfare and commensality with cannibalism" (Kohn 2013, 119), a differentiation that can turn living beings into objects. Likewise, beginning from a spiritual unity, when, for example, people in the Runa village Ávila in Ecuador's Upper Amazon "recognize many animals as potential persons with whom, on occasion, they have "personal" interactions" (Kohn 2013, 153), the problem is not to establish intersubjectivity but the opposite: how not to connect. Other spirits, with whom we connect, appear in different bodily forms from which their experiences emanate. Consequently, it becomes important to distinguish problematic forms of entanglement, emphatically expressed in an example from Mapuche people in Chile about meeting the Devil (Course 2013). The danger, the details wherein the Devil is, is that while sharing spiritual bonds with the other living being, i.e. speaking the same words, different bodily origin and education means the words have different references. When animals are ex-humans "they see their food as human food (jaguars see blood as manioc beer, vultures see the maggots in rotting meat as grilled fish, etc.)" (Viveiros De Castro 1998, 470). The other is not lying to us, but the truth in one bodily world does not correspond with the truth in another.

No conclusions about non-Western more-than-human practices can be drawn from a few examples, but they can draw attention to the importance of the dynamics forming our relation to the environment. Instead of pointing at a nature-human conflict as the origin of environmental crises we should look at the sense-making which unfolds between humans as well as between humans and the environment to understand how specific nature-human relations appear. Active self-regulatory interaction of an organism with the environment is a process that gives direction for a human self-determination between the necessity of the environment and its possibilities, i.e. freedom. We can, with Arnold Gehlen, understand human as the not determined animal which has as its task to become human, i.e. not merely to live but to lead one's life (1950/2004, 16 f.).

We engage in a process of forming the environment to our needs and ourselves to our environment in a process of practices and interpretations (Gehlen 1950/2004, 338; cf. De Jaegher 2021). This is a process of education, and a process in which the world can come to appear as a second nature (Gehlen 1950/2004, 348) – as something that has its own necessity determined by cultural norms of, for example, sexuality that have been

transformed into controlled forms of reproduction, gender relation, and acceptable forms of sexual pleasure. What appears as “natural” is the outcome of a cultural and educational process of the human being.

Practices make sense in practice, but we need to make explicit what it is that makes sense in them to understand what brings the sense-making about. The dialogues with the environment unfolded in practices, and the dialogues in making them explicit are what contribute to make us understand what it is in our environment-relation that create conflicts ending in crises. This is why the approaches of human sciences appearing in late 18th century invite us to “unveil to consciousness the conditions of its forms and contents” as described by Michel Foucault. We must ask for the implicit views on what it is to be human and what gives meaning and direction to human existence at work in current cultures, of what appears as necessity and freedom, of what we include and exclude for the recognition of the other. This points at investigating the sense-making of the concrete interactions between humans and their environments that result in ways of seeing and ways of making the world, a task taken upon by a number of different disciplines such as philosophical anthropology, critical theory and critical phenomenology, to name a few that have also been the foundation for this text. What they offer are investigations into how an “anthropological machine” is at work in determining our understanding of what the education to become human is.

References

Agamben, Giorgio. 2004. *The Open: Man and Animal*. Translated by K. Attell. Standord, Standford University Press.

Arendt, Hannah. 1958/1998. *The Human Condition*. Chicago & London, University of Chicago Press, 2nd edition.

Barad, Karen & Daniela Gandorfer. 2021. “Political Desirings: Yearnings for Mattering (,) Differently”, *Theory & Event* 24(1), 14–66.

Bennett, Jane. 2010. *Vibrant Matter. A Political Ecology of Things*. Durham & London, Duke University Press.

Benson, Melinda H. 2019. “New Materialism: An Ontology for The Anthropocene”, *Natural Resources Journal* Vol. 59.2., 251–280.

Bonneuil, Christophe & J.-B. Fressoz. 2016. *The Shock of the Anthropocene*. Verso. (*L’événement Anthropocène: La terre, l’histoire et nous* 2013).

Boysen, Benjamin & Jesper Lundsfryd Rasmussen. Eds. 2023. *Against New Materialisms*. London, Bloomsbury Academic.

Böhme, Gernot. 2017. *Critique of Aesthetic Capitalism*. Translated by E. Jephcott. Mimesis International.

Charkrabarty, Dipesh. 2012. “Postcolonial Studies and the Challenge of Climate Change”, *New Literary History* 43(1), Winter, 1–18; DOI: 10.1353/nlh.2012.0007.

Cole, Andrew. 2015. “Those Obscure Objects of Desire”, *Artforum* (summer), 318–23.

Comte, Auguste. 1848/1865. *A General View of Positivism*. Translated by J.H. Bridges. London, Trübner and Co.

Conty, Arianne Françoise. 2018. “The Politics of Nature: New Materialist Responses to the Anthropocene”, *Theory, Culture & Society* Vol. 35(7–8), 73–96, DOI: 10.1177/0263276418802891.

Course, Magnus. 2013. “Speaking the Devil’s language: Ontological challenges to Mapuche intersubjectivity”, *Language & Communication* 33, 307–316.

Crosby, Alfred W. 1997. *The Measure of Reality. Quantification and Western Society, 1250–1600*. Cambridge, Cambridge University Press.

Crutzen, Paul J. 2002. “Geology of mankind”, *Nature* 415, 23; https://doi.org/10.1038/415023a.

Crutzen, Paul J. & Christian Schwägerl. 2011. “Living in the Anthropocene: Toward a New

Global Ethos", *Environment 360*, 24 January, Retrieved: 18 February 2023 from http://e360.yale.edu/feature/living_in_the_anthropocene_toward_a_new_global_ethos/2363/

Davison, Aidan. 2015. "Beyond the Mirrored Horizon: Modern Ontology and Amodern Possibilities in the Anthropocene", *Geographical Research* 53(3), 298–305, doi: 10.1111/1745-5871.12123.

De Jaegher, Hanne. 2021. "Loving and knowing: reflections for an engaged epistemology", *Phenomenology and the Cognitive Sciences* 20, 847–870; DOI: 10.1007/s11097-019-09634-5.

Descola, Philippe. 2015. "Human, all too human", *Esprit* 12 (December), 8–22.

Esposito, Roberto. 2015. *Persons and Things. From the Body's Point of View*. Translated by Z. Hanafi. Cambridge, Polity Press.

Federici, Silvia. 2014. *Caliban and the Witch. Women, the Body and Primitive Accumulation*. New York, Autonomedia, 2nd edition.

Fieuw, Walter; Marcus Foth; Glenda Amayo Caldwell. 2022. "Towards a More-than-Human Approach to Smart and Sustainable Urban Development: Designing for Multispecies Justice", *Sustainability* Vol. 14(2), Article no. 948; DOI https://doi.org/10.3390/su14020948.

Foucault, Michel. 1966/1994. *The Order of Things. An Archaeology of the Human Sciences* [*Les mots et les choses*]. New York, Vintage.

Gamble, Christopher N.; Joshua S. Hanan & Thomas Nail. 2019. "What Is New Materialism?", *Angelaki* 24:6, 111–134, DOI: 10.1080/0969725X.2019.1684704.

Gehlen, Arnold. 1950/2004. *Der Mensch. Seine Natur und seine Stellung in der Welt*. Wiebelsheim, AULA-Verlag.

Haraway, Donna. 2015. "Anthropocene, Capitalocene, Plantationocene, Chthulucene: Making Kin", *Environmental Humanities* vol. 6, 159–165.

Hartwell, Robert M. 1966. “Markets, Technology, and the Structure of Enterprise in the Development of the Eleventh-Century Chinese Iron and Steel Industry”, *The Journal of Economic History* Vol. 26, No. 1, 29–58.

Heidegger, Martin. 1977. *The Question Concerning Technology and Other Essays*. Translated by W. Lovett. New York/London, Garland.

Kohn, Eduardo. 2013. *How Forests Think. Toward an Anthropology Beyond the Human*. Berkeley, University of California Press.

Koyré, Alexandre. 1973/1992. *Études d’histoire de la pensée scientifique*. Gallimard.

Lawrence, Anna M. 2022. “Listening to plants: Conversations between critical plant studies and vegetal geography”, *Progress in Human Geography* 46(2), 629–651; DOI: 10.1177/03091325211062167.

Lewis, Simon L. & Mark A. Maslin. 2015. “Defining the Anthropocene”, *Nature* 519, 171–180, doi:10.1038/nature14258.

Loscialpo, Flavia. 2023. “Ethno-Racial Capitalism within Contemporary Fashion: Forced Labour and the Uyghur Crisis” in Anna-Mari Almila & Serkan Delice. Eds. *Fashion’s Transnational Inequalities Socio-Political, Economic, and Environmental*. Abingdon on Thames, Routledge pp. 29–46.

Malm, Andreas & Alf Hornborg. 2014. “The geology of mankind? A critique of the Anthropocene narrative”, *The Anthropocene Review* Vol. 1(1) 62–69, DOI: 10.1177/2053019613516291.

Marx, Karl & Friedrich Engels. 1962. *Das Kapital. Kritik der politischen Ökonomie. Werke 23*. Berlin, Dietz Verlag.

Moore, Jason W. 2003. “Nature and the Transition from Feudalism to Capitalism”, *Review (Fernand Braudel Center)* Vol. 26(2), 97–172.

Moore, Jason W. 2016. “The Rise of Cheap Nature”. In Moore. Ed., *Anthropocene or Capitalocene? Nature, History and the Crisis of Capitalism*. Oakland, CA PM Press, pp. 78–115.

Moore, Jason W. 2017. “The Capitalocene I”, *The Journal of Peasant Studies* 44:3, 594–630, DOI: 10.1080/03066150.2016.1235036.

Moore, Jason W. 2018. “The Capitalocene II”, *The Journal of Peasant Studies* 45(2), 237–79, DOI: 10.1080/03066150.2016.1272587.

Moore, Jason W. 2021. “Opiates of the Environmentalists? Anthropocene Illusions, Planetary Management & The Capitalocene Alternative”, *Abstrakt* November, 1–19.

Moore, Jason W. 2022. “Our Capitalogenic World. Climate Crises, Class Politics & the Civilizing Project”, Working Paper: World-Ecology Research Group, Binghamton University; WEB.

Moore, Jason W. 2023. “There is No such Thing as a Technological Accident_ Cheap Natures, Climate Crisis & Technological Impasse”. In Joke Brower and Sjoerd van Tuinen. Eds. *Technological Accidents*. Leiden, V2 Publishing, pp. 10–37.

Pascal, Blaise. 2000. *Pensées*. Ed. Gérard Ferreyrolles. Paris, Le livre de poche.

Ritter, Joachim. 1989. “Landschaft. Zur Funktion des Ästhetischen in der modernen Gesellschaft (1963)”, in *Subjektivität*. Frankfurt a.M., pp. 141–163 + 172–190.

Rosa, Hartmut; Christoph Henning; Arthur Bueno. Eds. 2021. *Critical Theory and New Materialisms*. London, Routledge.

Schmelzer, Matthias. 2023. “From Luddites to limits? Towards a systematization of growth critiques in historical perspective”, *Globalizations* 20:3, 447–464, DOI: 10.1080/14747731.2022.2106044.

Shapin, Steven & Simon Schaffer. 1985. *Leviathan and The Air-Pump. Hobbes, Boyle, and*

The Experimental Life. Princeton, Princeton Unversity Press.

Sloterdijk, Peter. 1999. *Spären II: Globen*. Frankfurt a.M., Suhrkamp.

Steffen, Will; Jacques Grinevald; Paul Crutzen and John McNeill. 2011. "The Anthropocene: conceptual and historical perspectives", *Philosophical Transaction of the Royals Society. A* 369, 842–867; doi: 10.1098/rsta.2010.0327.

Steffen, Will; Wendy Broadgate; Lisa Deutsch; Owen Gaffney and Cornelia Ludwig. 2015. "The Trajectory of the Anthropocene: The Great Acceleration", *The Anthropocene Review*, 1–18, DOI: 10.1177/2053019614564785.

Truman, Sarah E. 2019. "Feminist New Materialisms" in P. Atkinson, S. Delamont, A. Cernat, J.W. Sakshaug & R.A. Williams. Eds. *The SAGE Encyclopedia of Research Methods*. London, SAGE Publication, n.p.; DOI: 10.4135/9781526421036808740.

Wagner, Dobald B. 2001. "Blast Furnaces in Song-Yuan China", *East Asian Science, Technology, and Medicine* 18, 41–74.

Vansintjan, Aaron. 2016. "Going Beyond the "Ecological Turn" in the Humanities", *Undisciplined Environments* March 1, Retrieved: 20 February 2023 from https://undisciplinedenvironments.org/2016/03/01/going-beyond-the-ecological-turn-in-the-humanities/

Vernadsky, W.I. 1945. "The Biosphere and the Noösphere", *American Scientist* Vol. 33(1), 1–12.

Vergès, Françoise. 2017. "Racial Capitalocene" in G.T. Johnson and A. Lubin. Eds. *Futures of Black Radicalism*. London, Verso, n.p.

Vergès, Françoise. 2019. "Capitalocene, Waste, Race, and Gender", *e-flux journal #100*, 1–13.

Viveiros De Castro, Eduardo. 1998. "Cosmological Deixis and Amerindian Perspectivism",

The Journal of the Royal Anthropological Institute Vol. 4(3), 469–488.

Åsberg, Cecilia. 2017. "Feminist Posthumanities in the Anthropocene: Forays into the Postnatural", *Journal of Posthuman Studies* Vol. 1(2), 185–204, DOI: 10.5325/jpoststud.1.2.0185.

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