

## ***Who is to Interpret the Anthropocene?***

### ***Nature and Culture in the Academy***

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#### **Abstract**

It is somewhat ironic that just when scholars seem to be reaching an academic consensus critiquing the human exceptionalism of modern humanism, and to be replacing such an exceptionalism with a contextual and processual understanding of the human species, we are suddenly told that we are living in a new geological era named The Anthropocene. Just when we had begun to overthrow such anthropic tendencies in philosophy and the social sciences, we are faced with the undeniable presence of the human in the entire eco-system, from deet-resistant mosquitoes to the o-zone hole in the heavens. If humanism understood the role of the human as exceptional in the positive sense of enacting progressive transformation on the world as defined by the Enlightenment, the centrality of the human in the Anthropocene lies in a different and regressive transformation, not of the cultural world but of the geological earth, in what is an unprecedented ecological decline.

Such a dissolution of the nature/culture divide is thus also a dissolution of the disciplinary divide between natural and human sciences, since moral issues can no longer be separated from biological concerns, and politics can no longer be separated from nature. To resolve the Anthropocene will thus require the collaboration of scholars from many different disciplines addressing both scale and value, for though we must measure the o-zone and the acidification of the oceans, we must also revise the ecological soundness of our political and economic practices and ideologies, establish a new understanding of the collective co-determination of human and other forms of life, and educate our species about its newfound responsibilities for both the human world and the nonhuman earth.

Yet notwithstanding widespread recognition of the dissolution of the nature/culture divide that is intrinsic to Anthropocene discourse, there is considerable disagreement about when and how such a divide came about, and the role this divide plays as cause and/or effect of the Anthropocene. The scientific discourse claims that prior to the Anthropocene, human niche culture in the Holocene did not interfere in any significant way with natural processes, which were independent of human society. Actor-Network Theory and many social scientists claim on the other hand that the nature/culture divide has never existed, and that it was simply a short-lived invention of modernity to set an active subject against a passive world to be exploited. Yet other social scientists disagree with both of these positions, and claim that not only has the distinction between nature and culture always existed, but it continues to exist in the Anthropocene, requiring social scientific rather than scientific expertise in order to come to terms with its political and economic causes. For these scholars, the Anthropocene term is itself misleading for its universalizing of *homo sapiens* as responsible for the geological shift.

What are we to make of these conflicting interpretations of the nature/culture divide, and how might they influence our understanding of the Anthropocene, and of possible responses to it? With such contradictory interpretations, the Anthropocene has come to represent the node in a theory debate with important consequences for understanding who we are and how to respond to the crisis and envision our future on the planet earth. This paper will seek to disentangle these different positions, and evaluate the solutions each position provides to ensure a future for life on the planet. If the scientific position reduces nature to a garden that must be managed by technology to allow for neoliberal lifestyles to continue and Actor-Network Theory reduces human agency to a material force no different from that of technological tools and thereby justifies a form of technological determinism where might makes right, the political positions either call for the demolition of capitalism and with it the nature/culture divide it created, or for the rehabilitation of the nature/culture divide that was destroyed by scientific determinism in order for a social critique of the Anthropocene to be possible at all. Though each position helps us to understand the stakes of the Anthropocene, none are able to develop a politics of nature that interprets the dissolution of the nature/culture divide in such a way as to imagine a polis shared by human and non-human actors. Instead of reducing such politics to a play of material forces or to the human management of the non-human world, such a shared polis requires a transversal ecology capable of rehabilitating solidarity and communication between human and non-human actors. The ecosophy developed by philosopher and psychoanalyst Félix Guattari will be proposed as just such a transversal solution, since it develops a mental, social and environmental ecology that is able to incorporate the perspectives of human and non-human subjects into a shared politics of nature.

From the Greek *anthropos*, human, and *kainos*, new, the term Anthropocene was coined by atmospheric chemist Paul Crutzen in 2000 in light of the research on the ozone layer that earned him a Nobel Prize (Crutzen and Stoermer 2000). Following upon the Holocene, the Anthropocene is the name given to a new geological era to indicate the fact that the strata of the earth have been indelibly marked by the presence of the *anthropos*, the human species. “The Anthropocene represents a new phase in the history of the Earth, when natural forces and human forces became intertwined, so that the fate of one determines the fate of the other. Geologically, this is a remarkable episode in the history of the planet” (Zalasiewicz, Williams, Steffen and Crutzen 2010: 2231).<sup>1</sup> The term has now been adopted by many geologists and environmental scientists, and the International Commission on Stratigraphy has organized an Anthropocene Working Group to decide upon the geological relevance of the human-wrought changes to the eco-sphere, and the best date for the end of the Holocene and the beginning of this new geological era. Some scientists point to the atomic bomb at mid-century as marking this

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<sup>1</sup> Elisabeth Povinelli (2016: 9) gives a darker hue to such an event, when she writes: “the Anthropocene marks the moment when human existence became the determinate form of planetary existence – and a malignant form at that – rather than merely the fact that humans affect their environment.”

shift, since it left significant levels of plutonium in the earth's strata, but others point to Industrialization and the period of Acceleration, or the birth of capitalism in the 16<sup>th</sup> century as the start date for the Anthropocene, since it sets into place a strategy of "cheap nature" that is implemented by techno-industrial means. Crutzen himself has favoured the Industrial Revolution as the major shifting point, focusing his research on the hole in the ozone layer humans have created over Antarctica, the level of methane in the atmosphere and the 30% rise in carbon dioxide emissions. Other scientists have since added the acidification of the oceans, the rise in global temperature, the rate of species extinction, the loss of soil fertility due to fertilizers, and the loss of arctic ice.

Yet wherever the start date, the scientific version of the Anthropocene seems to presuppose that before the industrial revolution, the Great Acceleration, the birth of capitalism or wherever the Anthropocene date will finally be located, there was a wild nature that went about its own affairs, unbeknownst to human societies, and that it is only in this new epoch of modernity that such a nature was controlled and socialized, making the divide no longer tenable.<sup>2</sup> Gary Tomlinson explains this well by distinguishing what he calls feed-forward from feedback elements. Where forces such as tectonic shifts, climate cycles and volcanism were untouched by human society, defining feedback cycles from outside human niche construction, they have now become what he calls "feedback elements" within human society, the Anthropocene coming to signify that there simply is no outside anymore.<sup>3</sup> According to such a view, human society had little influence over the natural world during the Holocene, whereas today there remains no species of plant or animal that has not been transformed by human culture.

The divide that many scholars took for granted between nature and culture, between the natural sciences and the human sciences, has thus become implausible. Though at first sight such a position may seem to confirm the patient deconstruction of the nature/culture divide in philosophy and the social sciences over the past thirty years, such a confirmation would be misleading. In what represents a direct reversal of the scientific position, such scholars claim that the nature/culture divide has never existed, and it was only during the period of modernity, representing the end of the divide for the scientific position, that the terms were invented to justify human

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<sup>2</sup> "The terrestrial biosphere is now predominantly anthropogenic, fundamentally distinct from the wild biosphere of the Holocene and before . . . [N]ature is now human nature; there is no more wild nature to be found, just ecosystems in different states of human interaction, differing in wildness and humanness..." (Ellis 2011: 1025, 1027).

<sup>3</sup> "Across millions of years of biocultural evolution . . . certain systems remained *outside* the feedback cycles of hominin niche construction. Astronomical dynamics, tectonic shifts, volcanism, climate cycles, and other such forces were in essence untouched by human culture and behavior (or if touched, touched in a vanishingly small degree). In the language of systems theory, all these forces were in effect *feed-forward* elements: external controls that "set" the feedback cycles from without, affecting the elements within them but remaining unaffected by the feedback themselves. . . . The Anthropocene . . . registers a systemic rearrangement in which *systems that had always acted as feed-forward elements from outside human niche construction have been converted into feedback elements within it.*" (Tomlinson in Chakrabarty 2016: 383).

treatment of the nonhuman world as passive resource to be exploited. For such scholars, nature and culture have always been intertwined, and it is only during the period of Western modernity that such relations were ignored to oppose an active human subject, endowed with consciousness and intentionality, over and against a passive world of nature that had to be controlled and manipulated by human agency to ensure human progress. In the words of Elmar Altvater: “The separation of nature and society that characterizes modern thought since Descartes has no basis in reality— only a basis in the European rationality of world domination” (Altvater 2016: 149). For such moderns, nature included natural environments, nonhuman animals, and many human beings separated by race, gender or class from those in power. As anthropologists have amply shown, all non-modern societies, on the other hand, were nature-cultures, integrating nature and other species into the symbolic systems that we call culture.

Such a dissolution of the nature/culture divide famously led Bruno Latour to claim that the nature/culture dichotomy is a case of modern Western bad faith since, and I cite from his famous book of the same title, “we have never been modern.” Just like all other peoples at all other times, moderns continued to depend upon nature-culture networks and interrelations that belie such divisions. For Latour and his Actor-Network Theory, the Anthropocene represents modernity giving up its exclusive claims to exceptionalism and joining the other nature-cultures that had the courage to assume their interrelations with the agency of myriad other things and beings. Ignoring capitalism as an ecological force to be reckoned with, and ridiculing the idea from scientific discourse that there might have been a period when an untouched nature was separate from human culture, Latour holds that the fault of human exceptionalism lies in denying agency to other living beings and nonliving things. For Latour, we have always relied on the agency of other actants to accomplish both the feats and the horrors of human history. If the Anthropocene is the product of ignoring these other actants, the solution for Latour lies in recognizing their agency in what he calls “an enlarged democracy” where both animate and inanimate actants are represented and given a voice.

If Actor-Network theory and scientific discourse understand the nature/culture divide in radically different ways, their solutions to the Anthropocene nonetheless coalesce, in that both camps treat all action, whether human or nonhuman, as material force, and both ignore causal reasoning that would implicate ideology and politics in favour of effects that are best resolved with material technological solutions. Due to the a-political tendencies at work in both scientific circles and in Actor-Network Theory, some social scientists have come to see these interpretations of the Anthropocene as dangerous and misguided, and have proposed yet another interpretation of the nature/culture divide in order to highlight the social and political factors involved in the Anthropocene. These theorists disagree with both the scientific position that sees the nature/culture divide overcome only with the arrival of the Anthropocene, and with

Actor-Network theory, which understands such a divide as a modern fabrication. Instead, for these scholars, not only has the distinction between nature and culture always existed, but it continues to exist in the Anthropocene, requiring social scientific rather than scientific expertise in order to come to terms with its political and economic causes. For such political theorists, the Anthropocene term is itself misleading for its universalizing of *homo sapiens* as responsible for the geological shift. Such a universal indictment of all of humanity that is inherent to the term Anthropocene hides from view the fact that only some peoples are to blame for the damage to the ecosystem, and only in very particular socio-economic conditions. Such social scientists have pointed out that it is only when certain technologies are harnessed to capitalist markets that the environment suffers irrevocable damage.

Though such scholars agree to disagree with both the geo-engineering and Actor-Network Theory approaches to the Anthropocene, they themselves have reached no consensus regarding the repercussions of the nature/culture divide on the Anthropocene. Rather, two opposed interpretations of the nature/culture divide have been defended. Some political scientists, such as Alf Hornborg and other Marxist scholars, blame scientific and social scientific interpretations of the Anthropocene for attempting to dissolve the nature/culture divide, claiming that in doing so, they evade all political responsibility. Other scholars, like Jason Moore, blame the material conditions of the Anthropocene, or what he prefers to call the Capitalocene (Moore 2014; Moore 2016; Malm 2015), for creating the nature/culture divide. Moore's argument focuses upon capitalism's dependency on a nature/society dichotomy that he believes must be deconstructed in order to undermine the understanding of nature as a "cheap" resource to be used for profit. Where Moore understands nature/culture divisions as themselves implicated in creating class, race and gender divisions, and hence intrinsic to the very capitalism that he blames for the Anthropocene, Alf Hornborg criticizes scholars for trying to undermine the nature/culture divide, since they thereby lose from sight the *social* nature of class, race and gender and their role in creating the Anthropocene. For Hornborg, the dissolution of the distinction between nature and culture belittles the value of the social sciences by somehow positing symbolic cultural signs as biologically natural.

What are we to make of these conflicting interpretations of the nature/culture divide, and how might they influence our understanding of the Anthropocene, and of possible responses to it? With such contradictory interpretations, the Anthropocene has come to represent the node in a theory debate with important consequences for understanding who we are and how to respond to the crisis and envision our future on the planet earth. Due to the importance of such responses, and the centrality the Anthropocene has taken in both academic circles and the general media, this article will seek to disentangle these different positions, and evaluate the solutions each position provides to ensure a future for life on the planet.

The first section will elucidate and evaluate the geo-engineering solutions to the Anthropocene that are proposed today by many scientists, and have been invested in recently by private capital. We will then compare such solutions to those proposed by Bruno Latour and Actor-Network theory before juxtaposing both positions with the political solutions proposed by other social scientists. Focusing upon the place of the *anthropos* in each conception of the Anthropocene, this article will show that none of the positions currently proposing solutions to the geological crisis are able to integrate the human being into a world beyond his construction, and thus to develop a 21<sup>st</sup> century politics of nature. However different the positions discussed here are, they all interpret the dissolution of the nature/culture divide as entailing the subsumption of nature into culture. This article will claim that only a politics of nature that incorporates culture into nature will foster the inter-species communities that are needed to struggle for common goals rather than sectarian interests in order to develop an ecology that constitutes a shared future for dwelling (*oikos*) on the planet earth. Using the work of philosopher and psychoanalyst Félix Guattari, a transversal ecology will be developed that is able to reconcile the academic disciplines in a mental, social and environmental ecosophy that is able to provide the solidarity lacking in each isolated response.

### **Geo-engineering and the Techno-Fix**

With the development of technology and industrialization tied to a globalized economy, many scientists have postulated that human culture has now infiltrated the natural world and transformed natural processes to operate outside the range of natural variability in what has been called “a no-analogue state” (Steffen et al. 2005: 299). The term Anthropocene has been justified as the name for this new geological epoch because such change has been unprecedented for at least 500,000 years, and because the geological levels of the earth will remain marked by the human footprint for at least that long into the future even if we were to redress the human causes of such ecological decline. Within the academy, attempts to manage the Anthropocene have either focused on the planetary management of the Earth System, or attempts to manage human activities at the global scale (the Paris climate protocol) in order to ease the human burden on the Earth System. The first response is that of adaptation, which focuses on technological solutions to respond to the effects of the Anthropocene. The second is that of mitigation, which addresses the human causes of the Anthropocene.

Notwithstanding the growing consensus to block the damage to the ecosystem without putting into question the capitalist, fossil-fuel-hungry, consumer world of inequalities, many scientists have clearly differentiated between managing the ecosystem by means of technology, and managing the human activities that are causing ecosystem failure. Instead of dangerous adaptation solutions that ignore the earth's

vulnerabilities or “Achilles heels” which signal turning points with unknown repercussions, such scientists propose mitigation strategies that attempt to lessen the impact of the drivers of climate change rather than its effects. Mitigation thus focuses on human activities responsible for the changes to the earth, rather than focusing on changes to the earth system as such. More fuel-efficient cars and aeroplanes, renewable energy sources like wind and solar power, the reduction of fertilizers to grow crops, etc, have all been developed as mitigation solutions, and new bio-mimicry solutions as well as designing products out of recycled materials to last a lifetime are gaining ground in some countries. But as such scientists and designers themselves point out, such solutions will not be enough. Societal and behavioural change is also necessary to reduce consumption and the global rise in population (from six to nine billion at the end of the century). If many of these clean-energy initiatives have already been adopted in certain places at the local level, the Anthropocene now requires global solutions.

The difficulties involved in reaching such a global political solution, the insufficiency of such climate protocols that have been reached (such as the Kyoto and Paris Protocols) as well as the necessity to change human behaviour, which appears as an insurmountable problem to natural scientists with limited understanding of how societies function, have led many scientists to prefer adaptation to mitigation as a response to the Anthropocene. Rather than questioning the technological thinking that has created this “no analogue state,” many scientists have proposed more technological thinking as the solution to the Anthropocene.<sup>4</sup> According to such a view, human progress is determined over and against the world, which is technologically manipulated to further human ends. In the age of the Anthropocene, this entails developing techniques that are now applied to the entire earth, which has come, not under human control, but under human management. Atmospheric chemist Paul Crutzen, who is considered responsible for bringing geo-engineering solutions into prominence as an acceptable scientific solution, has privileged such an understanding of planetary management as essential to responding to the Anthropocene. He writes:

Scientists and engineers . . . [must] guide society towards environmentally sustainable management during the era of the Anthropocene. This will require appropriate human behavior at all scales, and may well involve internationally accepted, large-scale geoengineering projects, for instance to ‘optimize’ climate (Crutzen 2002: 23).

Crutzen’s call for adaptation has gradually gained ground such that it has today reached beyond the confines of the scientific community to be adopted by many private corporations for investment purposes,<sup>5</sup> and is being considered by different government

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<sup>4</sup> “Crutzen’s vision commits the error that Albert Einstein asked us to avoid: to think that humanity can resolve problems by applying the same methods that caused them” (Altwater 2016: 140).

<sup>5</sup> “Exxon CEO, Rex Tillerson, has described climate change as an ‘engineering problem’ with ‘engineering

organisations. Such geo-engineering solutions of adaptation have the benefit of avoiding the intractable problems of facing the wrath of fossil fuel giants and other private corporations who make a profit from polluting energy sources, and the resentment of citizens of the developed world who may be unwilling to change their habits and face less comforts. Some geo-engineering solutions are also quick and efficient, where government action and treaties are often inefficient and slow. In addition to being economically affordable, it is claimed that such solutions would give us the necessary time to enforce the necessary social changes without worsening the climate, or to be deployed in the case of an emergency. The most popular solutions are Carbon Dioxide Removal technologies (sucking carbon), which extract carbon dioxide from the atmosphere and store it in the earth or the sea<sup>6</sup> and solar Radiation Management technologies (regulating sunlight), which reduce the energy trapped in the atmosphere that warm the earth by refracting sunlight back into the sky.<sup>7</sup>

But displacing the problem from causes to effects is also quite dangerous, since it ignores the fact that complex systems like the earth simply cannot be managed by means of geo-engineering, and that side effects may prove more destructive than the offset initially sought. Indeed, if we know that the causes of global warming are contingent on political and social choices, why invest and maintain such risky “management technologies” that do not take seriously enough the unknowns of a complex earth

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solutions” (Hamilton 2013: 78).

<sup>6</sup> Examples of sucking carbon solutions include the marine biological pump through iron fertilization of plankton and the injection of industrial carbon dioxide into the deep ocean or into geological strata. Because the acidification of the oceans is limiting the ocean’s ability to absorb carbon dioxide, and because such testing has so far proven inconclusive, other scientists are interested in depositing lime in the oceans to boost alkalinity levels. Diffusing ground limestone into the oceans creates flora, which is eaten by microbic forms of life whose excretions sink to the ocean floor, with their carbon content. To enable such a solution, it has been proposed that the Nullarbor Plain in southern Australia be transformed into a vast limestone factory, using solar energy and storing the carbon dioxide produced in the soil. Others have proposed that crushed limestone could be used instead of lime, since it is less labor intensive and would create less carbon dioxide, or capturing carbon dioxide in crushed rock which is then dumped into the ocean (enhanced weathering), alkalizing the oceans and getting rid of carbon dioxide which would sink to the bottom. Seeing the huge industrial costs necessary to provide this limestone, or to crush, transport and dispose of enough rock to capture a sufficient amount of carbon dioxide, wouldn’t it be more efficient to cut back emissions by investing in solar and wind energy sources instead? And because we create carbon dioxide to get the lime out of the earth and grind the rock, such solutions appear counterproductive. As Clive Hamilton put it, “there is something deeply perverse in the demand that we construct an immense industrial infrastructure to deal with the carbon emissions from another immense industrial infra-structure, when we could just stop burning fossil fuels” (Hamilton 2013: 49-50).

<sup>7</sup> Regulating sunlight technologies include orbiting giant mirrors around the earth to deflect solar radiation, marine cloud brightening (pumping submicron particles of sea water into the air), injection of aerosols (sulphur particles) into the atmosphere to counter greenhouse gases and the injection of propane into the stratosphere to neutralize chlorine atoms. Ignoring the source in rising greenhouse gas emissions, these technologies seek to deflect more sunlight back into space, to regulate the rising earth temperatures. For a discussion of setbacks to such technologies see Hamilton (2013).



system, rather than calling for social change to address the actual causes of the problem? For these scientists, changing the *status quo* of our consumerist, individualist, capitalist society is not a viable option, and they are thus prepared to invest in dangerous technologies to ensure that no political and social change is required. Clive Hamilton puts this quite well:

Shunning deeper questioning of the roots of the climate crisis avoids uncomfortable conclusions about social dysfunction and the need to challenge powerful interests. Calls for a technofix, including geoengineering, are thus deeply conformable with existing structures of power and a society based on continued consumerism... In the end, the answer from geoengineering supporters must lie in an implicit judgement that social change is inconceivable so the only answer is to buy time for the costs of renewable energy technologies to fall far enough or to prepare to deal with an inevitable climate emergency (Hamilton 2013: 174-177).

Intrinsic to such a vision of planetary management is an understanding of technology as somehow extrinsic to social and political relations, as if technological solutions were somehow historically neutral mechanical forces, rather than themselves intrinsic part of political processes and social organization. As Jason Moore has pointed out, by depoliticizing technology, such scientists ignore the fact that “technology itself is bound up with social relations, and has often been used as a weapon in class war” (Moore 2016: 156). Similarly, Daniel Hartley (2016: 155) criticizes the “implicit philosophy of history” that he finds at work in such interpretations of the Anthropocene, which constitute what he calls “an abstract, naturalistic materialism” that “excludes the historical process.”<sup>8</sup> Such a scientific appropriation of the Anthropocene as a historical paradigm ends up treating the Anthropocene as the inexorable consequence of the human path to progress by blaming traits innate to the human species when in fact it is specific human beings and ideologies who are to blame for ecological deterioration. Providing us with technocratic solutions rather than political ones, such scientists tend to adopt a technological determinism that leads them to avoid politics and class struggle in their interpretations. Ignoring political solutions in favour of technocratic ones, such an Anthropocene discourse tends to generalize the human species, speaking of “human enterprise” when in fact it is specific human beings and ideologies who are to blame for ecological deterioration, most human beings suffering as victims of such an ideology. Such a generalization of blame to the entire human species as somehow intrinsic to

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<sup>8</sup> “As a way of talking about geological changes, the Anthropocene discourse is relatively harmless. Danger arises, however, when geologists enter the political arena, calling for collective ecological intervention on the basis of the Anthropocene. For there exists something like a ‘spontaneous ideology’ of Anthropocene scientists; they have produced an implicit philosophy of history. It is an abstract, naturalistic materialism, one that ‘excludes the historical process,’ and whose weaknesses ‘are immediately evident from the abstract and ideological conceptions expressed by its spokesmen whenever they venture beyond the bounds of their own specialty’ (Marx)” (Hartley 2016: 155).

human nature has led political scientists Eric Swyngedouw and François Gemenne to replace the term Anthropocene with the term Oliganthropocene (Swyngedouw 2014; Gemenne 2015: 168),<sup>9</sup> in order to highlight the fact that most human beings are the victims of the degradation of the earth, rather than the agents. By depoliticizing the environment, which becomes the sole domain of science, we lose from view the war waged by the few against the many, and the climate refugees who bear the brunt, along with all nonhumans, of such a depolitized vision. But are such political and social solutions as insurmountable as the geo-engineers lead us to believe? It is to the possibility of such social solutions that we now turn.

### **Actor-Network Theory and the Agency of Things**

If the scientific position that we traced in the preceding section adheres to a view that understands nature as separate from culture until the start of industrialized modernity and the Anthropocene that ensued, philosopher Bruno Latour has famously claimed that “we have never been modern” and that the nature/culture dichotomy is a case of modern Western bad faith. Just like all other peoples at all other times, moderns continued to depend upon nature-culture networks and interrelations that belie such divisions. If for the position of the natural sciences nature used to exist and has only recently been engulfed by culture, for Latour nature has never existed as anything more than a modern fabrication, and, as he recently put it, “Thank God, nature is going to die.”<sup>10</sup> For Latour, the Anthropocene represents modernity giving up its exclusive claims to exceptionalism and joining the other nature-cultures that had the courage to assume their interrelations with the agency of myriad other things and beings. Ignoring capitalism as an ecological force to be reckoned with, and ridiculing the idea from scientific discourse that there might have been a period when an untouched nature was separate from human culture, Latour holds that the fault of human exceptionalism lies in denying agency to other living beings and nonliving things. For Latour, we have always relied on the agency of other actants to accomplish both the feats and the horrors of human history. If the Anthropocene is the product of ignoring these other actants, the solution for Latour lies in recognizing their agency in what he calls “an enlarged democracy” where both animate and inanimate actants are represented and given a

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<sup>9</sup> François Gemenne writes: “The concept of the Anthropocene might produce the false impression of a unified humanity, where all humans are agents of planetary change. Yet the Anthropocene is also rooted in inequalities, where the actions of some cause the suffering of the others. And in that regard, the Anthropocene can also lead to the depoliticisation of subjects, where the ‘environmentalisation’ of politics would actually end up in a depoliticisation of the environment. That is what has happened, to a certain extent, in the case of climate refugees, and it is why the Anthropocene is first and foremost a matter of keeping the Earth habitable for the most vulnerable” (Gemenne 2015: 173).

<sup>10</sup> “Dieu merci, la nature va mourir” (Latour 1999: 42).

voice.

Such a rapprochement of Western modernity to indigenous philosophies of animism that likewise give agency to all participants of an ecosystem was a promising way to develop an inclusive politics of nature that could perhaps prove itself capable of providing novel solutions to the Anthropocene founded in a shared vision of belonging to the earth. Rather than extending human culture through the technological manipulation of nature, such a vision of shared agency could develop the many different living cultures that work and think together in symbiotic dependence. But such hopes were misguided, because in order to treat technological tools, wind currents, and polar bears as political agents alongside human beings, Latour chose to interpret all agency as external material force, instead of attributing all entities spirit and thus an interiority capable of thought, volition and transformation. Such a materialistic reduction of agency disregards the desires, intentions and goals that inspire living animals to make political decisions, thereby reducing politics to a play of material power. Such an interpretation of politics ends up defending a vision of might makes right since it does not allow for decisions to be made that do not increment force, such as feeding the impoverished or protecting species from going extinct. Graham Harman has expressed this problem well in his book *Bruno Latour: Reassembling the Political*:

Latourian actor-network theory has little place for right that fails to acquire might by linking up with allies and arranging other entities in efficacious fashion. By Latour's own admission, he has often been unfair to the losers of history; his philosophical commitment to immanence often verges on a commitment to victory, since he allows little room for a transcendent right that would console the losers on a rainy day (2014: 13-14).

But should we attribute the same agency to technological tools and to stones that we attribute to trees and polar bears? If the nature/culture divide led to the objectification of the material world, does the solution really lie in objectifying all of life as equivalent forms of material force? Isn't a technological tool made of human social relations in a way that an ant-eater is not? Notwithstanding Latour's supposedly inclusive call to integrate academic specialization into the political sphere, the advances of the social sciences in explaining the role things play in weaving social relations are lost when inanimate and animate actants are treated as having equal agency and all agency is reduced to material force. By undermining the difference between human agency involving intentions and values and the agency of non-living things, Actor-Network Theory is left treating all action as though it were a physical force of nature, determined and therefore unintentional.<sup>11</sup>

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<sup>11</sup> As Alf Hornborg (2015: 61-62) puts it, "Rather than examine their societal and political drivers as factors that can be transformed, the narrative tends to represent them as natural and inevitable features of our biology. But phenomena such as worldviews, property relations, and power structures

Since no clear boundary can be drawn between objects and subjects, the human being loses its status as conscious, thinking subject, and is reduced to being a *res extensa* like any other, a ‘functioning’ thing instead of a thinking thing, entangled in social and natural events with other things. The lack of distinction between living and non-living entities makes political and ethical considerations obsolete, since it leaves us unable to differentiate between sensate, conscious beings who suffer, intend and resist, and constructed entities devoid of sensation and consciousness who carry out the programs they were designed for (artificial emergence is still far too rudimentary to modify this claim). Under these conditions, it becomes impossible to protect animals and ecologies from torture and destruction, since they are determined only in terms of the changes they effect upon other ‘machines’ and in this sense are no different from paper-cutters, computers and trains. By treating technological tools as having equal agency to living beings, he fetishizes the tool leading to the interpretation of a particular human state of affairs as one written into the agency of the tool as autonomous entity. Such a move ignores the fact that tools are not autonomous, and are owned and used by certain people toward certain ends. Such people destroy the environment with their tools in order to make a profit that takes advantage of the resources and labour of other human communities. Latour’s enlarged democracy thus ignores the unequal distribution of labour necessary for tools to be implemented in a capitalist economic system.

Rather than being the fruit of rational deliberation or compassion, ethics (or what Latour calls morality) becomes a psycho-morph like any other, floating in the world like a gas or what Latour calls a ‘particular emission’ (2012: 454). Without ever telling us what this emission might be, in an essay entitled ‘Morality and Technology’, Latour describes morality as a mode of existence to be equated with obligation, and proceeds to call the design of his desk which does not let him open a drawer unless the other two are closed a “moral law” that he is obliged to obey.<sup>12</sup> Describing morality as a material obligation allows Latour to attribute it to all actants, as the power one entity can have over another in the mediated encounters that constitute events. Thus not only is moral agency no longer an exclusively human property, but it is no longer a property of actants as such. Rather it becomes the property of networks, the result of interactions between many human and non-human actants. The risk of such an interpretation of moral agency as a set of material obligations lies in ignoring the ways human and other beings do indeed internalize external forces, not as obligations but as intentional states, desires and motivations that direct action in the world beyond external obligation toward the care or abuse of our planet and the many beings who live on it.

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are *social* phenomena. They are beyond the horizons of natural science, because they require analytical tools that natural scientists are not provided with”.

<sup>12</sup> “20 times a day for 10 years, I am ‘obliged’ to obey this meddlesome moral law since I am not ‘authorized’ to leave the three drawers open at the same time. I rail against it but I get on with it, and I have no shame in admitting that every day there is no other moral law that I apply with such inflexible severity” (2002: 253).

If the scientific position separated symbolic meaning and politics from the world of material nature, thereby justifying an ethical and political apathy, Actor-Network Theory corrects this bias by showing that nature and culture, objects and subjects, co-constitute each other and cannot be dissociated. Such a dissolution of the nature/culture divide was very important in undermining Eurocentrism and coming to recognize that Western culture continued to depend upon the agency of non-human entities. But in developing a politics of nature inspired by indigenous anthropology, Latour did not interpret the shared agency of modernity in line with the ecologically co-dependent worldviews of indigenous populations. Where indigenous peoples cultivate the empathetic ability to understand the world from the viewpoint of the other participants of an ecosystem, all of whom believe themselves to be human in the sense of exceptional and at the center of the world (Viveiros de Castro, 2015) Latour does not allow even the human to be human, instead reducing all actants to material forces vying for power. Instead of defending what Brian Massumi (2014: 87) calls “reanimating life” as the goal of a politics of nature, Latour reduces all of life to the status of the non-animate.

Though coming from an opposite theoretical position, Actor-Network theory and its posthumanist fans thus end up defending a material and depoliticized vision of natureculture that encourages the same solutions to the Anthropocene as the geo-engineers. Though some scientists reify language as representing simple states of affairs in the world, while Actor-Network theorists posit the social nature of the nature/culture divide as intrinsic to modern ideology, both posit the solution as coming from technoscience as represented by scientific disciplines in the political arena, and both understand technological tools as autonomous of political power relations and economic inequalities. Such a fetishization of technological agency is blind to the role of economics and politics in creating the Anthropocene, and thus of their role in enabling a solution.<sup>13</sup>

## Political Agency and the Capitalocene

Many scholars have found the term Anthropocene misleading for its universalizing of *homo sapiens* as responsible for the geological shift. Such a universal indictment of human nature that is inherent to the term Anthropocene, hides from view the fact that only some peoples are to blame for the damage to the ecosystem, and only in very

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<sup>13</sup> As Alf Hornborg has pointed out in his critique of Latour: “A glaring weakness of Latour’s social science, on the other hand, is his next to total indifference to ‘questions of power, gender, culture and ecology’ (Harris, 2005: 174; cf. Winner, 1993: 431). The ideological bottom-line of his deliberations may well be his dismissal of ‘the tedious resentments of anti-imperialism’ (Latour, 2010: 34). If Bruno Latour would have shared the political engagement of Karl Marx, or of the myriad social and environmental justice activists who have followed in his footsteps, his analyses of technological systems would have revealed not only social networks but exploitative social relations embodied in the artefacts” (Hornborg 2015: 126).

particular socio-economic conditions.<sup>14</sup> Scholars such as Malm (2015), Moore (2014) and Hornborg (2015) have pointed out that it is only when certain technologies are harnessed to capitalist markets that the environment suffers irrevocable damage. For this reason, Jason Moore prefers the term Capitalocene (Moore 2014; Moore 2016; Malm 2015), since it focuses the blame on the growth that is necessary to a capitalist system that treats the earth the same way it treats slave labor – as free resource to be exploited with no accountability. Multi-species feminist Donna Haraway (2016b) also feels uncomfortable with the universalism intrinsic to the term Anthropocene, as if the entire human species were to blame for the sorry state of the earth’s ecosystem, “as opposed to situated human beings in complicated histories.” In her interview with Lauren O’Neill Butler she explains why Capitalocene is a better term to describe the harm being done to the planet:

Capitalism is obviously based on growth—but not just any kind of growth: the growth that depends on resourcing the earth for the kind of expansion and extraction that result in profit, which is, in turn, distributed unequally. This unleashing of the motors of endless growth, extraction, and the production of ever-new forms of inequality is intrinsic to capitalism. It’s a vastly destructive process, whether you’re talking about social systems or natural systems. Capitalocene at least captures that this is a few-hundred-year-old process of building wealth through exterminationist extraction. (Haraway 2016b)

Moore’s own interpretation of the Capitalocene focuses on the commodification of nature, or what he calls “cheap nature.” For capitalism, he writes “nature is “cheap” in a double sense: to make nature’s elements “cheap” in price; and also, *to cheapen*, to degrade or to render inferior in an ethico-political sense, the better to make nature cheap in price.” (Moore 2016: 2-3). The four “cheaps” that he focuses on, food, raw materials, energy and human life, are all based on the broad “theft of planetary life and our – and our children’s – futures” (Moore 2016: 11). Moore’s argument focuses upon capitalism’s dependency on a nature/society dichotomy that he believes must be deconstructed in order to undermine the understanding of nature as a “cheap” resource to be used for societal benefit. Speaking of the problems inherent to the nature/culture divide, he writes:

No less than the binaries of Eurocentrism, racism, and sexism, Nature/Society is directly

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<sup>14</sup> “The ‘Anthropocene’ displaces the origins of the contemporary crisis onto the human being as species rather than as capital. It reinforces what capital wants to believe of itself: that human ‘nature,’ not capital, has precipitated today’s planetary instability. The Anthropocene says ‘humanity’ put the earth under its power, that it could either save or destroy it— yet it also says the unintended consequences of this power only accelerate our powerlessness over earth’s inevitable revenge. We have mistaken who ‘we’ are (as some kind of undifferentiated human mass) from what ‘we’ perform through capital. We have mistaken a historical condition of our economic organization for an innate aspect of the human being” (McBrian 2016: 119).

implicated in the modern world's colossal violence, inequality, and oppression. This argument against dualism implicates something abstract—Nature/Society—but nevertheless quite material. For the abstraction Nature/Society historically conforms to a seemingly endless series of human exclusions—never mind the rationalizing disciplines and exterminist policies imposed upon extrahuman natures. These exclusions correspond to a long history of subordinating women, colonial populations, and peoples of color—humans rarely accorded membership in Adam Smith's "civilized society" ([1776] 1937)... Efforts to transcend capitalism in any egalitarian and broadly sustainable fashion will be stymied so long as the radical political imagination is captive to capitalism's either/or organization of reality: Nature/Society. And relatedly, efforts to discern capitalism's limits today—such discernment is crucial to any antisystemic strategy—cannot advance much further by encasing reality in dualisms that are immanent to capitalist development. (Moore 2016: 2-3)

If Moore agrees with the scientific discourse and with Bruno Latour that the nature/culture divide must be overcome, it is nonetheless for very different reasons, since he understands such a divide as intrinsic to the capitalist ideology that he holds responsible for the Anthropocene, while both the scientists and Latour ignore ideology and understand the nature/culture divide as no longer valid due to material conditions that are determined by technological mediation. Likewise, when Actor-Network Theory undermines the difference between human agency and the agency of non-living things, social scientists are left treating all action as though it were a physical force of nature, determined and therefore unintentional, thereby encouraging interpretations of the Anthropocene as the inexorable consequence of the drive toward complexity.

Yet where Jason Moore understands nature/culture divisions as themselves implicated in creating class, race and gender divisions, and hence intrinsic to the very capitalism that he blames for the Anthropocene, Alf Hornborg criticizes scientists for undermining the nature/culture divide, since they lose from sight the *social* nature of class, race and gender and their role in creating the Anthropocene. For Hornborg, the dissolution of the distinction between nature and culture intrinsic to the scientific understanding of the Anthropocene belittles the value of the social sciences by somehow positing symbolic cultural signs as biologically natural. Thus Hornborg states that:

'Humanity' as a collective has never been an agent of history, and the technological fruits of the Industrial Revolution continue to be very unevenly accessible to different segments of world society. This uneven distribution of modern, fossil-fuel technology is in fact a condition for its very existence. The promises it held out to humanity were illusory all along: the affluence of high-tech modernity cannot be universalised, because it is predicated on a global division of labour that is geared precisely to huge price and wage differences between populations... An average American today emits as much carbon dioxide as 500 average citizens of some nations in Africa and Asia. It must thus be the work of social science to identify the drivers of rising emissions. (Hornborg 2015: 60-61)

Though such scholars are certainly correct to focus on human political and economical causes of the Anthropocene, they leave us with a political aporia: Is the nature/culture divide constructed by a modern capitalist worldview in order to profit from establishing a *bios/zoé* binary that reduces biological life to the laws of nature and thereby excludes it from the *polis*, interpreted as the 1% capable of making a profit from such *zoé*? Or is the deconstruction of the nature/culture divide itself a strategy of modern capitalist neoliberalism in order to undermine resistance by reducing political and ethical struggles to deterministic material forces at play? In light of such opposing visions that appear equally justifiable, we are left without any *modus operandi* to change the *status quo* and redress the damage to the planet.

If the scientific position reduces nature to a garden that must be managed by technology to allow for neoliberal lifestyles to continue and Actor-Network Theory reduces human agency to a material force no different from that of technological tools and thereby justifies a form of technological determinism where might makes right, the political positions either call for the demolition of capitalism and with it the nature/culture divide it created, or for the rehabilitation of the nature/culture divide that was destroyed by scientific determinism in order for a social critique of the Anthropocene to be possible at all. Though each position helps us to understand the stakes of the Anthropocene, none are able to develop a politics of nature that interprets the dissolution of the nature/culture divide in such a way as to imagine a polis shared by human and non-human actors. Instead of reducing such politics to a play of material forces or to the human management of the non-human world, such a shared polis requires a transversal ecology capable of rehabilitating solidarity and communication between human and non-human actors. It is to such an ecosophy that we now turn.

## **A Politics of Nature**

Though Latour titled one of his books *The Politics of Nature*, he did not truly understand what such a title actually implies, and instead encouraged the human representation of nature in a purely human representational assembly.<sup>15</sup> The problem with Latour's attempt to address the anthropocene with a politics of delegation is that it postulates that all nonhuman matter requires a human delegate to speak in its name, and that in order to do so, these human delegates are taken out of the living worlds

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<sup>15</sup> Just as women and slaves were excluded in the 'universal' democracy of modernity, we might wonder if such a representational democracy is as inclusive as Latour claims. As many indigenous scholars have made clear, a representational democracy that has (white, male) scientists speak for the rest of the world perpetuates the modern dualisms that New Materialists are interested in overthrowing. For a critique of Latour's politics, see my article (Conty forthcoming).



where they are co-implicated in living thoughts with other beings. The result of this separation is that politics itself becomes artificial and exclusively human. From such a perspective, Latour's democracy of things is merely a democracy of human representations of things.<sup>16</sup> Yet if the confabulated divide between nature and culture has finally been overcome in the Anthropocene, it should not be at the cost of reducing politics to a constitutional assembly already plagued by the capitalist power relations deemed responsible for the Anthropocene. A politics of nature must, on the contrary, leave the representational assembly and engage in politics on the ground in symbiotic environments where non-human actors can and do speak for themselves.

Similarly, though the scientific understanding of the Anthropocene has been essential in clarifying the damage to the earth and the causes and repercussions of such damage, it has used the dissolution of the nature/culture divide to justify an artificial and anthropocentric world. A solution will be found only if we stop reducing ecosystems to artificially managed worlds that serve only human ends and stop reducing ourselves and others to agents of material force vying for power. Material forces, after all, have nothing to share. And finally, if political analyses of agency have the benefit of highlighting the role of human-directed and unequal power relations at the heart of the Capitalocene, and thus pointing to ways such human-directed activities can be overcome, such political positions continue to understand politics as exclusively human and are unable to conceive of a politics of nature that might include the non-human other as active participant.

If we must follow Latour in attributing agency to all non-human actors, we must part ways with Latour's exclusive focus on material force in order to seek a trans-disciplinary response to the Anthropocene that, rather than disempowering the social sciences, is capable of proposing political and ethical change. Yet how can we include the non-human other and differentiate between forms of agency without falling into the dichotomies of modernity? Differentiating between "natural" and "artificial" materialities seems to prolong the nature/culture divide that new materialisms are seeking to deconstruct, while replacing the natural/artificial dichotomy with "autonomous" versus "made" materialities similarly seems to reinforce the autonomous subject of modernity that so much scholarship has sought to overcome. As philosopher of science Isabelle Stengers argues, we share our world with:

many concrete, heterogeneous, enduring shapes of value that compose actuality, thus including beings as disparate as 'neutrinos' (a part of the physicist's reality) and ancestors

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<sup>16</sup> Latour writes: 'The fiction is not to give a voice to water, but to believe that we could do without representing it *by means of a human voice* capable of being understood by other humans. The error is not in pretending to represent non-humans; we do that all the time when we speak of rivers, of travels, of the future, the past, States, the Law and of God. The error would be in thinking that we could take into account such interests, without a human who incarnates, who *personifies*, who *authorizes* and who *represents* their interests' (2015: 351).

(a part of reality for those whose traditions have taught them to communicate with the dead). (Stengers, 2002: 248)

If scholars like Isabelle Stengers and Elisabeth Povinelli have shown that life depends upon non-life, and “life is merely a moment in the greater dynamic unfolding of Nonlife,” (Povinelli 2016: 176) how are we to avoid indifference toward the destruction of the living earth?<sup>17</sup> If we are to treat a rock with the same consideration as a polar bear, and a technological artefact as equivalent to an indigenous Anuar, it is difficult to avoid ending up in the murky waters of object-oriented ontology, or Latour’s “parliament of things,” movements that are unable to give us a politics of nature and an ethics of solidarity.

As Julia Adenay Thomas has recently put it, because the Anthropocene is a question of both scale and value, “only the humanities and social sciences, transformed though they will be through their engagement with science, can fully articulate what we may lose” (Thomas 2014: 1588). What we may indeed lose, are ways of working together to create shared worlds of solidarity strong enough to repel the “mutant algae” of capitalist individualism. I have taken this biological metaphor from philosopher and psychoanalyst Félix Guattari, whose work can provide us with a strategy to find our way out of the Anthropocene impasse. As an alternative to the scientific, social and political solutions to the Anthropocene we have studied in the first three sections of this article, Guattari’s book *The Three Ecologies* develops an ecosophy<sup>18</sup> that bridges a mental, social and environmental ecology in order to create a “transversal” response capable of cultivating solidarity. He writes:

Now more than ever, nature cannot be separated from culture; in order to comprehend the interactions between ecosystems, the mechanosphere and the social and individual Universes of reference, we must learn to think ‘transversally.’ Just as monstrous and mutant algae invade the lagoon of Venice, so our television screens are populated, saturated, by degenerate images and statements. In the field of social ecology, men like Donald Trump are permitted to proliferate freely, like another species of algae, taking over entire districts of New York and Atlantic City... How do we regain control of such an auto-destructive and potentially catastrophic situation?... It is not only species that are going extinct but the words, phrases and gestures of human solidarity. (Guattari 2000: 43-44)

In order to decipher such solidarity amongst all of the subjects that populate the

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<sup>17</sup> Such a position is quite common amongst transhumanists like Nick Bostrom, and those seeking a future on the un-living star Mars. It is also found among philosophers of technology like Lucas Introna, who see no difference between stones and dogs, and claim that it is ontologically unfair to discriminate against the stone.

<sup>18</sup> “Whereas only an ethico-political articulation which I call ecosophy between the three ecological registers (the environment, social relations and human subjectivity) would be likely to clarify these questions” (Guattari 2000: 28).

earth, Guattari will turn to archaic systems of communication, and in particular, to animism. Indeed, if it was indigenous anthropology that allowed us to see that the nature/culture divide was a particular Western phenomenon, we might learn something from indigenous peoples who, instead of separating the world into active subjects and passive objects, attributed subjectivity universally to all entities. As anthropologist Viveiros de Castro has shown in his research on Amazonian tribes, not only are all entities subjects, but what they all share is humanity, since each being understands itself at the center of the world and interprets the world in terms of its own bodily form and needs. For the jaguar, as the Runa people put it, blood is manioc beer.<sup>19</sup> It is thus not nature that all entities share, but rather humanity, for, as Viveiros de Castro puts it, “the basis of humans and non-humans is humanity” (Viveiros de Castro in Melitopoulos and Lazzarato 2012: 48). Such a shared humanity is possible precisely because each living body is capable of thinking itself into the being of another. It is this humanity as common ground that allows for a shared politics, because in enunciating, in expressing its humanity, each human is able to think itself beyond the boundary of the unitary and enclosed self of the Western tradition into a shared world.

Rather than supporting the mind/body dualism of modernity, such an animist attribution of subjectivity to all actants reveals the very nature of immanence, for “subjectivity” and “thinking” are not transcendent categories in animism, but rather inhere in material bodies that transversally communicate with each other and co-constitute each other. As such, all entities, not just humans, express themselves, and through enunciating, assemble and disassemble subjectivities and collectivities. It is in this sense that nature has always been culturally invested, since in the words of Eduardo Viveiros de Castro “it is matter itself that is infused with soul. Subjectivity is not an exclusively human property, but the basis of the real” (Viveiros de Castro in Melitopoulos and Lazzarato 2012: 48). Guattari (2000: 48) thus asks us to “pass through animist thought” in order to develop a veritable politics of nature in which subjectivation, and thus the political, inheres in all matter. By replacing behaviour with assemblage (*agencement*),<sup>20</sup> and conscious subjectivity with pre-conscious subjectivation, the world is constantly opening itself up to being politically reconfigured by human and non-human subjects in a shared world. In Guattari’s words:

I am more inclined to propose a model of the unconscious akin to that of a Mexican Cuandero or of a Bororo, starting with the idea that spirits populate things, landscapes, groups, and that there are all sorts of becomings, of haecceities everywhere and thus, a sort of objective subjectivity, if I may, which finds itself bundled together, broken apart, and shuffled at the whims of assemblages. The best unveiling among them would be found,

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<sup>19</sup> This example is reported Eduardo Kohn (2013).

<sup>20</sup> Deleuze and Guattari (2008: 179) write: “But what we are saying is that the idea of assemblage can replace the idea of behaviour, and thus with respect to the idea of assemblage, the nature-culture distinction no longer matters.”

obviously, in archaic thought. (Guattari cited in Melitopoulos and Lazzarato 2012: 45)

For Guattari, subjectivity is fluid, traveling from body to body by means of enunciation, or what he called an a-signifying semiotics, whether gestural, aesthetic or linguistic. It is only when subjectivity is imprisoned within a dominant human form in order to further the ends of economic competition and state power, that communication ceases and subjects lose their singularity and can no longer be transformed by their encounters with other subjects. The value of subjectivation thus depends upon “machinic animism,” the ability of souls to reassemble and become other to themselves through their encounters with alterity.

There is at least a risk that there will be no more human history unless humanity undertakes a radical reconsideration of itself. We must ward off, by every means possible, the entropic rise of a dominant subjectivity. Rather than remaining subject, in perpetuity, to the seductive efficiency of economic competition, we must reappropriate Universes of value, so that processes of singularization can rediscover their consistency. We need new social and aesthetic practices, new practices of the Self in relation to the other, to the foreign, the strange – a whole programme that seems far removed removed from current concerns...” (Guattari 2000: 68)

Understood in this light, we might surmise that the Anthropocene represents precisely such an entropic dominant subjectivity, caused by the rapid extermination of subjectivation as the possibility of becoming other and communicating otherwise. If such a reconsideration of humanity is to be taken seriously today, it will require the development of a transversal ecosophy, which is able to take into account the ways mental, social and environmental values coincide and communicate.

Guattari is not alone in calling for such a transversal discipline that can reunite the human, social and natural sciences. In a 2015 interview given to NDTV<sup>21</sup>, humanities scholar Homi K. Bhabha similarly claimed that the humanities were essential to the survival of our species, since only such disciplines are able to develop moral and social values in times of transition, and make connections between the human, social and natural sciences. A similar claim was made by historian Dipesh Chakrabarty, when he recently confirmed Guattari’s emphasis on creating new values as critical in order to respond to the Anthropocene. “The questions of justice that follow from climate-change science,” Chakrabarty writes, “require us to possess an ability that only the humanities can foster: the ability to see something from another person’s point of view. The ability, in other words, “to imagine sympathetically the predicament of another person.”<sup>22</sup> Just

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<sup>21</sup> <https://www.youtube.com/watch?v=6pOe8g0ByPE>

<sup>22</sup> Dipesh Chakrabarty, “Humanities in the Anthropocene: The Crisis of an Enduring Kantian Fable” in *New Literary History*, 2016, 47: 377–397, pg. 378.

as machinic animism cultivates forms of subjectivation that move from body to body to communicate a shared solidarity, so for Chakrabarty a solution to the Anthropocene will depend upon the ability to enter other embodiments and see the world from their perspective.

We might claim with novelist J. M. Coetzee that the humanities foster the inclusion of all other beings within humanity, just as indigenous animism does, and that such an inclusion is indeed constitutive of what it means to be human. Though his book *The Lives of Animals* does not directly address the Anthropocene, Coetzee imagines a world where non-human forms of life have been genetically and biologically re-engineered to serve human ends, and where such a loss of other ways of being in the world incurs a loss of humanity, because “the sympathetic imagination” is dulled. To become human for Coetzee, we must be able to “think ourselves into the being of another,” to be more than one. In other words, thinking is always about thinking alterity, and thus always about sharing a world. And if we can think ourselves into the fictional characters of literature, Coetzee’s protagonist Elisabeth Costello claims that we can think our way:

into the existence of a bat or a chimpanzee or an oyster, any being with whom (we) share the substrate of life... There are people who have the capacity to imagine themselves as someone else, there are people who have no such capacity (when the lack is extreme, we call them psychopaths), and there are people who have the capacity but choose not to exercise it. (Coetzee 1999: 35)

Sympathetic imagination, rather than calculation, is required to see things from the point of view of a jaguar, a flying ant, or a forest. In his book *How Forests Think*, anthropologist Eduardo Kohn (2013) calls such sympathetic imagination thinking, and attributes such thinking to the clown fish, but also to the coral reefs, to the polar bear, but also to the glacier. Similar to Guattari’s a-signifying semiotics, Kohn defines thought as the semiotic ability of form to remember the past and predict a future in relation to alterity, and it is such thought that animates subjects to interpret the world around them and therefore to think. Recalling Uexküll’s famous explanation of the lifeworld of the tick as it waits indefinitely for a mammal to allow it to fulfil its destiny by internalizing alterity, Kohn uses the example of the anteater to show that it is formed by past knowledge of ant tunnels, which are other to it yet essential to the form it seeks to maintain. Agency should not be attributed indiscriminantly to all action as it is in a ‘flat ontology,’ but rather only to the action of an organism whose form is both maintained and transformed in relation to an otherness that it is not but that it depends upon to survive and project itself into the future. Such sympathetic imagination and animistic thinking about otherness is necessary to live in a shared world, and there is no such thing as a world that is not shared. It is such thinking that is missing in the world of the Anthropocene and in the solutions developed to address it. However ironic, the “new age

of the human” might very well herald a loss of humanity. To respond to such a loss, we may need to cultivate a postmodern form of animism that would privilege solidarity over technological manipulation and ecosophy over the isolated natural and human sciences. Perhaps such an ecosophy, capable of incorporating the perspectives of other thinking subjects into a politics of nature, will be capable of providing us with the sympathetic imagination capable of making the Anthropocene era truly human.

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