

The future is now!

Reframing environmentalism in the Anthropocene.

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“Mankind’s old greatness was created in scarcity. But what may we expect from plenitude?”

Saul Bellow, *Humboldt’s gift*.

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In assembling this paper, I have tried to reflect upon the impact of the Anthropocene hypothesis on environmentalism as a collective movement and, above all, as a political theory. In doing so, some lines of thought I have recently been pursuing have converged in a non-systematical way, almost as if they had overlapped, thus creating a patchwork of different but intertwining ideas. Instead of labouring them further, I have opted for presenting them as such, hence running the risk of inconsistency or incompleteness. In what follows, they adopt the form of separate thesis that however can be read in succession. The first concerns the decline of environmentalism as a voice in the contemporary conversation about socionatural relations and sustainability. The second is about the meanings of the Anthropocene. The third suggests that habitation may provide a useful framework for discussing sustainability under the anthropocenic conditions. The fourth deals with the position that environmentalism should adopt in the new scenario created by the Anthropocene. A brief coda serves as a conclusion.

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First Thesis

*Environmentalism is becoming a declining force
in the conversation about the sustainable Anthropocene.*

Since its inception, environmentalism has been -both as a social movement and as a theoretical enterprise- the most pugnacious voice in the public debate about socionatural relations and is still widely accepted as the natural spokesperson of nature itself. However, its ability to push such relations in the direction of a moralized sustainable society wherein natural beings and processes are granted a high level of protection has been gradually diminishing. Sustainability has become mainstream and the radical green agenda does not seem to win the battle of minds and hearts of the global middle class, whose perceptions are decisive for the articulation of the political process in democratic regimes. At best, incremental reforms are supported, but what might be called the green *ideal* does not appeal to the public -especially once the implications of the ideal, translated into particular social principles, are explained. So far, the language of limits has not captured the public imagination and remains a dead end for promoting green goals. It would not be unfair to say that the Anthropocene is but another confirmation of such failure.

Nevertheless, mainstream environmentalism has not abandoned its old rhetoric. In fact, the rise of climate change as a public concern -which in itself cannot be explained without environmentalism itself- has reinvigorated green dystopianism. Frightening scenarios were again forecast, from climate wars (Welzer 2008) to digital panopticons designed to exert political control on carbon emissions (Urry 2008). Unsurprisingly, they could yet be avoided if urgent measures are rapidly implemented. But the latter must be determined and radical, since "to slow down, let alone reverse, increasing carbon emissions and temperatures requires nothing more and nothing less than the reorganization of social life" (Dennis and Urry 2009: 8). A future past: this is what environmentalism has been unsuccessfully demanding since the sixties, namely a post-industrial

utopia, to borrow Frankel's (1987) label, anchored in fear. It is interesting to recall that Andrew Dobson (1990) already underlined in his seminal work on green political thought at the early 90s that the survivalist discourse is rather a strategic choice for environmentalism: biocentric arguments are even less influential over the broader social body and thus the private environmentalist restrains herself and chooses instead a public persona that puts human beings - human avoidance of ecological collapse-first.

Yet as predictions have failed, the language of limits has languished as an effective communication strategy or at best has become a recipe for a strange kind of psychopolitical cynicism: the apparent belief in collapse does not lead to meaningful political action, thus betraying a false or half-hearted belief. It may be a prominent case of moral corruption (Gardiner 2006), but then again perhaps the morals are not what they seem in the first place. Be that as it may, environmentalism is in trouble (White and Wilbert 2006: 96). The Anthropocene has put forward the facts about socio-natural relations -or just exposed socio-natural realities- and environmentalism runs the risk of becoming a negligible influence in the conversation about an anthropogenic sustainability. That is why Anderson (2010) argues that environmentalism has become a *zombie* category, a living-dead theory that must be revived through a reality shock. In his view, environmentalism faces three main problems that should be confronted *if* it seeks to become mainstream: the 'environment' as an intellectual concept has become disconnected from popular understandings and experiences; green theorists go against the tide of a pro-consumption and pro-development culture that is conspicuous in advanced economies but increasingly prevalent in emerging ones; and environmentalism itself is associated with a discourse and practice of denial and doom, thus diminishing its popular appeal. In a world impregnated by a language of individual freedom, environmentalism offers a collective chain.

But the problem goes arguably beyond self-presentation and discourse. Mainstream environmentalism is afflicted by a lack of realism as far as the political conditions for a sustainable society in the Anthropocene are concerned. To begin with, the human colonization of the environment is the reason why human beings have thrived -up to a point where caring for the environment has emerged as a social concern. Needless to say, classical environmentalism has made a great contribution to the recognition of nature's value, but the latter could have never succeeded in a society where basic needs had not been previously fulfilled. Nordhaus and Shellenberg (2011: 13) have emphasized that degrading nonhuman natures does not undermine the basis for human civilization, but rather it is the transfer of wealth from nonhuman environments into human ones that has made human societies richer.

For classical environmentalists, this narrative is outrageous, since this 'transfer of wealth' is rather seen as a process by which human beings alienate themselves from nature and from their inner well-being by actually killing nature. Human aggressive adaptation is not seen as a necessity, but as a choice triggered by a number of cultural and historical twists -including Christianity, Cartesianism, and the allegiance between the Scientific Revolution and Capitalism (see Merchant 1983). A parallel narrative about how human beings and nature *should* relate to each other is thus devised. And if such *ideal* socio-natural relationship -translated into particular social modes of organization where economic growth and human mobility are severely restricted- does not fit into the *reality* of such relations, the problem, it seems, is reality's. And the same goes for public opinions as long as they refuse to recognize the substantial validity of such political project.

It is important to stress that environmentalism may well choose to stay in trouble. In that vein, an alternative to internal reform is ideological purity: mainstream environmentalism can remain loyal to its core beliefs, thus sacrificing a potentially wider reach among the public while continuing to exert a minor influence on it. And this influence, crucially, is a valuable one. In the contemporary ecosystem of ideas -whether they are moral, political or economic- environmentalism provides a unique perspective on socio-natural issues, as it frames the question of nature in terms that, however disputable, remain important. Above all, it helps to counterbalance the most fiercely anthropocentric voices in that ecosystem and contributes decisively to the moral recognition that

particular nonhuman beings lead significant and sometimes complex existences that merit some kind of legal protection.

Nevertheless, this viewpoint could very well be provided by a different environmentalism too. Symons and Karlsson (2015) argue that ecological and eco-modernist voices have such irreconcilable epistemologies that they cannot be brought into productive harmony. Yet modernization and preservation are not incompatible goals, but actually complementary ones: only modernization can provide the conditions for an enlightened preservation. No matter how seductive for its defendats it may be, de-growth has a limited appeal among those social groups whose support is necessary for achieving global sustainability. Therefore, in my view, the best way ahead for environmentalism is arguably a combined defence of eco-modernization and nature's value. Yet the former cannot be vindicated in the classical fashion anymore. The Anthropocene has made clear that only a non-essentialist defence of nature makes sense: a hybrid nature that is part of a complex, multi-layered, increasingly mixed-up socionatural entanglement. Detaching himself from both environmentalists and postenvironmentalists, Latour puts it his way:

"Environmentalists say: 'From now on we should limit ourselves'. Postenvironmentalists exclaim: 'From now on, we should stop flagellating ourselves and take up explicitly and seriously what we have been doing all along at an ever-increasing scale, namely, intervening, acting, wanting, *caring*'" (Latour 2011: 21; my emphasis).

Following this advice, Symons and Karlsson (2015) themselves suggests that the task of nurturing green subjectivities should be freed from the burden of saving the planet and rather advocated for its intrinsic worth. Green virtues would then be defended as post-modern moral virtues that connect with a particular lifestyle, rather than being presented as a strong ideological commitment tied to the search for a puritanical sustainable society. On his part, Anderson proposes a *coyote* environmentalism (to overcome its 'zombiness') that adopts a mixed identity, so that environmentalist practices and selves are no longer "secluded at one pole of a binary positioning, but regain their connection to the range of practices and identities we action and inhabit in the course of our everyday lives" (Anderson 2010: 984).

All in all, then, a more enticing narrative for environmentalism -or for sustainability beyond environmentalism- seems to be in order. As I see it, the Anthropocene represents a good chance to renew the environmental discourse, offering a new framework for the coalescing of those theoretical factions that have been pushing in that direction for some time now (see Humphrey 2003). But before environmentalism is reframed, it has to transform itself by transforming its own 'regime of perception'. For that to happen, in turn, the lessons of the Anthropocene must be assimilated.

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Second Thesis

The Anthropocene produces a shift towards a transformational approach to socionatural relations that puts hybridization of nature at its centre.

A critical observer who has followed the rapid success of the Anthropocene might well conclude that this fashionable label is nothing but academic hype. It is well known that scholars operate in competitive markets where profitable novelties are enthusiastically embraced, thus creating epistemological bubbles after which explosion nothing valuable remains. Yet the Anthropocene does not look like an unsubstantial hype at all. On the contrary, is a very potent theory that seems poised to remain firmly in place even if geologists refuse to recognize the new geological era later this year. That proposal is backed by so many evidences about the degree in which human beings and social systems have colonized natural systems at a global scale that the geological question, albeit important at a symbolic level, seems irrelevant in comparison.

Yet the Anthropocene does not exactly offer a *theory* about socionatural relations, but a *description* of the current state of the latter which in turn gives plausibility to particular explanations of the logic of such relations in the long run, i.e. on a species level. That is why it has become so relevant, so soon: it has provided a cohesive theory that encompasses a number of intuitions that have been on the table for some time now. Whether the talk was about the end of nature or hybrid environments, the Anthropocene was lurking in the background, a latent overarching category that now cannot be resisted. It is simultaneously a description of the current state of socionatural relations, a chronology of those events that led to the Anthropocene itself, an explanatory theory about how the human species relates itself to nature, and an epistemic category that increasingly frames the conversation about global environmental change and guides further research on several -more and more interconnected- disciplines. Those are reasons enough for environmentalism to become engaged with the concept. Needless to say, this engagement is to be a critical one. But for environmentalism to flourish as an consistent and influential voice in the sustainability debate, some of the new insights should be accepted. After all, if climate skeptics are derided as negationists and climate change is but one of the manifestations of the Anthropocene, environmentalists should not become negationists themselves.

It was already accepted that every society is grounded on a particular “socioecological regime”, that is, on a specific type of interaction between with *its* natural systems (Fischer-Kowalski and Haberl 2007). The socionatural interaction is thus socially bounded and culturally constrained -otherwise it would be the same everywhere. Instead of possessing unique features irrespective of the time and space in which it takes place, this relation thus varies *relatively* from one social context to another, so that different understandings of nature co-exist, producing different patterns of interaction between human beings and the natural world. These patterns depend on a complex set of factors, including culture and history. Anthropologists and ethnographers have been especially active in pointing out the *mediated* character of the relationship between humans and nature (see Castree 1995, White et al. 2015). Thus the idea that nature is socially ‘constructed’, i.e. that our perception of nature determines our relation with it. In turn, this social condition would also mean that there is no *single* universal nature, because different contexts, cultures, social positions and historical moments will produce disparate visions of nature from which nature itself cannot be freed (Macnaghten and Urry 1998). Yet it is important to note that the social construction of nature not only involves a cultural apprehension of nature, but also a *physical* re-construction of it, a human impact in the surrounding world that never leaves nature unchanged (see Arias-Maldonado 2011). The Anthropocene just shows the formidable degree of that physical alteration and suggests that it corresponds to the species way of being, reflecting in turn those features that makes the latter *exceptional* -an adjective that does not necessarily connote a hierarchical valuation, it should be noted: it just points out that a given phenomenon is different from others.

Therefore, it would be more accurate to state that different socioecological regimes vary just *relatively* from one another. As much as an anti-essentialist view of nature is pertinent, lest we overlook meaningful differences between separate sociohistorical contexts, it can also make us forget how useful a species viewpoint can be when making sense of the human habitation of the world. However, a neutral viewpoint should be adopted when considering the history of humanity as a *species*, a front in which survival and population increase over time are enough indications of success. Needless to say, a different perspective is opened when normative criteria are introduced, so that the point of view of the *species* is replaced by that of a *moral being* that considers the effect of her behavior on other, nonhuman, creatures. This perspective enables us to moralize the socionatural relationship, thus giving a different meaning to animal extinction or suffering. One species' success is another's catastrophe. On his part, in an important work published last year, Erle Ellis (2015) argues that ecological patterns or processes across the Earth cannot be explained anymore without considering human role in them, so that we should start devising an “anthroecology” that fully integrates humanity into ecology. Moreover, he adds that

“The question for ecology is not whether, when, or even how humans have transformed the biosphere, but rather, *why?*” (Ellis 2015: 288; my emphasis).

In this regard, it would be a mistake to see the human colonization of the world as a choice among many, instead of taking it as the result of an universal impulse -the impulse of an entire species- towards survival and betterment. As Craig Dilworth (2010: 160) suggests, human tendency to quick adaptation to almost any situation, in having its basis in our karyotype (the complete set of chromosomes in our species) may itself be considered *instinctual*. The expression of the human species particular *way of being* involves the active transformation of the environment and the creation of its ecological niche (Barry 1999: 51). Human beings adapt nature by adapting it to them - ours is an *aggressive adaptation* that actively transforms the environment through ecosystem engineering, thus creating new possibilities for habitation that were not originally 'written' in the local space we deal with. Natural limits are thus not pre-fixed: they are subjected to social redefinition. Needless to say, this active transformation is not always intentional, but often nonintentional. An unawareness that demonstrates, precisely, how sociocultural niche-creation is a way of being rather than a choice among others.

In the fields of environmental history and evolutionary theory, some approaches have taken this insight -the human construction of its own niche- as the key explanatory factor of human development. Both historical ecology and niche-construction theory emphasize human transformative powers. Historical Ecology holds that historical rather than evolutionary events are responsible for the principal changes in the relation between societies and their environments: "it focuses on the interpenetration of culture and the environment, rather than on the adaptation of human beings to the environment" (Balée 1998: 14). It is fitting that landscapes are thus seen as places of interaction that bear traces of past socionatural events, a notion derived from cultural and historical geography (see Drenthen 2009). On its part, niche-construction theory refuses to subscribe to the view that organisms always adapt to their environments and never vice versa, recognizing instead that organisms *change* their environments, thus describing a dynamic, reciprocal interaction between the processes of natural selection and niche-construction (Laland and Brown 2006: 96). Tellingly, the key factor to explain this difference is the human difference: culture. Because, admittedly, niche-construction is a general process exhibited by all living organisms (Odling-Smee et al. 2003). Yet human beings modify their environments mainly through cultural processes, a reliance that lends human niche-construction a special potency (see Smith 2007; Kendal et al. 2010). *Cultural* niche-construction is that in which learned and socially transmitted behavior modifies environments, amplifying the evolutionary feedback loop generated by *biological* niche-construction.

Human beings are specially effective niche constructors due to their exceptional capacity for generating culture. In fact, the unfolding of a historical dualism that separates nature and society may be explained resorting to this view of human adaptation: it is the human species way of being what gradually sets it apart from the natural world wherefrom it has emerged. Dualism is not an ontological condition, but a an emergent feature: a product of history that is real but also produces its own 'ideology'. Giorgio Agamben (2004) has referred to the "anthropological machine of humanism", that is, a "fundamental meta- physico-political" device that contributes to human self-understanding *in opposition* to nature. The idea that human beings are separated from the rest of nature would thus be one of the "fictions" that, functional to human evolution, have punctuated their cultural history -having fictions and sharing them being precisely, as Harari (2011) claims, the human exception. But fictions are understood by Harari as beliefs in non-material realities, such as the human right to a sound environment, not as 'lies'. In fact, human/nature dualism *is* a reality. Material and cultural processes such as the functional separation between the urban and the rural life, or the increasingly strong symbolic opposition between the rational productive activity and the natural world have made real a separation of something that was not separated in the beginning (Stephens 2000: 277). Moreover, this separation helps us to explain the potential contrast between *ideals* and *modes* of habitation, as well as possible gaps between the latter and habitability itself. What we *think* does not always reflect what we *do*.

As Ellis (2015) explains, long-term ecological change is driven by three fundamental processes of sociocultural niche construction: cooperative ecosystem engineering, social upscaling through culturally mediated changes in social organization and the harnessing of nonhuman energy sources. Their combination over time has increasingly taken place in larger societies, so that rates of cultural evolution have also scaled up, putting nonhuman species at an extreme disadvantage. The kind of societies we inhabit can be explained as a result of this collective logic:

“The general long-term trend in sociocultural niche construction is toward the evolution of subsistence regimes capable of supporting ever-larger and denser human populations in increasingly unequal, hierarchical, and complex societies by increasing land production over time through cooperative ecosystem engineering, increasing dependence on subsistence Exchange over larger and larger distances, and by increasing use of nonhuman energy” (Ellis 2015: 309).

This does not only account for the increase in social complexity -an increase that renders some collectivist political solutions to social problems obsolete- but also points towards the increasing convergence of socioecological regimes across the planet. Diversity is reduced due to the spread of similar techniques and technologies, solutions and approaches. Global capitalism is of course one of the main forces behind this increasing homogenization, but the forces behind this economic development itself may very well lie in the species very features as described by sociocultural niche construction theory.

At the same time, theories of socionatural interaction that revolve around human agency are not incompatible with the view that the particular direction taken by the species may constitute a gigantic human maladaptation -triggered by the very factors that seems to have made it a success so far. After all, if we can distinguish between nature 'as it is' and nature as it has been 'socially constructed', then there might be cognitive maladjustments between the two, causing humans to interact with nature in ways harmful to humans themselves and to other species (Evanoff 2005: 77). Ecological collapse thus remains a possibility. Furthermore, other species have certainly suffered due to the rise of *Homo sapiens* and continue to do so. Megafaunal extinctions on at least two continents, North American and Australia, to cite just one piece of evidence, were mainly caused by the arrival and action of human beings (Barnosky et al. 2004). Additionally, all kinds of animals and habitats have been destroyed by humans.

Be that as it may, the rise of the Anthropocene hypothesis -based on a number of factual evidences about the current state of socionatural- is an important reminder of the need to take sociocultural niche-construction into account. In this vein, Isendahl (2010) has aptly suggested that the Anthropocene forces us to reconsider adaptationist models of human-environment interactions, so that transformative human agency leads to new epistemological premises for the study of the latter. Natures are co-created by human beings, albeit they have so far remained mostly unaware of it - hence our belief in a natural nature and our spontaneous resistance to accept the end of nature as well as its corollary, a postnatural understanding of nature. White *et al.* have just reminded that “we live in social, ecological and material worlds, where natural and human history are *intertwined* and *interacting*” (2015: 2). Moreover, the current socionatural entanglement can be read as the result of a long process of increasing hybridization, wherein the separation between the social and the natural becomes less and less clear -a process that arguably began with domestication and agricultural experimentation, and culminates in our days with the first steps in artificial design. This view is now reinforced by the Anthropocene hypothesis.

In their oft-cited piece, Ellis and Ramankutty (2008) introduces the notion of "anthropogenic biomes" in order to describe how that most basic unit of ecological analysis (the biome) can no longer be understood as being purely 'natural', as recent studies suggest that human-dominated ecosystems now cover more of Earth's surface than 'wild' ecosystems. The purity view, after all, has long been challenged by ecologists and cultural historians (see Cronon 1996), but remains the mainstream one. It should be replaced by a more realistic picture of what biomes have become, that is, a mixture:

"Anthropogenic biomes are best characterized as heterogeneous landscape mosaics, combining a variety of different land uses and land covers. Urban areas are embedded within agricultural areas, trees are interspersed with croplands and housing, and managed vegetation is mixed with semi-natural vegetation (eg croplands are embedded within rangelands and forests)" [Ellis and Ramankutty 2008: 442].

What anthropogenic biomes show is that human and natural systems are intermingled almost everywhere on Earth, natural ecosystems embedded within human systems. As Liu (2007) puts it, human and natural systems are now "coupled": they are integrated systems in which people interact with natural components. This interaction may be intentional as much as unintentional, but either way it has acquired a systemic quality. Preserving nature in the Anthropocene is a thoroughly different task. Nature cannot be understood anymore in isolation from the social systems it is embedded in. And by fusing together human and non-human histories, the Anthropocene assumes a post-natural ontology (Barry et al. 2013). Hybridization is thus the new normal.

To sum it up, the Anthropocene offers the following insights on the current state, general character and underlying logic of socionatural relations: (i) human colonization has reached a formidable degree and social and natural systems are now coupled, so that ecological processes cannot be explained without the anthropogenic factor; (ii) nature does not exist anymore as an autonomous entity, except in the trivial sense that it still provides the backbone of physical reality and retains some elements of independence; (iii) nature is now a hybrid, a socionatural assemblage that has been anthropogenically influenced in a variable degree, irrespectively of the outer visibility of such influence; (iv) socionatural history is the product of the human species adaptive ways, whose main feature is a transformational ability that may be explained as a form of niche construction turbocharged by social cooperation and information storage and transmission; and (v) this logic produces over time an homogenization of socioecological regimes that involves the reduction of particularism and the convergence of different societies around the Western, capitalistic-driven model of socionatural relations.

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Third Thesis

Habitation provides an alternative framework for sustainability that contributes to the understanding of the sociocultural dimension of socionatural relations.

Another way of conceptualizing sustainability in the Anthropocene is the distinction -but also relation- between habitation and habitability (see Lantrip 1997). It can be meaningfully connected to sociocultural niche construction and offers environmentalism an opportunity to become engaged with the Anthropocene in a critical yet useful way.

Whereas habitation refers to the way a community makes use of its environment in order to support its way of life, habitability designates the match or mis-match between them. Yet the latter is not an uncontested concept reflecting a pre-fixed relation between a given society and its natural environment, since the latter does not exist. Humans do *not* possess a 'natural' way of life and it could even be argued that humanity's historical trajectory *contradicts* the very idea that there is a natural 'match' between a society and its environment. Habitation thus forces us to elucidate the role of cultural ideals in shaping -or concealing- the social relation with the environment. What is cultural, what is natural, what is decided upon, what is done but not exactly decided? A major paradox emerges from this reflection, namely, that habitation is neither natural nor purely social. Rather it is a combination of both natural (but not exactly pre-fixed) and social factors -whose historical development, however, gradually increases the human ability to make conscious decisions about how to inhabit its environment.

One of the main implications that this approach entails for habitation vis-à-vis habitability is the need to carefully distinguish between intentional and nonintentional aspects of habitation. The latter looks indeed less the product of a conscious *decision* than an emergent order that is humanly

created but not designed. This idea resembles that of the "spontaneous orders" championed by liberal epistemology, a "social intelligence" that stems from an unguided rationality (see Hayek 2008, Foster 2008). This means that there is an *unavailable* aspect of habitation: local differences do not amount to the lack of an universal socio-natural relation marked by the human impulse towards an aggressive adaptation that involves the physical transformation of the environment.

In this complex and multi-layered approach to habitation, culture plays an important role as a gigantic repository of information that can be transmitted between and across generations. But culture performs other functions in relation with nature. It also provides us with values, assumptions, and images that condition our individual perception of that complex entity. Moreover, there is no overarching consensus about what nature *means* or about how human beings *should* relate to it: culture is also a battlefield where different conceptions of nature clash (see Cronon 1996: 52). In turn, each of these conceptions claims its own legitimacy for *arranging* socio-natural relations -producing different *ideologies* that justify a given treatment of the non-human world and result in disparate *ideals* of habitation. As it happens, there is a tragic gap in our increasingly global culture between the prevalent *mode* of habitation (an instrumental usage of natural systems and forms) and the prevalent *ideal* of habitation (a Romantic/Arcadian view of nature). Strictly speaking, this is tragic because this conundrum is ingrained in the species way of being and thus cannot be 'solved'.

Although Cronon himself lists a number of ways in which nature is perceived nowadays -ranging from nature as a moral imperative to nature as an innocent reality, a merchandise or even the return of the repressed-, this is not the place to elaborate an exhaustive taxonomy of nature's embodiments in culture. What matters for my argument is that there is a clear distinction between an utilitarian and a non-utilitarian view of nature, each of them supported by its corresponding *ideology* in the weak sense of the term. Advanced societies combine a Romantic *ideal* of nature with an anthropocentric *ideology*, resulting in a tragic gap that can be rephrased as the one between an anthropocentric mode of habitation and a Romantic -or Arcadian- ideal of habitation. Or, at least, a mode of habitation that is pervaded by such ideal. In other words, we eat a steak made of industrially processed meat and then wander through the fields waiting for the sunset. Or we wish to have a *Häuschen im Grünen*, as the Germans put it, namely a suburban house where nature is 'closer', but we want it with a wi-fi connection and a SUV-vehicle parked in the door.

The concept of *fantasy* may be helpful to understand this peculiar dynamics. I am referring to the Lacanian-cum-Zizekian reading, where fantasy performs a vital function in mediating the subject's relation with reality. As Zizek (1989) explains, Lacan's thesis is that in the opposition between dream and reality, fantasy is on the side of reality, actually giving consistency to it. This happens because our desire, that is always a neurotic one, is structured by the promise of recovering what we have lost (in Freudian terms, of course, a satisfying relationship with the mother). This chimerical object of fantasy materializes the void of our desire and structures it, resisting interpretation:

"The usual definition of fantasy ('an imagined scenario representing the realization of desire') is therefore somewhat misleading, or at least ambiguous: in the fantasy-scene the desire is not fulfilled, 'satisfied', but constituted (given its objects, and so on) -*through fantasy, we learn 'how to desire'*" (Zizek 1989: 118).

As the Slovenian philosopher puts it, the question to be answered is how does a given empirical object become an object of desire. That is, how does it begin to contain some X, some unknown quality, something which is 'in it more than it' that makes it worthy of our desire? The answer: by entering the realm of fantasy. Therefore:

"There is nothing 'behind' the fantasy; the fantasy is a construction whose function is to hide this void, this 'nothing' -that is, the lack in the Other (Zizek 1989: 133)".

This in turn means that reality is simultaneously both the hard kernel resisting symbolization and a pure chimerical entity which has in itself no ontological consistency -a product of our fantasy. Yet it

is through fantasy that we live, that we endure reality. Fantasy is the object of desire that keeps our desire alive, the paradoxical missing presence that remains latent within us, mediating in our relation with the real.

Oddly enough, this theoretical framework can be usefully applied to the socrionatural relation and, in particular, to the contrast between modes and ideals of habitation. Since there is a coexistence of the dualistic/anthropocentric/utilitarian ideology that defines our prevailing modes of habitation (whose ultimate driver is the human species way of being) and the fantasy of a Romantic/Arcadian/harmonious nature that we embrace as a phantasmatic object of desire. Because nature is absent. As Kate Soper (2011) recently noted, our increased powers over it have left us 'alone': at the mercy of culture and economic and social policies rather than subjected to biological dictates. Moreover, the gradual convergence of different societies around a set of values, practices and technologies that loosely constitute the 'Western' worldview is eroding slowly any regional or local 'particularity', i.e. suppressing alternative socrionatural regimes. Hence the greater distance between ideology and fantasy.

Now, politicizing habitation means making modes of habitation *salient*, so that citizens can become aware of the very fact that societies *do* have modes of habitation that involve a particular treatment of the nonhuman world and a particular way of exploiting natural resources. As environmentalism has warned repeatedly, a given mode of habitation can undermine the habitability of a society if it ceases to be sustainable in relation to the conditions that an environment imposes. In principle, that is the main reason for politicizing habitation, together with moral issues concerning the treatment of nonhuman beings.

But what if that habitability is not, after all, threatened? What if a society produces the necessary technological innovations to conjure up this danger or adapts to the changes that befall it without substantially changing its prevailing mode of habitation? In such a case, there are reasons to expect that making habitation salient would still be useful. In this context, politicization seeks to create an awareness of the *fact* of habitation, that is, the fact that societies *are* inhabited in a certain way. Ideally, once they see this, citizens can choose between different modes of habitation -including the existing one. Interestingly, much as there exists a permanent gap between expressed values and actual behaviors in the environmental realm, a societal gap is also observable in the contrast between prevalent *modes* of habitation in the developed world and its pervasive *ideals* of habitation. Most people still hold a Romantic view of nature either as a wilderness to be in touch with or as a garden where living is worthwhile -or both. Yet we live in a hypertechnological society where natural resources are methodically exploited and biodiversity is plummeting. This contradiction should also be made salient, in what clearly constitutes a political task.

Laclau's (1990) conception of the political can be helpful in this context. He makes a distinction between the *social* and the *political*: the former consists in forgetting the acts or decisions of "originary institution" of the social order, whereas the latter requires the reactivation of the contingent moment of foundation, thus disclosing the potential for different constructions of that order. Social structures and collective norms are sedimented and thus taken as 'natural'; the political reveals them as *contingent*. For Laclau, the frontier between the social and the political is essentially unstable. It requires constant displacements and renegotiations between social agents that seeks to 'naturalize' their preferred social order. The ensuing conflict can take many forms - from collective mobilization to framing battles in the public sphere, from electoral competition to social upheavals. He is thus giving an explicit political meaning to genealogies, in the Nietzschean sense: researching the true origins of social norms and practices (Nietzsche 1988). In his own words:

"To reveal the original meaning of an act, then, is to reveal the moment of its radical contingency - in other words, to reinsert it in the system of real historic options that were discarded (...) by showing the terrain of original violence, of the power relation through which that instituting act took place" (Laclau 1990: 34).

It is thus an unveiling operation that can shed light on current social configurations. Actually, that is what both environmental historians and philosophers have been doing over the last decades: offering an alternative view on how human beings have related themselves to nature (e.g. Merchant 1983, Plumwood 1993). There is also a *political* position, one that is challenged by critics both outside and inside the field of environmental studies.

However, a genealogy of habitation in the Anthropocene should go beyond the classical green framing, according to which human beings have alienated themselves from nature by dominating it. Instead, it must explain in a realistic fashion why and how the current mode of habitation is firmly in place and why it is so different from the Romantic ideals of habitation that pervade Western cultures. Most importantly, such a research program should try to differentiate between contingent and non-contingent elements of the socio-natural relation, thus parting ways with Laclau in that not everything is deemed contingent and thus 'elective'. As Ellis put it:

“Sociocultural niche construction in an increasingly anthropogenic biosphere is neither new nor disastrous, but the perpetual activity of human societies engaged in the intentional cooperative engineering of ecosystems since prehistory” (Ellis 2015: 320).

Developing a genealogy of habitation thus involves the recognition that human adaptation is not a choice but rather a necessity, as well as identifying those aspects of human adaptation to the environment that could not have been much different (dominating other species, exploiting natural resources, migrating to other territories, and so on). In sum, there is a nonintentional side to habitation that must be emphasized, so that alternative ideals -as it is the case with the Romantic or Arcadian one- do not become utopias whose practical implementation remains unfeasible despite their strong cultural presence. If, as Sloterdijk (2010: 60) claims, a genealogical investigation allows us to distinguish between 'good' and 'bad' origins, a genealogy of habitation in the Anthropocene must be careful in identifying pure contingencies from bare necessities within socio-natural history. By doing this, it will become self-evident that humans should not be framed as “destroyers of nature” anymore, but rather as creators and sustainers of nature (Chapin et al. 2011). In turn, the debate on how to re-create natures and re-arrange socio-natures in ways that are beneficial to both human and nonhuman beings can take place under the right assumptions.

§

Fourth Thesis

*Environmentalism should reinvent itself as
an agent of ecological enlightenment for the Anthropocene age.*

Mike Ellis and Zev Trachtenberg (2013) have argued that the Anthropocene is not a scientific concept with a detachable moral significance, but a concept that has moral content at its core. Human actions have produced the Anthropocene, that is the result of individual and social choices, and although we have no choice but to live in *an* Anthropocene, the choices we make now will have some influence on the shape of the future, so that, to some extent, we can choose *which* Anthropocene is it going to be. And although there is nothing new in claiming that human beings are responsible for the damage they have inflicted on natural systems, the recognition of human beings as major forces of nature with the Anthropocene produces a shift in the conversation. As in Steffen et al.:

“We are the first generation with the knowledge of how our activities influence the Earth System, and thus the first generation with the power and the responsibility to change our relationship with the planet” (Steffen et al. 2011: 749).

Hence the idea that human beings must become effective stewards of the Earth system (Schellnhuber 1999). Human exceptionalism, then, can reinforce human responsibility. The question is, in turn, what does exactly mean that we should become planetary stewards, and how

exactly should we behave as such. After all, moral questions become immediately political questions: recognizing human responsibilities vis-à-vis the Anthropocene is one thing, determining how to react to it is another. The possible answers are many and this ambivalence is inherent to the story that the Anthropocene tells. As Clark suggests, the Anthropocene "is as much about the *decentering* of humankind as it is about our rising geological significance" (Clark 2014: 25). It does not manifest a clear moral lesson.

In what follows, I would like to present the four main moral positions regarding how human beings should react to the challenges posed by the Anthropocene. They are ideal types in the Weberian sense -intellectual constructions that synthesize real phenomena and/or discourses, thus helping us to understand reality.

(i) *Frugality*. Human societies are in a dangerous path of unsustainability and ecological destruction, and therefore a complete value change is needed: human beings must step back, abandon the capitalistic mode of production, and build up a different, more harmonious socio-natural relationship. The Anthropocene is understood as a fragile equilibrium that will not last. It is the traditional view of classical environmentalism: a thoroughly moralized Anthropocene that leads to a sustainable society that radically departs from the current social model and involves a strong protection of the remaining natural world. As Barry (2012) argues, a transition towards a post-growth sustainable society must be guided by the idea that an economy aimed at producing enough goods and services (instead of maximizing production and consumption) is one in which a new kind of well-being flourishes. Principles such as resilience or sufficiency (see Princen 2005) become the guide for a frugal, non-capitalistic Anthropocene. A blueprint of this future can be found in the initiatives carried on by the Transition Model that operates as a network of local communities (see Hopkins 2008). The Anthropocene is just seen as further proof that the classical green vision needs to be put into practice.

(ii) *Restraint*. Human societies are endangering their own survival by going too far in the exploitation of natural resources, overloading the global environment beyond its carrying capacity and thus threatening their ability to perform the functions and provide the services that a sustainable Anthropocene demand. Echoing the limits to growth perspective, but seemingly less radical in its implications, this perspective signals a number of planetary boundaries that must not be trespassed (Röckström 2009). It is a goal that can be achieved by different means, but that does not necessarily entail too radical a social change. As the Earth System approaches or exceeds thresholds that might precipitate a transition to some state outside its Holocene stability domain, society must consider ways to foster more flexible systems that contribute to the former's resilience (Folke et al. 2010). In this context, a new social contract on global sustainability that translates into political and institutional action the idea of a human planetary stewardship should be agreed upon (Folke et al. 2011). The Anthropocene is thus seen as a new condition under which societies must operate carefully.

(iii) *Enlightenment*. Although the need for a rearrangement of socio-natural relations is clear, the latter will not be effective unless it is linked to new social values that actually reconceptualize human place in the world. Frugality is not enough to encourage radical action, as it is associated to a somber narrative of human limitations that has proven so far utterly ineffective. Instead, the human exploration and enjoyment of new possibilities for defining the good life and engaging creatively with the socio-natural entanglement should be emphasized. In this context, the Anthropocene is an opportunity to reframe the conversation on the good society, thus making it the driver for an Anthropogenic Enlightenment. Such is the meaning of the "ecological receptivity" advocated by Schlosberg (2013), involving a new human disposition towards the nonhuman world. A similar path is taken by Andreas Weber (2014) by advocating an "erotic ecology" that reconnects human beings with nature. Again, a rewriting of the social contract is suggested, specially since the Anthropocene makes obscenely evident that nature is "the non-human third party that has been neglected in the classical social contract theories of natural law" (Kersten 2013: 51). Yet this contract is explicitly addressed to human beings themselves -as a way to reinvent their notions of the good and hence

changing their preferences. As the German Advisory Council on Global Change argues in its lengthy 2011 report on the subject, such global transformations cannot be grounded just on a 'planetary boundaries' perspective, but rather need to be rooted in an 'open frontiers' narrative that emphasizes the alternative ways of living that the Anthropocene would entail (WBGU 2011: 84). In this context, environmentalism might be seen as the enlightening agent that continues -and brings further- the task of modernity (Radkau 2011).

(iv) *Boldness*. Despite indications that the socionatural relationship must to some extent be re-arranged, the anthropocenic condition suggests that there is no turning back in the deep socionatural entanglement, nor can human beings reproduce the state of relative autonomy that nature enjoyed before the great anthropogenic acceleration: the Holocene conditions are gone forever. Therefore, human beings must be bold and perfect their control of socionatural relations. This can only be done through scientific and technological means. A general premise for those who hold this position is to deny the existence of natural limits or planetary boundaries as such. On the contrary, the human enterprise has continued to expand beyond natural limits for millennia (Ellis 2011: 38). As two well-known representatives of this perspective argue, an environmentalism that preaches the virtues of frugality and humility may be an obstacle to true modernization, since shrinking the human footprint does not look like a good strategy in a world where most of the people seek to live energy-rich modern lives (Nordhaus and Shellenberg 2011). Hence a significant reorientation of social preferences is not seen as likely nor desirable. Rather new techniques and innovations must be fostered in order to make liberal society and the Anthropocene technically compatible. Modernization might thus involve enlightenment, but of a different sort. The recognition of the Anthropocene is thus taken mainly as an invitation to produce even more Anthropocene.

Where does environmentalism stand, or should stand? The Anthropocene impacts on environmentalism in a twofold way: it forces it to accept some features of the socionatural relation that had been so far neglected or denied and it also creates the opportunity to regain protagonism as a voice in the ensuing debate about the good Anthropocene. The latter will only happen if the former happens too. As Cohen puts it:

"A newly invigorated environmental movement must chart a path that begins to fundamentally change how contemporary societies use scarce materials while simultaneously recognizing that we are in the midst of a process of global transformation that likely cannot (or arguably should not) be reversed. To foster meaningful engagement, it is necessary to realign our conceptual categories so that they more closely depict the complex sociotechnical systems that characterize prevalent configurations of production and consumption" (Cohen 2006: 77).

In this vein, an Anthropocene-friendly environmentalism should begin by acknowledging that nature and society are not, nor have ever been and neither will be, separate entities. Latour has perceptively commented on this:

"Just at the moment when this fabulous dissonance inherent in the modernist project between what modernists say (emancipation from all attachments!) and what they do (create ever-more attachments!) is becoming apparent to all, along come those alleging to speak for Nature to say the problem lies in the violations and imbroglios - the attachments!" (Latour 2011: 19).

Those attachments have brought us here -to the Anthropocene. That is why environmentalism should reframe itself as an active agent of ecological enlightenment, one that is able to recognize both the poorness of the human behaviour regarding other living beings and the richness that characterizes the species as a whole (without denying that humans are problematic animals dangerous to each other). Up to now, the colonization of nature has helped to provide that wealth. Now, it is time to *refine* the human control of nature, re-arranging the socionatural entanglement in a more reflective way. This will not 'liberate' nature, but it will protect the remaining natural forms in a highly technological world that is rapidly in the making. After all, environmentalism cannot escape the fact that the biological, including human nature, is becoming to a great extent a question of

design, a transformation driven by a logic of recombination: "an era of pure antiessentialism" (Escobar 1999: 11). But what kind of designs and serving what ends, nurturing what subjectivities and giving content to what lifestyles -this remains partly to be decided upon. It would be a shame if environmentalism does not participate meaningfully in this process.

§

Coda

These four statements combined amount to an exploration of the implications that the Anthropocene may have for the future of environmentalism. It should be noted that I have mostly referred to classical or mainstream environmentalism, thus somehow reducing the inner diversity of green political theory. However, the line that divides antimodernists and modernists within environmentalism is still valid as a general rule -as depicting, again, ideal types. In my view, the Anthropocene must be taken seriously, as it provides an accurate description of the state of socionatural relations as well as a plausible description of the historical trajectory that leads to it and of the underlying logic that explains its occurrence at the species level. The basic idea that it communicates, that of a pervasive and irreversible human influence on global natural systems, is convincing. Although classical environmentalism can very well insist on the validity of its old tenets, they look less convincing than ever. If environmental political theory is to remain alive and influential, it must come to terms with the insights provided by the Anthropocene, giving up its old dear nature and embracing instead the complicated socionatural entanglement that the former has become. A more persuasive and less apocalyptic narrative should come out from that operation, hopefully stopping the decline of environmentalism as a political theory capable of influencing socionatural realities in the Anthropocene age.

References

- Agamben, G. (2004). *The Open: Man and Animal*. Stanford: Stanford University Press.
- Anderson, J. (2010). From 'zombies' to 'coyotes': environmentalism where we are. *Environmental Politics*, 19(6), 973-991.
- Arias-Maldonado, M. (2011). Let's make it real: in defence of a realistic constructivism. *Environmental Ethics*, 33 (4), 377-393.
- Arias-Maldonado, M. (2015). *Environment & Society. Socionatural Relations in the Anthropocene*. Heidelberg: Springer.
- Barnosky, A. D. et al. (2011). Has the Earth's sixth mass extinction already arrived? *Nature*, 471, 51-57.
- Barry, J. (2012). *The Politics of Actually Existing Unsustainability*. Oxford: Oxford University Press.
- Barry, J., Mol, A. and Zito A. (2013). Climate change ethics, rights, and policies: an introduction. *Environmental Politics*, 22(3), 361-376.
- Castree, N. (1995). The nature of produced nature: materiality and knowledge construction in Marxism. *Antipode* 27, 13-48.
- Catton, W. (1980). *Overshoot: The Ecological Basis of Revolutionary Change*. Urbana: University of Illinois Press.
- Chapin, F. S. III et al. (2011). Earth Stewardship: science for action to sustain the human-earth system. *Ecosphere* 2, 89.
- Clark, N. (2014). Geo-politics and the disaster of the Anthropocene. *The Sociological Review*, 62(S1), 19-37.
- Cohen, M. (2006). The death of environmentalism: Introduction to the Symposium. *Organization & Environment*, 19(1), 74-81.
- Cronon, W. (Ed.) (1996). *Uncommon Ground. Rethinking the Human Place in Nature*. New York: W. W. Norton & Company.
- Cronon, W. (1996). Introduction: In Search of Nature. In W. Cronon (ed.), *Uncommon Ground. Rethinking the Human Place in Nature*. New York: W. W. Norton & Company, 23-56.
- Dennis, K. and Urry, J. (2009). *After the Car*. Cambridge: Polity Press.
- Diamond, J. (2006). *Collapse: How Societies Choose to Fail or Survive*. London: Penguin.
- Dilworth, C. (2010). *Too Smart for Our Own Good. The Ecological Predicament to Humankind*. Cambridge: Cambridge University Press.
- Dobson, A. (1990). *Green Political Thought*, London: Routledge.

- Drenthen, M. (2009). Ecological Restoration and Place Attachment: Emplacing Non-Places? *Environmental Values*, 18, 285-312.
- Escobar, A. (1999). After Nature: Steps to an Antiessentialist Political Ecology. *Current Anthropology*, 40(1), 1-30.
- Ellis, E. and Ramankutty (2008). Putting people in the map: anthropogenic biomes of the world, *Frontiers in Ecology and the Environment*, 6 (8), 439-447.
- Ellis, E. (2011). Anthropogenic transformation of the terrestrial biosphere. *Philosophical Transactions of the Royal Society*, 369, 1010-1035.
- Ellis, E. (2015). Ecology in an anthropogenic biosphere. *Ecological Monographs*, 85(3), 287-331.
- Ellis, M., Trachtenberg, Z. (2013). Which Anthropocene is it to be? Beyond geology to a moral and public discourse. *Earth's Future*, 2(2), 122-125.
- Evanoff, R. J. (2005). Reconciling Realism and Constructivism in Environmental Ethics. *Environmental Values*, 14, 61-81.
- Fischer-Kowalski, M. & Haberl, H. (2007). Conceptualizing, observing and comparing socio-ecological transitions. In M. Fischer-Kowalski & H. Haberl (Eds.), *Socio-ecological Transitions and Global Change. Trajectories of Social Metabolism and Land Use*, 1-30. Cheltenham: Edward Elgar.
- Folke, C. et al. (2010). Resilience thinking: integrating resilience, adaptability and transformability. *Ecology and Society*, 15(4), 20.
- Folke, C. et al. (2011). Reconnecting to the Biosphere. *Ambio*, 40(7), 719-738.
- Foster, J. 2008. *The Sustainability Mirage. Illusion and Reality in the Coming War on Climate Change*. London: Earthscan.
- Frankel, B. (1987). *The Post Industrial Utopians*. Cambridge: Polity Press.
- Gardiner, S. (2006). A Perfect Moral Storm: Climate Change, Intergenerational Ethics and the Problem of Moral Corruption. *Environmental Values*, 15, 397-413.
- Harari, Y. (2011). *Sapiens: A Brief History of Humankind*. London: Harvill Secker.
- Hayek, F. (2008). *The Constitution of Liberty*. London: Routledge.
- Hopkins, M. (2008). *The Transition Handbook*. Totnes: Green Books.
- Humphrey, M. [ed.] (2003). *Political Theory and the Environment: A Reassessment*. Londres: Frank Cass.
- Isendahl, C. (2010). The Anthropocene forces us to reconsider adaptationist models of human-environment interactions. Letter to *Environmental Science & Technology*, 15 August, 6007.
- Kendal, J., Tehrani, J., & Odling-Smee, F. (2011). Human niche-construction in interdisciplinary focus. *Philosophical Transactions of the Royal Society B*, 366, 785-792.
- Kersten, J. (2013). The Enjoyment of Complexity: A New Political Anthropology for the Anthropocene. In H. Trischler (ed.), *Anthropocene. Envisioning the Future of the Age of Humans* (pp. 39-56). Rachel Carson Center Perspectives, 2013/3.
- Laclau, E. (1990). *New Reflections on the Revolution of Our Time*. London: Verso .
- Laland, K. and Brown, G. (2006). Niche-construction, Human Behavior, and the Adaptive-Lag Hypothesis, *Evolutionary Anthropology*, 15, 95-104.
- Lantrip, D. B. (1997). Defining habitable: a performance-based approach. *Environment and Planning B: Planning and Design*, 24 (5), 647-668.
- Latour, B. (2011). Love your monsters. In M. Shellenberg and T. Nordhaus (Eds.), *Love Your Monsters. Postenvironmentalism and the Anthropocene* (pp. 16-23). San Francisco: The Breakthrough Institute.
- Liu, J. et al. (2007). Complexity of Coupled Human and Natural Systems. *Science*, 317, 1513.
- Nordhaus, T. and Shellenberg, M. (2011). Introduction. In M. Shellenberg and T. Nordhaus (Eds.), *Love Your Monsters. Postenvironmentalism and the Anthropocene* (pp. 5-7). San Francisco: The Breakthrough Institute.
- Macnaghten, P. and Urry, J. 1998. *Contested Natures*. London: Sage.
- Merchant, C. (1983). *The Death of Nature: Women, Ecology, and the Scientific Revolution*. New York: Harper & Row.
- Nietzsche, Friedrich (1988). *Zur Genealogie der Moral*. Stuttgart: Reclam.
- Odling-Smee, F., Laland, K., Feldman, M. (2003). *Niche-construction: The Neglected Process in Evolution*. Princeton. New Jersey: Princeton University Press.
- Plumwood, V. (1993). *Feminism and the Mastery of Nature*. London: Routledge.
- Princen, T. (2005). *The Logic of Sufficiency*. Cambridge and London: The MIT Press.
- Radkau, J. (2011) *Die Ära der Ökologie: Eine Weltgeschichte*. Munich: C. H. Beck.
- Röckstrom, J. et al. (2009). A Safe Operating Space for Humanity. *Nature*, 461, 472-475.
- Schellnhuber HJ. (1999). 'Earth system' analysis and the second Copernican revolution. *Nature*, 402, 19-23.
- Schlosberg, David (2013). 'For the animals that didn't have a dad to put them in the boat': Environmental Management In The Anthropocene". Paper presented at the ECPR General Sessions Bourdeaux, 4-7 September.
- Sloterdijk, P. (2010). *Scheintod im Denken: Von Philosophie und Wissenschaft als Übung*. Berlin: Suhrkamp.
- Soper, K. (2011). Disposing Nature or Disposing of It? Reflections on the Instruction of Nature. In G. Kaebnick

- (ed.), *The Ideal of Nature. Debates about Biotechnology and the Environment*. Baltimore: The Johns Hopkins University Press, 1-16.
- Smith, B. (2007). Niche-construction and the behavioral context of plant and animal domestication. *Evolutionary Anthropology*, 16, 188-199.
- Steffen et al. (2011). The Anthropocene: From Global Change to Planetary Stewardship. *Ambio*, 40 (7), 739-761.
- Stephens, P. (2000). Nature, Purity, Ontology. *Environmental Values*, 9, 267-294.
- Symons, J. & Karlsson, R. (2015). Green Political Theory in a Climate Changed World. *Environmental Politics*, 24(2), 173-192.
- Urry, J. (2008). Climate change, travel and complex futures. *British Journal of Sociology*, 59(2), 261-279.
- Welzer, H. (2008). *Klimakriege. Wofür im 21. Jahrhundert getötet wird*. Frankfurt am Main: Fischer Verlag.
- WBGU [German Advisory Council on Global Change] (2011). *Welt in Wandel: Gesellschaftsvertrag für eine grosse Transformation*. Berlin: WBGU.
- Weber, A. (2014). *Lebendigkeit. Eine erotische Ökologie*. Munich: Kösel-Verlag.
- White, D. and Wilbert, C. (2009). Inhabiting Technonatural Time/Spaces. In D. White and C. Wilbert (Eds.), *Technonatures. Environments, Technologies, Spaces, and Places in the Twenty-first Century* (pp. 1-30). Waterloo: Wilfried Laurier University Press.
- White, D., Rudy, A., Gareau, B. (2015). *Environments, Natures and Social Theory. Towards a Critical Hybridity*, London: Palgrave.
- Zizek, S. (1989): *The Sublime Object of Ideology*. London: Verso.