



Lonely Futures?

From the Last Man to Posthuman Kinship

MADELINE BECKER

Otto-von-Guericke-University Magdeburg, Germany

Introduction

Some evil spell had settled in the community: mysterious maladies swept the flocks of chicken; the cattle and sheep sickened and died. Everywhere was a shadow of death.

No witchcraft, no enemy action had silenced the rebirth of new life in this stricken world. The people had done it themselves.

(Carson 1962: 2-3)

An ever-growing human population that excessively and mindlessly consumes more resources than available has inspired authors and filmmakers to make grim predictions about the future. Late capitalism and mass consumerism might have empowered humankind to become a powerful influence on the nonhuman environment, but it may also herald the end of our as well as of other species. Rachel Carson's above quoted *Silent Spring* is one of the most influential texts in the environmental discourse. Her apocalyptic vision into the future, and her criticism of the use of pesticides like DDT inspired an environmental movement. And it was indeed successful: shortly after the release of *Silent Spring* the United States government banned DDT. The first lines of her book introduce the idea of apocalypse as a rhetorical device to the environmental discourse of the 20th century and it migrated into the 21st century. What is more, Carson reimagined apocalypse not as divine intervention, as it is according to its biblical origin, but as the result of humankind's anti-environmental lifestyles.

In the following I will explore whether and how post-apocalyptic texts, and the last man narrative in particular, can prompt their readers to rethink humankind's position in the world by confronting them with the possibility of a catastrophic future and in doing so encourage cultural, social, and political change. In this regard I will consider how two recent examples of the last man narrative engage with the issue of overpopulation and the concepts of human and nonhuman kinship, power, and agency against the backdrop of the Anthropocene idea. By imagining the sudden end of global capitalism and its ideologies, and the disappearance of humankind, the event of apocalypse points towards the fragility



of both our way of life and our species. Thus, it challenges the long-fostered myth of human exceptionalism and control over the world. Last but not least, the post-apocalyptic world, which is relieved of the ideas, concepts and ideologies of late capitalism, becomes an imaginary space in which alternative concepts of the human and the nonhuman can be explored. Yet, the last man narrative does not suggest that change is only possible after the disappearance of our present world. Rather, they should be read as an extrapolation of present trends and fears, which offer their readers the possibility to engage critically with the ways in which they live with and in the world. In doing so, they appear to suggest that change is not only necessary but also possible.

As Lawrence Buell notes, ever since Carson's popular text apocalypse has become the "most powerful master metaphor" within the environment discourse (Buell 1995 qtd. in Garrard 2011: 101). The popularity of narratives that imagine the end of the world as we know it prompts us to inquire about their potential efficacies and functions as part of the cultural imagination. The question what imagining catastrophic futures can do for the environmental discourse has generated scholarly disagreement. Greg Garrard points out that apocalyptic literature, if read as a sign of the coming end, instils fear and despair and, thus, can be "politically disabling" (Garrard 2012: 45). Pieter Vermeulen claims that these narratives rather than encouraging readers to avert a catastrophic future help to "come to terms with the finitude of human life" (2017: 870). Both Garrard's and Vermeulen's reading of apocalypse and post-apocalypse as texts that point towards the inevitable seems to doubt that such texts can encourage cultural, social, and political change. Horn, on the other hand, points out that post-apocalypse constitutes a narrative of *both* "sickness and healing" (2018: 3); such narratives are *both* "horrifying" (2018: 2) and "comforting" (2018: 3). She concludes that because of their ambivalent attitude towards the future these texts constitute "sites for negotiating about the future" (Horn 2018: 10). According to Horn, these stories extrapolate present risks, fears, and suspicions and in doing so illustrate potential dangers and shed light on the risks of "an overly complex world" (2018: 9).

In the following analysis of two recent examples of last man narratives, a subtype of the post-apocalyptic imagination, I will largely follow Horn's reading of imagined catastrophic futures. Both Franny Armstrong's documentary film *The Age of Stupid* (2009) and Margaret Atwood's *MaddAddam* trilogy (2003-2013) constitute sites in which ideas, concepts, and ideologies about humankind and its position in the world are negotiated and the potential dangers of our present anti-environmental lifestyles are revealed. According to these two texts the enlightenment idea of human exceptionalism and the capitalist myth of eternal growth are at the root of the immense population growth and an excessive and mindless consumption of the earth's resources. They warn that these ideologies will eventually lead to environmental crisis and, thus, the end of humankind.



The issues of overpopulation, global capitalism and the idea of human exceptionalism prove particularly problematic if they are considered in the context of the Anthropocene concept. At the dawn of the 21st century Paul J. Crutzen and Eugen F. Stoermer have popularised the notion that we have entered a man-made geological age. The Anthropocene concept argues that population growth, a lifestyle of mass consumption, and the maxim of endless economic growth have increased humankind's influence on chemical, atmospheric, geological and other process in the global ecosystem and thus are causing climate change (Crutzen and Stoermer 2000: 18). Even though Crutzen and Stoermer point out the potential dangers and risks of climate change, the idea of human geological agency is problematic in at least two ways: One, it can be easily misinterpreted as reaffirming the notion of human exceptionalism and dominion over the nonhuman world. Two, it assumes human collective responsibility for climate change, ignoring that it is rather one particular group of humans, namely the capitalist West, whose actions cause an increase in the average global temperature.

Donna Haraway criticises that one of the most common responses to climate change is our naïve belief in being able to use our scientific and technological agency to manage and solve climate crisis (2016: 3), which is probably rooted in the idea of human exceptionalism and a notion of invulnerability. Already in the 18th century, the English economist Thomas Malthus observed with great concern the belief in human scientific and technological agency and the maxim of economic growth. He pointed out that an unhindered population growth will ultimately result in the lack of resources to sustain the population. Malthus concluded that a growing population and a growing economy will only temporarily increase wealth and health, but will soon lead to poverty, famine, disease and suffering (1798: 5). As Horn observes, Malthus did not believe that knowledge, planning, and precaution can bring a better future (2018: 41). In that the Malthusian approach to crisis differs significantly from recent common responses to climate change because it doubts that humankind will be able to save itself and instead reveals the vulnerability and fragility of an ever-growing population. Similar predictions were made again later by among others Paul Ehrlich (1968), and by Dennis L. Meadows, Donella Meadows, and Jorgen Randers (1972), all of which seem to resurrect Malthus' argument with a growing awareness of a looming environmental crisis.

Another issue that has often been criticised with regards to the Anthropocene concept is the idea of human collective responsibility for climate change. Crutzen and Stoermer appear to assume that *all* of humankind has brought forth the changes that led to environmental crisis. Yet, as for instance T.J. Demos argues, it is but a particular lifestyle of a particular group of human beings that is causing climate change, namely the capitalist West and its consumer culture (2017: 19). Accordingly, such criticism suggests that we should talk about the Capitalocene rather than the Anthropocene. While the Capitalocene idea highlights some well justified issues concerning collective agency and responsibility,



it puts strong emphasis on the origins of environmental change rather than on who is going to be affected by it. Even though capitalism and mass consumerism might be the driving forces, environmental crisis affects all of humankind and also the nonhuman world. Thus, Dipesh Chakrabarty argues that instead of debating about responsibility and guilt, we should focus on how we are “united by a shared sense of catastrophe” (2015: 349). Chakrabarty highlights that climate change will affect everyone regardless of their class, gender, race, or species (2015: 349).

Both *The Age of Stupid* and the *MaddAddam* trilogy engage critically with issues of population growth, human collectivity, power, and agency in the Anthropocene. In imagining the sudden disappearance of humankind, they reveal the fragility of an ever-growing human population and destabilise the notion of human exceptionalism and its trust in our ability and power to save humankind. They suggest that if the world we live in faces crisis, so will we. As the last men of both texts look at the present and reflect what has brought about the catastrophe that wiped out humankind, they identify human hubris, the anti-environmental ideologies of late capitalism, and a seemingly endlessly growing, all-consuming human population as the harbinger of apocalypse.

Last but not least, the post-apocalyptic setting of especially Atwood’s final novel of her *Maddaddam* trilogy (2013) constitutes a blank canvas which is used to explore alternative ideas and concepts of human and nonhuman interaction and living-with. Towards the end of the novel the last human survivors join forces with humanoid bioengineered creatures and form what I will term posthuman communities. These communities on the one hand fundamentally question what it means to be human and, on the other, highlight the interrelatedness and co-dependency of the human and the nonhuman world. They suggest that we need to become aware that the fate of humankind is entwined with that of the world we live in.

The following part of this essay will consider some of the particularities of the last man narrative as well as its function in the environmental imagination. I will argue that the event of apocalypse, if read as warning rather than divine providence, constitutes an imaginary site which extrapolates present threats and risks and thus allows for a negotiation of the present and its anti-environmental lifestyles. What is more, after the world as we know it and its ideologies have disappeared, the post-apocalyptic world becomes a blank canvas on which new ways of living in and with our environment can be explored. Most importantly, I will demonstrate that the post-apocalyptic novel always remains hopeful as it assumes that the future it imagines can be averted.

The subsequent reading of *The Age of Stupid* explores how Armstrong’s documentary engages with questions of human collective agency and responsibility in the Anthropocene. The film strongly draws on the criticism of the Capitalocene idea illustrating that the



capitalist West's exploitation of the unequal distribution of wealth and its excessive consumerism will soon exhaust the availability of natural resources. Notably, the documentary's frame narrative, which revolves around the last human survivor of apocalypse, not only dramatically stresses the film's argument that a world of global capitalism will soon come to collapse, it further suggests that all of humankind will be united by its looming tragic fate regardless of class or race. In doing so, *The Age of Stupid* expands the discussion of human collective responsibility by a notion of human collective affectedness.

The last part of this essay discusses Atwood's trilogy. The pre-apocalyptic dystopia of the *MaddAddam* novels is a world determined by capitalist greed and excessive consumerism, which is brought to collapse by Crake, who saw the only hope for earth in the annihilation of humankind. A great part of the last two novels is set in the pleeblands, an urban, overcrowded environment in which people seem to be blinded by their unsatisfiable greed for consumption. The pleeblanders are often represented as a self-destructive, violent mob, which is locked in a battle over scarce resources. Yet, Atwood also imagines an alternative group of people as part of this world. The God's Gardeners are an eco-spiritual community, who are aware of the looming end and chose to change their way of life in the face of danger. Even though this change can no longer avert apocalypse in the world of Atwood's novels, God's Gardeners nonetheless represent the possibility of change. Their eco-centred worldview which is based on respect, appreciation and care for their fellow human and nonhuman beings is further explored after the event of apocalypse and becomes the basis for the formation of posthuman community, in which the conceptual boundary between the human and the nonhuman appears to fully dissolve.

The Last Man Narrative in the Environmental Imagination

A future of environmental crisis in which the world as we know it and its inhabitants have fundamentally changed or disappeared altogether has become a common topos of the environmental imagination. Mary Shelley's *The Last Man* (1826) is probably one of the earliest literary texts which has established this kind of narrative. More recent examples can easily be found across a number of genres and media including non-fiction such as Rachel Carson's *Silent Spring* (1962) and Bill McKibben's *The End of Nature* (1989), narrative fiction such as Richard Matheson's *I Am Legend* (1954), J.G. Ballard's *The Burning World* (1964), T.C. Boyle's *A Friend of the Earth* (2000), and Hollywood blockbusters such as Roland Emmerich's *The Day After Tomorrow* (2004), Francis Lawrence's film adaptation of *I am Legend* (2007), and Christopher Nolan's *Interstellar* (2014). The last man narrative constitutes a popular subtype of the post-apocalyptic imagination. It tells the story of a lone survivor of catastrophe, who rummages through a post-apocalyptic world desperately trying to survive. I will follow Horn's reading of the last man as a figure of revelation, who discloses what brought about the crisis and how it might have been averted (2018:



25). What is more, the last man narrative points towards the fragility of our way of life and of humankind. Last but not least, its post-apocalyptic setting offers an imaginary space in which alternative ideas, concepts, and ways of life can be explored.

Horn observes that the last man is first of all a figure of revelation. He casts “a gaze backward to understand an ultimate truth that can only be revealed in hindsight” (2018: 24). Horn argues that the last man knows what brought about the crisis and how it could have been avoided. In doing so he also represents the realisation that apocalypse was not fate (2018: 25). This constitutes an important departure of recent apocalyptic fiction from its biblical origin. In the Judeo-Christian tradition apocalypse is divine providence, it cannot be averted, most importantly not by humankind. As Garrard observes, apocalypse in the 21st century imagination is fundamentally different from its biblical origin in that it can be read as a warning instead of as a sign of the coming end (2011: 97). The post-apocalyptic world it depicts is not divine providence but the result of human actions and choices. Accordingly, last man narratives can highlight both the need for and possibility of change in order to avoid a catastrophic future. Horn even suggests that reinterpreting the post-apocalyptic world as an open future that is “subject to human decision and intervention but also to change” helps its readers to understand themselves as “authors of that future” (2018: 22). It can be concluded that last man narratives experiment with possibilities of what might come rather than constituting a grim prediction for a future that is already set. As they do so they suggest that by changing our lifestyle, we can avert a future of environmental crisis.

It follows that the extrapolation of trends, fears, and risks of their reader’s present world is another important characteristic of the last man narrative. This extrapolation constitutes a link between the text and the extra-textual world of its readers, which allows for post-apocalyptic fiction to become a site of negotiating these trends and fears and make them manageable. In this vein Horn argues that every depiction of catastrophe “claims to reveal something that already exists in the present” (2018: 11). She concludes that such stories become key in communicating about possible futures, as they extrapolate from the present and anticipate what might come and how we can prevent it (2018: 10). This appears to apply to both Armstrong’s and Atwood’s texts. Atwood’s pre-apocalyptic world constitutes a dystopian extrapolation of an excessively consumerist culture, ruthless capitalism, and scientific hubris. Invasive bioengineered animals replaced most wild animal species. Those who have an education in science and technology are part of a small privileged elite living in compounds, while the great majority of people struggles for survival in the pleeblands. The inhabitants of Atwood’s dystopia distract themselves from their misery with sex (*Scales and Tales*), spectacles of violence (*Painball*), and body modification (*AnooYoo*). As Lars Schmeink observes, Atwood’s dystopian world is concerned that “rampant capitalism” and “individualistic consumer societies” will lead to a “global



ecological catastrophe, the development of transgenic species (across all biological domains), and ultimately the creation of a rival species of posthumans (2016: 73). In doing so, Atwood's novel seems to warn against the ideologies of late capitalism and human scientific hubris as harbingers of crisis.

Armstrong's *The Age of Stupid* presents an even closer reference to our present world. Her pre-apocalyptic world is indeed our present world, which is the object of Armstrong's documentary on climate change. As the last man looks back at the years between 2008 and 2015 and asks: "Why didn't we save ourselves when we had the chance to?" (01:18:29), he browses through the material filmed and assembled into a documentary that is reporting on the effects of climate change. As the last man looks back at his audience's present, he claims that our ignorance and inability to change in the face of a looming crisis have brought about the annihilation of the entire human species. The last man narrative that frames the documentary on climate change underlines the urgency of cultural, social, and political change.

Atwood's and Armstrong's texts both seem to be characterised by what Barbara Korte terms a "cautionary stance towards modernity" (2008: 153). Heather Hicks equally emphasises the key role of the last man in communicating that word of warning. She observes that as the lone survivor moves forward after the conditions of his world have broken down, he has to make decisions concerning which fragments of the modern world (including fragments of the material world as well as the immaterial domain of words and ideas) he wants to salvage (2016: 3). Hicks concludes that the absence of some phenomena of modernity become "a starting point for weighing their meaning" and thus invite the reader "to ask what should survive and why" (2016: 4). Hence, the last man's "unflinching gaze back at humanity" (Höpker 2014: 162), offers a critical and revealing perspective on the world of its textual production. It both deconstructs ideologies of the modern world and explores new ones, a point I will return to in an instant.

Horn points out that apart from representing the recognition of what brought about the catastrophe that led to the end of his world, the last man reveals the fragility of both humankind and the human individual (2018: 25). While Enlightenment and humanism have fostered the idea of human exceptionalism, and the belief in an ongoing improvement of humankind, Thomas Malthus has employed a rhetoric of apocalypse in order to refute the dominant discourse of the 18th century. His "An Essay on the Principle of Population" contradicts the idea of "perfectibility of mankind" (Malthus 1798: 3), and the possibility to accumulate endless wealth and argues that humankind is, in fact, fragile and dependent on external factors, such as the availability of food and medicine. Malthus doubts that mankind will continue to grow and thrive and is concerned that we will reach a tipping point when the human population exceeds the availability of vital resources. He does not believe that humankind will be able to manage the crisis, but is convinced that



the majority of people, most likely those that are already poor and marginalised, will suffer and starve (Malthus 1798: 9). As Horn further points out, Malthus, unlike his contemporaries, did not see the human as a soul, a bearer of rights and intellectual capacities, but as a body that is vulnerable and dependent (2018: 38). Malthus was probably one of the first to use the trope of apocalypse in order to object to the notion of human exceptionalism and to suggest that our way of life and our hubris will lead to crisis.

Even though Malthus' ideas have circulated since the 18th century and have been resurrected by among others Paul Ehrlich and Dennis L. Meadows et al. in the 1960s and 70s, the Enlightenment and humanist anthropocentric worldview and the concomitant idea of human exceptionalism seem to have prevailed and still dominate Western thought of the 20th and 21st century. This is not least reflected in Crutzen and Stoermer's concluding remark in their essay on the Anthropocene. Even though they highlight the risks of population growth and excessive consumerism, they close their essay stating: "[...] mankind will remain a major geological force for many millennia, maybe millions of years to come. [...] An exciting, but also daunting task lies ahead of the global research and engineering community to guide mankind towards global, sustainable, environmental management." (2000: 18) This remark not only suggests that mankind will prevail for many years to come, despite the environmental crisis it has brought forth, it also expresses a hubristic belief in man's ability to manage the crisis with the help of science and technology. As Haraway observes, this naïve trust in mankind's ability to manage and solve environmental crisis is one of the most common responses (2016: 3). This belief seems to be founded in the idea of human scientific and technological exceptionalism, and the idea that human geological agency also constitutes an accumulation of power and control. Imagining the sudden disappearance of humankind, on the other hand, reveals its fragility and vulnerability and, thus, becomes a powerful rhetorical device within the environmental discourse. Horn concludes that apocalypse demonstrates that humankind depends on the world that they "inhabit, exploit, and pretend to control" (2018: 13). It supports the awareness that, to borrow Chakrabarty's words, "[changing] the climate, increasingly not only the average temperature of the planet but also the acidity and the level of the oceans, and destroying the food chain are actions that cannot be in the interest of our lives" (2015: 348).

Apart from highlighting the fragility of humankind as a species, the figure of the last man further represents an altercation with what it means to be human on an individual level and seems to strengthen the idea that we are first and foremost living, vulnerable bodies rather than souls. Taking the theme of cannibalism as an example, Horn argues that the last man reveals that under pressure humans lose all humanness. Enlightenment ideals such as empathy, friendship, and rationality no longer play any role. In a world that is stripped of the comforts of civilisation man becomes selfish, fearful, and brutal. Thus, driven by the need to survive he does not even refrain from cannibalism (2018: 34-5).



Horn concludes that the last man is a body rather than an intellectual being, a bearer of rights, or a soul. Alessandra Boller similarly observes that man is commonly understood as “a stable ‘being’”, but exposed to crisis becomes “fragile, permeable and open to diseases and damages” (2018: 4). This awareness of the fragility of the human body, which destabilises the idea of human superiority, has become increasingly felt in Western societies after 9/11 and has, thus, become a central trope of the dystopian novel of the 21st century (Boller 2018: 4-5).

These observations support the idea that last man narratives can contribute to the environmental and posthuman discourse, both of which attempt to de-centre man’s position in the world and argue for, among other things, an eco-centred worldview. The last man narrative seems to highlight the vulnerability of the human body, its dependence on the world it inhabits and reveals a side of human nature that is rather unfavourable and thus often concealed in the Western discourse on human nature. Yet, at least in Atwood’s novel this applies only partly. While her post-apocalyptic trilogy does reveal human’s dependence on the nonhuman world and questions whether our capability of envy and romantic love, and our lust for power make us violent, ruthless, and self-destructive, it does also suggest that we are capable of empathy, care, and appreciation for our fellow human and nonhuman beings, even in times of crisis. She explores the complexity and ambivalence of human nature, and outlines different possible reactions to crisis.

The last two novels of Atwood’s trilogy, *The Year of the Flood* and *MaddAddam*, focus on an eco-spiritual movement called God’s Gardeners, which bears strong resemblance with deep ecology philosophy. God’s Gardeners stand out in Atwood’s pre-apocalyptic setting as they reject the predominant consumerist lifestyle, and choose a more modest and primordial life. Most importantly their eco-centred worldview is characterised by empathy, appreciation, and care for their fellow human and nonhuman beings, even in times of crisis. It is members of the God’s Gardeners who survive Crake’s killer virus and whose community of survivors becomes the starting point of something new. Three surviving painballers (former inmates of a colosseum-like institution for the punishment of criminals) become their opponents as they begin to stalk the surviving God’s Gardeners. As the painballers find themselves in a post-apocalyptic world they begin to kill everyone and everything they encounter, often without obvious necessity, and take pleasure in violence and rape. The painballers resemble the survivor-type identified by Horn. They are brutally and selfishly fulfilling their needs, which appear to be primarily hunger and sexual lust. Yet, it should be noted that this was already the case before the apocalypse. Accordingly, they cannot be read as only the product of catastrophe, but in many ways constitute a remnant of a world of ruthless capitalist creed, which commodifies violence and rape. They represent what Crake believed to be beyond hope and, thus, chose to eradicate: a humankind that is prone to destroy the world because of its irrevocably violent nature.



God's Gardeners, on the other hand, appear to suggest the opposite, namely that humankind is not naturally destructive and violent. While Atwood makes clear that she rejects the Enlightenment idea of human exceptionalism, she maintains its belief in humans' capability of empathy and care. In doing so, Atwood's novel negotiates both the best and worst qualities of humankind, leaving room to explore both. Most importantly, however, God's Gardeners represent both the necessity of change as well as its possibility.

In the previous paragraph I argued already that the community of God's Gardeners survivors becomes a starting point of something new. Indeed, the post-apocalyptic setting of the last man narrative can be read as a space in which alternative ways of life and worldviews can be explored. The post-apocalyptic world evolves out of a rupture with the preceding culture and society and with its beliefs and ideologies. Garry Canavan notes that ideologies of the present world, particularly those of late capitalism, have been naturalised so strongly that it is easier to imagine the end of the world than to imagine the end of capitalism. Thus, apart from allowing the reader to see the present world "more clearly without the distortion of ideology" (Canavan 2012: 139), the disappearance of it makes space for something new. The remaining survivors of apocalypse, if there are enough, can begin to rebuild the world and while doing so decide to build one that differs significantly from the previous one. Once more, Atwood's third novel serves as a prime example of this observation. In *MaddAddam* the remaining survivors found a community. All of these survivors once had a connection with God's Gardeners and their eco-centred worldview survives with them. With capitalism and mass consumerism gone, this group of survivors represents the possibility of creating something new. At the end of the novel they form an alliance with other species, the humanoid Crakers created by Crake to substitute for the human population, and the pigoons, a genetically engineered human-pig splice. In this posthuman community the boundary between nature and culture, and human and non-human becomes ineffective; it represents an imaginary extension of a posthuman, post-anthropocentric worldview, which emphasises interspecies equality and co-dependence.

Anthropocene or Capitalocene? Human Collective Guilt and a Shared Sense of Catastrophe in *The Age of Stupid*

One of the central concerns of *The Age of Stupid* is an ever-expanding population that consumes more and more of the planet's resources. The film repeatedly emphasises that if we continue to grow and to live as we do at the present, we will soon exceed earth's capacities. Yet, while some groups have only limited access to resources and generally contribute considerably less to climate change than others, the film highlights that, in the end, we will all be united by the fact that humankind will be doomed. The Capitalocene criticism follows the argument that climate change is not human-made in the sense that all of



humankind is equally responsible for it, but correlative with global capitalism, mass consumption, and the unequal distribution of wealth. *The Age of Stupid* picks up this idea, but extends it by pointing out that even though capitalism might be a significant driving force of climate change, its impact will outlast capitalism and ultimately affect everyone, regardless of status and role in the global economic system.

Notably, Crutzen and Stoermer's essay appears to be based on an understanding of humankind as a global collective, which shares geological agency and, thus, brought about climate change. Theorising human collective responsibility in this sense, however, fails to shed light on what it is in particular that is at the root of climate change, and disregards the fact that not all of humankind exploits and destroys the global environment. As Hannes Bergthaller argues, whether the human population exceeds earth's capacities to provide us and other species with resources depends on the "exact manner in which people make their living" (2018: n.pag). In the same vein, Demos argues that it is by no means all of humankind which brought about environmental crisis, but a particular lifestyle of only a part of the global population, namely Western capitalism and its culture of mass consumption (2017: 21). These observations have led Demos and others to populate an alternative term for the discussion of anthropogenic climate change: Capitalocene.

The Capitalocene idea constitutes an important moment in the environmental discourse as it highlights that first and foremost the privileged West needs to change the ways in which it understands its position in the world and how it lives in and with the world, if we want to avert a future of resource scarcity, starvation, and disease. Yet, its focus on the origins of environmental change rather than on its effects has become the subject of criticism. One of its most popular critics is Chakrabarty, who is concerned that "climate change may well end up accentuating all the inequalities of the capitalist world" but argues that it is not sufficient to "read climate change only as a crisis of capitalist management" as it will probably outlast the capitalist world (2015: 343). He concludes that in the face of a global crisis categories such as class, race, nationality, gender, or species – with the help of which we commonly make sense of the world and which seem to play an important role in the concept of the Capitalocene – will lose importance as we are all "united by a shared sense of catastrophe" (2015: 349). Armstrong's documentary material on climate change is characterised by its critique of capitalism, the unequal distribution of wealth and access to resources, and, thus, highlights that it is first and foremost the capitalist West which is responsible for climate change. Yet, its frame narrative, which is set in a post-apocalyptic world in which all of humankind but one last survivor has vanished, suggests that if the Western world continues the way it does, all of humankind will suffer the consequences and is thus united by its disastrous fate.

Armstrong's documentary follows a familiar and well-established line of argumentation, according to which we need to stop global capitalism from advancing if we want to



make a significant change. A similar rhetoric can be found in documentaries such as Kip Andersen's *Cowspiracy* (2014), which understands industrial livestock farming and agriculture as key factors in climate change, or Cyrus Sutton's *Island Earth* (2016), which demonstrates how small Hawaiian communities are affected by U.S. industrial agriculture polluting their land with pesticides. *The Age of Stupid* does not necessarily stand out because it argues that there is a close link between global capitalism and climate change, but because of its frame narrative. Looking back at the present world the last man attempts to reveal that it was our collective ignorance of these issues and our reluctance to change that were the driving force towards environmental disaster. Most importantly, however, he reveals that all these issues we appear to be concerned with, such as economic wealth, success, careers, or the view from our backyard lose importance in the face of looming catastrophe. What is more, the event of a global apocalypse appears to create unity regardless of class or nationality. The Indian entrepreneur starting a new airline, the French mountain guide witnessing the melting of a glacier, the African woman dreaming of becoming a famous physician—they all share the same fate: they are heading towards the end of humankind. While criticising capitalist greed and ruthless consumption, and sympathising with the marginalised other, *The Age of Stupid*, does not stay within the limitations of the Capitalocene idea. Instead, its post-apocalyptic frame suggests that in the face of environmental crisis humankind will be united by its fate. In doing so, Armstrong's documentary can be read as fostering the idea that the world we live in, our ways of living in it, and finally humankind itself are fragile and depend on stable climate conditions and the availability and equal distribution of resources.

The films' establishing shots show a deserted and devastated world: in London, the river Thames is swelling and about to swallow the famous London Eye, Las Vegas is sunk under the surrounding desert, Sydney Opera House is in flames and about to be turned to ashes, Taj Mahal is crumbling surrounded by human skeletons (00:02:19-00:02:49). All these famous landmarks signifying human civilisation and culture are about to vanish, just as those which have created them. Such images constitute a common trope in the post-apocalyptic imagination, pointing towards the fragility of human life and culture. What is more, as humankind has disappeared nature seems to take over again. The monuments of culture are overgrown, devoured by fire, water, and earth. Thus, it can be argued, these images not only represent the fragility of humankind but also the resilience of nature, which seems to have been waiting and lurking to reclaim the earth. They destabilise the idea of human exceptionalism and supremacy by pointing out that what we think we control will outlast crisis, while we will become its victims.

After being made familiar with the post-apocalyptic world of 2055, the audience meets one of the last human survivors, a man guiding an archive of the remains of human culture. As he does so, he reflects on what has brought about the crisis, and how we could have ignored its beginnings while they were so obvious. At first his task may strike the



audience as rather meaningless, an act of preserving something the world has no longer any use for. Yet, the last man's true task does not really seem to be to guard human art, and films, but to reveal what has happened. Having access to all audio-visual material, the last man watches Armstrong's documentary and points out that had we been willing to change, we could have averted environmental catastrophe. By the end of the film, he hopelessly concludes, that his archive can no longer serve as warning for his fellow human beings. But he sends out his message into space hoping it will reach someone or something and prevent them from committing the same mistakes (01:23:25). Watching *The Age of Stupid* in the years following its release in 2009, the intended audience can be interpreted as the extra-textual recipient of the last man's message. In doing so, Armstrong's film first and foremost constitutes a call for change using the threat of apocalypse to mobilise her viewers.

While *The Age of Stupid* fosters the idea of a human universal, the nonhuman world is largely excluded from this notion. Instead, it often appears to constitute the mere backdrop for stories that focus on human protagonists. Even though the post-apocalyptic rhetoric of the frame narrative relies on the idea that the survival of humankind depends on climate conditions and natural resources, it does not expand on the idea of interconnectedness. Margaret Atwood, on the other hand, extrapolates notions of interconnectedness or mesh, and imagines human communities that understand themselves as part of the nonhuman world, and live accordingly in a relationship with it that is determined by appreciation, respect, and care.

Towards a Posthuman Collectivity: Nonhuman Agency and Kinship in Atwood's *MaddAddam* Trilogy

While Atwood's pre-apocalyptic dystopia is dominated by the violent and destructive pleeblanders, her post-apocalyptic world constitutes a new beginning for a group of survivors of God's Gardeners, who come to find kinship amongst the posthuman Crakers and pigoons. While the first novel revolves around the protagonist's struggle for survival, solitude, and desperation in a deserted world, Atwood's last novel employs the post-apocalyptic setting as a hopeful space in which capitalist greed, and excessive consumerism make room for something new: a peaceful posthuman community in which the distinction between the human and nonhuman finally and fully dissolves and which constitutes a return to a simpler primordial life. In doing so, Atwood's trilogy uses the pre- and post-apocalyptic setting on the one hand to criticise late capitalism and its ideologies, and on the other to explore the idea of posthuman collectivity as its conceptual alternative.



The Anthropocene concept has been frequently criticised for its idea of human geological agency, according to which humankind appears to dominate and control its non-human environment. In this sense, it easily reaffirms the idea of human exceptionalism and can be misinterpreted as humankind being able to manage environmental crisis. While the notion of human exceptionalism and collective power explains how we found our way into a man-made geological epoch, it does little to avert a looming environmental crisis. Accordingly, a number of scholars have argued for an understanding of humankind that de-centres its position in the world and highlights our interconnectedness with and dependence on the nonhuman world. As Chakrabarty points out, humankind could only thrive and grow and become a geological force because of stable climate conditions and the availability of life-sustaining resources (2015: 347). He continues that these conditions were provided by the Milankovich phenomenon, a coincidental event which is responsible for the stable climatic conditions of the Holocene, and allowed humankind to settle down and practice agriculture (2015: 347). Accordingly, concepts such as mesh (Timothy Morton) and distributed agency (Bruno Latour) emphasise the interrelatedness with and dependency of humankind on the nonhuman world and, thus, challenge anthropocentric worldviews. Timothy Morton's mesh, for instance, highlights the interconnectedness of all human and nonhuman, living and non-living things (2010). In the same vein, Bruno Latour argues for a distribution of agency across species boundaries (2014). Criticising the idea of human geological agency, Latour points out that earth, likewise, is a "full-fledged actor" (2014: 3). Indeed, the concept of nonhuman agency acknowledges that there are parameters and limitations within which humankind can develop. The destruction of the nonhuman world may very well be the destruction of humankind. What is more, acknowledging the interconnectedness of the human and nonhuman world also fosters a sense of responsibility not only towards our fellow human but also towards our fellow nonhuman beings.

A significant part of all three novels is set in a dystopian pre-apocalyptic world, which Canavan describes as "a twenty-minutes-into-the-future satire of our present" (2012: 141). Capitalist greed and excessive consumerism have generated severe climate change, natural catastrophes, and the extinction of most animal species that were not bioengineered by humans. The world's inhabitants have been corrupted by this world's ideologies and seem to be driven by an unsatisfiable and selfish desire for bodies and things they can consume. Paradoxically, those who live in the pleeblands, an overpopulated urban environment, seem to know no restraint even though resources are scarce and they find themselves in a competition over food and water. Atwood's pre-apocalyptic world is an extrapolation of capitalist greed and excessive consumerism, and seems to be inspired by the Malthusian image of an overpopulated world in which there are a privileged few who continue a life of wealth while a great majority of human beings suffers and starves. It is



specifically the latter who reveal the self-destructive tendencies of an ever-growing human population, which refuses to change in the face of crisis, and resorts to some of humankind's worst qualities.

Atwood's representation of pleeblanders in many ways bears resemblance to Elias Canetti's concept of the crowd. According to Canetti a crowd is characterised by its aspiration for endless growth, its ignorance of limitations (1960: 8) and their affinity towards destruction and violence (1960: 31). The pleeblanders fulfil all three criteria: they are the result of overpopulation, they continue to grow despite a scarcity of resources, and they are both self-destructive and cause the destruction of the nonhuman world. This also reflects in how Atwood describes the pleeblanders as a violent mob which is "poised to surge", and "stomping" (2009: 49). The event of apocalypse reveals yet another quality of the crowd identified by Canetti: its fragility. According to Canetti the crowd might feel powerful and strong but nonetheless is always threatened by the possibility of its sudden collapse (1960: 8), which is exactly what happens to the human population inhabiting Atwood's dystopia. Crake, who believes that humankind is beyond salvation and that the earth is a better place without it, sees its weakness and uses it to annihilate humankind. He hides an ultra-lethal virus in a pill which he advertises as creating increases sexual desire, enabling an ecstatic sexual experience, while also acting like a birth control pill and, a STD vaccine, and prolonging youth. BlyssPluss is the ultimate promise to a society in which sexual pleasure and beauty have become the primary objects of desire. The following quote, however, reveals the vulnerability of that society and the fragility of an ever-growing human population:

It was the small normal things that bothered me the most. Somebody's old diary, with the words melting off the pages. The hats. The shoes – they were worse than the hats, and it was worse if there were two shoes the same. The kid's toys. The strollers minus the babies. [...] There were bundles of rag and bone. 'Ex-people,' said Croze. They were dried out and picked over, but I didn't like the eyeholes. And the teeth – mouths look a lot worse without lips. And the hair was so stringy and detachable. Hair takes years to decay; we learned that in Composting, at the Gardeners. (Atwood 2009: 405)

As Ren, one of the protagonists of *The Year of the Flood*, walks through the pleeblands after Crake's virus has wiped out almost all of humankind, she encounters this unsettling and gruesome sight of those who have died of the virus. Canetti argues that survivors of an event of mass death enjoy a feeling of uniqueness and inviolability. Observing the death of others, according to Canetti, generates an awareness of having outlived them and thus a feeling of power. (1960: 151). Canetti appears to assume that the death of a mass reveals only its own fragility and mortality. In the last man narrative, however, the opposite appears to be the case. Ren is shocked and horrified by what she encounters. The remaining objects that once were part of human lives have something uncanny about them. They are both familiar and strange, as without their human users they have lost their meaning. On



the one hand, the dried-out corpses appear to remind Ren of her own mortality. They reveal that her survival was first and foremost pure luck and coincidence. On the other, they serve as a reminder of the mortality of humankind. Horrifying images like these can deconstruct notions of human exceptionalism and supremacy. They remind us that human geological agency and pretending to control the nonhuman world does not render us immortal.

In general, it can be argued that the figure of the last man in Atwood's novels by no means represents the power of the individual who has outlived the mass. As Horn observes, after the disappearance of the world as we know it the last man becomes a body struggling for survival, deconstructing the Enlightenment and humanist ideal of man as an intellectual being, a creature of God, or a soul (2018: 25-26). Especially *Snowman*, the protagonist of the first novel who formerly lived in one of the compounds, seems to reveal how the existence of man is reduced to his most basic needs if stripped of the perks and comforts of civilisation. The following passage demonstrates the powerlessness of the survivor of apocalypse:

'I didn't do it on purpose,' he says, in the snivelling child's voice he reverts to in this mood. 'Things happened, I had no idea, it was out of my control! What could I have done? Just someone, anyone, listen to me please!' [...] He wiped his face on a corner of the sheet. 'Pointless ripening' he says out loud. As often, he feels he has a listener: someone unseen, hidden behind the screen of leaves, watching him slyly. (2003: 50-51)

There is no sense of power in *Snowman's* survival. In fact, quite the opposite seems to be the case: the last man is utterly powerless. Finding himself alone in a strange world, unable to change what has happened all that is left for him to do is dwell in the past and reflect on what has happened and how it could have been avoided, even though he no longer can avoid it. Yet, this passage also demonstrates an extra-textual quality. The unseen listener that it alludes to may be the reader. Hence, the novel highlights that rather than constituting a glimpse into the future, the post-apocalyptic novel is an experiment of how the future might look like if we continue our anti-environmental lifestyle. It is a warning prompting its present readers to reconsider their position in the world.

Apart from constituting a setting of horror and shock in which the last remaining human beings struggle for survival, the post-apocalyptic world further constitutes a space in which alternative ideas, concepts, and ways of living in and with the world can be explored. Especially the last novel takes up the idea of interspecies kinship as its post-apocalyptic space is populated by a number of species that are neither human nor nonhuman and who together decide to form a community. Because of a "major cultural misunderstanding" (2013: 22), as Toby, one of the protagonists of the novel, interprets the events, two of the surviving women, Ren and Amanda, are raped by the Craker men, become preg-



nant, and have the babies. Moreover, the group of survivors consisting of former Gardeners and MaddAddamites, an activist group connected to the Garderners, join forces with the highly intelligent pigeons, a bioengineered human-pig hybrid, to revenge the attack of a group of violent and abusive painballers. By the end of the third novel, most of the main characters have died, making space for the posthuman part-Craker children and pigeons. Even though Atwood employs the post-apocalyptic space to explore the possibility of posthuman collectivity, the way events unfold in *MaddAddam* does not necessarily imply that we are moving towards the end of humankind, but rather represent a deconstruction of an anthropocentric worldview which can be argued to have led to environmental crisis. The idea of a posthuman community allows for a conceptualization of the human and the nonhuman that blurs its boundaries: the pigeon looks like a pig but appears cognitively and culturally much more evolved than the human-looking but very naïve Crakers. Those beings suggest that what we consider human and nonhuman is much more alike than we commonly think, and once this boundary is blurred it becomes possible to understand the human and the nonhuman as two sides of the same coin. Haraway has repeatedly emphasised that the idea of human and nonhuman kinship, as it seems to be the case in Atwood's novel, might solve a number of problems including overpopulation and the mass extinction of many animal species. As the title of her and Adele Clarke's recent anthology summarises, Haraway suggests that we should be "making kin not population" (Clarke and Haraway 2018).

One of the central questions the trilogy incorporates is how we can correct the damage we have done. Crake saw the only hope for the world to recover and thrive again in the annihilation of humankind. Indeed, as Horn argues, the "picture of a world finally relieved of the pressure placed on it by humanity" (2018: 2) has something comforting about it. Yet, as previously implied, it remains doubtful whether Atwood's novel propagates that we can only repair the damage by vanishing altogether. Even though it criticises the humanists' notion of human supremacy and perfectibility, it is also, as Korte observes, a humanist novel (2008: 160), in the sense that it does not echo the "icy tone" (Horn 2018: 38) of Thomas Malthus, who, as Horn argues, has become rather unpopular because he seemed to accept human suffering as a natural law which regulates population growth (2018: 38). Instead, the trilogy uses the event of apocalypse as warning and not as providence, and the pleeblanders as extrapolations of both the flaws of human nature and humankind's vulnerability. Yet, the novels imagine a similarly slightly overdrawn alternative human collective, which in many ways represents the counter-model to the destructive pleeblanders. The God's Gardeners reveal that humankind is by no means only vicious and violent, but also bearer of many good qualities, even though these are not necessarily exclusively human. They appreciate and respect the nonhuman world and, even in face of crisis, show their empathy with and care for both their human and nonhuman fellow beings.



The Year of the Flood follows Toby and Ren, two women who joined the God's Gardeners, though not necessarily of their own accord or out of sincere conviction. However, their beliefs and ideologies are fundamentally affected by their encounters with that eco-religious group. The God's Gardeners represent the awareness of an urgent need for change, and in many ways their beliefs and ideologies fulfil a model function. Significantly, that collective not only understands itself as the sum of its human members but generally regards all human and nonhuman life as part of an interconnected ecosystem. Their beliefs and ideologies strongly resemble those of deep ecology, a spiritual environmental philosophy which emphasises the interconnectedness of all living and nonliving things within the ecosystem. Anticipating an imminent waterless flood, the God's Gardeners prepare for apocalypse on a rooftop garden, where they not only join in religious gatherings and rituals but also learn to grow their own food and how to survive in times of crisis.

The idea of collectivity constitutes an important aspect of how Atwood imagines the Gardeners. As a collective they are united by their appreciation and care for their fellow human and nonhuman beings. These attitudes differentiate them from the ruthless capitalism, hubristic scientism, and excessive consumerism, which characterise the rich compound people and poor plebs. The equal value and interconnectedness of all life on earth is one of their key assumptions. The narrative revolving around Toby and Ren is frequently interrupted by the Gardeners' leading figure's speeches followed by an excerpt from *The God's Gardeners Oral Hymnbook*. These speeches reveal how important the idea of interspecies collectivity is to the God's Gardeners and further underline ideas such as interrelatedness, equality, and responsibility. Most of the speeches begin with Adam One addressing his audience: "Dear Friends, dear Fellow Creatures, dear Fellow Mortals" (2009: 413). This phrase is often used in varying forms and already puts forth the idea of equality amongst all living, and thus mortal, beings. Significantly, while the greatest part of the novel is narrated in first or third person singular, Adam One's speeches are narrated in first person plural. As Natalya Behkta argues, such we-narratives "[create] a holistic supraindividual level that supersedes a mere aggregation of individual characters" (2017: n.pag.). As a consequence, a sense of collective subjectivity, a communal story, of collective agency and responsibility can emerge from such narratives (2017: n.pag.¹).

Among others, Toby, Ren, and later Snowman find refuge and kindness in the midst of the Gardeners. Their willingness to care for their fellow human and nonhuman beings is also what differentiates the Gardeners from Crake. Both the Gardeners and Crake saw the suffering, destruction, and death late capitalism has caused. And both understood humankind as the root of that evil. But while the Gardeners chose to change and, thus, offered an alternative to the lifestyle of the pre-apocalyptic world, Crake resorted to a Mal-

¹ This is quoted from a pre-print version of Behkta's essay.



thusian solution. He wiped out the entire human species and replaced it with the bioengineered Crakers, a humanoid species that lacks all characteristics that, according to Crake, are responsible for human malice. Thus, most importantly the Gardeners represent not only the necessity of change but also its possibility. The Gardeners reveal that we do not need apocalypse in order to start anew, but that threatened by its possibility we can begin to change our anti-environmental lifestyles and avert a catastrophic future.

Last but not least, the Gardeners appear to be very aware of the fragility of humankind and of its fate being entwined with that of its fellow nonhuman beings. Towards the end of the last novel *Adam One* resumes the catastrophic event leading to the near annihilation of all of humankind: “All Souls is not restricted to Human Souls: among us, it encompasses the Souls of all living Creatures that have passed through Life [...]” (2009: 507). A bit further on he continues:

Like you [extinct animal species], we have enjoyed the air and the sunlight and the moonlight on the water; like you we have heard the call of the seasons and have answered them. Like you we have replenished the Earth. And like you, we must now witness the end of our Species, and pass from Earthly view. (2009: 508)

Once more, *Adam One* picks up the idea of our mortality, not only as individuals but also as a species, by means of which he deconstructs the myth of human exceptionalism. What is more, this passage picks up the idea of human/nonhuman interconnectedness and kinship again.

Conclusion

The threat of human-made climate change seems to overshadow the 21st century. As the Anthropocene theory suggests humankind has become a major influence on the global environment, which turns out to have a devastating impact on the world we inhabit. While the Anthropocene concept helps to explain the causes and effects of climate change, it should be noted that its idea of human geological agency easily reaffirms the notion of human exceptionalism and dominion over the nonhuman world, both of which can be argued to constitute the ideological basis on which humankind felt justified to control, exploit, and destroy the natural world in the first place. Thus, it can be doubted that the concept of geological agency will help us find our way out of environmental crisis. Instead, we need to find alternative ways of problematising and conceptualising man and nature in the face of overpopulation, climate change, an increasing emergence of natural catastrophes, a new wave of mass extinction, and so forth. Most importantly, we need to overcome the notion of a nature/culture divide and human supremacy and dominion. We need to begin to understand humankind as part of a global network of human and nonhuman



actors, which influence and depend on each other. Last but not least, we need to understand that a looming environmental crisis will affect *all* of the world's inhabitants.

The two last man narratives discussed in this article can be read as a critique of present conceptualisations of man and nature that appear to continue the myth of human exceptionalism. Notably, both texts suggest that late capitalism, its ruthless exploitation of natural resources and of those that are marginalised in the global economy as well as its myth of endless economic growth will be one of the harbingers of environmental catastrophe. In doing so, Armstrong's film and Atwood's novels also object to the Anthropocene idea's underlying assumption of human collective responsibility for climate change, pointing out that it is just one particular group of humans and one particular lifestyle which is pushing our ways towards catastrophe. Nonetheless, the imagined event of apocalypse unites all human beings regardless of their status, class, or race by their tragic fate. Furthermore, it reveals the vulnerability of humankind as a species as well as of the individual human body. In doing so the post-apocalyptic text suggests that we do indeed depend on the world we inhabit, the availability of resources, and stable climate conditions.

Especially Atwood's trilogy seems to be concerned with the question of what we can and should do in light of a looming environmental crisis. She outlines two major possibilities. The first is Crake's neo-Malthusian approach. Like Malthus, Crake does not believe that humankind is capable of change. He understands human nature as immutably flawed. Thus, he concludes that the only chance for a better future is to relieve the world of humankind. Like Malthus, he accepts the suffer and death of many in order to save the earth. Atwood's preferred alternative to the neo-Malthusian solution, however, is more humanitarian and hopeful. It assumes that humankind has some good qualities, with the help of which we might be able to avert apocalypse. The God's Gardeners saw the looming crisis and chose to change. Their eco-centred worldview, their empathy and care for both their human and nonhuman fellow beings suggest that it is indeed possible to change our anti-environmental lifestyles. Atwood's third novel develops the idea of human/nonhuman interconnectedness further. In the post-apocalyptic world humans, pigeons, and Crakers form a community in which the boundary between the human and the nonhuman fully dissolves.

In the beginning of this essay I enquired about the potential functions and efficacies of the last man narrative in the environmental discourse and the cultural imagination. In an interview about her novels Margaret Atwood argues that she wants her novels to make readers think about whether the future she depicts is the world they want to live in, and if not, prompt them to consider the ways in which they live. She thinks of her novels as thought experiments outlining what might happen if we continue the way we do now (2019: 00:16:35). By looking at how *The Age of Stupid* and the *MaddAddam* trilogy extrap-



olate the threats of overpopulation, late capitalism, and a culture of excessive consumerism and how they engage with questions of human collectivity, agency, and power against the backdrop of the idea of a man-made geological age, I tried to demonstrate that the last man narrative can enable negotiation of these threats. Rather than constituting a grim prediction for the future, such texts experiment with what might come and how a future catastrophe can be averted. What is more, their increasing popularity suggests a growing awareness of the threats of our anti-environmental lifestyles. In particular, Armstrong's documentary and Atwood's novels suggest that we need to rethink our idea of man and his position in the world. We need to begin to understand ourselves as part of an interconnected whole of human and nonhuman agents, if we do not want to be responsible for an indeed lonely future.

Works Cited

- Atwood, Margaret (2003). *Oryx and Crake*. London: Virago.
- (2009). *The Year of the Flood*. London: Virago.
- (2013). *MaddAddam*. London: Virago.
- Behkta, Natalya (2017). "We Narratives: The Distinctiveness of Collective Narration." *Narrative* 25.2: 164-181. Preprint. <<https://researchportal.helsinki.fi/en/publications/we-narratives-the-distinctiveness-of-collective-narration>>. [accessed 13 Oct 2019]
- Bergthaller, Hannes. "Population, Ecology, and the Malthusian Imagination: An Introduction." *Eczon@* Vol 9 No 1. <<http://ecozone.eu/article/view/2484/2562>> [accessed 13 May 2020]
- Boller, Alessandra (2018). *Rethinking 'the Human' in Dystopian Times: Modified Bodies and the Re-/Deconstruction of Human Exceptionalism in Margaret Atwood's MaddAddam Trilogy and Kazuo Ishiguro's Never Let Me Go*. Trier: Wissenschaftlicher Verlag. Studien zur Anglistischen Literatur- und Sprachwissenschaft 43.
- Canavan, Gary (2012). "Hope, But Not for Us: Ecological Science Fiction and the End of the World in Margaret Atwood's *Oryx and Crake* and *Year of the Flood*." *Literature Interpretation Theory* 23.2: 138-159.
- Carson, Rachel (1962). *Silent Spring*. Greenwich: Fawcett Crest.
- Chakrabarty, Dipesh (2015). "The Climate of History: Four Theses." *Ecocriticism: The Essential Reader*. Ed. Ken Hiltner. London: Routledge, 335-352.
- Clarke, Adele, and Donna Haraway (eds.) (2018). *Making Kin Not Population: Reconceiving Generations*. Chicago: Prickly Paradigm Press.
- Crutzen, Paul J., and Eugene Stoermer (2000). "The Anthropocene." *Global Change Newsletter* 41: 17-18. <<http://www.igbp.net/download/18.316f18321323470177580001401/1376383088452/NL41.pdf>>. [accessed 10 Oct. 2019]



- Demos, T.J. (2017). *Against the Anthropocene: Visual Culture and Environment Today*. New York: Sternberg Press.
- Garrard, Greg (2011). *Ecocriticism*. London: Routledge.
- (2012). “A World Without Us: Some Types of Disanthropy.” *SubStance* #127 41.1: 40-60. <https://www.academia.edu/257407/Worlds_Without_Us_Some_Types_of_Disanthropy>. [accessed 10 Oct. 2019]
- Haraway, Donna (2016). *Staying With the Trouble: Making Kin in the Chthulucene*. London: Duke University Press.
- Hicks, Heather J. (2016). *The Post-Apocalyptic Novel in the 21st Century: Modernity Beyond Salvage*. New York: Palgrave Macmillan.
- Höpker, Karin (2014). “A Sense of an Ending: Risk, Catastrophe and Precarious Humanity in Margaret Atwood’s *Oryx and Crake*.” *The Anticipation of Catastrophe: Environmental Risk in North American Literature and Culture*. Ed. Sylvia Mayer and Alexa Weik von Mossner. Heidelberg: Universitätsverlag Winter, 161-180. American Studies: A Monograph Series 247.
- Horn, Eva (2018). *The Future as Catastrophe: Imagining Disaster in the Modern Age*. New York: Columbia University Press.
- Interview with Margaret Atwood (2019), By Krishan Guru-Murphy. Channel 4. <<https://www.youtube.com/watch?v=PH2ltR-xvFI>> [accessed 13 May 2020]
- Korte, Barbara (2008). “Fundamentalism and the End: A Reading of Margaret Atwood’s *Oryx and Crake* in the Context of Last Man Fiction.” *Literary Encounters of Fundamentalism: A Case Book*. Ed. Klaus Stierstorfer and Annette Kern-Stähler. Heidelberg: Universitätsverlag Winter, 151-163.
- Latour, Bruno (2014). “Agency at the Time of the Anthropocene.” *New Literary History* 45: 1-18. <<http://www.bruno-latour.fr/sites/default/files/128-FELSKI-HOLBERG-NLH-FINAL.pdf>>. [accessed 10 Oct. 2019]
- Malthus, Thomas (1791). “An Essay on the Principle of Population. *Electronic Scholarly Publishing Project*. <<http://www.esp.org/books/malthus/population/malthus.pdf>> [accessed 13 May 2020]
- Morton, Timothy (2010). *The Ecological Thought*. Cambridge: Harvard University Press.
- Schmeink, Lars (2016). *Biopunk Dystopias: Genetic Engineering, Society, and Science Fiction*. Liverpool: Liverpool University Press.
- The Age of Stupid* (2010). Dir. Franny Armstrong. Spanner Films.
- Vermeulen, Pieter (2017). “Future Readers: Narrating the Human in the Anthropocene.” *Textual Practice* 31.5: 867-885. <http://www.pvermeulen.com/uploads/1/2/4/3/12438327/future_readers__narrating_the_human_in_the_anthropocene.pdf>. [accessed 10 Oct. 2019]