# Editorial *Ecozon@* Issue 11.1

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We have had a wake-up call over the last few weeks and months: the threat to society from pandemics has been systematically underestimated. Across the world, political leaders are now focused on slowing the rate of infection from the coronavirus, to avoid health systems from being overwhelmed and minimise the death rate. The consequences for our daily lives have been immediate and dramatic. Yet the shutdown of the economy may be short-lived, and the long-term impact on our way of life may be negligible in comparison with that of climate change. In the short term, the coronavirus is shifting attention and resources away from addressing climate change. However, it could serve as an opportunity for cultural change. Out of the crisis may come a realisation that there is considerable potential to change working practices and lifestyles. Putting our daily lives on pause gives us a chance to think how we may live more sustainably. The response to the coronavirus is an enforced experiment in behavioural change, as increasing numbers work from home and discover new modes of sociality. We may learn to travel less, to conduct more of our meetings virtually, and to eat more local food. It could also be a catalyst for restructuring the economy, if businesses shorten their supply chains, and government stimulus packages to prop up the world economy include funding low carbon infrastructure and strengthening the social safety net. We cannot simply return to business as usual. COVID-19 has been described as anthropogenic global warming on speed. It has burst the bubble of normalcy in which we have dwelled, and made unthinkable government actions thinkable: if we perceive a survival-level threat, we can, it seems, move in unprecedented ways. Of course, the rapid spread of the virus has focused attention in a way that is more challenging for the slow-moving, diffuse and varied phenomena of climate disruption. Nonetheless, it may open doors, psychologically and politically, for human society to consider the scale and scope of changes we need to adequately address the climate crisis. It may teach us the value of knowledge and science, and the imperative for international collaboration. The pandemic underscores the importance of building a resilient and sustainable society, and its most lasting lesson may be the urgency of taking swift action.

In this sense, the subject of the themed section of this issue of *Ecozon@*, 'Cultures of Climate. On Bodies and Atmospheres in Modern Fiction', is timely. The editors, Eva Horn and Solvejg Nitzke, note in their introduction how the disconnect between nature and culture which has resulted in part from the objectification, abstraction and numerification of modern science has made it difficult for individuals and societies to relate to climate change. To effect the reconnection with the natural environment which is needed at a time when, as Chakrabarty has put it, the distinction between natural and

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human history has collapsed, they argue that we need to adopt a cultural approach to climate, understanding it not just as a *natural* fact, but also as a *social* and *cultural* one. This can be done by setting current debates on climate change in the historical context of the long tradition of thinking about climate as an experience connecting bodies, places, cultures and social institutions. What is required is a critical review of the many different ways in which individuals and communities have perceived the weather, lived with it, and imagined alternatives, drawing on everyday practices, individual accounts, fictions and visual representations, as well as theories and narratives on the effects of climate on human bodies, mentalities and societies. Literature is the prime medium for close observation of the political, social and psychological consequences of climate change. The six essays which Horn and Nitzke present (by Johannes Ungelenk, Urs Büttner, Emanuel Herold, Brad Tabas, Michael Boyden and Solvejg Nitzke) contribute to the growing body of humanities and social sciences research into the imaginaries connected to climate and weather phenomena. Examining narratives, metaphors and images in French, American and Austrian writing from the nineteenth, twentieth and twenty-first century which make palpable the abstraction that atmosphere has become in modern science, and probing the intellectual, social and political functions performed by the concept of climate over time, they reinstate climate as "a mediating framework that links the local to the planetary, the short-term acts of human consumption and technology to long-term consequences in the atmosphere and the earth system, and the course of human civilization to that of a nature understood as a unified, self-regulating system".

The General Section of the issue opens with an essay by Judith Rauscher analysing the American poet Sharon Doubiago's epic *Hard Country* (1982) from the perspectives of ecocriticism and mobility studies. Rauscher describes *Hard Country* as a proletarian eco-epic that rethinks human-nature relations from a working-class perspective shaped by experiences of mobility and stasis. It revises the American epic tradition by foregrounding working-class people's desire for meaningful relationships to place against a background of environmental injustice and displacement. However, settler colonialism involved the violent dispossession of the indigenous population. Doubiago's acknowledgement that white working-class people in the United States have always been perpetrators as well as victims of environmental and mobility injustice has wider implications for American identity.

The other two articles in the section are concerned with Latin American culture. Nancy Madsen examines ecology and human rights in the Nicaraguan author Gioconda Belli's novel *Waslala* (2006). *Waslala* holds up to scrutiny the tensions that arise when human rights (including the right to access to and control of resources) are considered in the context of planetary ecological crisis. Madsen argues that although the novel purports to privilege human rights over ecological concerns, it highlights the impossibility of separating the two, and prompts a rethinking of the definition and practice of human rights within the context of global ecology.

In his article on two essay films directed by the Chilean Patricio Guzmán in 2010 and 2015, Sebastián Figueroa discusses the director's use of a blend of realism and

symbolic abstraction to convey the processes of capitalist extraction which have degraded the environment, and been associated with brutal political oppression. Guzmán's representation of the historical, archaeological, and cosmological past through images of the landscape in the Atacama Desert and Patagonia infers that capitalism is progressing from the human scale to the planetary, leaving the extinction of all life on Earth as the logical future. He suggests that Guzmán intends the memories of past processes of extraction and extinction inscribed in these landscapes as a warning, prompting us to change the way we structure society and relate to nature.

In his introduction to the Creative Writing and Art Section, Damiano Benvegnù writes of the long history of the use of 'climate' as a tool facilitating forms of domination and exploitation: it is a far from innocent concept. While its ideological deconstruction is primarily the task of ecocritics, he argues that it is the job of artists and writers above all to "bring back a sense of experiencing this atmospheric layer that is so close to us by rendering it visible," and thereby promote alternative perceptions of climate. Contemporary art can similarly help us understand climate and our connection with the atmosphere by articulating the "hopes, polemics, anxieties and antagonisms that emerge from a crisis that often seems beyond representation". In *Nimbus*, a series of images of clouds in relation to architectural environments, the Dutch artist Berndnaut Smilde documents an imagined embodied encounter with the air we breathe. Smilde's striking digital collages are followed by four short texts by the German author and poet Alex Dreppec. Under the heading *Periodic Poetry*, these cleverly arrange chemical symbols from the periodic table in sentences evoking an atmosphere characterized by pollution and environmental degradation. Contrasting with these, two poems by the American poet, Karen Poppy, speak of the ephemeral nature of human life, the beauty of nature, and its endangerment. The section ends with a nod to the impact of the coronavirus. 'More Virulent Than Disease' is a chapter from a novel by Stephanie Gage set in the early twentieth century, in which a young man recalls how going for long walks, drawing and taking photographs helped him overcome depression during his isolation in a sanatorium, when he was convalescing from tuberculosis. Daily exercise and artistic expression are "great physicians": guiding "our sensibilities towards the world around us, the fount of the purest and most refreshing pleasures", they may "free us from our own virulent ideas, sometimes more dangerous than disease itself".

Two of the seven titles reviewed in the Book Reviews Section directly address the focus of the issue: Leonardo Nolé discusses Adeline Johns-Putra's edited volume *Climate and Literature*, and Jessica Maufort reads Ben Holgate's *Climate and Crises: Magical Realism as Environmental Discourse*. Three further titles relate to it, examining aspects of the Anthropocene: Giulia Champion presents Elizabeth DeLoughrey's *Allegories of the Anthropocene*; Solvejg Nitzke reviews the edited volume *Future Remains: A Cabinet of Curiosities for the Anthropocene*; and Başak Ağın reviews David Lombard's *Techno-Thoreau: Aesthetics, Ecology and the Capitalocene*. The section also contains a review essay "New Directions in African-American Ecocriticism" by Matthias Klestil, examining recent studies by Sonya Posmentier, Lindgren Johnson, and John Claborn. Last but not

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least, Katie Ritson discusses Nicole Seymour's provocative book, *Bad Environmentalism. Irony and Irreverence in the Ecological Age*.

With regards to the history and progress of *Ecozon@*, 2020 marks two major events. Firstly, we have reached our tenth year without having missed an issue or deadline and with a great variety of topics and articles always on hand. Our thanks to our contributors and readers and to the different members of the editorial board who have made this possible. Our next issue, Vol. 11.2 will be a special anniversary issue, revisiting the structure of our first issue, with essays written by notable ecocritics. We hope to celebrate this event at the next EASLCE conference, scheduled for November 2020 in Granada. And secondly, but importantly, *Ecozon@* now has a DOI assigned. The University of Alcalá has carried out the needed steps to make this possible. This issue is the first to have a DOI assigned to all submissions, both on the web and on the pdfs of every submission. We have also backtracked and have been able to assign a DOI to all past submissions on the web, although it does not appear in the pdfs themselves. This should help all our contributors to identify their submissions and have them easily located by potential readers. Our thanks to the University and to our wonderful Editorial Assistant, Beatriz Lindo, who did all the tedious and technical work of assigning each submission its corresponding DOI.



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# Cultures of Climate. On Bodies and Atmospheres in Modern Fiction: An Introduction

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Global warming epitomizes a paradox in the relationship between humans and climate. While for centuries we have understood climate as one of the most pervasive forces shaping human lives, societies, and cultures, today we have to recognize the immense human influence on climate. Climate is a condition *and* a product of human civilization, responsible for *and* a threat to human existence (Hulme 2017, Horn 2018). Yet, at the very moment when humans assume responsibility for climate change on a planetary level, it seems more difficult than ever to relate cultures to climate. This difficulty is due to a new—and somewhat counter-intuitive—definition of climate which underlies all current forms of climate science. Defining climate as "the average weather" (as established by the World Meteorological Organisation) disconnects it from human bodies, souls, cultures and societies. This "weather-biased understanding of the atmosphere" (Fleming and Jankovic 2) has uncoupled climate from human experience and forms of life, and has thus made it all the more difficult for individuals and societies to relate to climate change.

Yet climate has been omnipresent in the history of human cultures and societies, and is everywhere to be found in the historical forms of their aesthetic, political and scientific representation. This is why we believe it is necessary to look carefully at the long tradition of thinking about climate—a tradition dating back long before the awareness of anthropogenic climate change. Looking at climate and climate change culturally illuminates an understanding of climate as "an intimate ground-level *experience*" (Fleming and Jankovic 4), connecting bodies, places, cultures, and social institutions. It is time to re-address and re-assess the multifold relations of climates, bodies, communities and their environment, as well as of individuals and their ways of living with the weather. "Making sense of climate and its changes," writes Mike Hulme, "cannot be separated from how weather enwraps itself with landscapes, memory, the body, the imagination and routine practices in particular places. Approaching climate this way demands an explicitly geographical and cultural interrogation of how people live climatically, how they become weathered" (57). Such a cultural approach to climate is necessary, we believe, for understanding climate not just as a natural but also as a *social and cultural fact*. Beyond

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the realm of measurable data, averages, and variations of the states of the atmosphere provided by the natural sciences, understanding climate culturally draws on a vast and heterogeneous set of phenomena and discourses: the many different everyday practices, individual accounts, social institutions, objects and architectures, fictions, myths, and stories, perceived atmospheres, visual representations, as well as the theories and narratives on the effects of climate on human bodies, mentalities, and societies. A cultural approach to climate includes heterodox forms of knowledge about climate, such as historically "outdated," indigenous, tacit, or fictional forms of making sense of *being in climate*. Aesthetic representations or imaginations can convey a view of the air from the "inside," setting local experiences, perceptions and practices in relation to the knowledge and the news we get about the changing state of the atmosphere. It means focusing on the different spatialities of the climate (the tension between the local and the global, the fixed and the roaming, the stable and the flowing), as well as its different temporalities (cyclical and linear, expectation and event, repetition and singularity). Instead of merely casting climate as an object of science, we need to understand how it resists a distancing and objectifying gaze, its 'stickiness', as it were, that always already implies and engulfs the observer (Neimanis and Walker).

Recently, a growing body of research has started to address the need to explore cultural responses to climate change by looking at the imaginaries connected to climate and weather phenomena (Hulme, Jasanoff, Neimanis and Walker, Horn "Air conditioning" and "Global Warming", Nitzke, Büttner and Theilen, Jasanoff, Milkoreit, Yusoff and Gabrys, Corbin and others). What connects these diverse approaches from the humanities and social sciences is the attention to narratives, metaphors, and images designed to give form to the abstraction that the atmosphere has become in modern science. Climate change may only be one aspect in the array of human-caused changes in the earth system that mark the advent of the Anthropocene. But it is, we contend, particularly suited to the analysis of the complex environmental crisis we are facing from a cultural studies perspective, namely in its historical, aesthetic, ethical and social dimensions. Climate change, as well as climate as such, is neither merely cultural nor merely natural but a contact zone where human and non-human forms of life, natural environments, economies, and technologies are inextricably intertwined.

Reducing climate to *climate change* as a mainly socio-political, scientific and technological problem means to ignore both the rich conceptual history of "climate" and the ways in which individuals and societies perceive and make sense of their weather. This reductionism contributes significantly to the difficulty that contemporary societies have in addressing climate change as a problem of individual and collective concern. Focusing solely on a notion of climate as global averages, and of climate change as a slow, long-term process has obfuscated the ability to perceive and relate to climate as an essential dimension of human existence. In order to truly understand the social, individual and affective dimensions of climate change, we first have to rediscover the cultural meanings of *climate*.

This cultural understanding of climate needs to be grounded, first and foremost, in a detailed account of the ways in which weather and climate were perceived and

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understood before, and in the course of, globalization and industrialization. In literary studies, the representation of climate change is currently being analyzed, first and foremost, with regard to contemporary Climate Fiction (Trexler and Johns-Putra, Johns-Putra, Bracke, Goodbody and Johns-Putra), focusing on the individual and social consequences of climate change and the ways these translate into dystopic, elegiac, utopian, satirical and other narrative forms. Some of the articles gathered in this special issue follow this perspective asking if, and how, Climate Fiction and its narrative strategies can help to provide a deeper understanding of climate change and its social and affective consequences. Others take a different perspective: They address the cultural and intellectual functions of climate, aiming to develop an understanding of climate beyond climate change. Clearly, climate is more than climate change and more than the "average weather." In order to understand the functions of climate more broadly a historical perspective on climate discourse—in terms of environmental, intellectual and literary history—is paramount. However, as Fabien Locher and Jean-Baptiste Fressoz have pointed out, this involves dealing with seemingly outdated epistemic forms and figures of thought. "To understand the environmental reflexivity of eighteenth- and nineteenth-century societies, we need to shake off our innate/acquired, body/environment, living/inert, or nature/society dichotomy-based classifications to think our way into a now defunct epistemological realm known as climate theory where technique, political form, environment, and bodies all overlapped" (581).

In the eighteenth century, most notably in the writings of Montesquieu, Buffon and Herder, the climate was conceived of as a natural factor both influenced by and influencing human cultures (Montesquieu, Buffon, Herder, see Horn "Klimatologie um 1800"). Cultures, in this perspective, were shaped or "bent" by climate—while, in turn, civilizations evolved by transforming the landscapes and climates that were their natural environment. Only with the advent of institutionalized meteorology and climate science in the second half of the nineteenth century was climate abstracted into the average weather, cast as a global system, and measured according to long-term developments (Edwards). Until the end of the Enlightenment, climate knowledge unfolded in a space between geography and anthropology, serving as a universal explanation for human health, national characters, the rise and fall of empires, social institutions, the differences between civilizations or human bodies, economic success, and many other phenomena. As a category of social explanation, climate persisted until the beginning of the twentieth century, when "climatic" explanations of social facts fell under the spell of "climate determinism" (Stehr and Machin). At the same time, climate started to become a merely meteorological category. It was, for the first time, defined as the average of local weather conditions by the Austrian climatologist Julius von Hann: "Unter Klima verstehen wir die Gesamtheit der meteorologischen Erscheinungen, die den mittleren Zustand der Atmosphäre an irgendeiner Stelle der Erdoberfläche kennzeichnen" (1). In her study of the "imperial climatographies" of the Habsburg Empire, Deborah Coen has shown how the understanding of climate as a geographical category shaping landscapes and life-forms was transformed into a standardized set of data by moving from detailed chorographic descriptions of local climes towards measurements that could be scaled up to a national



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and eventually planetary scale (Coen "Big is a Thing of the Past" and *Climate in Motion*). Climatology in the modern sense thus shed its geographical, anthropological and cultural dimensions in favor of large-scale statistical analysis. The local and specific knowledge of different climates, as well as the disciplines and genres in which this heterogeneous body of knowledge was documented, yielded to vast sets of data that could then be fed into the models used today by meteorology and climate research (Coen "Imperial Climatographies", Sörlin). From being a mediation between nature and culture, environments and civilizations, the individual and the collective, the ephemeral weather and the steady ways of life in a given place, from being, in short, an object of the humanities, climate became a set of complex data and models, exclusively the object of the sciences.

Today, this seems no longer tenable. Anthropogenic climate change, as Dipesh Chakrabarty famously wrote, "spells the collapse of the age-old humanist distinction between natural history and human history" (201). The advent of the Anthropocene challenges old dichotomies between the man-made and the natural, the local and the planetary, the short epochs of human history and the deep time of earth history (Horn and Bergthaller). In this context, climate returns to being not only a social and cultural category but also a mediating framework that links the local to the planetary, the short-term acts of human consumption and technology to long-term consequences in the atmosphere and the earth system, and the course of human civilization to that of a nature understood as a unified, self-regulating system. Climate thus needs to be re-thought from the point of view of the humanities, not in opposition but as a necessary complement to science-based climate research. This, however, also means a shift in traditional methods of historical and literary research. In history, it involves not only shifting attention from social history to the natural and material bases of human civilizations, such as the transformation of energy regimes, the emergence of new materials, and the evolution of cultural practices. It also calls for a genealogy of "environmental reflexivity" (Bonneuil and Fressoz, and Locher and Fressoz), a long-standing and rich tradition of attention to the environmental impact of certain human practices. Some of the papers in this issue try to re-think climate and the perception of climate change as a topic which has, time and again, triggered such environmental reflexivity long before man-made climate change was recognized. In literary studies, it means reading literary texts differently. Literature, we believe, is especially apt at revealing the complex entanglement of human civilizations and cultural techniques with changing climates and environments. This requires a reading of historical and contemporary fiction that challenges the traditional hierarchy between the background and the foreground of a given story. In this perspective, what may seem like the mere setting of a novel—a landscape, a way of life, weather conditions, agricultural practices, architecture etc.—now becomes the main focus of analysis (Kneitz, Ghosh). As perceptions of climate evolve from static, local "backgrounds" of human life to dynamic, historical and global concepts, the shifting states of nature and its frailty move to the foreground. Seeing nature, and more specifically climate and weather, as a mere background has long prevented literary research from taking into account the entanglements between culture and climate. Seen as a "pathetic fallacy" (Ruskin, see

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Garrard), weather in literature was often dismissed as merely reflecting the turns of the plot or the protagonist's emotions. What is needed today are methods that decipher the presence of climate and weather in texts that seemingly deal with entirely different problems.

Opening the issue is Johannes Ungelenk who considers "Émile Zola's Climate History of the Second Empire." Ungelenk shows how Zola's novel cycle *Les Rougon-Macquart* casts the social and political history of the Second Empire in terms of a warming climate headed for catastrophe. Drawing on Hippolyte Taine's notion of "milieu," the novel frames the climatic difference between the "old" and the "new" Paris as a process of warming. This can be observed and experienced in particular in urban spaces and architectures, such as the famous department store of Octave Mouret. Serving as a metonymy for the whole of Paris, the department store makes apparent the intertwined relationship between different modes of historiography. Ungelenk's reading of Zola shows how a certain type of climate imagination shapes the understanding of political history.

In his article, "Talking about the Weather. Roland Barthes on Climate, Everydayness, the Feeling of Being, and the Poetic," Urs Büttner takes up Roland Barthes' lectures on poetology, *La Preparation du Roman.* While weather and climate had not played a major role in Barthes' earlier theories of literature and popular culture, in his last lecture series climate emerges as a phenomenological concept shaping human experience of place and time. In a careful reading of several texts by Barthes, Büttner deciphers Barthes' thought about the relationship a text establishes between weather, climate and writing self. Despite his earlier disregard of images of nature, in his late work Barthes tries to understand how poetry can capture the singularity of ephemeral weather phenomena against the background of everyday language. Barthes' poetics of weather is also an early document for thinking about climate change in terms of cultural theory. How, Barthes asks, will climate change impact everyday life and change our notion of "everydayness"?

Climate change and its impact on future societies is at the center of Emanuel Herold's paper, "Nichts als Katastrophen? Klimawandel als Herausforderung für die utopische Tradition." Taking the catastrophist rhetoric of current movements such as Fridays for Future or the Extinction Rebellion as his point of departure, Herold asks how utopian scenarios envisioning climate change can offer not only catastrophist, but also positive strategies for living in a profoundly changed world. As a case in point, he reads Kim Stanley Robinson's novel *New York 2140,* retracing the challenges and possibilities that climate change poses to a contemporary metropolis. Through its proleptic temporal structure, the utopian novel can link individual, social and climatic temporalities. Thus the utopian novel presents a versatile resource for contributing to visions of viable human society in the face of climate change, one that counterbalances the predominant catastrophism, which risks leading only to paralysis and cynicism in the face of environmental degradation.

It is exactly this type of cynical and escapist reaction to the climate crisis that forms the topic of Brad Tabas' article, "Hatred of the Earth, Climate Change, and the Dreams of Post-Planetary Culture." Tabas examines the movement of "post-planetarists" as a



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particularly lurid, and potentially pathological, reaction to the crisis of the Anthropocene. Instead of working against climate change, post-planetarists dream of taking human civilization to other planets and thus escaping a degraded earth. Tabas argues that one of the key characteristics of post-planetary culture is a feeling of hatred and alienation towards the earth. This hatred feeds on a mix of Science Fiction and futurist thought by scientists and entrepreneurs, and can be analyzed in an early example of environmental dystopia, David Brin's novel *Earth*. Kim Stanley Robinson's *Aurora*, however, can be read as an antidote to this affect, as it is both a critique of post-planetarism and a guide to renewing an affective attachment to the earth.

Time and history are at the center of Michael Boyden's foray into "The Pathogenesis of Modern Climate." The article offers a conceptual history of the word "climate" through the lens of Reinhart Koselleck's theory of historical semantics. It sketches the transformations of the term "climate" from the eighteenth century to the present, highlighting its rise to an ubiquitous explanatory function in a vast array of disciplines throughout the nineteenth century. In the twentieth century, the term returns to a much more specific and narrower meaning within the rising field of climate research. Yet, with the recent emergence of collocations such as "climate crisis," the paradox of climate communication lies in a contradictory attitude towards historical, economic and technological progress. Progress is both cast as the solution to climate change, and framed as its cause. Boyden's suggested solution to this paradox is to pay closer attention to these temporal implications and contradictions underlying climate change communication.

Looking at the narrative pitfalls of climate depiction, Solvejg Nitzke examines the difficulties of "scaling" as an epistemological, narrative and physical technique to approach heights. In "Scaling High Places. Mountaineering Narratives as Climatological Tales," Nitzke compares Christoph Ransmayr's novel, *Der fliegende Berg*, and Thomas Glavinic's *Das größere Wunder* with respect to "scaling," a physical technique that the texts epitomize in the process of acclimatization. In aligning biography with the ascent of the respective peak, the narratives present themselves as mediations between personal and planetary scales. Climate, Nitzke argues, is not only present as an obstacle to overcome, but as a narrative device negotiating increasingly precarious relationships between humans and nature. In comparison with non-fictional mountaineering accounts these narratives resurrect apparently outdated notions of climate as a local and bodily entity.

Thinking through climate, literature can serve as a medium of close observation and attention to its symptoms and effects. The abstraction and imperceptibility of climate in its modern sense can thus be reversed and turned into vivid images, metaphors and stories we can relate to cognitively and affectively. Literary texts can also highlight different emotional attitudes towards a world profoundly changed by environmental degradation. Last but not least, literature can serve as a space of exploration for new forms of awareness and new "arts of living on a damaged planet," as Anna Tsing puts it (Tsing et al.). Rather than offering "better" stories for the current crisis, the variety and diversity of literature can provide an array of possible ways of relating culturally to a changing climate. In the words of Mike Hulme: "There is another story to be told about climate-change, one which starts with the cultural origins of the idea of climate".

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# Émile Zola's Climate History of the Second Empire

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## Abstract

This article looks at Émile Zola's novel cycle *Les Rougon-Macquart* and argues that it describes its subject, the Second Empire, as a warming climate tending toward climate catastrophe. Zola's affinity to the notion of climate is shown to be linked to his poetic employment of the concept of 'milieu,' inspired by Hippolyte Taine. Close readings of selected passages from the *Rougon-Macquart* are used to work out the climatic difference between 'the old' and 'the new Paris,' and the process of warming that characterises the Second Empire. Octave Mouret's department store holds a special place in the article, as it is analysed through what the article suggests calling a 'meteorotopos': a location of intensified climatic conditions that accounts for an increased interaction between human and non-human actors. The department store is also one of the many sites in the novel cycle that locally prefigure the 'global' climate catastrophe of Paris burning, in which the Second Empire perishes.

*Keywords: Rougon-Macquart*, climate, milieu, Hippolyte Taine, global warming.

## Resumen

El artículo hace una lectura del ciclo de novelas *Les Rougon-Macquart* de Émile Zola y sostiene la tesis de que el sujeto al que describe, el Segundo Imperio, puede leerse como un clima en proceso de calentamiento que se dirige hacia una catástrofe medioambiental. La afinidad de Zola con la noción de clima se ve expuesta al conectarla con su uso poetológico del concepto de 'milieu', inspirado en Hippolyte Taine. El artículo ofrece una lectura en profundidad de ciertos pasajes de las novelas Rougon-Macquart para mostrar las diferencias climáticas entre el "viejo" y el "nuevo París", y el proceso de calentamiento que caracteriza el Segundo Imperio. El gran almacén de Octave Mouret es analizado, en particular, bajo el concepto de "meteorotopos" propuesto en el artículo: un lugar de condiciones climáticas intensificadas, un lugar de interacción aumentada entre actores humanos y no-humanos. El almacén es uno de varios espacios en el ciclo de novelas en los que ya se señala la catástrofe climática 'global' del París en llamas, momento en que se hunde el Segundo Imperio.

Palabras clave: *Rougon-Macquart*, clima, milieu, Hippolyte Taine, calentamiento global.

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"I have taken the whole of society for my subject," Zola writes in the essay "Du roman" ("The Novel" 260). The results of this extensive project of literary 'research' are presented in his twenty-novel cycle *Les Rougon-Macquart*. As the cycle's subtitle—*The Natural and Social History of a Family Under the Second Empire*—suggests, it is the reign of Napoléon III that Zola sets out to examine. Starting with the *coup d'état* in 1851 and ending with the defeat of the French army in the Franco-Prussian war of 1870/71, Zola's cycle not only covers a whole historical epoch, but gives a detailed account of the different social classes and milieus that constituted French society of the time. Each of the novels can be said to be "set in a specific well-defined milieu" (Alcorn 105): the

working-class in *L'Assommoir*, the petit-bourgeoisie in *Pot-Bouille*, the world of retail in *Au Bonheur des Dames*, the demi-monde and the aristocracy in *Nana*, the world of finance and speculation in *L'Argent,* and many more. However, despite their being set in different milieus, the novels do not each establish "a kind of 'air-tight cell,'" as Clayton R. Alcorn claims (105). On the contrary, "the surface diversity of the *Rougon-Macquart*, Zola's division of the world into categories and social groups, is belied by the strong unifying impression given by the dominant themes and characteristic imagery of his novels" (Nelson 11). Zola's cycle does not content itself with an encyclopaedic approach to the 'whole' of the Second Empire: the 'whole' is not to be captured by a meticulous description of all of its parts (all of its milieus, for example) but emerges transversally 'from' these descriptions as the "strong unifying impression" that Brian Nelson talks of.[1] What exactly is, however, "the whole" of a society? What is the Second Empire? What defines this complex conglomerate of a historical, socio-cultural formation, of a specific political regime, and also of a certain 'mentality'—or, as Zola would call it, of a certain 'temperament' characteristic for the Second Empire? Based on the novels' dominant themes and imagery, I would suggest that it is as a *climate* that Zola captures the coherence which holds the Second Empire's different local milieus and social groups together.

Before turning to the text of the *Rougon-Macquart*, I would like to present some poetic statements made by Zola that indicate a constitutive affinity of his literary project with the notion of climate. It is the concept of the 'milieu' that I am interested in. "'An account of the milieu which determines and completes man'" ("The Novel" 233; translation amended): this is what the "scientific employment of description" ("The Novel" 231) is all about. Zola's role model Claude Bernard introduced the concept of 'milieu' as a cornerstone for the nascent discipline of physiology. 'Milieu' here lays the ground for a new, 'scientific' perspective of the world and the living, as it creates communication and correspondence across boundaries that had previously been regarded as absolute. In the case of Bernard's physiology, it is "constant physico-chemical properties" (Zola, "The Experimental Novel" 3; translation amended) that force

[1] In *The Antinomies of Realism* (2013) Fredric Jameson works out a possible candidate for Nelson's "unifying impression" that holds together the *Rougon-Macquart*: He calls it "affect", "a new space" that is opened up by "the gradual enfeeblement of named emotions and the words for them", a space that is created and stabilized by a certain autonomy from the descriptions, the plot and the point of view from which it emerges (55). Whereas Jameson's Deleuzian concept of 'affect' explores a 'formal' phenomenon of unity which constitutes itself by gaining autonomy from the cycle's thematic concerns, David Baguley's "entropic vision" argues for turning to the thematic level, where he finds "a conceptual core deriving from a common vision" (205)—not only for Zola, but for the wider context of naturalism. My suggestion of locating the "unifying impression" in a notion of 'climate' which emerges from Zola's *Rougon-Macquart* brings together different aspects of both Jameson's and Baguley's readings: Like Baguley it takes up thematic and motivic traces that can be found in the novels but, like Jameson, grants the 'climate', which emerges from them, a certain autonomy. This 'climate'—understood as a notion that "connects material and imaginative worlds in ways that create order and offer stability to human existence" (Hulme, 2)—interacts with the thematic and political aims of Zola's cycle, in some cases blocking, in others strengthening them. It is however not a single trait, not the conceptual essence that is produced by abstraction, by a bundling of all the single observations to one characteristic paradigm, as it is in Baguley's "entropic vision", but a complex sphere of heterogeneous forces, which develop their own observable regularities, even their own, non-linear concept of time and history.



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the external milieu of the inanimate body and the internal milieu of the animate organism to correspond. As a result, the living becomes an 'adequate' subject for a science based on these "constant physico-chemical properties," and physiology is born. Zola's narrative project also focuses on groundbreaking interactions and correspondences, traversing apparently insurmountable boundaries: "we are into the exact study of the milieu," Zola writes, "into the observation of the conditions of the exterior world, which correspond to the interior conditions of the characters" ("The Novel" 233; translation amended). It is not, however, Claude Bernard's physiological boundary between the animate and inanimate that Zola is interested in, but another 'absolute' boundary. His *Rougon-Macquart* attempts a 'natural and social history'; it is dedicated to correspondences between the natural and the cultural. The problem with the kind of 'milieu' that Zola attempts to study is simple: in contrast to Bernard, Zola cannot base the correspondence of the milieus on knowledge of their factual similarities, their "constant physico-chemical properties." As Zola admits, he and his contemporaries "are not yet able to prove that the social milieu is also physical and chemical" ("The Experimental Novel" 20; translation amended). In order to compensate for this conceptual shortcoming, Zola turns to another prominent thinker concerned with the 'milieu', who has found a solution to the problem Zola faces: Hippolyte Taine.

Abstracted from very different epistemological frameworks, Taine uses natural philosophy to pave the way for his 19th-century milieu project. Ancient thought, more precisely Hippocratic humorism, constructs a passage from the natural to the social that allows for the observation of their 'modern' interaction. What Taine is aiming for, in a way, has been thought of before him—although, and we should hasten to emphasise this point, the epistemological problems Taine tackles are of a decisively modern pedigree. The fact that Taine imports ancient philosophemes of humoral theory into his thinking of milieu is clear: the initial parameters of "difference in air, food, temperature" stem from the same repertoire of Hippocratic, humoral thinking as his theory of race and its connection to the climate.

Like that of Taine, Zola's "study of the temperaments and the profound modifications brought about in the human organism by the pressure of milieus and circumstances" (Zola, *Thérèse Raquin* 5; translation amended) is based on the auxiliary construction of a humoral correspondence between temperament and the surrounding climatic conditions. For Taine, it was "with a people as with a plant," (22) while Zola uses the same image to refer to character: "The character has become the product of the air and the soil, like a plant; this is the scientific conception" ("The Novel" 233; translation amended). For this kind of analysis, 'character' is "no longer a psychological abstraction" ("The Novel" 233) but is rather conceptualised as interacting and corresponding with its 'milieu.' The description therefore deserves the label "scientific." The conceptual basis that makes this correspondence or interaction of the human being and its surroundings conceivable, however, is as heuristic for Zola, as it is for Taine. Both pursue an intuitive approach to the interactions crossing the nature/culture divide via atavistic notions of the climate's influence on plants or temperament.



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Zola conceptualises the guiding correspondence of climate and temperament as radically interacting, one influencing the other, both open to change: "Indeed our great study is just there, in the reciprocal effect of society on the individual and the individual on society" ("The Experimental Novel" 20). In other words, Zola's *Natural and Social History of a Family Under the Second Empire* narrates the story of a changing 'climate' that is both brought about by the human agents of a modern society and, at the same time, shapes the perceptions and actions of these agents. As he himself writes, his aim is "finally to exhibit man living in the social milieu produced by himself, which he modifies daily, and in the heart of which he himself experiences a continual transformation" ("The Experimental Novel" 21; translation amended).

In the *Rougon-Macquart*, Zola establishes the notion of the Second Empire's characteristic climate by introducing a striking opposition between atmospheres associated with different locations. In *La Curée*, the second novel of the cycle, the overheated atmosphere of the Hôtel Saccard (Warning, "Der Chronotopos Paris" 156) is contrasted with the constant coldness (Berthier 117) and hostility to life (Warning, "Der Chronotopos Paris" 156), of the Hôtel Béraud. Aristide Saccard, the protagonist both of *La Curée* and the later *L'Argent*, embodies what Zola calls "the essentially modern impulse that sets the lower classes marching through the social system" (Zola, *The Fortune of the Rougons* 4). His luxurious home exposes the new wealth that he has created by strategically marrying into a rich family and using his wife's money for real estate speculations during the Haussmannisation of Paris. The house is a monument of the 'new Paris'. Its hypertrophic luxury of heat and light is represented symbolically by a hothouse that functions as the building's *pars pro toto*. Zola's novel narrates the progressive correspondence of the milieu the house creates—Saccard has designed the building for himself and his wife Renée—with the characters living in it. The climate of the hothouse, its "overheated soil" (Zola, *The Kill* 160) not only grows the "criminal fruit" (*The Kill* 160) of incest and perversion (Renée makes love with Saccard's son Maxime) but is also associated with Saccard's business model of fuelling aggressive speculation: "His brain teemed with extravagant ideas. He would have proposed, in all seriousness, putting Paris under an immense bell-glass, so as to transform it into a hothouse for forcing pineapples and sugar-cane" (*The Kill* 98). While the Hôtel Saccard comes to stand for heat, accelerated turnover and rapid change, the Hôtel Béraud, the home of Renée's father, with its cold, damp walls, represents asceticism, moral integrity and death. It is a symbol for 'the old Paris', against which Zola sets his description of the 'new' developments of the Second Empire.

The difference in 'climate' we have diagnosed is not simply antithetical (Hemmings 37); cold vs. hot does not merely refer to the binary of old vs. new. The climatic realisation of this opposition opens up the possibility of communication, of passage, of crossing the boundary between the two worlds: the cold world can and will be heated up. It does not have to remain as isolated, apart and protected as the Île Saint-Louis and Renée's father in *La Curée*. The warmth of the new world is spreading—this is the story of the Second Empire and its transformations that Zola tells in *Rougon-Macquart*. In reconstructing this story, I am heavily indebted to Michel Serres, who, in

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*Feux et signaux de brume* (1975), famously indicated the importance of the thermodynamic processes taking place between the cold and the hot in Zola's cycle.

Another pair of houses and protagonists, this time in Zola's *Nana*, makes us aware of these processes of heating. The residence of the Muffats, writes Jean-François Tonard, cannot but remind us of the severe architecture of the Hôtel Béraud (201). Located in the "Rue Miromesnil, on the corner of the Rue de Penthièvre,"

> [t]his huge, square building had been occupied by the Muffat family for more than a century; the tall, sombre façade with its large slatted shutters, rarely opened, looked asleep, as melancholy as a convent; in the tiny, damp back garden the trees had grown so tall and puny in their search for sun that their branches were visible above the slate roof. (Zola, *Nana* 54)

The place's characteristic "cold dignity" (*Nana* 54) is typical of Zola's labelling of a milieu: it is both a metaphorical label for its "customs" and "morality" (*Nana* 54), but also, literally, refers to its specific 'climate'. This climate, damp, dark and cold, both mirrors and affects the inhabitants of the house. The count and countess are shown to be chilly. They share an "icy look" (*Nana* 28)—but also, secretly, "search for sun" (*Nana* 54). The count finds his source of heat and light in the actress and courtesan Nana. She is a focal point of the Second Empire's process of warming: on the theatre stage or at the dinner parties she gives in her overheated apartment, she spreads excessive warmth and thereby enkindles and 'infects' the Parisian upper class. Count Muffat is one of the aristocrats who lose their "cold dignity" under the influence of the girl from the streets who has become a celebrity of the age, and become part of the Second Empire's 'hot' debaucheries. The transformation that Zola's novel narrates is however not merely the conventional one of a man falling for a woman. While the novel has focused on the count's adventures and transformations, Sabine's "coldness of a pious person" has undergone the same process of warming, without being exposed to the infecting contact of Nana. In the end, Sabine and her husband, side by side, as it were, united in their new hotness, receive guests for a party in their newly renovated house:

> The party took place in a setting full of gentle, spring-like charm; mild June weather had made it possible to open up the double doors of the large drawing-room and to extend the dancing out on to the sandy garden terrace. The first guests, greeted at the door by the count and countess, were quite dazzled; they could remember the icy cold Countess Muffat and the old-fashioned drawing-room full of stern piety and solid mahogany Empire furniture, with its yellow velvet hangings and its damp, musty green ceiling. Now on entering the front hall you saw glittering mosaics picked out in gold, with the marble staircase and its delicately carved banisters gleaming under the high candelabra. […] In this room the chandeliers and crystal sconces lit up a luxurious array of mirrors and fine furniture; Sabine's former single chaise longue, with its red silk upholstery which had looked so much out of place in the old days, seemed now to have spawned and expanded, filling the whole grand residence with a mood of idle pleasure and eager enjoyment which had broken out with the violence of a fire that had long been smouldering. (*Nana* 353)

The atmosphere at the Muffat's house clearly resembles the one that Nana had created in her apartment for her famous dinner parties. The warmth in the room had been gradually increasing, "[p]eople were starting to let themselves go" (*Nana* 94) and in the end, "the hullaballoo was deafening" (*Nana* 98). Zola even explicitly connects the



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Muffat's party to the courtesan by introducing the waltz theme that has been associated with Nana and her naked entrance on the theatre stage:

> The waltz swirled voluptuously on and on, battering at the old house in a rising tide of pleasure. The thrills of the piccolos were shriller, the sighs of the violins more and more rapturous; amidst the gilt and the paintings and the Genoa velvet, the chandeliers were glowing like hazy suns and the throng of guests, amplified by the mirrors, seemed to be growing larger and larger, the buzz of their voices louder and louder. [. ...] In the garden, the Venetian lanterns looked like the glowing embers of a fire which lit up the shadowy figures of the men and women strolling off to take a breath of air in the remoter oaths, with a gleam as if from some distant conflagration. And these quaking walls [tressaillement des murs] and this red haze were like a final holocaust [flambée dernière] consuming the honour of the whole of this ancient house. Those timid bursts of laughter which were just vaguely audible in that night in April in the past when Fauchery had mentally compared them to the tinkle of broken crystal, had become bolder and wilder to culminate in this peak of glittering revelry [éclat de fête]. Now, the crack [la fêlure] was widening and soon the whole house would crumble. In working-class slums, families dragged down by drunkenness finish up in utter destitution, with larders emptied and mattresses stripped to satisfy the mad craving for alcohol; in this house, where a vast accumulation of wealth was suddenly about to go up in flames and collapse in ruins, the knell of this ancient family was being tolled with a waltz, while poised over the dancers, loose-limbed and invisible, with the smell of her body fermenting in the stuffy air [ferment de son odeur flottant dans l'air chaud], Nana was turning this whole society putrid to the rhythm of her vulgar tune. (*Nana* 363–64)

Zola uses the party's "peak of glittering revelry" to prognosticate the catastrophic consequences of the extreme warming transforming the climate of Paris.[2] The scenario that Zola anticipates is not only a sort of apocalypse, staging the end of a world; it is, as the imagery shows, also a climate catastrophe, "a rising tide of pleasure" "batter[ing] at the old house." The "red haze" testifies to the overheated, fiery atmosphere finally turning into real fire, consuming the house and all.

Before I turn to an examination of the climate catastrophe toward which the changing climate is, according to Zola, destined to lead, I would like to emphasise the generalising or comparative note on which Zola closes the quoted passage. The last sentences open up the perspective of class: 'working class' families are ruined by alcohol, whereas the old aristocracy is brought to fall by Nana's 'air', by waltz and smell, by her "smell floating in the hot air." It is not, however, the contrast of different 'lethal' vices that this generalising move intends, but the overarching integration of these ruins: one and the same *fêlure* destroys the working class and kills the old aristocracy. This *fêlure* is heat damage, induced by the energy of a blatant difference in temperature, and it is precisely this *fêlure* that is the concern of Zola's *Rougon-Macquart*, as a *Natural and Social History* of the Second Empire (cf. Deleuze).[3] *Nana*, I would like to suggest, does not

[2] In fact, the warming that can be observed in Zola's cycle is not limited to the city of Paris. In Zola's depiction it is a 'global' phenomenon of the Second Empire; it makes itself felt as early as in the town of Plassans in the first novel and even characterises the plot of *Germinal*, as Michel Serres pointed out: the revolt itself is a process of heating, of people catching fire [l'incendie de la révolte] (181).

[3] My reading of 'fêlure' brackets the question of heredity, which for Zola was obviously a main concern of his cycle. Gilles Deleuze's famous analysis in "Zola et la fêlure" (1969) follows a different approach, which however challenges the traditional understanding of 'heredity'. He distinguishes between a "petite hérédité" (384), which is a heredity of the Same (377) and a "grande hérédité" (384), which is a heredity



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merely represent the old, cold aristocratic world being infected and assimilated by the hot milieu of the demi-monde (cf. Tonard 201). The change of climate, the warming, transcends classes. The problem of alcohol—narrated in *L'Assommoir*—and the problem of the ruin of the aristocracy belong together. Nana's biography (she is the daughter of *L'Assommoir*'s protagonist Gervaise) underlines this dimension of Nelson's "unifying impression."

Here, we encounter the historical perspective of Zola's *Natural and Social History of a Family Under the Second Empire*. Zola's concept of history is Tainean to the core: he unfolds a history of conditions (social, natural, cultural) that "combined with [the humans'] renewed effort, produces another condition, sometimes good, sometimes bad, sometimes slowly, sometimes quickly, and so forth" (Taine 16). History thus examines the "mechanism of human history," that is to say the interaction of milieu and human (re)action, which brings forth "a permanent force": "we may regard the whole progress of each distinct civilisation as the effect of a permanent force which, at every stage, varies its operation by modifying the circumstances of its action" (Taine 16). In the *Rougon-Macquart* this permanent force finds expression as a changing, warming climate. On the one hand, this warming is "a product of the *débordement des appétits* which characterizes the Empire" (Warning, "Zola's *Rougon-Macquart*" 723), the warming of the temperaments; on the other hand, it is an effect of modern developments, industrialisation, architecture, financial speculation and so forth, a 'warming of the world.' The two interact and increase with each other, producing the permanent force of a warming 'climate'. Zola's narrative project presents the 'history' of this 'climatic' change.

The interaction of the milieu and the human being can be observed best in locations that I will call 'meteorotopoi'. The term combines Mikhail Bakhtin's concept of 'chronotopos' (cf. 1981) and Michel Foucault's notion of 'heterotopos' (cf. 2001 [1984]): meteorotopoi emphasise the "intrinsic connectedness" (Bakhtin 84) not of *le temps qui passe* (time) but of *le temps qu'il fait* (weather) and space: It is their very own climate that, apparently, differs from the climate outside their boundaries and thus characterises them as a particular location. Although constructed and managed by human beings, meteorotopoi are particularly 'weathery' places. Their atmosphere is not only dominantly described in meteorological terms, it also acts upon the human beings exposed to their atmosphere in the very 'bodily' way that the weather does. The meteorotopoi are therefore emblematic locations for Zola's analysis of milieu. Being shaped by modern technology, architecture and organisation, they bring together the

of the Other (377). The first is associated with instincts and temperaments (which can and will be passed on from one generation to the other), the second with 'fêlure'. The two heredities interact, the instincts try to cover up the void of the fêlure, for example, but in Deleuze's reconstruction, the two cannot mix, they are located on different levels or scales and therefore must remain separate: 'small' heredity of history, associated with drives towards life vs. 'great' epic heredity, the fêlure as death drive (378). It is here that an ecological perspective may feel the need to intervene. As human induced climate change has taught us, there is a passage from 'small scale' developments to 'large scale' conditions. I would argue that this is exactly what Zola describes in the *Rougon-Macquart*: the fêlure has a history to which the heating up of the instincts of life contributes decisively.



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historical and social specificities of locations that play an important role in the daily life of the Second Empire. They thereby embody the interaction of the social/cultural and the 'natural': they are, at the same time, products of human technology and progress and produce an inescapable, quasi-meteorological atmosphere that subjects the humans and shapes their behaviour and temperament. The humans that frequent the meteorotopoi are therefore exposed to forces that they themselves have caused, but one which nevertheless exert an uncontrollable and inescapable influence on them. The fact that the climate 'strikes back', however, is often concealed by the 'naturalness' of the atmosphere that encompasses rather than represses. The meteorotopoi, built by human beings, envelop its creators and make them part of their intense weathery activity.

The *Rougon-Macquart* assemble dozens of meteorotopoi, of locations where the forces of the milieu thicken, where the hot, damp atmosphere sometimes literally condenses into clouds and thereby becomes visible:[4] the washhouse, Gervaise's laundry shop and the bar in *L'Assommoir*, the kitchen of the Quenus and the covered markets in *Le Ventre de Paris*, the hothouse in *La Curée*, the coal-pit in *Germinal*, the stock exchange in *L'Argent* and the department store in *Au Bonheur des Dames*, to name only the most prominent examples.

An analysis of the latter ties in well with the course of this essay, because the department store forms part of the characteristic climatic differences between the old and the new Paris. When Denise, the protagonist of *Au Bonheur des Dames*, arrives at Paris with her two younger siblings, what she finds in the quarter of retail trade where her uncle lives and has his small shop is a world split in two. She and her brothers are immediately taken in by the sheer grandness of a department store, "the windows of which were bursting with bright colours" (Zola, *Ladies' Paradise* 3). More than that, it seems to them "as if the shop were bursting and throwing its surplus stock into the street" (*Ladies' Paradise* 4–5). When the three finally arrive at their destination, uncle Baudu's shop, right opposite the department store, the contrast could not be more striking: "The door, which was ajar, seemed to lead into the dark gloom of a cellar" (*Ladies' Paradise* 7). A glance inside the house's "inner courtyard which communicated with the street by means of a dark alley" best summarises its 'climate':

> This yard, sodden and filthy, was like the bottom of a well, a sinister light fell into it. In the winter the gas had to be kept burning from morning to night. When the weather allowed them to do without it, the effect was even more depressing. (*Ladies' Paradise* 13)

Dark, damp, and cold, like a well—this seems to be the climate that Zola associates with the 'old Paris', whether the 'old' aristocracy or the 'old' trade. This characteristic 'climate' metonymically spreads from the Baudus' courtyard to the house's interior and then to the atmosphere of the shop: "The shop retained its musty smell, its half-light, in which the old-fashioned way of business, good-natured and simple, seemed to be weeping at its neglect" (*Ladies' Paradise* 15).

[4] See Jessica Tanner, "The Climate of Naturalism: Zola's Atmospheres" (2017) on "atmosphere" and "precipitation".

When Denise risks a first glance at the interior of the 'Le Bonheur des Dames' department store, into this bright and attractive place that differs so markedly from the gloomy and damp neighbourhood of little old boutiques, it is not so much the luxury of the commodities that draws her attention, but rather that the manifold impressions condense into one metaphorical and perhaps quite surprising 'vision':

> Through windows dimmed with condensation she could make out a vague profusion of lights, the confused interior of a factory. Behind the curtain of rain this vision, distant and blurred, seemed like some giant stokehold, in which the black shadows of the stokers could be seen moving against the red fire of the furnaces. (*Ladies' Paradise* 27–28)

This vision ties in well with the climatic difference between the old and the new Paris we have analysed above: one cold, damp and dark, the other of a fiery heat. The 'vision' of the department store as a factory or a great machine, whose furnaces have to be constantly heated in order to ensure it works properly, is of greater importance: Zola comes back to this vision throughout the novel, and it is established as the store's emblematic metaphor. For instance, the procedures for the end of a day are described as the "final movement of the overheated machine," (*Ladies' Paradise* 117) and during the "summer slack season" (*Ladies' Paradise* 153),

> the factories lay idle, the workers were deprived of their daily bread; and this took place with the unfeeling motion of a machine—the useless cog was calmly thrown aside, like an iron wheel to which no gratitude is shown for services rendered. (*Ladies' Paradise* 154)

The protagonist and owner of the store, Octave Mouret, is constantly haunted by the worst of his fears, the fear of feeling "his great machine coming to a standstill and growing cold beneath him" (*Ladies' Paradise* 95). Although Octave does all he can to heat his store's furnaces, he, like theatre manager Bordenave in *Nana*, is dependent on his 'audience,' which brings in the essential heat from the streets of Paris. Only when he hears the crowd of shoppers arrive can he be sure that his machine will reach its perfect operating temperature:

> And he could no longer have any doubt about the sounds arriving from outside, the rattle of cabs, the banging of doors, the growing babble of the crowd. Beneath his feet he felt the machine being set in motion, warming up and coming to life again […]. (*Ladies' Paradise* 99)

Octave has certainly contributed to this swarming crowd: "Newspapers and walls were plastered with advertisements, and the public was assailed as if by a monstrous brass trumpet relentlessly amplifying the noise of the great sales to the four corners of the globe" (*Ladies' Paradise* 392); the crowd that the store attracts is "a crowd warmed by a month of advertising" (*Ladies' Paradise* 390; translation amended). This strategy of metaphorical heating is accompanied by the quite excessive 'real' heating of the building: "It was very warm under the covered galleries; the heat was that of a hothouse, moist and close, laden with the insipid smell of the materials […]" (*Ladies' Paradise* 242). The economic calculus behind the store's temperature management seems to work out,

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as Zola shows with regard to a group of shoppers whose experiences and emotions he describes during a business day:

> But a feeling of well-being was stealing over them; they felt they were entering spring after leaving the winter of the street. Whereas outside the icy wind of sleet storms was blowing, in the galleries of the Paradise the warm summer months had already arrived, with the light materials, the flowery brilliance of soft shades, and the rustic gaiety of summer dresses and parasols. (*Ladies' Paradise* 241)

As Edward Welch writes, "the store creates a parallel universe to the world outside. It has its own distinct climate, shoppers leaving a wintry breeze to enter a realm of perpetual spring or summer" (44). With regard to its constantly warm temperature, the store thus lives up to its paradisiac name.

Octave Mouret wants his customers to be "caught up in the overflow of all this luxury" (*Ladies' Paradise* 104). He wants them to lose control and drown in the mass of items they buy and carry home—despite the fact that they often neither need nor are really able to afford what they acquire. Octave's store is not only a machine that has to be metaphorically heated to work properly and to produce the best of results, but also a weather-machine: the customers are exposed to the well-calculated violence of the store's climate, which is not as cosy as it looks. It aims to infect the shoppers with the store's excessive weather conditions, to induce them to become part of this weather, to give in to their desire to lose themselves and fall prey to the excesses of shopping fever.

The weather Octave Mouret tries to create by heating up his store, by firing its furnaces (and by arranging its items in the spectacular way he does) is characterised by a violent dynamic that brings all that is present in the shop into the fastest of circulations, thereby maximising turnover. It is thus the crowd that has to be observed in order to get an idea of the weather in the store:

> A compact mass of heads was surging through the arcades, spreading out like an overflowing river [fleuve débordé] into the middle of the hall. [. …] The great afternoon rush-hour had arrived, when the overheated machine led the dance of customers, extracting money from their very flesh. (*Ladies' Paradise* 108)

Zola here exhibits an association that is at the centre of this essay's argument: the heating of the machine is thermodynamically linked to the violent movement of the weather. In other words, by (over)heating the machine, Octave Mouret produces the violent flooding of the crowd "spreading out like an overflowing river." It is this important juncture that links the *Rougon-Macquart*'s dominant theme and the imagery of the steam engine, and of heating in general (examined extensively by Michel Serres and Jacques Noiray) with the theme of (violent) weather and climate. The association of heat with the weather's dynamics is one of the basic intuitions from which the theory of thermodynamics departs:

> To heat also are due the vast movements which take place on the earth. It causes the agitations of the atmosphere, the ascension of clouds, the fall of rain and of meteors, the currents of water which channel the surface of the globe, and of which man has thus far employed but a small portion. Even earthquakes and volcanic eruptions are the result of heat. (Carnot 37–38)

This passage is taken from the first pages of Sadi Carnot's ground-breaking study, titled *Réflexions sur la puissance motrice du feu et sur les machines propres à développer cette puissance* (1897 [1824]), which can be regarded as the foundation of thermodynamic theory. As does Michel Serres, I maintain that the thermodynamic discovery of the transformability of thermic energy into motive power is of crucial importance for Zola's *Rougon-Macquart*. This discovery forms the juncture between the 'warming global climate' that Zola, as we have seen, diagnoses for the Second Empire and this world's increasing "dynamism" (Nelson 30, Rochecouste 121), and consequently its increasingly heavy weather that in turn leads toward climate catastrophe, to the apocalyptic end of this world.

It is in the conceptualisation of the catastrophe that my reading parts ways from Michel Serres'. In contrast to Serres, I do not think that the ultimate catastrophe which destroys the Second Empire is "what one called thermal death [mort thermique]" (Serres 1975, 63; my translation); the Second Empire does not die a "cold death" (Serres 1975, 63; my translation) that would be characterised by the absence of thermodynamic free energy. This is not to say that David Baguley is mistaken in observing a "characteristic movement of the naturalist novel […] in the direction of disintegration and confusion" (208), which he labels as its "entropic vision". Entropy and the paradigm of the steam engine are however not particularly suited to account for the débâcle, the ultimate catastrophe that Zola narrates in the *Rougon-Macquart*. That is why I suggest introducing a second thermodynamic paradigm, the weather, that interacts with or rather feeds on the first but may provide us with a better understanding of the circle's end.

Catastrophe in *Rougon-Macquart* happens as an uncontrolled release of thermodynamic energy (a very hot death)—modeled as a weather catastrophe—which destroys (that is Zola's 'positive' vision) many of the structures that had led to the dangerous accumulation of this energy. The weather as thermodynamic paradigm is compatible with Zola's cyclical vision of renewal: There is weather after the storm and there is the possibility—although highly improbable—that weather interacts with its own conditions of formation, thereby perhaps creating a more favourable equilibrium. In his thinking about fêlure, Gilles Deleuze sketches a similar movement of the fêlure against itself: "En allant au plus loin, l'Instinct de mort se retournera-t-il contre lui-même? Peut-être la fêlure a-t-elle de quoi se surpasser dans la direction qu'elle crée […]" (385). The unresolvable ambiguity between good and evil is a characteristic trait of Zola's project; nature is surely not, as David Baguley claims, "ontologically evil" (216) and it is not good either. It is its inherent ambiguity, its tension, that thermodynamically feeds its processes.

Octave Mouret's store, as a weather-machine, exemplifies the thermodynamic procedure that combines the paradigm of the steam engine with the paradigm of the weather's forces: Octave stokes the furnace of this machine (metaphorically by promotion and spectacular installations; literally by heating up the store's air), and what he thermodynamically "causes" are indeed "agitations of the atmosphere," "the ascension of clouds" and "the currents of water which channel the surface of the globe":



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> the eddy of the crowd continued endlessly, its dual stream of entry and exit making itself felt as far as the silk department [...]. This sea of multi-coloured hats, of bare heads, both fair and dark, was flowing from one end of the gallery to the other [...]. (*Ladies' Paradise* 250)

By focalising on a customer, Mme Desforges, fighting her way through the store during a day of sales, Zola illustrates that it is almost impossible "to avoid being carried away by the stream of people" (*Ladies' Paradise* 253). The story of the sales is a story of the weathery natural forces that Octave releases in his store. The nautical topos of "flowing" streams, of a "sea of hats" or an "ocean of heads" (*Ladies' Paradise* 253) is dominant for relating the violent dynamic of the crowd. Moreover, the crowd cannot only be described as a weathery phenomenon: this is how it feels to be in the middle of it. The violent forces at work in the crowd spread throughout the whole building: "In the living vibration of the whole shop, the iron supports were perceptibly moving underfoot, as if trembling at the breath of the crowd" (*Ladies' Paradise* 253). This is important to note because the weather produced in the meteorotopos of the department store is not merely a phenomenon of a socio-psychical dynamic. It is not only human beings that get caught up in the violent weather of flows, streams and oceans, but also the commodities of the shop:

> The counter was overflowing [débordait]; [Mme de Boves] was plunging her hands into the growing cascade of pillow lace, Mechlin lace, Valenciennes, Chantilly, her fingers trembling with desire, her face gradually warming with sensual joy; while Blanche, by her side, possessed by the same passion, was very pale, her flesh soft and puffy. (*Ladies' Paradise* 110)

The imagery used to narrate the circulation of the materials is exactly the same as that found in the description of the dynamic of the crowd. The crowd's "dual stream of entry and exit" finds a counterpart in the "endless flow" of commodities circulating mostly behind the scenes, entering the building through a "yawning trap" in order to be sold and carried out of the shop again as quickly as possible:

> Everything entered through this yawning trap; things were being swallowed up all the time, a continual cascade of materials falling with the roar of a river. During big sales especially, the chute would discharge an endless flow into the basement, silks from Lyons, woollens from England, linens from Flanders, calicoes from Alsace, prints from Rouen [. ...] streaming like rain from some spring higher up. (*Ladies' Paradise* 36–37)

The "roar of a river" of materials clearly equals the crowd's "deafening noise" of "a swiftly flowing river"; the "overflowing river" of shoppers corresponds to the "overflowing counter" and the "cascade of materials." The flow of materials and the flow of customers (the flow of money should too be added!) are not only similar, not only narrated in an analogous manner, but form part of the same setting. Furthermore, the similarity of the weather imagery indicates that both flows or streams are located on the same plane; neither of the two can claim a privileged position with regard to the other. Both are parts and products of Octave Mouret's weather machine. The meteorotopos of the department store thus provides us with a perfect example of Zola's weathery conception of milieu and the role that 'the human' plays in this constellation: the shop's milieu brings together different elements (human beings, commodities, money) and



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makes these disparate elements communicate and interact. Instead of resorting to the physico-chemical conditions that his idol Claude Bernard uses to bridge the boundary between the animate and the inanimate, Zola constructs a different medium: a medium of weather, of flows, streams, cascades, of weathery forces. In a way, this choice favours the abstract on the one hand; it is as alien to the commodities (that are 'things') as it is to the human beings and their motivations and intentions. On the other hand, it is the seeming abstractness of the medium that makes the observation of the communication or interaction possible. By abstracting from the privileged access via the human individual and its instrumental, rational or psychological approach to the world, Zola introduces an approach to the interaction of the disparate and to the mutual effects brought about when the disparate communicates.[5]

The violent weather forces that Octave Mouret unleashes are not merely responsible for the economic success of the department store as they produce a massive increase in turnover—they inevitably rush toward climate catastrophe:

> Inside, beneath the flaming gas jets which, burning in the dusk, had illuminated the supreme tremors of the sale, it was like the battlefield still hot from the massacre of materials. The salesmen, harassed and exhausted, were camping amidst the havoc [débâcle] of their shelves and counters, which looked as if they had been wrecked by the raging blast of a hurricane. […] Liénard was dozing on a sea of materials in which some half-destroyed stacks of cloth were still standing, like ruined houses about to be carried away by an overflowing river [un fleuve débordé]; (*Ladies' Paradise* 117; translation amended)

The passage's 'local debacle' clearly foreshadows the military, 'global' débâcle that will bring the Second Empire to an end. The battlefield scenes of *La Débâcle*, the penultimate novel of the cycle that is dedicated to the Franco-Prussian war, literalise the war imagery employed for the description of the sales day in *Au Bonheur des Dames*. Strikingly, we encounter the very same weather 'imagery' that exposes the logic and dynamic, the 'quasi-natural', the historical force that inevitably drives the Second Empire toward its fatal collapse. This catastrophic world is one of extreme weather, a world where "a terrifying storm br[eaks] out, a truly diluvian downpour" "soak[ing] the men to the skin" (Zola, *La Débâcle* 69) and "a hailstorm, a hurricane of bullets and shells" (*La Débâcle* 223; translation amended) coincide, where 'figural' and 'literal' weather become indistinguishable, where, as Jessica Tanner writes, "[t]he relationship between literary and literal atmosphere goes beyond metaphor" (23):

> [They heard] ferocious yells which the crackling bullets accompanied with the noise of hailstorm, rattling down upon everything metal, mess-tins, water bottles, the copper trim on their uniforms and on the harnesses. Through the hail came the hurricane blast of wind and thunder that set the ground trembling, leaving a smell of scorched [brûlée] wool and sweating beasts rising up into the sunlight. (*La Débâcle* 266; translation amended)

In a similar way to the Second Empire's ultimate catastrophe, Paris burning—it is not quite clear whether it is the Prussians or the Communards who have set it alight—is

[5] In a similar way Jessica Tanner observes in Zola's cycle "an ecology of heterogeneous agents operating on different spatiotemporal scales and intensities, making their interconnectedness perceptible within the time of reading" (22).

prefigured by a 'local' climate catastrophe. The injured Maurice, one of the protagonists of *La Débâcle*, hands out the hermeneutic keys for the figural reading of the cycle by babbling away in his "delirium of fever" in the face of Paris ablaze:

> 'What a beautiful party at the Conseil d'État and the Tuileries… They've lit up the façades, the chandeliers are sparkling, the women are dancing… Oh! Dance, then, dance, in your smouldering petticoats, with your chignons aflame…'
>
> With his good arm he mimed the galas of Sodom and Gomorrah, with the music and flowers and perverted pleasures, the palaces bursting with so much debauchery, lighting up the naked abominations with such a wealth of candles that they'd set fire to themselves. (*La Débâcle* 496–97)

It is the 'metaphorical' fire, the "wealth of candles," the "Venetian lights" of the Muffat's party in *Nana* that have finally found their 'realisation': "the glowing embers of a fire," the "conflagration" and the "final holocaust" (*Nana* 364) have become reality.

The 'typological' connection between the pre-figuring novels not only works as a literalisation that turns metaphor into reality, but also makes use of an important metonymic dimension. It continues, to the most extreme extent, the movement of growth and proliferation that we have already observed as typical with regard to the meteorotopoi. The heart of most meteorotopoi (and also the heart of the process of modernisation), the furnace, that produces the heat for driving the steam engine, has grown to encompass the whole city: "And above the huge city of Paris, the fire's glow had swelled larger still, the sea of flames appeared to have gained the distant shadows of the horizon, the sky was like the roof of some gigantic oven, heated white-hot" (*La Débâcle* 510). Paris—white-hot," turned into one "gigantic oven"—marks the endpoint, the extreme point of the process of 'global' heating that the cycle diagnosed as the characteristic trait of the Second Empire. The point of transition from 'metaphorical' to 'metonymic' or to 'real' is impossible to determine. It is however important to note that the movement that Zola traces is no abstract rhetorical operation: it does not merely turn the metaphorical into the real, but also contains a line of predominantly metonymic continuity that accounts for the story of a historical development. The insistent theme of a fatal proliferation of heat metonymically supplements the cycle's progress toward literalising a metaphor.

The ultimate catastrophe of Paris burning is itself far from purely 'literal'. The fire is consistently conceptualised as an inundation, as a deluge of an "overflowing" "sea of flames" (*La Débâcle* 490). It is surely not unintentional that the two protagonists Jean and Maurice make their way through the burning city by boat—they are surrounded by fire "setting the skyline ablaze, flames standing out against more flames in a bloody, endless sea" (*La Débâcle* 496)—as if the city had been washed away by a flood. Even in the context of the Commune and the *pétrole* associated with it, the elemental combination of a 'fiery deluge' is too paradoxical a combination not to carry the weight of deeper meaning. It takes up and continues the imagery of overflowing, of *débordement*, that pervades the cycle from its first to its last pages. In fact, it is this familiar imagery that makes the ultimate catastrophe readable as another weather/climate catastrophe, as the last of a series of weather catastrophes handed to us in Zola's cycle. The 'Débâcle' thus exposes the thermodynamic link between a process

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of (over)heating and violent weather that threatens to destroy the structures and do harm to the agents that have been contributing to the unleashing of this weather's forces. The 'imagery' of deluge, of inundation and overflowing that Zola employs to narrate the perishing of Paris and the Second Empire in the fires of (civil) war thus connects the ultimate, 'global', historical catastrophe to all the 'local' catastrophes.

The 'Débâcle' is not merely the mythical punishment imposed upon a modern Gomorrah by an abstract instance of justice; it is the "inevitable" result of the Second Empire's 'climate.' It marks the extreme point of a heating which has gone out of control, when the fires of the *Rougon-Macquart*'s furnaces—'real' and 'figurative'—spread all over the city. Paris is flooded by all the torrents the Second Empire has unleashed and that have soon started to follow their own, uncontrollable, natural way down the slopes—streams and torrents of people, of goods, of money, of passions. The imagery of overflowing, of *débordement*, links the burning Paris (and the collapse of the Second Empire) to the torrents of shoppers in *Au Bonheur des Dames*, to the torrents of orders to sell from *L'Argent*, to the torrents of waters flooding the coal-pit of *Germinal*, to the torrents of fugitives in *La Débâcle*: it is the prime example of "the coherence of Zola's novels" that, according to Brian Nelson, "rests on their dense metaphorical structures" (11). It is this coherence of imagery that turns the descriptions of the meteorotopoi and of the 'local' catastrophes into detailed explanations for the 'global' catastrophe.

Seen from this perspective, the collapse of the Second Empire "was inevitable" (*La Débâcle* 490) for purely 'immanent' reasons. It is the laws and regularities of this world, of this modern world of the 19th century (historical, material, cultural, social, 'natural') that account for the necessity of the catastrophe.

To be sure, Zola's novels are not ecocritical in a narrow sense;[6] he does not know about carbon dioxide and the scientific concept of the greenhouse effect. It is, however, no coincidence that his novels resonate so intensely with 20th and 21st century notions of climate change. Zola's construction of a milieu that abandons the divide between the natural and the social, his positing of a radical correspondence and interaction of the modern human being and the 'climate' surrounding it led him to metaphorically project or anticipate what science, still believing in the old division between nature and culture, started to reconstruct a hundred years later, only because data became available which demanded an explanation. His narrating a 'climate' that pervades the world of the Second Empire and that, nevertheless, proves to be so hard to 'describe' that it emerges only as a "unifying impression" holding together a cycle of twenty novels may be said to anticipate Timothy Morton's concept of the climate as a "hyperobject" (2013). More than that, it also suggests a way to approach this unapproachable object: literature.[7]

[6] Ecocritical readings in the 'wider sense', as practiced in my paper, have long become a standard procedure in the environmental humanities. Tobias Menely and Jesse Oak Taylor's *Anthropocene Reading* (2017) and Nathan Hensley and Philip Steer's *Ecological Form* (2019) may stand exemplarily for the good amount of research that has been dedicated especially to the 19th century literature and its environmental implications. As Jessica Tanner's (2017) and Tancrède Lahary's (2017) articles show, the interest has also reached Zola's œuvre in the last years.

[7] In "The Aesthetics of Heat. For a Cultural History of Climate in the Age of Global Warming", Eva Horn emphasises the importance of heat as a metaphor which has the capacity "to convey a phenomenal



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The metaphorical links Zola constructs between the mentality of an era, the galloping forces of industrialisation and speculation, the employment of the steam engine with its combustion of fossil fuel and a 'general heating up' turning into a weathery catastrophe, cannot but strike the modern reader. However, the 'climate change' that Zola narrates is not merely an anticipation of a fact that would challenge generations after him. In fact, Zola's story of a 'climate change' oscillates continually between the metaphorical and the 'real'. For Zola, 'climate change' is not the description of a certain fact of nature ('the average temperature is rising') but a societal diagnosis.[8] It is the answer to a complicated question, a question similar to the one that Hippolyte Taine had raised: Zola is searching for "certain general traits, certain characteristics of the intellect and the heart common to men of one race, age, or country" (Taine 13): in Zola's case, those of the Second Empire. 'Climate' stands for the forces behind the voluntary or the rational. His *Natural and Social History of a Family Under the Second Empire* goes beyond the human agent; that is why it is natural and social. The kind of history that Zola pursues attempts to work out "the general tendency of the whole" (*The Fortune of the Rougons* 3) by capturing its 'historical a priori,' (cf. Foucault, *L'archéologie du savoir* 174), that is to say the conditions responsible for the fact *that* things come into existence. The "general traits," the "certain characteristics" common to the Second Empire find expression in a meta-milieu that shapes the temperament and actions of the human agents and is, at the same time, itself shaped and brought about by these temperaments and actions. This meta-milieu that Zola conceptualises as having a resonance in 'climate' (always fluctuating between weather imagery and this imagery's becoming 'real' weather) gives an account of the 'unconscious' impetus behind the voluntary action of the individual, of phenomena of human behaviour and the interaction with non-human agents that are inaccessible to individual consciousness and will (Gumbrecht 91). Zola's narrative project testifies to literature's very particular contribution to thinking on 'climate.'

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sensibility to an uncanny, complex and unrepresentable process [i.e. climate change] that exceeds our categories of perception and cognition" (3). It does not come as a surprise that literature has been and continues to be a privileged place both for developing and spreading this metaphor.

[8] Zola's societal diagnosis is more complex than the degeneration and decadence that David Baguley's 'entropic vision' detects. The warming climate which the cycle narrates is not simply an aberration, a maldevelopment that could be criticised or even cured from without, but is intrinsically and paradoxically linked to the very forces of life itself. By claiming "a constant assimilation of man (and particularly woman) to the natural order" (212)—he conceives of nature as "evil"—Baguley implicitly introduces the notion of 'good' humanity, for which, in my opinion, there is hardly any evidence in Zola's *Rougon-Macquart*. I think it important to take the ambiguities and paradoxes that Zola depicts seriously: The notion of a climate, i.e. a field of interacting and conflicting forces which is in itself neither good nor evil but has the capacity to bring forth harmful as well as beneficial effects, therefore appears to me to be a promising and more adequate way of thinking about modern society and life.



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# Talking about the Weather
# Roland Barthes on Climate, Everydayness, the Feeling of Being, and Poetics

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## Abstract

The paper reads Rolands Barthes' considerations on weather and climate in his last lecture cycle *La Préparation du Roman* by contextualizing its brief remarks with his previous discussions on this topic. Barthes develops a phenomenological concept of climate, showing how experiences of place across the seasons shape certain habits. These manifest in expectations, perceptions, daily routines, and language. However, his particular interest is devoted to the question of how an existential experience of weather in its contingency can be regained. Furthermore, he investigates how poetry tries to capture the uniqueness and singularity of respective weather appearances against the patterns and narratives of the climate sedimented in the language system.

*Keywords:* Roland Barthes, Gilles Deleuze, Roman Jakobson, weather, climate, language, habits, everyday life, body, mood, perception of time, city vs. country, haiku, poetics.

## Resumen

El artículo ofrece una lectura de las reflexiones de Roland Barthes sobre el tiempo y el clima en su último ciclo de obras *La Préparation du Roman* contextualizando estas breves observaciones con pensamientos previos acerca del tema. Barthes desarrolla un concepto fenomenológico del clima demostrando cómo la experiencia de habitar un lugar en el transcurso de las estaciones del año forma ciertos hábitos que se manifiestan en distintas expectativas, percepciones, rutinas diarias y un cierto lenguaje. El texto se centra, específicamente, en el modo de recuperar una experiencia existencial del clima en su contingencia. Además, Barthes investiga cómo la poesía trata de capturar la especificidad y singularidad de ciertos fenómenos climáticos sin retornar a los modelos narrativos del clima anclados en el sistema lingüístico.

*Palabras clave:* Roland Barthes, Gilles Deleuze, Roman Jakobson, tiempo, clima, idioma, hábitos, vida cotidiana, cuerpo, humor, percepción del tiempo, ciudad vs. campo, haiku, poética.

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"Pour ma part, j'ai toujours pensé que le Temps qu'il fait: un sujet (une *quaestio*) sous-estimé" (*Préparation* 71), confesses Roland Barthes in his last major lecture series at the Collége de France in 1978/79. 'Toujours' is not an exaggeration, because Barthes had written frequently about the subject of weather in notes, essays and books since the 1950s. However, these brief remarks often seem rather casual. When Barthes set about

preparing his lecture in the summer of 1978 (*Préparation* 31), he must have picked out the quotations and earlier ideas again from his slip box, in which he had collected them over the years. In any case, many of the older examples and considerations reappear in the lecture. Barthes now presents them more coherently and continues his reflections in many respects. Therefore, *La Préparation du Roman* can be considered the sum of Barthes' decades-long work on this underappreciated subject.

*La Préparation du Roman* investigates the desire to write. Barthes is concerned with getting from the mere desire to actual writing. In the lecture, the starting point is the transition from perception to notation. As the series progresses, Barthes asks more and more about the prerequisites of this transition. He talks about environmental conditions, the appropriate mood, and the organization of time. Eventually, his inquiry leads him to ethical questions about the conduct of life, which prevent disturbing influences and create favorable conditions for writing. The large-format novel, to which the title alludes, serves only as the vanishing point and is successively approached through smaller forms. The lecture series fits seamlessly into Barthes' late work, which explores in ever new approaches the relation between material and semiotic aspects of writing.

In the course of the lecture's argumentation, Barthes devotes large parts of his discussion to the weather as a physical influence, as an ephemeral phenomenon and as a literary topos. The concentrated presentation of his ideas collected over decades, however, leads to a dearth of explanation on many points. For, unlike in his earlier writings, Barthes names his theoretical inspirations in the lecture only at the margins, discusses many arguments briefly, and refrains from quoting and interpreting them when citing references. By tracing Barthes' thought back through his theoretical references and examples, and by drawing on the preliminary work scattered throughout his writings, one can gain a more comprehensive understanding of the lecture. Establishing systematic links between Barthes' own words often makes it necessary to add substantial explanations. That which is less comprehensible in the lecture's dense formulations, which seem otherwise to be connected only by an associative logic, thereby takes on a surprising significance. Such a contextualized reading is the goal of this essay. It traces Barthes' reflections back in four steps and concludes by linking his arguments to current debates.

*La Preparation du Roman* begins with a diagnosis of the present. Although climate is still deeply imprinted in today's language, talk of the weather has lost its reference. To the extent that people's lives have become more and more independent of weather conditions, according to Barthes, talking about the weather has almost become synonymous with small talk in Western cultures. Based on this observation, Barthes sets himself the goal of regaining the referentiality of weather. The second section deals with this point. Barthes has noticed that when on holiday he enjoys living more in harmony with the rhythms of the weather. Apparently, aesthetically motivated cloud watching is inherited from more practically oriented weather observation practices of earlier times. Barthes examines his holiday impressions and shows how changes in the weather affect

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his experience of time, and thus his moods, much more so than in his everyday life in Paris. A third section discusses how moods gain their tone from the interplay between one's expectations with regard to weather, be it hopeful or fearful, and their fulfillment or frustration. Building on this observation, Barthes develops the thesis that the perception of weather is narratively preformed. Every look at the sky is immediately classified into familiar patterns of experience, as rain, for example, is often followed by sunshine. Barthes regards the narrative preformation of weather experience as the everyday understanding of climate. Such narratives set in motion a hermeneutics of the present by drawing attention to signs of the brightening of the sky after the rain. At the same time, these narratives associatively create a connection to other habits and memories that have nothing to do with the weather, and these accompanying circumstances are reintegrated into everyday interpretation schemes. Language's climatic imprint and the tendency of perception to narrative contextualization lead Barthes to the question: how can the weather, in its own never-recurring uniqueness, which resists the dispositions of perception and language, be expressed in words? The next section is consequently devoted to Barthes' poetological reflections on haiku. He sees in this poetic form the project of the linguistic recovery of reference realized in all its respects. For Barthes, the haiku is emphatically a form of weather writing, not climate-writing. To interpret Barthes lecture is rewarding, it can be concluded, because it contributes fruitfully to contemporary debates. Barthes developed a concept of climate that can be experienced life-worldly. As a literary critic Barthes devises various strategies that allow literature to transcend the climatically preformed language of everyday life. From this, finally, a systematic distinction can be drawn between three strategies of literary weather writing.

**Climate and Weather**

In *La Prépararation du Roman*, Barthes distinguishes between climate and weather. Barthes does not use the term climate explicitly, because in his phenomenological approach he is not interested in scientific meteorology at all. He adopts an understanding of climate that derives from unreflective practice, for which ordinary people would therefore never use a scientific term like 'climate'. Literally on the quiet, he replaces the scientific concept with this more original understanding based on everyday perceptions and habits. In the lecture, climate is understood as recurring weather patterns and their typical development. According to Barthes, meteorological measurements and their statistical analysis are not necessary in order to abstract from these patterns; rather, habituation to the weather conditions of a place in the course of the year already subconsciously arouses certain expectations. The recognition of a particular weather phenomenon immediately triggers certain behaviors. The climate can therefore be compared with a linguistic system. It assumes typical characteristics and changes in the weather, comparable to the formation of linguistic categories in their generality and the grammatical specification of the links between them. The verb determines sentence



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structure from its possible objects, and particular phrases suggest a certain continuation or response. If climate corresponds to the language system, weather is its counterpart, equivalent to the actual use of language. Although, and precisely because, lexicon, grammar and convention provide possibilities for the combination of words and sentences, they do not strictly determine the choice of words and the sentence structure of the individual speech act, and thus open up leeway to place one's own emphasis. The same applies to the climate code. Barthes notes this in his lecture manuscript: "*le temps qu'il fait* = le code *parlé* par le moment, le jour, l'heure, l'individuation de l'existence, c'est-à-dire qui accomplit, ou qui *déjoue* (toujour la fonction rémunératrice, compensatrice, rectificatrice du discours par rapport à la longe)" (*Préparation* 72).

But Barthes wants to go beyond mere analogy to language. He explains that climatic conditions are deeply imprinted in the system of individual languages, the *langue.* Climate has shaped lexicon and grammar. Despite the combinatorial freedoms of the *parole,* the prescriptions of climatic categories and the linguistic possibilities of connection may seem inadequate. Inadequate in two respects, because on the one hand the possibilities of expression given by *langue* and the sensual impressions of the weather can diverge. Barthes' point can be described in this way: Even though different languages distinguish types of precipitation conceptually with different precision, they are always abstractions from the sensual experience. In French, the word *nuage* means clouds of any size, color and density. The concept is therefore not able to differentiate more precisely between them. Hence, the concept levels out the uniqueness of the respective weather phenomenon. The climatic specifications of the language cannot grasp this uniqueness and appear coarse and rigid. And if, as in *il pleut* in French, it is only expressed with an impersonal subject, this betrays ontological assumptions about the nature of the powers of nature. That is why there is no possibility within the limits of grammar to express the way nature's powers seem to act as their own agents. On the other hand, in some situations language may not be general enough. A conversation about *nimbus*, *stratus* and *cumulus* simply does not seem suitable for small talk.

The tension between things and words can never be completely resolved, but it can be shifted to one of the two poles in language usage. In order to outline this thought more precisely, Barthes refers to the work of Roman Jakobson. The latter had noticed that language use varies in order to accentuate certain inherent functions, thus making them more apparent. Jakobson (21–27) ultimately distinguished six language functions, each of which runs within language towards its different exteriors, and thus mark the limits of what can be said. Barthes takes up Jakobson's distinctions and develops them further by assigning them to two fields of tension that cut transversely. He does not formulate this idea explicitly in the lecture, but rather he bases his further argumentation on it.

Barthes sees the first field of tension as lying between the *referential* and the *poetic* functions of language. The referential functionalization of language, on the one hand, shifts the relation from words to things. Such a use of language looks for possibilities to depict reality mimetically, even in resistance to the system of language, but nevertheless

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by using language as the medium. The poetic functionalization, on the other hand, emphasizes the inherent logic of language. 'Poetic' does not only mean literature, but all kinds of self-referential linguistic gestures. By noticeably increasing or decreasing the language-immanent connections, the otherwise transparent form, mediality, and order of language itself becomes the focus of attention. This language function aligns with the visuality or sonority of language as well as semantic distinctions and logical conclusions. What, from the point of view of referentiality, must appear as an obstacle to the linguistic reproduction of the weather, seems from the poetic point of view as the independence of the *langue* from the specific circumstances of the weather.

However, the use of language is not limited to the tension between words and things. As a form of communication, language connects people, and not only through the mediation of meaning, but physically through the sound of the voice or writing on paper. This opens up a second field of tension that lies transverse to the first and is limited by the extra-linguistic poles of 'I' and 'You.' Here, however, there is not a single basic polarity that determines the play of forces. Tensions arise from the interplay of four vectors, which are oriented by the *emotive*, *conative*, *meta-linguistic* and *phatic* functionalization of language. The emotive function focuses on the transmitter's relation to speech, just as the conative function emphasizes the relation to the receiver. The meta-linguistic function accentuates the use of words and their meaning. The phatic function, finally, underscores the aspect of relation. The communicative force field can be characterized by two overarching principles: relations between people cannot be mediated exhaustively by language, and language adds something of its own to these relations.

Today, as Barthes points out in *La Préparation du Roman* (71), talking about the weather seems to be the paradigmatic example of phatic speech. Talking about the weather is almost completely absorbed in its relational aspect, while almost completely detached from the experience of and reference to weather itself. Thus its content is almost as arbitrary as the weather is incidental. Talking about the weather is meaningless. This seemed remarkable to Barthes a few years earlier. To say nothing, one can simply be silent. But within language, as Barthes already wrote in 1971, "*rien* ne peut se dire que *rien; rien* est peut-être le seul mot de la langue qui n'admet aucune périphrase, aucune métaphore, aucun synonyme, aucun substitut." To say nothing, a more indirect strategy must therefore be chosen. "Dire *le temps qu'il fait,*" Barthes explains,

> a d'abord été une communication pleine, l'information requise par la pratique du paysan, pour qui la récolte dépend du temps; mais dans la relation citadiene, ce sujet est vide, et ce vide est le sens même de l'interlocution: on parle du temps pour *ne rien dire*, c'est-à-dire pour dire à l'autre qu'on lui parle, pour ne lui dire rien d'autre que ceci: je vous parle, vous existez pour moi, je veux exister pour vous (aussi est-ce une attitude faussement supérieure que se moquer du temp qu'il fait). ("Pierre Loti" 1403; see already "Mythologies" 706 and 715)

The meaninglessness of talking about the weather, Barthes notes only briefly in the lecture, reveals itself in two extremes: the possibility of talking to anyone, or of talking to

someone who is so close that there would actually be no need to talk at all (*Préparation* 71).

In his autobiography, Barthes had described how he converses with people in Urt, his holiday home in the south of France. In the village shop he greets the shop girl: "*il fait beau, il fait gris,* etc." Then the postman passes by "(il fait lourd ce martin, quelle belle journée, etc.) et, un peu plus tard, dans sa camionette pleine de pains, la fille de la boulangère (elle a fait études, il n'y a pas lieu de parler du temps)" ("Sur Roland Barthes" 156). Barthes concludes by commenting on these scenes: they clearly show his bourgeois habitus. In earlier remarks, talking about the weather still seemed to convey emphatically 'vous existez pour moi'. Now it turns out to be mere existing, a basic mode of encounter that does not imply recognition among equals. One does not have to talk about the weather with someone of the same class. Later, Barthes in his autobiography returns to the scene again: "En somme, rien [est, U.B.] de plus culturel que l'atmosphère, rien de plus idéologique que le temps qu'il fait" ("Sur Roland Barthes" 229).

**The Feeling of Being**

Barthes' bourgeois habitus is an attitude that he cannot completely abandon even in the countryside. Life in a big city like Paris has become alien to nature. Only where the referential function of language has lost its meaning does a phatic re-functionalization become possible. However, weather has not become completely lost as a referent. Yet, before Barthes can touch on the reference of language to weather, he must first regain the reference itself. He therefore first thinks back to the pre-linguistic experience of weather (*Préparation* 66).

"Cet investissiment *individuel* (par example esthétique) dans la Saison (le Temp qu'il fait)", explains Barthes in *La Préparation du Roman*, "continue l'intérêt des civilisations rurales pour la saison et le temps (*Weather*)" (*Préparation* 68). In the city, the distinction between everyday life and vacation has taken the place of seasonal rhythms, and the weather is no longer an obstacle to almost any activity. During his vacations in Urt, however, Barthes enjoys the fact that his life is more in harmony with nature (even though he is aware that he is clinging to a modern myth with the idea of rural harmony). Located close to the Pyrenees and the Atlantic Ocean, the climate there is completely different from that in Paris, and Barthes develops an entirely other sense of his body: he goes so far as to claim that he literally has two bodies, a Parisian and a rural one ("Sur Roland Barthes" 114; see also "La lumière du Sud-Ouest" 720). In addition, temporality can be experienced differently if it is not determined by the beat of abstract clock time, but can be apprehended sensually by changes in weather and lighting conditions.

At this point, Barthes takes up Gilles Deleuze's reflections, to which he refers briefly in the lecture. Judging by the terminology, Deleuze's *Différence et répétition* is probably his point of reference (*Préparation* 77; Deleuze esp. ch. 1, 2 and 5). Extending Husserl and Bergson's reflections, Deleuze understands perception as a two-stage process. If the

intensity of the impressions exceeds the threshold of perception, one becomes aware of them as a phenomenon without already being aware of the act of perceiving it. The phenomenon then appears as a spatial and temporal fact in its unique shape, but not yet as something definite. This is what Deleuze calls *passive synthesis*. If this is followed by an *active synthesis*, the singular impression is assumed to be a case of… for which there is also a word. Complementary to this, at the level of passive synthesis one has no ego-consciousness, not even a pre-reflexive one. This is only added in the course of active synthesis. Thus, at the level of passive synthesis, one does not yet know that he or she is the one who has perceived what is perceived. On this level, it is thus a matter of pure experience without the possibility attributing it to the outer world or subjectivity. Above all, Deleuze devotes his attention to passive synthesis, which is what makes his philosophy interesting for Barthes. The latter describes this pure experience, which lacks an ego-consciousness, as the emptiness of subjectivity. Because conceptual definitions are lacking, perceptual impressions of pure being-so follow each other in a flow. They are not senseless, but they are meaningless. In the lecture he describes an experience that is based solely on passive syntheses with the words: "lorsque le langue se tait, qu'il n'y a plus commentaire, d'interpretation, de sense, c'est alors que l'existance est pure" (*Préparation* 84). And he conveys an insight into this mode of experience by quoting from the diary he had been keeping since 1976. On July 16th, 1977 Barthes wrote in Urt: "...ce matin une sorte bonheur, le temps (très beau, très léger), la musique (Haendel), l'amphétamine, le café, le cigar, une bonne plume, les bruits ménagers" (*Préparation* 99; the diary excerpts were published later also separately in *Tel Quel* as "Délibération"). Here, different impressions appear in a flow without any connection. They form an open manifold, not a wholeness, Deleuze would say.

Perception is not instantaneous, such that only the present impression is captured. Rather, the momentary impressions move into a stretched field of perception. In this way, they become synthesized. Although attention within the field of perception is limited by a measurable amount of time, it is not characterized by a predetermined temporal division. Only changes of intensity structure temporality. In terms of the weather, this means that on a gray monotonous rainy day, time seems to stand still since nothing happens. Yet, when the sun is wandering or heavy weather events like a thunderstorm appear suddenly, the flow of temporality accelerates. This point brings Barthes to the ambiguity of *temps* in the French language, which means both time and weather. But rarely does the change of weather alone determine the division of temporality. Rather, its changes often interfere with other fluctuations of intensity. Barthes illustrates this thought by quoting again from his summer diary in the lecture, this time the entry from July 17th, 1977: "On dirait que le dimanche matin renforce le beau temps." And adds: "Je voulais dire: une intensité renforce l'autre" (*Préparation* 75).

Within the field of perception, to continue disclosing the epistemological backgrounds of Barthes' argumentation, there is a tendency to organize impressions in regular sequences as rhythms. Momentary perception is always placed into a sequence, in

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which immediately preceding impressions continue to have an effect and further impressions are already anticipated. Husserl called this *retention* and *protention*. Future expectations are constituted with reference to the assumed regularity of the immediately preceding sequence. The expectation for the near future is that the past rhythm of intensities will probably simply continue or change uniformly. Hence, if it suddenly thundered out of the blue, the surprise would be great. In comparison with the largely calculable routine processes of everyday life, however, the weather is always good for a surprise, especially in a country like France, where Barthes estimates that it more often disappoints than fulfills climatic and seasonal expectations. This increased contingency and the resulting lack of predictability characterizes rural life. The feeling of escaping the alienation of civilization in the countryside and being freed from the constraints of everyday life can therefore easily turn into uncertainty. Yet, Barthes notices about himself that although he welcomes some variety, he does not want to worry too much, especially during the holidays. That is why he also obeys his own everyday routine during the holidays—the daily walk to the village shop, the postman who brings the mail at the same hour, conversation with the baker's daughter, work on the coming semester. Barthes' daily life in Urt constitutes a broad present, in which he tries to ignore thoughts of the future and to stick to what is at hand, enjoying himself and consuming. But distraction from outside, which beckons from every street corner in Paris, is missing during the holidays. In moments of boredom or leisure, he therefore pays more attention to changes in the weather. The change of the weather then unfolds its liberating, but sometimes also unsettling effects. By more attentively perceiving the passage of time, he becomes aware that the future, to the extent that it seems unpredictable, appears to be more emotionally expansive, filled with fears and hopes. These feelings radiate as mood back to his perception of the present. Barthes sees two extreme states of emotional excitement: "la misère du 'paumé'" and "la jubilation ardente du 'vivant'" (*Préparation* 84).

Barthes experiences his rural body, to sum up the preceding considerations, entirely differently from his Parisian body because it is attuned to another, previously unfelt, feeling of being, "*le sentir-être*" (*Préparation* 72). This feeling of being in the countryside, which he further describes in the lecture as "la *vie*, la sensation de la vie, le sentiment d'existence" (*Préparation* 84), results from an aesthetic attitude of greater openness towards nature and weather in particular. During his holidays in Urt, Barthes can suspend the reductive subsumption of active syntheses, which always take the weather only as an example of a particular climate, and more fully experience the uniqueness of the weather conditions of each individual day. In contrast to everyday life in Paris, his days are not ruled by the clock and divided into appointments, so that his temporality is more deeply structured by changing weather conditions. Not driven by so many everyday duties and with fewer possibilities to be distracted, he also notices more clearly which other changes in intensity also affect his feelings. Barthes had already written about this in 1971,

> le temps renvoie à une sorte d'existance complexe mode (de ce qui est) où se mêlent le lieu, le décor, la lumière, la température, la cénestésie, et qui est ce mode fondamental selon lequel mon corps est là, qui se sent exister (sans parle des connotations heureses ou tristes



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> du temps, suivant qu›il favorise notre projet du jour); [...] il permet de référer à quelque *être-là* du mode, premier, naturel, incontestable, in-signifiant [.] ("Pierre Loti" 1403; see also already "Le Plaisier du Texte" 1522)

As a kind of mood, emotional orientation towards the future lays itself like a filter over present perception and modifies its understanding. This is a thought that Barthes apparently took from Heidegger, who he mentions by name in a different context in one of the later lectures. By using *être-là*, an artificial word in French commonly used as the translation of Heidegger's *Dasein* (literally *being-there* in the sense of *existence*), he lets the philosopher shine through in the quoted passage (see Heidegger 130–149 on *attunement*). On the level of passive syntheses, the impressions of all senses and bodily feelings form an inseparable wholeness, since no ego-consciousness yet accompanies the sensations. The interplay of all these factors tune the feeling of being, which becomes more noticeable in moments of rest and openness.

**Narrativization**

If it is not only a matter of anticipating the immediate future, but of anticipating further into the future or classifying rare events, reflexive moments come into play, which involve activating experience and memory. With this thesis Deleuze develops Bergson's philosophy further. Barthes will later follow this thesis with his own thoughts. Active syntheses then intervene in perception. If the surprising thunderclap from the previous section occurred in oppressive humidity, then experience would probably say it was an approaching summer thunderstorm. Although such a thunderstorm does not occur every day, one knows it is possible in the summery south of France. If summer thunderstorms were to cause unending, torrential rains, one would search memory to recall whether such storms have ever occurred before. In this sense, being accustomed to a climate means being familiar with the proto-narratives and narratives of certain weather courses. Generally speaking, temporal perception thus takes place within proto-narratives, in the case of rhythmic sequences, and narrative patterns, in the case of experience and memory. Both are employed in predicting the future since they raise certain expectations. These proto-narrative and narrative patterns also serve as a kind of hermeneutic key to the interpretation of present perception. Hermeneutics attempts to interpret the present as a case of repetition of known patterns, as a case of..., and directs attention to discovering further clues as to the correctness of this interpretation. But if signs do not appear or remain ambiguous, if one has not abandoned a certain expectation as incorrect and pursued other interpretations, such a hermeneutics can take on almost neurotic traits.

The more detailed the pre-existing narrative, the more accompanying circumstances it brings into its interpretation of the present. The onset of summer rain may remind one that the windows are still open at home, just like last time. But one might also remember that the storm happened in the disaster movie in the U.S. and not here. The comparison of these narratives with current circumstances therefore always has an effect

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on the narratives. Hence, the hermeneutics of the present always reconfigures the familiar or remembered past and expected future. The disaster movie, whose appeal lay in the fact that it depicted a future that will not come, seems to have suddenly become reality through the storm now raging outside. Thus the previously unimportant question arises of whether one could learn from the film hero how to escape the threatening flood. But the accompanying circumstances of the narratives also create associative bridges to distant memories. This creates couplings with completely different narratives, which can then direct the current perception of the weather again. In the lecture of February 13th, 1978, Barthes alludes in this context to another diary passage without quoting it. It can be found under the previous day's entry in the *Journal de deuil,* unpublished at the time of the lecture, which he had begun to keep after the death of his mother: "Neige, beaucaup de neige sur Paris; c'est étrange. Je me dis et j'en souffre: elle ne sera jamais plus là pour le voir, pour que je le lui raconte" (*Journal de deuil* 103*;* see *Préparation* 72*).* No matter what the weather on this day actually was, in his depression Barthes would have experienced it as sad. But Barthes also gives an example of the opposite case. In his diary entry from July 16th, 1977 in Urt, the prospect of bright weather modifies his everyday activities: "De temps, éclat et subtilité de l'atmosphère: une soi fraîche et lumineuse; ce moment vide (aucun signifié) produit une evidence: qu'il vaut la peine de vivre. La course du matin (chez l'épicier, le boulanger) alors que village est encore presque vide, je ne la manquerais pour rien au monde" (*Préparation* 84).

**Poetics**

Barthes is not as explicit in his examination of the pre-linguistic and then narrative perception of weather as I have been in demonstrating the Deleuzian background of his argument. Because for Barthes, these considerations only set up his actual question: How can the weather in its uniqueness be expressed within the climatically preformed system of language?

Barthes begins the answer to this question with an apology: "J'y suis, pour ma part, d'un sensibilité [météo, U.B.] extreme" (*Préparation* 68); with a tendency to heavy migraine, he informs the listeners of his lecture. That is why he is a passionate indoor writer even on holiday. Where the weather directly intervenes in his writing, where his rural body takes up the pen, so to speak, Barthes' desire to live in Urt, more in harmony with the rhythms of nature, ceases. The diary entries bear witness to the fact that he can nevertheless control the intensity of the weather's influence far less than he would like. Barthes' emotive commentary on his own speech about weather is therefore both a playful reference to his bourgeois habitus, which binds him to the linguistic system of the climate, but also a claim to possession of exceptional competence for speaking about the weather.

For his investigation of how "la force d'individuation, de différence, de nuance, de moire d'existentialité qu'il y a dans la relation de l'homme et de l'atmosphère" (*Préparation* 71) can be verbalized, Barthes seeks out the point of transition where an

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instantaneous perception of the weather is written down. Although Barthes can identify approaches to weather-writing in Baudelaire and Proust, he turns to the Japanese haiku in his analysis. What is not decisive at this point, is whether Barthes' enthusiasm for Japan perhaps directed him first and foremost to the example of haiku, and whether his interpretation of these poems is really appropriate. Rather, it is decisive that Barthes systematically considers how the weather can be expressed poetically in a way that is neither tied to climatic patterns nor mimetic at all. Barthes is concerned with an indirect means of presentation, in which language transcends itself and, in the gesture of referring to its own limits, references the weather itself. Hence, Barthes' argument is not about haikus, but more generally about a particular use of language.

Similar to his own diary entries, in haikus Barthes thinks he can recognize poetic techniques capable of suspending the linguistic system of the climate far more extensively than in French literature (*Préparation* 62-66). The organizational form of the Japanese language already proves favorable for this. The linking of the words here is more additive than in western languages, so that flow and openness characterize the sequences. But also the brevity and tripartite structure of the haiku is conducive to such poetics: The print layout is characterized by the blank white space of the page. In the midst of emptiness, therefore, the space between the lines, which separates but also connects them, shines more brightly. The lines, in contrast, recede. The limited length also means a reduction to the essential. This creates the impression, the lines after and under each other seem to gravitate towards one center, where they almost merge. Viewed from a distance, the verses tend to become a single word, a kind of holophrase (*Préparation* 57). The haiku can therefore be grasped intuitively at a glance. Nevertheless, the haiku never forms a unity, but an open diversity, differentiated in itself. Altogether, one can therefore speak of a denarrativizing disposition of the Japanese haiku (*Préparation* 131). The haiku aims to refer to reality in its diversity and uniqueness. Hence, it has to transcend the obstacles of the linguistic system of climate. For haikus, it is all about capturing those moments when seasons merge into each other or when the weather changes. Barthes therefore analyses their linguistic articulation of these intermediate states of Neither-Nor, for which there are no terms of their own in language. Haikus mark the season exactly and unambiguously—but only to burst this precision open again. The haiku uses the set of expressions provided by the *langue,* but tries to turn it against itself within language. The haiku therefore prefers classificatory terms with as little scope as possible over broad categories in an effort to counteract the tendency of language towards abstraction. A haiku would therefore not speak of a thunderstorm, but would name the dark gray cloud cover, the lightning, the thunder and the streams of rain individually. The use of haiku language aims to strip away any symbolic charge, even interpretations, aiming to approach mere phenomenality. In the end, this procedure strives to leave behind the referentiality of language at all, to merely point deictically to the weather. The aim is overcoming language completely, evoking the weather phenomenon itself in its pure presence with all its singularity and uniqueness (*Préparation* 68 and 86). Even if this goal cannot be fulfilled



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entirely, the haiku seeks to undo the meaning-making of the active syntheses. This performs a gesture that turns against the hermeneutics of everyday life, by going behind the active synthesis back to what is only sensually given in passive-synthetic perception (*Préparation* 94 and 123).

The effort to capture phenomenal impressions in their uniqueness goes hand in hand with the attempt to reproduce their momentariness. The haiku can thereby fully play out its already denarrativizing disposition. The haiku only strings together impressions without causal or logical links between them. It thus works against the inherent aspiration of language to determine regularities. Correspondingly, it leads to the impression that everything happens contingently to the utmost degree and never recurs exactly. This creates a strong authenticating effect. In three lines, the haiku repeatedly begins anew to describe a single impression without capturing it completely. The haiku operates indirectly to circumvent the boundaries of language. The respective uniqueness of the individual impressions occurs through the series of parallelizing descriptions, which differ and thus enter into considerable tension with each other. However, the descriptions do not remain in pure succession, but merge asymptotically into an instantaneous perception through their brevity. The different moments interact in the sense of intensities that reinforce or weaken each other and thereby differentiate each other. Hence, as Barthes puts it, there are "pas de référents dans le haïku […]; on pose seulement des entours (circonstants), mais l'objet s'évapore, s'absorbe dans la circumstance: ce qui l'entoure, le temps d'un éclair" (*Préparation* 90).

The haiku not only pushes the referential function to the limits of language, but also serves the conative function. Its arrangement of the weather has a certain effect on the reader that can be understood as a kind of address. By combining strong referentialization with the destabilization of the reference between word and thing, the haiku guides the reader to the same epistemic openness that Barthes experienced on holiday. This results in the strong affective quality of this poetry. By virtue of its typographical form, it already corresponds to the emptiness of the subject. When a reader engages deeply with a haiku, the poem will not only awaken his or her feeling of being, but change it such that this feeling dances on the narrow border between uncertainty and freedom.

**Conclusion**

In the autumn of 1978, when Barthes gave the parts of his lecture series discussed here, his students complained at the secretariat of the Collège de France that what he was talking about was banal (Samoyault 667). When the lecture notes of *La Préparation du Roman* were published some 25 years later, the main question of interest was whether Barthes really wanted to write the novel referred to in the title or not (O'Meara 163-199). Today, another 15 years later, Barthes' reflections on weather and climate can also be appreciated (only Sheringham has briefly mentioned them so far).

Barthes' considerations were then, as now, untimely. While Barthes' listeners at the Collège de France were perhaps therefore not able to gain great benefit from his lectures, today it is precisely the distance in time that makes his thoughts a stimulating contribution to ongoing debates. In an age of global warming, numerous writers (Fleming, Jankovic; Horn, Schnyder; Hulme, Schneider) have stressed that even if climate were a theoretical construct of averages, which cannot be experienced in itself, climate change can be experienced. The change will not be limited to the increase of weather extremes and increasing temperatures. The consequences will become apparent in everyday routines and the way the majority of people live their lives will change fundamentally. For this reason, these writers advocate an understanding of climate that also covers a life-world understanding. In the life-world, habits function as a kind of correlate to the averages in science. They form the background of the perception of the weather and its changes. This background can only appear in the resistance of its abstraction and generality against the impressions of the unique weather conditions. Therefore, a concept of climate founded in sensory perception inevitably leads to the perception routines of everyday life.

Roland Barthes' considerations can provide important systematic insights into developing such a conception of climate. His analyses offer a meticulous phenomenology, ranging from physical affection by the weather to its influence on mood, sensory perception and, ultimately, reflective cognition. As such, he develops the holistic concept of feelings of being in order to take into account the multiplicity of modes of perception. Based on this concept, it seems almost inevitable that Barthes anticipated in his lecture a thought that Tim Ingold has recently elaborated upon. Ingold (72–78) turns against the splitting and doubling of the atmosphere into a realm in which only weather happens and another realm which is reserved solely for sensations, feelings and moods. In contrast to science and art, the two cannot be separated in everyday life. There is only one atmosphere.

The concept of climate, which Barthes subsequently develops, is based on the accustomed patterns of a place in the annual cycle. Barthes makes a central contribution to understanding the hermeneutics of everyday life. They are founded in their comparison with these narrative patterns, but also have an effect on them. These climatic narratives, however, not only preform the perception of present weather, but also of memory and expectation, and are in many ways associatively linked with other narratives.

Barthes' thoughts also open up new perspectives for literary analysis precisely because he did not develop them with climate change in mind. They provide a view on the variety of ways in which weather and climate are presented in literature. In order to structure this diversity typologically, Barthes' classification of Jakobson's linguistic functions into two polarities, between the referentiality and intrinsic logic of language and, transversely, between different moments of communicative functions, can be further elaborated into a distinction between three modes of literary depiction of weather: *literary meteorology, meteopoetology and meteopoetics* (Büttner, Gamper).



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Literary meteorology describes a mode of weather representation that aims at a strong referentiality. Using aesthetic techniques, these texts attempt to convey the weather in the greatest possible detail, thereby approximating the conditions in their uniqueness. These texts struggle against the climatic preformed language. They use various ways to overcome them. Sometimes they comment on their approach poetologically. Explicitly or implicitly, they relate to scientific methods of weather recording. In contrast, meteopoetological texts orient themselves towards the pole of linguistic autonomy. They strive for independence from predetermined weather conditions. To achieve this, they transcend the climatically preformed language towards an intensification of its own logic. This leads to an increase in the self-referentiality of language up to poetological self-reflection. Although Barthes does not use these two terms, he has already considered these two textual strategies in his discussions. The haiku aspires to literary meteorology, however, meteopoetological moments are not entirely absent there either. For the two categories can never be separated in principle, since an accentuation on the reference does not remove the logic of language, but rather increases the tension to this pole and vice versa. Barthes' lecture reflects in detail on the poetological implications of this tension. In Barthes' interpretation, the haiku itself poetically points to his struggle to create a strong referentiality. It makes this struggle with language within language explicit, but does not reflect it poetologically. This cannot be explained by genre conventions and the brevity of form alone. Moving beyond climatically preformed language, the poetic function emerges in its alliance with the referential. Not only making poeticity more explicit, but also reflecting on it and thus making it thematic would, however, already pull it away from the pole of reference. For reflection would refer to the inherent logic of language. In the interest of a strong referentiality, literary meteorology in its extreme forms therefore refrains from a reflected poetology. Conversely, this also explains why meteopoetology not only tends towards reflection but cannot avoid self-reflexive gestures at all. If the reference of language use to itself is to be further increased beyond its expressiveness, language use itself must become the subject. In this sense, the reflected poetology of meteopoetology proves to be a potentization of the poetic function of language.

Barthes also addresses the communicative dimension of the talk about the weather in two parts of his lecture. He focuses on the functions of climatically preformed language under living conditions, which are today largely independent from climatic conditions. Barthes comments on his small talk with the villagers in Urt and he confesses to the audience his own sensitivity to the weather. In the lecture, Barthes characterizes the small talk about the weather only shortly after interlocutors - the dialogue between strangers, the dialogue between people of different status, the dialogue in the greatest intimacy, where every word is actually superfluous. In his autobiography, however, he describes his morning conversation in the village shop or with the postman in detail. The will to stylize, which is evident at every point in the artistic arrangement of his autobiography, also draws the reader's attention to the poetic moments of this way of speaking, and Barthes

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demonstrates how it works. But then, with an abrupt turn, he breaks the illusionism. With a revealing gesture, he deconstructs small talk as a power relationship in which different habitus find expression. The description immediately fades into mere quotation, while reflection becomes the defining moment of communication. Since the reflective gesture deactivates the poetic moments of small talk, it cannot itself become poetology. But when Barthes interrupts his theoretical discourse and addresses his weather sensitivity, this confession has unmistakably theatrical traits. At the same time, the audience of his lecture is already sensitized to the communicative dimensions of talking about the weather, so that they will immediately recognize the theatricality of the pose and pay special attention to it. Comparable to an artistic autobiography, the performance activates the poetic function. Following on from what was said earlier in the lecture, it is quite obvious that Barthes cannot unquestionably claim for himself the almost clichéd weather sensitivity that is part of the urban habitus. The poetic marking of the cliché as a cliché, however, only distances itself from the statement to the effect that the pose is not very original and expectable, but it does not take anything away from its claim of validity.

Meteopoetics, as this literary technique can be called, simulates the talk about the weather and exposes its communicative dimensions. Through stylization, exaggeration, or contextual marking, as Barthes would say, it accentuates the poetic function of language and not only allows the speech to unfold its effect, but even intensifies it. This makes the communicative effects more explicit. Gestures of reflection, however, rob them of this effect and push themselves in front of it with their own power, which, as Barthes demonstrated, can itself be used as a poetic effect. When reflection becomes the central moment of communication, it is able to reveal the social pragmatics of even poeticized speech, but does not become poetology. The climatically preformed language appears in communicative references dissolved from the climatic conditions. Social alienation generates aesthetic alienation. Through the absence of a reference to the real climate, the language refers back to it.

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# Nichts als Katastrophen?
# Klimawandel als Herausforderung für die utopische Tradition

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## Abstract

Aktuelle klimapolitische Debatten sind von einem apokalyptischen Denken durchdrungen. Auch Bewegungen wie Fridays for Future oder Extinction Rebellion sind davon geprägt—positive Zielsetzungen bleiben dagegen abstrakt, utopische Bilder einer nachhaltigen Gesellschaft stehen nicht im Vordergrund der öffentlichen Auseinandersetzungen. Ich möchte dafür argumentieren, dass eine Vergegenwärtigung und Fortschreibung der Tradition der literarischen Utopie Potentiale für alternative Zukunftskonstruktionen bieten. Ich möchte der Frage nachgehen, wie literarische Utopien Momente eines besseren Lebens in einer vom Klima verwandelten Zukunftswelt aufzeigen können. Dazu werde ich (1.) aktuelle literaturwissenschaftliche Diskussionen zum sogenannten „Cli-fi"-Boom betrachten. Insbesondere die zeitlichen Dimensionen des Klimawandels erweisen sich als eine beachtliche Schwelle für seine Literarisierung. Allerdings, so werde ich (2.) darlegen, gründet gerade die Wandelbarkeit literarischer Utopien auf ihrer Fähigkeit, Zeitlichkeit zu modellieren. Vor diesem Hintergrund werde ich (3.) mit Kim Stanley Robinsons *New York 2140* einen aktuellen Text analysieren, der die utopische Tradition vor dem Hintergrund der aktuellen Debatten um Klimawandel und Anthropozän fortschreibt. Ich werde nachzeichnen, mit welchen Strategien er individuelle, soziale und klimatische Zeitebenen miteinander verknüpft. Abschließend (4.) werde ich kurz diskutieren, weshalb eine kritische Reflexion der zeitgenössischen Dominanz apokalyptischen Denkens für aktuelle klimapolitische Debatten wichtig ist: Die Fixierung auf potentielle Verwüstungen und abstrakte Reduktionsziele birgt die Gefahr, dass die derzeit mobilisierten Kräfte allzu schnell frustriert werden und in eine zynische Haltung umkippen.

*Schlüsselbegriffe:* Cli-Fi, Klimawandel, Utopie, Katastrophismus, Fridays for Future.

## Abstract

Contemporary debates on climate change policy are pervaded by apocalyptical thought. Movements like Fridays for Future or Extinction Rebellion are affected by that as well—positive objectives remain limited to abstract goals; utopian imaginations of a sustainable society are not at the center of public discourses. I argue that a reassessment and updating of the tradition of literary utopias offer potentials for alternative conception of the future. I want to take on the question how literary utopias can shed a light on elements of a better life in a future world altered by changing climates. To this end, I will (1.) look at discussion regarding the so-called "cli-fi"-boom in literary studies. Especially the temporal dimensions of climate change pose a significant threshold for depicting climate change in literary texts. However, as I will (2.) explain, the variability of literary utopias is very much predicated on its ability to model temporalities. Considering this, I will (3.) analyze Kim Stanley Robinson's recent novel *New York 2140* which revisits the utopian tradition in the contexts of contemporary debates about climate change and the anthropocene. I want to show which strategies the text employs in order to weave together individual, social, and climatological temporalities. Finally, I want to discuss (4.) why a critical reflection of currently prevalent apocalyptical thought is important: Fixation on potential devastation and abstract reduction goals runs danger of frustrating recently mobilized forces and of slipping into cynicism.

*Keywords:* Cli-fi, climate change, utopia, catastrophism, Fridays for Future.

**Resumen**

Los debates políticos actuales sobre el clima se caracterizan por la presencia de preceptos apocalípticos. Lo mismo sucede en movimientos como *Fridays for Future* o *Extinction Rebellion*. En cambio, las visiones optimistas siguen siendo de carácter abstracto, y las imágenes utópicas de una sociedad sostenible no ocupan un puesto destacado en el debate público. En este texto se argumenta que actualizar y continuar la tradición de la utopía literaria ofrece un gran potencial a la hora de imaginar construcciones de un futuro alternativo. El texto aborda cómo las utopías literarias pueden presentar alternativas positivistas en un mundo futuro trasformado por el cambio climático. Para ello, en primer lugar abordaré los debates actuales de crítica literaria sobre el boom del género llamado "Cli-fi". Se explora en particular el modo en el que las dimensiones temporales constituyen una barrera notable para su literarización. Además, en un segundo lugar, se muestra la capacidad de modelar la temporalidad que presenta la versatilidad de la utopía literaria. En este contexto se analizará—en tercer lugar—*New York 2140* de Kim Stanley Robinson, texto contemporáneo escrito continuando la tradición utópica frente el trasfondo del debate actual sobre el cambio climático y el Antropoceno. Se describirán las estrategias usadas en la novela para conectar los diferentes niveles de tiempos individuales, sociales y climáticos. Finalmente se discutirá por qué es importante una reflexión crítica sobre el predominio del pensamiento apocalíptico en los debates actuales de política climática: Centrarse en exceso en la posible destrucción y en objetivos abstractos como el de la reducción esconde el peligro de la frustración y de una evolución hacia el cinismo.
*Palabras clave:* Cli-fi, cambio climático, utopía, catastrofismo, Fridays for Future.

„Wir hätten es aufhalten können. Wir hätten es aufhalten müssen.
Nicht in 10 Jahren, nicht in 5 Jahren—sondern jetzt."

Während die Stimme aus dem Off spricht, sieht man, wie eine junge Frau mit Gasmaske durch einen dunklen Wald rennt. Sie blickt hektisch umher, schaut nach einer Bedrohung, die dem Zuschauer verborgen bleibt. Plötzlich entdeckt sie Leichen, zum Teil mit Blut verschmiert. Es folgt, in Form eines Rückblicks, eine Anklage wegen leerer Versprechungen und fahrlässiger Untätigkeit—und zuletzt eine Ansprache der jungen Frau in die Kamera, ein direkt an den Zuschauer gerichteter Aufruf zum Protest. Eingeblendet werden abschließend „24.05.", „Kein Europa ohne uns!" sowie das Logo von Fridays for Future.

In einem knapp zweiminütigen Video forderte die Bewegung im Mai 2019 zu einer länderübergreifenden Demonstration im Vorfeld der Europawahlen auf (*Fridays for Future*). Trotz seiner Kürze ist das Narrativ des Videos eindeutig und aus vielen Filmen, Games und Büchern bestens bekannt: eine Post-Apokalypse, die Geschichte von Überlebenden einer Katastrophe, verbunden mit der Frage, wie es soweit kommen konnte. Damit werden moralische Fragen evoziert und eine politische Konfrontation eingefordert. Der offenkundige Erfolg der Bewegung und die Mobilisierung vieler junger Menschen für die komplexe Materie der Klimapolitik ereignet sich in einem gesellschaftlichen Kontext, dessen Zukunftsbezug negativ besetzt ist:

> Wer heute unter 30 und in Deutschland aufgewachsen ist, hat nie etwas Anderes gehört, als dass die Welt am Abgrund steht, der Klimawandel furchtbare Folgen haben wird, es kaum noch Zeit zum Umsteuern gibt, die Meere verschmutzt und voller Plastik sind und die Tiere aussterben. Passend dazu die bekannte abgegriffene Metaphorik: Es ist „fünf vor zwölf", man hat „keine zweite Erde im Kofferraum", das „Raumschiff Erde hat keinen Notausgang" und „der Mensch" begründet mit seiner Zerstörungswirkung nun sogar ein ganzes Erdzeitalter, „das Anthropozän". (Welzer n.p.)

Das Zeitempfinden dieser Generation ist düster und das liegt keineswegs nur an klimatischen und ökologischen Problemen. Man denke bspw. an den politischen Aufstieg nationalistischer Strömungen, welche den politischen Diskurs so sehr bestimmen, dass der deutsche Bundespräsident in einer Rede über den Zustand der Demokratie eine übermäßige „Lust am Untergang" monierte (dpa 2018). Doch nicht nur im öffentlichen Raum, auch in den eigenen vier Wänden gibt man sich dieser Lust hin: Der „Reiz der Post-Apokalypse" durchdringt seit einigen Jahren die erfolgreichsten Titel der Unterhaltungsindustrie, welche immerzu gesellschaftliche Ängste vor Pandemien, nuklearen Unfällen oder dem Zusammenbruch öffentlicher Infrastrukturen aufgreifen und reproduzieren (Horn 2014, van Loon 2015, Beyer 2018, Kreienbrink 2018). Derartige Diskurse bekräftigen vielfach Gefühle der Fragilität und Verwundbarkeit.

Die Demonstrationen von „Fridays for Future"—oder der weitaus apokalyptischer auftretenden „Extinction Rebellion" (Nowak 2019, Anwar 2019)—kanalisieren diese Gefühle, um ihren Protest zu artikulieren. Ein positives Zukunftsbild, das über spezifische technische Ziele und abstrakte Schlagworte („Ausbau erneuerbarer Energien", „Dekarbonisierung", „Klimaneutralität", usw.) hinausgeht, wird dabei kaum sichtbar (Ataman 2020). Der „apocoholism" des zeitgenössischen Zukunftsdenkens (Heise 29) möchte also durch Warnungen und Schrecken aufrütteln—allerdings stellt sich zunehmend die Frage: Wie ist eine wünschenswerte Zukunft überhaupt noch vollstellbar? Welche kulturellen Ressourcen haben wir, um zu vermeiden, dass sich unser Blick in die Zukunft in Formen des Katastrophismus erschöpft? Ist es nicht gerade in einer utopiefernen Zeit angezeigt, utopische Narrative wiederzuentdecken?

Literarische Texte können Klimawandelszenarien thematisieren und ernst nehmen, ohne dabei apokalyptisch auszufallen. Im Gegenteil bieten sie die Möglichkeit, jene Untergangslust kritisch zu reflektieren und alternative Zukünfte zu skizzieren. Ich möchte dafür argumentieren, dass die Tradition der literarischen Utopie Potentiale für solche alternativen Zukunftskonstruktionen bietet und dies an einem aktuellen Beispiel aufzeigen.[1] Dazu werde ich (1.) aktuelle literaturwissenschaftliche Diskussionen zum literarischen „Cli-fi"-Trend[2] betrachten. Insbesondere die zeitlichen Dimensionen des Klimawandels erweisen sich als beachtliche Schwelle für eine Literarisierung des Themas. Allerdings, so werde ich (2.) darlegen, gründet gerade die Wandelbarkeit literarischer Utopien auf ihrer Fähigkeit, Zeitlichkeit zu modellieren. Vor diesem Hintergrund werde ich (3.) mit Kim Stanley Robinsons *New York 2140* einen Text analysieren, der die utopische Tradition der aktuellen Debatten um Klimawandel und Anthropozän fortschreibt. Ich werde nachzeichnen, mit welchen Strategien er lebenszeitliche, sozialhistorische und klimahistorische Zeitebenen miteinander verknüpft. Abschließend (4.) werde ich kurz diskutieren, weshalb eine kritische

[1] Der vorliegende Text ist ein gekürzter und überarbeiteter Ausschnitt eines Kapitels meiner Dissertation *Utopien in utopiefernen Zeiten* (Herold 2020).

[2] Abgekürzt für „climate change fiction", siehe z. B. Tuhus-Dubrow 2013, Glass 2013, Tonn 2015, Noller 2018, Zähringer 2018. Cli-Fi-Neuerscheinungen diskutiert die *Chicago Review of Books* in ihrer monatlichen Kolumne *Burning Worlds* (Brady).

Reflexion der zeitgenössische Dominanz post-apokalyptischer Narrative für aktuelle klimapolitische Debatten wichtig ist: Anstatt am nicht realisierbaren Ziel festzuhalten, den Klimawandel „aufzuhalten", muss es darum gehen, jenseits von Untergangsphantasien die Spielräume für eine bessere Zukunft in einer vom Klima verwandelten Welt aufzuzeigen.

**Klimawandeldiskurse werden literarisch reflektiert: Das Phänomen „Cli-Fi"**

Literarische Texte verarbeiten stets Elemente von außerliterarischen Diskursen. Dadurch werden Wissenselemente aus gesellschaftlichen Spezialdiskursen—z.B. religiöser, ökonomischer oder eben wissenschaftlicher Art—auch für eine breitere Öffentlichkeit zugänglich.[3] Gemeint ist damit, dass Literatur jene Wissenselemente „auf gattungs-, genre- und einzeltextspezifische Weise" transportiert, indem sie sie bestimmten „Vertextungs- und Erzählstrategien" unterwirft (Ort 184/187). Sie stehen in diesem Sinne in „Traditionen", sie basieren „notwendig auf vergangenen Form- und Wissensbeständen und sind jeweils schon auf ihre zukünftige produktive Um- und Weiterbildung hin ausgerichtet" (Urbich 23). Diesen Zusammenhang möchte ich für den Fall der sogenannten Klimawandelliteratur in aller Kürze erläutern.

Innerhalb des spezialisierten wissenschaftlichen Diskurses entwickeln immer mehr Disziplinen eigene Forschungsperspektiven auf den anthropogenen Klimawandel und dessen weitreichende Auswirkungen, wie insbesondere die Kontroversen um den Begriff des Anthropozäns zeigen.[4] Die Geistes- und Sozialwissenschaften stehen dabei vor der Herausforderung, die Verflechtung von naturwissenschaftlich rekonstruierter Klimageschichte einerseits und sozialer, politischer und ökonomischer Geschichte andererseits theoretisch reflektiert zu durchdringen.[5]

Der anthropogene Klimawandel überschritt schon vor längerer Zeit, angetrieben durch politische und mediale Debatten, den diskursiven Kontext der Wissenschaft und rückte in den Fokus einer breiteren Öffentlichkeit (Weingart et al. 2008). Eine besondere Rolle spielen dabei seine temporalen Aspekte. Denn die Zeitlichkeit des Klimawandels ist nicht nur Gegenstand der Diskussion, sondern Bedingung, unter der diskutiert wird: „[…] climatological time—accessible through and mediated by a range of complex technologies—complicates and disrupts the connections among personal identity, history, and narrative" (Markley 43). Die schiere temporale Ausdehnung klimatischer Prozesse in die Vergangenheit und in die Zukunft droht, die gewohnten Ebenen von individueller Biografie und gesamtgesellschaftlicher Geschichte

[3] Ich gehe hierbei von den Prämissen der Interdiskurstheorie aus, wie sie von Jürgen Link und Ursula Link-Heer etabliert wurde (Link/Link-Heer 1990, Link 2003, Link 2005; zur Einordnung dieser Position in die literaturwissenschaftliche Debatte siehe Bogdal 2007, Gardt 2007, Neumeyer 2013, Dörner/Vogt 2013 sowie Müller/Schmieder 2016).

[4] Ich kann an dieser Stelle nicht genauer auf diese mittlerweile umfangreiche Debatte eingehen (vgl. Horn/Bergthaller 2019). Wenngleich der Begriff „Anthropozän" schon älter ist (Schmieder 2014), hat er seit der Jahrtausendwende insbesondere durch die Schriften des Atmosphärenchemikers Paul J. Crutzen rasant an Prominenz gewonnen (z. B. Crutzen/Stoermer 2000).

[5] Siehe exemplarisch Chakrabarty 2009, Palsson et al. 2013, Lövbrand et al. 2015, Rickards 2015, Latour 2017, Moore 2017, Neckel 2019.



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bedeutungslos erscheinen zu lassen (Clark 2012, Mertens/Craps 2018). Die Zeitlichkeit des Klimawandels ist damit eine unhintergehbare und zugleich komplexe Bedingung für seine literarische Verarbeitung.

Seit der Jahrtausendwende entsteht nichtsdestotrotz eine rasant wachsende Menge an literarischen Texten, in denen Elemente klimawissenschaftlichen Wissens und klimapolitischer Debatten Eingang finden. Dieser Korpus wird zumeist unter dem Label „Cli-Fi" zusammengefasst und kritisch diskutiert.[6] An einem Ende des Spektrums fließt das Wissen um den Klimawandel und seine möglichen Folgen implizit ein, vor allem in die Gestaltung des Settings von Geschichten, die aber hinsichtlich des Plots von anderen Themen getrieben werden.[7] Am anderen Ende gibt es eine Reihe von Romanen, welche die klimawissenschaftliche Forschungsarbeit selbst ins Zentrum stellt und Klimawissen explizit thematisiert.[8]

Für meine Fragestellung entscheidend ist die Einschätzung, dass das Thema des anthropogenen Klimawandels und seiner Auswirkungen tradierte literarische Formen heraus-, wenn nicht gar überfordert: „[…] we have entered a time when the wild has become the norm: if certain literary forms are unable to negotiate these torrents, then they will have failed" (Ghosh 8). In diesem Sinne werden in der Literaturwissenschaft mehrere Schwellen genannt, die eine Integration klimatologischer Debatten in den literarischen Diskurs erschweren: die thematische Privilegierung subjektiver Erfahrung gegenüber materiellen Bedingungen (Trexler 12-13), die Zentrierung realistischer Literatur auf das Handeln und Erleben von Individuen statt Kollektiven (Clode/Stasiak 20, Ghosh 127) und die Einordnung dieses Handelns und Erlebens menschlicher Subjekte in eine relativ klar begrenzte historische Epoche (Clark 158, Ghosh 59).[9] Können nun literarische Utopien den Klimawandel und dessen Zeitlichkeit überhaupt angemessen aufgreifen?

## Kann es so etwas wie „Klima-Utopien" geben? Zur Wandelbarkeit literarischer Utopien

Im Gegensatz zur Ökologie-Debatte der 1970er Jahre steht aktuell nicht nur die Frage im Raum, wie positiv besetzte Zukunftsentwürfe angesichts der oftmals düsteren

[6] Siehe z.B. Johns-Putra/Trexler 2011, Clode/Stasiak 2014, Trexler 2014, Mehnert 2016, Farzin et al. 2016, Craps/Cronshaw 2018 und Goodbody/Johns-Putra 2019.

[7] Beispiele hierfür sind Romane, die z. B. biotechnologische Entwicklungen, transhumanistische Diskurse oder politische Krisen verarbeiten, wie Michel Houellebecqs *Die Möglichkeit einer Insel* (2005), Omar El Akkads *American War* (2017), Cory Doctorows *Walkaway* (2017) oder Tom Hillenbrands *Hologrammatica* (2018).

[8] Hierzu zählen bspw. Susan Gaines' *Carbon Dreams* (2001), Michael Crichtons *State of Fear* (2004), Kim Stanley Robinsons *Science in the Capital*-Trilogie (2004, 2005, 2007) oder Barbara Kingsolvers *Flight Behavior* (2012). Zur Frage, auf welche Weisen „Wissenschaft" in Cli-Fi-Romane einfließt, siehe Trexler *Anthropocene Fictions*, pp. 30-34.

[9] Ich möchte keineswegs suggerieren, die Darstellung des Klimawandels sei allein in der Literatur problematisch, im Gegenteil: Sie teilt dieses Problem mit den diversen wissenschaftlichen Disziplinen (Nitzke 2016). Auf diese Problematik kann ich hier aber nicht eingehen.

wissenschaftlichen Szenarien Glaubwürdigkeit behaupten können (Garforth).[10] Es geht zusätzlich um das Problem, wie die enormen zeitlichen Dimensionen der Klimageschichte literarisiert werden können. Sind utopische Entwürfe einer vom Klima gewandelten Welt überhaupt denkbar?

Offenkundig stehen zeitgenössische Zukunftsentwürfe vor einer doppelten Herausforderung: Einerseits müssen sie die Gegenwärtigkeit des Klimawandels, seine potentiell verheerenden Folgen und seine enorme zeitliche Ausdehnung im Verhältnis zur menschlichen Geschichte anerkennen. Andererseits sollen sie dennoch im Rahmen dieses Prozesses Spielräume gesellschaftlicher Verbesserungen ausloten. Das Potential literarischer Texte ist darin zu suchen, jenseits der gewohnten Katastrophenszenarien „imaginations of possible, plausible, desirable, and undesirable futures" anzubieten, „thereby helping us reflect not only on the nature of climate change, but on the meaning of human life and social existence in a changing climate" (Milkoreit 177). Die Ressource zur Realisierung dieses Potentials liegt nicht zuletzt in den literarischen Mitteln „to dramatize and negotiate between the short and the long term, creating narrative relationships between past, present, and future" (Mehnert 96).

Ich möchte hier an eine Lesart utopischer Literatur anschließen, der zufolge die Pluralität und Reflexivität von Zeitkonstruktionen zu ihren wesentlichen Bestandteilen gehört.[11] Im Wandel der Strukturen der Zeitutopie zeigt sich nicht nur eine Sensibilität für die sozialen, ökologischen oder technologischen Probleme dieser oder jener Epoche. Sie stellen auch verschiedene Möglichkeiten dar, sich zwischen Vergangenheit und Zukunft zu verorten. Utopische Narrative sind in der Lage, „Zeitlichkeit und das heißt insbesondere Zukünftigkeit [zu] modellieren" (Bühler 297). Jede literarische Utopie entsteht im Spannungsfeld zwischen der Beobachtung gesellschaftlicher Tendenzen und der Beobachtung der Möglichkeiten utopischen Erzählens selbst. Die Frage *Wie ist Zukunft überhaupt erzählbar?* schwingt daher in jeder Zeitutopie mit.

Mit Kim Stanley Robinsons *New York 2140* (2017) werde ich mich im Folgenden einem Text zuwenden, der versucht, in einer vom Klima verwandelten Welt Momente eines besseren Lebens auszumachen. Ich werde zeigen, mit welchen literarischen Mitteln er die Geschichte von menschlichen Subjekten und Kollektiven mit dem Wandel des globalen Klimas verknüpft. In der Analyse dieser Zeitebenen orientiere ich mich an Arbeiten von Timothy Clark und Robert Markley: Clark unterscheidet zwischen „personal scale", „historical period" und „[scale] of the whole earth" und erörtert die narrativen Schwierigkeiten eines Wechsels zwischen diesen Ebenen (157-158). Markley spricht in ähnlicher Weise von „embodied time, historical time, and climatological time" als wechselseitig konstitutive und zugleich wandelbare Formen kultureller Zeitvorstellung (45). Ich lehne meine Textanalyse an diese Unterscheidungen an.

[10] Diverse „kritische Utopien" jener Zeit – u.a. Ursula Le Guins *The Dispossessed* (1974), Ernest Callenbachs *Ecotopia* (1975) oder Marge Piercys *Woman on the Edge of Time* (1976)—stellen bedeutsame Versuche einer Beantwortung dieser Frage dar (ausführlich dazu Moylan 1986).
[11] Siehe z. B. Geoghegan 1992, Hölscher 2016, Voßkamp 2016, Hagel 2016, Herold 2018.

## Manhattan als Super-Venedig: Zur utopischen Verflechtung von Klima- und Gesellschaftsgeschichte in *New York 2140*

Robinson bietet in *New York 2140* das ausführliche Porträt einer Welt, die von den Folgen des Klimawandels geprägt ist. Der klimatologische Ankerpunkt dieses Zukunftsentwurfs ist die Veränderung von Küstenlinien infolge des Meeresspiegelanstiegs, welcher eine Metropole wie New York massiv umgestaltet:

> Fifty-feet-higher sea level means a much bigger bay, more tidally confused [...] Brooklyn and Queens and the South Bronx all shallow seas [...] lower Manhattan is indeed much lower than upper Manhattan, like about fifty vertical feet on average. And that has made all the difference. The floods inundated New York harbor and every other coastal city around the world, mainly in two big surges shat shoved the ocean up fifty feet and in that flooding lower Manhattan went under, and upper Manhattan did not. (Robinson 33-34)

*New York 2140* ist Robinsons zweiter „Cli-Fi"-Roman.[12] Dessen komplexer Plot wird in acht Teilen entfaltet, die jeweils aus acht bis neun Unterkapiteln bestehen. Jedes dieser Unterkapitel erzählt die dargestellten Ereignisse aus der Perspektive einer oder zweier Figuren: Zunächst von Jeff und Mutt, zwei Programmierern, die für einen Hedgefonds gearbeitet haben und nach einem Streit über dubiose Geschäfte entlassen wurden. Sie versuchen die Börse in Chicago[13] zu hacken, um eine gigantische Umverteilung von Geldmitteln zu erreichen. Sie fliegen auf und werden entführt. Bemerkt wird ihr Verschwinden von Charlotte, Sozialarbeiterin und langjährige Leiterin des Metropolitan Life Towers, in dem die beiden gewohnt haben. Sie und die Bewohner des „Met"—wie es in Kurzform genannt wird—haben sich als Genossenschaft organisiert und sehen sich aktuell mit einem Kaufangebot konfrontiert, wobei der Käufer selbst unbekannt bleibt. Charlotte steht von Anfang an im Austausch mit Inspector Gen vom NYPD. Sie hinterfragt bei ihren Untersuchungen zum Verschwinden von Jeff und Mutt zunehmend, wie die zunächst getrennt erscheinenden Ereignisse des Verschwindens der Programmierer und des undurchsichtigen Kaufangebots zusammenhängen könnten. Der Verdacht eines Zusammenhangs wird genährt durch Beschädigungen in den unteren Etagen des Gebäudes, die der Hausverwalter Vlade entdeckt. Er und Charlotte vermuten darin Sabotageakte, die den Druck auf die Mitgliederversammlung des Met erhöhen sollen, einem Verkauf zuzustimmen.

Die Dynamik des Immobilienmarkts, auf dem auch das Met gehandelt wird, erschließt sich durch die Arbeit des Bankers Franklin, der den „Intertidal Property Pricing Index" (IPPI) entwickelt hat. Durch den Index werden weltweit Spekulationen auf die Wertentwicklung von Immobilien möglich, die entlang von Küsten liegen und durch den Gezeitenwechsel partiell unter Wasser stehen. Franklin ist gelegentlich mit

[12] Mit der sogenannten *Science in the Capital*-Trilogie (2004, 2005, 2007) hat Robinson bereits einen viel besprochenen Titel zum „Cli-Fi"-Trend beigetragen (siehe Johns-Putra 2010, Trexler 2014, Mehnert 2016, Garforth 2017). Seine Werke durchzieht generell ein utopischer Impetus: So hat er z.B. mit *Pacific Edge* (1990) die ökotopische Tradition der 70er und 80er Jahre fortgeschrieben (Garforth 78-95). Sein bekanntestes Werk, die *Mars*-Trilogie (1992, 1993, 1996), ist dem Science-Fiction-Genre zuzuordnen, verarbeitet aber ebenfalls utopische Motive (Jameson 394-416).

[13] Der Financial District New Yorks, inklusive der Wallstreet, befindet sich in Lower Manhattan, das in Robinsons Szenario unter Wasser steht.

seinem Schnellboot in den überschwemmten Boroughs unterwegs, um den Zustand der Gebäude mit eigenen Augen zu sehen. Hinzukommt Amelia, wie alle anderen ebenfalls Bewohnerin des Met, die mit ihrem Luftschiff *Assisted Migration* durch die Welt reist, um bedrohte Tierarten umzusiedeln, was über ihre eigene Online-Show öffentlichkeitswirksam inszeniert wird. Dieses polyperspektivische Arrangement geht mit einigen narrativen Variationen einher: Die Mehrzahl der Unterkapitel ist aus einer Dritte-Personen-Perspektive fokalisiert, während Franklins Geschichte aus der Ich-Perspektive erzählt wird. Die Unterkapitel zu Jeff und Mutt sind in Dialogform gehalten.

Wie werden nun individuelle, soziale und klimatische Entwicklungen aufeinander bezogen? Zur Beantwortung dieser Frage ist neben dem Metropolitan Life Tower und dem IPPI, auf welche ich noch ausführlicher eingehe, zunächst eine weitere Erzählstimme entscheidend, nämlich die des namenlos bleibenden „citizen". Seine Unterkapitel bieten eine Art Metaperspektive auf die anderen Erzählstränge, nehmen also eine Sonderrolle in der figurengebundenen Narration ein. Dieser Bürger liefert einerseits sehr viel Hintergrundwissen zur Entwicklung des Klimas und zur Sozialgeschichte New Yorks, andererseits wird seine genaue Identität und historische Situiertheit im Unklaren gelassen.[14] Zusätzlich kommentiert er immer wieder Erzähltes und auch Erzählweise:

> Sail ahead a page or two to resume voyeuring the sordidities of the puny primates crawling or paddling around this great bay. If you're okay pondering the big picture, the ground truth, read on. (32)
> Enough with the I told you sos! Back to our doughty heroes and heroines! (145)
> And hopefully the concept of ease of representation will have impinged on the reader's consciousness to the point of reminding you that this focus on New York is not to say that it was the only place that mattered in the year 2142, but only to say that it was like all the cities around the world, and interesting as such, as a type, as well as for its peculiarities as an archipelago in an estuary debouching into a bight, featuring a lot of very tall buildings. (495)

Der Tonfall dieses Experten in *New York 2140* ist mal überaus belehrend, mal reichlich sarkastisch. Die Vermittlung der historischen Kontexte wird mit einer sehr deutlichen Kritik an jener derzeit ubiquitären Untergangslust verbunden. So schildert jener „citizen" rückblickend, wie Teile New Yorks und anderer Küstenmetropolen in zwei großen Flutkatastrophen verwüstet wurden. In diesen Rekonstruktionen unterbricht er sich gelegentlich selbst:

> And so the First Pulse and Second Pulse, each a complete psychodrama decade, a meltdown in history, a breakdown of society, a refugee nightmare, an eco-catastrophe, the planet gone collectively nuts. The Anthropocide, the Hydrocatastrophe, the Georevolution. [...] but we won't go there now, that's pessimistic boo-hooing and giving-upness, more suitable for the melodramas describing individual fates in the watery decades than this grandly sweeping overview. (34)

Die Vermeidung einer nüchtern-sachlichen Vermittlung lässt sich auch als Antizipation eines bestimmten Rezeptionskontexts deuten. Der implizite Leser wird vorgestellt als jemand, der zum Verständnis der Geschichte die Erörterung bestimmter

[14] Das gilt auch hinsichtlich des Geschlechts. Ich folge mit der männlichen Form der 2018 erschienenen deutschen Übersetzung des Romans von Jakob Schmidt.

klimatologischer Zusammenhänge benötigt, dem aber grundlegende Aspekte wohl mit einer gewissen Wahrscheinlichkeit bereits bekannt sind—so bekannt, dass eine erneute Erörterung Überdruss erzeugen würde. *New York 2140* präsentiert sich in solchen Passagen als ein Klimawandelroman, der auf fast zwei Jahrzehnte „Cli-Fi"-Boom, Anthropozän-Debatte und wachsenden Katastrophismus folgt:

> Paleoclimatologists looked at the modern situation and saw CO2 levels screaming up from 280 to 450 parts per million in less than three hundred years, faster than had ever happened in the Earth's entire previous five billion years (can we say "Anthropocene", class?) […] They published their papers, and shouted and waved their arms, and a few canny and deeply thoughtful sci-fi writers wrote up lurid accounts of such an eventuality […]. (140)

Diese spezifische Tonalität macht die sachlichen Erörterungen aber nicht weniger gehaltvoll. Sie reichen von der geologischen Entstehung der New Yorker Bucht (32) über die Ursachen des „First Pulse" und „Second Pulse" (141-145) hin zu den nachfolgenden technologischen Bemühungen um eine „rapid decarbonization" und deren Grenzen (378-381). Dabei wird auch die Trägheit des Klimasystems in Rechnung gestellt, sodass die Geschichte moderner Treibhausgasemissionen weit in die Zukunft ragt: „The global warming initiated before the First Pulse was baked in by then and could not be stopped by anything the postpulse people could do" (139). Diese künftigen Kapitel der Klimageschichte folgen zudem keiner linearen Entwicklungslogik, sondern eher dem Modus einer Eskalation: „Rates of change themselves change" heißt es mit Blick auf den Verlauf des Meeresspiegelanstiegs (143).

Diese anspruchsvolle Rekonstruktion der zeitlichen Dynamik des Klimawandels wird mit einer überraschend starken sozialen Kontinuität kontrastiert. Das New York des 22. Jahrhunderts ist immer noch Teil der USA, deren politisches System ebenso unverändert ist wie ihre kapitalistische Wirtschaftsweise. Der Zusammenhang zwischen Klima- und Wirtschaftsgeschichte wird dadurch als Krisengeschichte des Kapitalismus erzählbar: Selbst nach den Verwüstungen der beiden großen Flutwellen hat sich die kapitalistische Wirtschaft erholt. Der durchlaufene Krisenzyklus wird dabei als Wiederkehr der Finanzkrise von 2008 vorgestellt, das heißt der erneut einbrechende Bankensektor wird immer wieder durch staatliche „bailouts" gerettet (207).

Diese politische Ökonomie schlägt sich auch im Umgang mit den überfluteten Gebieten nieder. Investitionen werden aus den bedrohten oder zerstörten Küstenstädten abgezogen und in die unversehrten Metropolen innerhalb des Landes verlegt, wie z. B. Denver (welches auch die Hauptstadt geworden ist). Das „refugee capital" zog sich—nicht nur in den USA, sondern weltweit—ins Landesinnere zurück und überlies die beschädigten Küsten sich selbst. Die Auswirkungen des Klimawandels werden aber nicht nur zum Faktor im „centuries-long wrestling match between state and capital" (207). Sie werden vom Banker Franklin zudem als ein Fall von „creative destruction" bezeichnet (118, 144). Der Kapitalismus, so wird suggeriert, überlebt also nicht trotz, sondern wegen der Flutkatastrophen.

Die Zerstörungen eröffnen zugleich einen alternativen Zusammenhang von sozialer und klimatischer Geschichte, denn die Überreste der Küstenstädte verwandelten sich zu lokalen Experimentierfeldern des Zusammenlebens:

> The narrow but worldwide strip of wreckage […] was dangerous and unhealthy, but there was some infrastructure left standing, and one immediate option was to live in that wreckage. […]
>
> Hegemony had drowned, so in the years after the flooding there was a proliferation of cooperatives, neighborhood associations, communes, squats, barter, alternative currencies, gift economies, solar usufruct, fishing village cultures, mondragons, unions, Davy's locker freemasonries, anarchist blather, and submarine technoculture, including aeration and aquafarming. (209)

Die Neuordnung in den überschwemmten Stadtteilen New Yorks ist dezidiert von Kooperation und Enthierarchisierung geprägt. Der Zusammenbruch moderner Strukturen wird in *New York 2140* zum Anlass der lokalen Erprobung von Organisationsformen, die zu einem großen Teil in einer sozialutopischen und ökotopischen Tradition stehen.

Die verbliebene Infrastruktur, vor allem die Gebäude, sind eine zentrale Bedingung für diese Experimente. Der Metropolitan Life Tower erweist sich in diesem Sinne als Knotenpunkt sämtlicher Handlungsstränge und Zeitebenen. Nicht nur leben dort alle Figuren, aus deren jeweiliger Perspektive erzählt wird.[15] Er ist zugleich Symbol des von den Fluten verwandelten Lower Manhattan: Das 1909 erbaute Gebäude ist dem Markusturm in Venedig nachempfunden, wie der Historiker-Bürger zu berichten weiß, weswegen der überschwemmte Stadtteil sich allmählich einen Namen als „SuperVenice" macht (77). Das Gebäude befindet sich im Besitz seiner Bewohner, ist also genossenschaftlich organisiert. Es hat ein Bootshaus und diverse Gemeinschaftsräume. Hinzukommen Farmen in bestimmten Etagen, die dem Anbau von Obst und Gemüse dienen. Der Dünger für die Farmen wird durch die Aufbereitung von Abwässern hergestellt (52). Aber auch das Alltagsleben ist auf besondere Weise neugeordnet: So essen die hunderten Bewohner des Met nicht in ihren Wohnungen, sondern gemeinsam in der „dining hall" (43). Das Hochhaus in Manhattan erscheint daher mitunter wie ein in die Vertikale verlegtes Ökodorf. Robinsons Darstellung schließt dabei auch an zeitgenössische utopische Praktiken wie Co-Housing oder eben Genossenschaften an.[16]

Das alles hat allerdings technische Voraussetzungen. Das Fortbestehen der Intertidal-Immobilien wird bspw. durch ein „diamond sheeting" gesichert, das die vom Wasser umschlossenen Gebäudeteile vor Korrosion schützt. Weitere materialwissenschaftliche Innovationen haben es ermöglicht, die Hochhäuser der gesamten Gegend über „skybridges" miteinander zu verbinden. Elektrizität wird über Photovoltaik-Anlagen an der Fassade erzeugt. Sowohl bei Energie- als auch der Nahrungsversorgung ist das Ziel, einen immer höheren Grad der Suffizienz zu erreichen. So ist Robinsons Zukunftsentwurf von einem gewissen Technikoptimismus durchzogen, der schon seine *Science-in-the-Capital*-Trilogie kennzeichnete.[17] Weitere

[15] Wenn nicht von Anfang an, dann doch im Laufe der Geschichte, wie im Falle von Stefan, Roberto und Hexter. Die Ausnahme ist natürlich der namenlose Bürger, dessen Situierung unklar bleibt.

[16] Zu Tradition und Praxis solcher „intentional communities" siehe Sargisson 2012.

[17] Beide Klimawandel-Werke können, trotz unterschiedlicher zugrundeliegender Klimaszenarien, als komplementär angesehen werden: Die Trilogie „uses the trope of the bureaucratic agency to provide a new mode of utopian action in the face of climate change" und beschreibt detailliert „the creation of a composite political entity with sufficient agency to redress climate change" (Trexler 122). Genau dieser



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technoutopische Visionen liegen in der Existenz von ballongetragenen „skyvillages" und vor der Küste treibenden „townships", die so unabhängig sind, dass ihre Bewohner über Jahre nicht an Land gehen müssen (233, 361, 379, 418). Da beides aber eher *en passant* geschildert wird und für den Plot keine große Rolle spielt, konzentriert sich der utopische Gehalt von *New York 2140* in der Art und Weise, wie das Met sozial organisiert und technisch konstruiert ist.

Das Met ist Teil der „Lower Manhattan Mutual Aid Society", einem Dachverband der lokalen Genossenschaften (51). Diese Verbände tragen wesentlich zur Aufwertung der „intertidals" bei, also jener Gebäude, die durch ihre Lage dem Wechsel von Ebbe und Flut ausgesetzt sind:

> The mutual aid societies were making something interesting, the so-called SuperVenice, fashionably hip, artistic, sexy, a new urban legend. Some people were happy to live on the water if it was conceptualized as Venetian, enduring the mold and hassle to live in a work of art. I like it myself. (280)

Dieses Bekenntnis stammt von Franklin, dessen IPPI die Wertentwicklung der Intertidals erfasst. Was abstrakt als Verflechtung von radikalem Klimawandel mit ungebrochener Kapitalismusgeschichte zu beschreiben ist, konkretisiert sich auf lokaler Ebene als allzu bekannter Gentrifizierungsprozess, der bei den Bewohnern der Intertidals auf Widerstand stößt (273). Nach den Fluten wurden die Viertel an den Küsten zunächst sich selbst überlassen und dann im Zuge der lokalen Aufwertungsprozesse allmählich als Spekulationsobjekte wiederentdeckt. Es geht im Kern um eine Wette auf den künftigen Meeresspiegelanstieg und dessen potentielle Auswirkungen auf die Küstengebiete (18). Es wird darauf spekuliert, dass die Intertidals für absehbare Zeit als handelbare Objekte auf dem Immobilienmarkt existieren und nicht in signifikanter Zahl von einer weiteren Flut oder durch die stete Einwirkung der Gezeiten vernichtet werden (122). Es kommen weitere Faktoren hinzu:

> […] an evaluation of improvements in intertidal construction techniques; an evaluation of the speed at which the existing stock was melting; a "change in extreme weather violence" factor derived from NOAA data; currency exchange rates; a rating of the legal status of the intertidal; and an amalgam of consumer confidence indexes, crucial here as everywhere in the economy. (121)

Der IPPI leistet also eine enorme Verdichtung unterschiedlicher Zeitlichkeiten, „from the nano-seconds of high-frequency trading to the geological epochs of sea level rise, chopped into intervals of seconds, hours, days, weeks, months, quarters, and years" (18). Robinsons Roman erhält durch diese kreative Verknüpfung von wirtschaftlicher und klimatischer Dynamik auch einen ironischen Unterton: Wie erwähnt wird der Verlauf der Finanzkrise von 2008—Bankrott privater Banken, staatlicher Bailout, Austeritätspolitik—immer wieder als Modell für spätere Krisen thematisiert. Eine zentrale Pointe des Romans besteht also darin, vor dem Hintergrund der historischen Erfahrung des 2008 zusammengebrochenen Häusermarkts den Leser in eine

„adaptionist utopianism" (Garforth 120) wird für die Handlung in *New York 2140* vorausgesetzt, wenn bspw. rückblickend die weltweiten staatlichen Programme zur Dekarbonisierung nach der ersten Flutkatastrophe beschrieben werden.

Zukunftswelt zu führen, in der sich ein Markt für zusammenbrechende Häuser formiert hat, der noch immer denselben ökonomischen Praktiken folgt.

Durch dieses Arrangement wird ein Gefühl von Ungleichzeitigkeit erzeugt. Die Welt hat sich einerseits stark verändert und ist andererseits mit der des Lesers nahezu identisch. Denn in sozialer Hinsicht wird geradezu ein „Ende der Geschichte" à la Fukuyama inszeniert: Liberal-repräsentative Demokratie und kapitalistische Marktwirtschaft bestehen unberührt von klimatischen Verwüstungen und technologischen Innovationen fort. Vor dem Hintergrund dieses Kontrasts durchzieht den Roman eine mal implizite, mal explizite Aushandlung darüber, wie Kontingenz in die Sozialgeschichte eingeführt werden kann. Eröffnet wird diese Frage durch die Schilderungen von zwei Alternativen: Einerseits der Versuch von Jeff und Mutt durch gezielte Hacks das globale Finanzsystem zu verändern, andererseits durch die alternativen Wirtschafts- und Lebenspraktiken der Bewohner im Met. Handelt es sich bei Jeffs und Mutts Intervention um einen isolierten Akt, der auf die globale Ebene zielt, bleiben die kollektiven Anstrengungen des Met lokal begrenzt. Der Verlauf der weiteren Handlung lässt sich als Plädoyer deuten, mehr kollektives Handeln in Richtung globaler Veränderungen anzustreben. *New York 2140* greift also verschiedene sozialutopische Ansätze auf und reflektiert deren Erfolgschancen.

Charlotte, die die Strukturen des Met aufgebaut und zu einem Vorbildprojekt gemacht hat, vollzieht im Laufe der Zeit eine exemplarische politische Wendung: Sie tritt als Kandidatin für die Kongresswahlen an, mit einem radikalen Programm zur Verstaatlichung von Banken im Falle einer weiteren Krise, damit eine erneute Wiederholung des Krisenschemas von 2008 durchbrochen wird. Sie spricht mit ihrem Ex-Mann Larry, dem Chef der nationalen Notenbank, über die drohende Übernahme des Met durch einen unbekannten Investor und bekennt: „I realized that it can't be fought by any one building or any aid association. It's a global problem. So if there's to be any chance of fighting it, it's got be at the macro level" (435).

Die Praktiken lokaler „intentional communities" können nur von begrenzter Wirkung sein. Es steht aber ebenfalls in Frage, ob der Weg über das repräsentative politische System effektiver ist. So diskutieren die entführten Hacker Mutt und Jeff, eingesperrt in einen Container an einem unbekannten Ort, das Scheitern ihres Plans und haben zugleich Zweifel hinsichtlich der Aussichten, über Wahlen tiefgreifende Veränderungen herbeizuführen (295). Diese Reflexionen zur Begrenztheit utopischer Praxis und politischer Institutionen werden auch fortwährend auf der Metaebene des Historiker-Bürgers vollzogen, u.a. mit abschätzigen Kommentaren zum „bioregionalism" und zum „march of progress" versehen, hinter denen sich doch nichts anderes verberge als die immergleiche Dynamik der Kapitalakkumulation (205).

Parallel und teilweise in Ergänzung zum Ringen der Figuren um ihre historischen Spielräume wird auf der Metaebene zudem eine Auseinandersetzung über die Gestaltbarkeit von Geschichte geführt. Diese beginnt mit Volten gegen das bekannte „History is bunk"-Diktum Henry Fords, dem entgegenhalten wird: „History is humankind trying to get a grip" (81, 145). Da der Roman an diesem frühen Punkt noch stark von Expositionen geprägt ist, die in die vom Klima verwandelte Welt einführen, liegt es

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zunächst nahe, dieses Motto auf den Umgang der Menschheit mit den langwierigen und trägen Prozessen des Klimawandels zu beziehen. Später rücken aber die Frustrationen aller Akteure mit den wiederkehrenden Finanzkrisen in den Vordergrund und die Wiedergewinnung von sozialer Handlungsmacht wird zum zentralen Thema. Robinsons Roman lässt sich daher nicht nur der literarischen Tradition der Utopie zurechnen, sondern transportiert auch ein spezifisches Utopieverständnis: Eine utopische Perspektive im Angesicht des Klimawandels zu entwickeln, kann nicht bedeuten, eine Gesellschaft vorzustellen, die durch eine geschlossene soziale Neuordnung perfekt an die vom Klima verwandelte Welt angepasst ist. Stattdessen präsentiert *New York 2140* ein „utopia in the making".[18] Die Spannung zwischen individuellen und kollektiven Anstrengungen zur stetigen Verbesserung der sozialen, technologischen und ökologischen Bedingungen menschlichen Zusammenlebens wird in den einzelnen Handlungssträngen erkundet.

Der gesuchte kollektive Akt zur Erreichung globaler Veränderungen ist ein „financial general strike", den Charlotte und Franklin zunächst erdenken (347-348). Kommt eine neue Krise, die darauf hinausläuft, dass die öffentliche Hand erneut für die privaten Verluste aufkommen muss, ohne dass daraus Konsequenzen für den privaten Sektor erwachsen, sollen die Bürger u. a. ihre Rechnungen nicht mehr bezahlen und ihre fälligen Kreditraten nicht begleichen. Konkret initiiert wird der Streik dann von Amelia: Nach einer Sturmflut mit massiven Zerstörungen, in denen Vlade die Vorboten eines „third pulse" erkennt (465, 472), bricht der IPPI ein, es kommt zu einer Vertrauenskrise im Finanzsektor. Über ihre Online-Show ruft Amelia spontan zum Zahlungsstreik auf. Dieser findet tatsächlich statt und erzwingt die vorübergehende Verstaatlichung der Banken, die so genötigt sind, ihre Rettung durch die öffentliche Hand durch Gewinnbeteiligungen des Staates abzugelten. Hinzukommen neue Steuern und Regulierungen, die im neugewählten Kongress verabschiedet werden, sodass die verschiedenen politischen Handlungsebenen ineinandergreifen, die vorher in ihrer jeweiligen begrenzten Wirkungsweise dargestellt wurden.

Individuelle und kollektive, lokale und globale Anstrengungen stehen in Spannung zueinander, können aber einander ergänzen. Das unterstreicht auch eine abschließende Reflexion des „citizen", der die genannte Spannung in einer physikalischen Analogie fasst: „So ultimately history is another particle/wave duality that no one can parse to understand" (603). Die durch den Finanzstreik angestoßenen Veränderungen, wie auch der erwartete „third pulse" machen deutlich, dass die Geschichte weder in sozialer noch klimatischer Hinsicht ein Ende kennt: „History happened. It does not stop happening" (603). Darin besteht die Robinson'sche Utopie.

## Utopien in utopiefernen Zeiten

Robinsons Roman ist ein Versuch, die eingangs skizzierten Schwierigkeiten im Umgang mit den zeitlichen Dimensionen des Klimawandels zu bearbeiten. Für das

[18] Auch in diesem Sinne schreibt der Roman die *Science in the Capital*-Trilogie fort (Mehnert 176-177).

grundsätzliche Problem, wie eine vom Klimawandel geprägte Zukunft angemessen zu literarisieren ist, wählt er die Strategie, das klimageschichtliche Szenario von einer Experten-Stimme darlegen zu lassen. Die entsprechenden Ausführungen sind wiederum mit Verweisen auf lokale Episoden verknüpft. Die Entwicklung der New York Bay und der dort situierten menschlichen Schicksale erhalten so einen exemplarischen Charakter, der *pars pro toto* für die weltweiten sozialen und ökologischen Umbrüche steht. Das ist möglich, weil *New York 2140* den globalen Anstieg des Meeresspiegels ins Zentrum der Aufmerksamkeit rückt.

Damit einher geht die Dezentrierung jener Erzählperspektive, die in der Geschichte literarischer Zeitutopien lange genreprägend war:[19] Anstatt über die vertraute Figur eines träumenden oder zeitreisenden Besuchers in die Zukunftswelt einzuführen und damit die Fokalisierung am Handeln und Erleben eines einzelnen Protagonisten auszurichten, liefert Robinson eine polyperspektivische Narration. Der orientierende Ankerpunkt sind die klima- und stadtgeschichtlichen Ausführungen des Historiker-Bürgers, dessen Stimme aber als eine unter vielen präsentiert wird.[20] Er rekonstruiert die Geschichte des anthropogenen Klimawandels als Kapitalismusgeschichte. Dadurch werden die dargestellten Konflikte der anderen Figuren in diese Kontexte gestellt und individuelle Biografien, gesellschaftlicher Wandel, technologische Anpassung und Klimageschichte miteinander verflochten.

Die technologischen Aspekte spielen eine besondere Rolle für die Verflechtung der diversen Zeitlichkeiten: In Ergänzung zu Markleys und Clarks analytischen Unterscheidung von individueller, sozialer und klimatischer Zeitebene erscheint es sinnvoll, die Lebensdauer technologischer Infrastrukturen—von Gebäuden bis zu Systemen der Energie- und Nahrungsversorgung—als eigene Zeitebene zu betrachten. Nicht nur sind soziale Praktiken in sie eingebettet: Sie bilden einen materiellen Rahmen, der die körperlich begrenzte Lebenszeit der Individuen überschreitet und damit eine dauerhafte Bedingung sozialen Wandels darstellt—freilich ohne die temporale Ausdehnung des Klimawandels irgendwie einzuholen. Wie die soziotechnische Konfiguration des Met in *New York 2140* allerdings zeigt, erlaubt eine genauere Betrachtung dieser Ebene, das Alltagshandeln menschlicher Individuen mit den umfassenden klimatischen Veränderungen zu vermitteln.

[19] Von beispielsweise Louis-Sébastien Merciers *Das Jahr 2440* (1771) über Edward Bellamys *Looking backward: 2000-1887* (1888) bis zu Marge Piercys *Woman on the Edge of Time* (1976).

[20] Diese Figur leistet also eine „systematische Historisierung der Zukunft", wie sie sich mit Bellamys *Looking Backward* in der utopischen Tradition etabliert hat (Hölscher 146). Allerdings wird die Form der Retrospektion erheblich modifiziert: In *Looking backward* liegt die historiografische Autorität bei Dr. Leete, der den Zeitreisenden Julian West bei sich aufnimmt und ihm in langen Dialogen die Zukunftswelt erörtert. Die Position des Rückblicks ist dabei ebenso klar wie die Identität des Rückblickenden (Dr. Leete, Boston, das Jahr 2000). Das wiederum verankert das emphatische lineare Fortschrittsdenken von Bellamys Geschichte, da die retrospektive Narration so auf einen Zielpunkt zulaufen kann. Die Verunklarung der Position, von der aus Robinsons „citizen" spricht, kann als Absage an solch eine teleologische Zeitstruktur gelesen werden: An die Stelle des Repräsentanten eines gesellschaftlichen Zielzustandes tritt ein unspezifischer Beobachter des fortwährenden Ringens der Gesellschaft mit sich selbst und ihrer sich immerzu wandelnden Umwelt. Die zeitliche Komplexität dieses Geschehens verschließt sich jedweder teleologischen Geschichtsphilosophie.

Robinsons Szenario enthält auch katastrophische Ereignisse („First Pulse", „Second Pulse"), aber keine apokalyptische Disruption. Im Gegenteil wird suggeriert, dass die künftigen Verwüstungen der Klimakrise nicht automatisch bekannte politische Institutionen oder kapitalistische Wirtschaftsformen hinwegfegen. Trotz aller klimatischen und technologischen Entwicklungen besteht in Robinsons Zukunftsbild eine zunächst irritierende Kontinuität auf Seiten des Sozialen. Der Kapitalismus erweist sich, zugespitzt formuliert, als noch anpassungsfähiger als die Bewohner von „SuperVenice" und absorbiert die externen Schocks immer wieder.

An dieser Irritation entzündet sich die sozialutopische Dimension des Texts: Um den Wandel der sozialen Verhältnisse zu initiieren, braucht es die kollektive Handlungsfähigkeit menschlicher Akteure. Sie bedienen sich des Ereignisses einer abermaligen Sturmflut, um ihre kollektiven Interessen politisch durchzusetzen, die sie aber zuvor reflektieren und organisieren müssen. Robinsons Ausführungen zeigen dabei einen eigenwilligen Humor, der insbesondere im changierenden Tonfall des Historiker-Bürgers zum Ausdruck kommt, wie auch in der narrativen Verknüpfung von wiederkehrenden Finanz- und Klimakrisen. Robinson wendet sich damit gegen die Untergangslust der Gegenwart. Er stellt einerseits in Aussicht, dass auch eine von klimatischen Verwerfungen geprägte Zukunft nicht ohne Hoffnung auf ein besseres Zusammenleben sein muss. Zugleich fordert er mit Nachdruck zur konkreten Veränderung des alltäglichen Lebens und zum Umbau technischer Infrastrukturen auf.

Wie zu Beginn geschildert, wird in der öffentlichen Diskussion um die derzeitigen Klimaproteste oft konstatiert, dass die verschiedenen Bewegungen in einem gewissen Katastrophismus verhaftet sind. Damit verknüpfen sich Spekulationen über ihre weitere Entwicklung und ihre künftigen Erfolgschancen. Denn das enge Zeitfenster von rund einem Jahrzehnt, welches Fridays for Future als Spielraum für Veränderungen artikuliert, ist einerseits naturwissenschaftlich fundiert und erzeugt akuten politischen Handlungsdruck. Andererseits drängt sich die Frage auf, was aus den mobilisierten politischen Energien wird, wenn in diesem kurzen Zeitraum nicht massive Erfolge erzielt werden (Liessmann 2019, Franzen 2019).

Ohne eine umfassendere und längerfristige Vision von einem künftigen Zusammenleben in einer vom Klima verwandelten Welt, so eine Befürchtung, bleibt die Fixierung auf kaum erreichbare Reduktionsziele enorm anfällig für Frustrationen (Tholl 2019): Rebecca Solnit hat mit dem Begriff des „naïve cynicism" die Gefahr beschrieben, aufgrund hoher sowie vermeintlich eindeutiger und messbarer Zielsetzungen reale Teilerfolge und Kompromisse geringzuschätzen (2016). Insbesondere der Sinn für nicht-technische Möglichkeiten wird damit aus dem politischen Prozess verdrängt, da die Defizite gegenüber quantitativen Wegmarken einen großen Teil der öffentlichen Aufmerksamkeit absorbieren. Die weltweiten Klimaproteste sind daher Anlass für eine ausführlichere Debatte darüber, *welche Zukunft* man nun anstrebt. Umfassendere Zukunftsentwürfe für scheinbar utopieferne Zeiten zu entwickeln, ist eine gesellschaftliche Herausforderung, für deren Bewältigung der literarische Diskurs Anregungen bieten kann.

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# Hatred of the Earth: Climate Change and Post-Planetary Culture

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## Abstract

This text examines the effects of climate change on cultural ideas regarding the colonization of space. More specifically, this paper explores the ways which the looming danger of climate catastrophe has fueled the growth of post-planetary culture: a culture that dreams of a human destiny beyond the Earth. It takes as its object both science fiction texts and non-fiction futurological pronouncements by scientists and entrepreneurs. What emerges from this study is the observation that unlike climate skeptics, post-planetarists believe that climate change is real. Yet like climate skeptics, they subordinate climate action to other priorities, putting the construction of a means of escaping this planet above climate action. But why do these post-planetarists wish to fly? Via a close reading of David Brin's *Earth*, we argue that one of the key characteristics of post-planetary culture is a feeling of hatred and alienation towards the Earth. This hatred is both re-enforced by the ravages of climate change even as it contributes to this destruction by blocking post-planetarists from whole-heartedly engaging in climate action. In order to illustrate an antidote to this pathological cultural reaction to our current crisis, I present a close reading Kim Stanley Robinson's *Aurora*, exploring how this text is both a critique of post-planetarism and a guide to renewing our love for the Earth.

*Keywords*: Post-planetarism, climate change, ecocriticisim, David Brin, Gregory Benford, Kim Stanley Robinson, science fiction.

## Resumen

El texto examina los efectos del cambio climático en ideas culturales en torno a la colonización del espacio. El artículo explora especialmente las formas en que el peligro inminente de una catástrofe climática ha alimentado el crecimiento de una cultura post-planetaria: aquella que sueña con un destino humano más allá de la Tierra. Se centra tanto en textos de ciencia ficción como en proclamaciones futurológicas de no-ficción publicadas por diferentes científicos y emprendedores. Así, se observa que, al contrario que los negacionistas climáticos, los post-planetaristas sí creen en la realidad del cambio climático. No obstante, al igual que los primeros, estos subordinan la protección del clima a otras prioridades anteponiendo, por ejemplo, la construcción de un medio para escapar de este planeta a la protección del clima. Pero, ¿por qué desean volar los post-planetaristas? Profundizando en la obra *Earth* de David Brin, se argumentará que una de las características clave de la cultura post-planetaria consiste en el desarrollo de un sentimiento de odio y alienación hacia la Tierra. Este odio se ve reforzado por las devastaciones del cambio climático, aunque sea este mismo el que contribuye a la destrucción de la Tierra impidiendo a los post-planetaristas comprometerse incondicionalmente con la protección del clima. Como antídoto contra esta reacción cultural patológica hacia nuestra crisis actual, se realiza un análisis de *Aurora* de Kim Stanley Robinson que pretende abordar el texto como una crítica al post-planetarismo y como una guía para renovar nuestro amor hacia la Tierra.

*Palabras clave:* Post-planetarismo, cambio climático, ecocrítica, David Brin, Gregory Benford, Kim Stanley Robinson, ciencia ficción.

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## Introduction

Why attempt to colonize space? The answers have ranged from reinforcing faith in the power of human ingenuity to fueling economic growth and garnering political glory. People have hoped to go to space in the name of adventure, once there they have hoped to find aliens or financial opportunities, have hoped to establish mining colonies or to found starlit resort hotels. Extending the human habitat into space is seen as a means of protecting humankind against all sorts of existential risks, including pandemics, nuclear holocausts and asteroid strikes. Environmental concerns have also driven humans to wish to expand their lifeworld out into space. Resources found in space promise to resolve the planetary-limits problem highlighted by sustainable development advocates. Space will permit the perpetuation of the growth and production-oriented paradigm of capitalism. Yet space colonization is not only seen as providing a lifeboat against the unsustainability of the economy. Increasingly, humans have been imagining the conquest of space as a response to climate change and the threats that it poses to the future of life on this planet. As despair over our collective failure to slow climate change has grown and the risk of a climate-related catastrophe has augmented, so too has flourished a cult and culture of what we call the post-planetary, a culture brought together by a collective will and desire to establish habitable territories beyond the Earth.

The aim of the following essay is to explore the imaginary of this post-planetary culture, with a particular eye to the ways in which its growth has been informed by climate change. Our thesis is that post-planetarism, though it did not start with climate change, is increasingly influenced by it, and thus constitutes a form of climate culture. In the following we draw on both fictional and non-fictional texts. We attend to both the projects and predictions of entrepreneurs and scientists and the work of science fiction writers, with a particular focus on pieces by Gregory Benford, David Brin, and Kim Stanley Robinson.

## Climate Change and Post-Planetary Culture

Space voyages, in sicence fiction as well as in philosophy, were most often imagined as essentially circular. Humankind went out into space only to realize that there was nothing to do but to return to Earth. The astronaut Dick Gordon expressed this viewpoint perfectly: the most important discovery of the space missions was the "Earth."[1] Consequently, Bill Anders' *Earthrise* photo was used to illustrate the environmentalist notion of Earth as fragile and beautiful, a thing to be cared for and protected, an island of life in the vastness of space.

This 'discovery' of the Earth from space was more than purely rhetorical, and the history of space conquest and of our awareness of climate change are deeply entangled with this development. Eric Conway's history of climate science at NASA shows how

[1] These are the words of Astronaut Dick Gordon, as relayed by Marina Benjamin in her *Rocket Dreams* (49).



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little we would understand about climate change and Earth systems science if it were not for data from NASA satellites that view the 'whole Earth'. These eyes in the sky have helped scientists track climate change at a global level, and made them see desertification, weather pattern and sea level shifts, even biodiversity loss.[2] Many of the earliest Cassandras of the climate crisis were space scientists. James Hansen (the first scientist to testify on climate before the senate) was a NASA employee. James Lovelock (who, with Lynne Margulis, developed the Gaia hypothesis) came up with this idea while studying comparative planetology.

Yet if the initial decades of space exploration brought us 'back to Earth', towards the end of the 20th century something began to alter the ways in which people were imagining space. People started to dream about heading back out again, *this time for good*. The data that was streaming back from our satellites was terrifying, and the outlooks foretold by predictive models were even worse. The planet was warming at an alarming rate. Land and sea animals were perishing. Human beings would be displaced by climate change, they would find themselves engaged in climate wars, they would have to confront famines and plagues due to their irresponsible abuse of the climate. Clearly the forms of human existence on Earth were going to have to change. The current economic order, with its addiction to "productivism" (Audier) and its fantasies of unlimited growth, was going to have to be reformed. People were going to have to learn to live within limits, they were going to have to break their carbon addiction. Or perhaps not: perhaps humankind could continue on its growth trajectory regardless of the fact that the planet had metabolic limits. All they needed to become a post-planetary species.

Post-planetary solutions seemed possible because the satellite data confirming the anthropogenic causes of climate change was coming from space. It seemed possible because humans had been living on the ISS continuously for decades, and experiments indicated that space agriculture was possible. Space launch costs were also coming down, and the pursuit of extractive industry in space was a near-term project. A solution to climate change might thus be found in becoming a multi-planetary species, or really a post-planetary species. After all, leaving Earth in response to climate change was not aimed at solving the climate problem. The post-planetary project, to quote Elon Musk, was to "die on Mars", to set off into space, and never look back.[3]

Today there exists a growing population of post-planetary dreamers with the means to possibly fulfill their dream. A provisional list would include the "rocket billionaires" Jeff Bezos, Elon Musk, and Peter Diamandis. High-profile scientists and engineers also make the list, including Stephen Hawking, Freeman Dyson, Gerard O'Neill, Carl Sagan and Robert Zubrin. Many science fiction writers and filmmakers are post-planetarists. Larry Niven, Gregory Benford, David Brin, Daniel Suarez and Christopher Noland all have explicitly supported efforts to realize the post-planetary dream. But post-planetary culture is not just an affair of the elites, it is a pop-cultural phenomenon.

[2] On this see Gabrys.
[3] Quoted from Elien Blue Becque.



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Admittedly, not all post-planetarists are concerned about climate change. But an increasing number of them are.

**A Dirty Truth**

If going to space can easily be justified by curiosity, abandoning the Earth requires more serious reasons, for example, an existential thread. Sir Martin Rees, the English Astronomer Royal and member of the Centre for the Study of Existential Risk at Cambridge University, argues that the current threats confronting humankind include climate change, asteroids and comets striking the Earth, volcanic super-eruptions which would transform the chemistry of the atmosphere, nuclear wars, plagues induced by bio-attacks resultant from either natural or engineered viruses, and malicious AI. Considering these threats, post-planetarists such as Elon Musk believe we stand at a crossroads: either we stay on Earth and "there will be some eventual extinction event," or we "become a space-bearing civilization and a multiplanetary species" (46). Such statements express a wholly reasonable and responsible viewpoint, but it is worth noting that climate change has a quite peculiar status among the threats on Rees' list. Unlike asteroid strikes and volcanic eruptions, climate change is not utterly out of our hands. Yet unlike nuclear holocausts or malignant AI, where the threats lie before us and seem to be in control, the climate change dice have already been cast. We can still respond to climate change, but any response will be difficult. Living sustainably and responsibly is guaranteed to require radical changes in our form of life. Fleeing the planet in response to climate change is radical—but flight will allow humankind to maintain capitalism and its culture of infinite growth. There is clearly something irresponsible and unethical about colonizing space as a response to the degradation of the Earth, particularly when the reason seems expand extractivism into the solar system. It is perhaps for this reason that post-planetarists tend to avoid pointing to climate change as a reason for the "conquest of space". For example, Jeff Bezos, the founder of the rocket company Blue Horizon (and Amazon.com), began a pitch for his project aimed at creating space cities with the insistence that "the Earth is the best planet." He stressed that we need to "work on the here and now" and "get started on the large-scale problems." Yet as listeners soon find out, Bezos' viewpoint is a bit more complicated. Bezos wants humanity to expand out into the cosmos. He claims that if we remain on Earth we will face a future of scarcity and rationing, while if we move out into space the future will be one of economic abundance. He does not address climate change explicitly, yet the specter of climate continually appears between the lines. Bezos claims that his space cities will offer "ideal climates" and "shirt-sleeve environments." He says they will be "Maui on its best day, all year long. No rain, no storm, no earthquakes." His position is, in short, that climates in space cities will be better than the real thing. If we don't save the Earth, we can save the economy and at the same time make these climate utopias a reality. It is difficult to not wonder whether climate change would not be in the interest of Bezos and other investors. After all, the worse the climate on Earth, the more attractive those "ideal" space climates.



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## Selling the Stars

One of the keystones of liberal ideology is the idea that self-interest can bring about collective benefit through the "invisible hand." Like latter day Mandevilles, some post-planetarist writers have employed fictional thought experiments to show how a self-interested and market-driven colonization of space can nevertheless ameliorate the harms done by climate change.

Benford's *The Man Who Sold the Stars* exemplifies this perfectly. Like Heinlein's *The Man Who Sold the Moon*, the hero of *The Man Who Sold the Stars* is an entrepreneur, Harold Mann (a composite of Bezos, Musk and Branson, all of whom are mentioned in the tale). The story recounts Mann's efforts to enrich himself through space mining and only treats climate change as a secondary theme, though Benford's future history of the space economy gives a clear account of how he thinks that this will affect the Earth's climate. The beginning of the book evokes our current catastrophe: "Australia was burning again," "an angry black shroud north of Melbourne cloaked the already parched lands" (loc. 2929). Benford speculates that the solution to these issues will come in the form of geo-engineering, using techniques that are spin-offs of space science.[4] He does not disguise that this is working "imperfectly," but he suggests that climate manipulation will allow humankind to head off a repetition of "the terrible drought of the early 2030's." Benford also draws attention to the positive trade-offs associated with climate change, noting that Russia will benefit from "wide open" sea lanes and clement temperatures. Yet where his text becomes most interesting is how he imagines that the conquest of space will improve climate back on Earth. His first "solution" is rather unconvincing: charitable giving. When he hears about the situation in Australia, Mann makes "a corporate donation" to aid them. Benford's next proposal is more convincing: with industry and wealth creation being moved off-world, the colonization of space will lead to a depopulation of the Earth. Excitement will be off-world. With "fewer of us," the climate will be "punched up" (loc. 3473). This is a convincing solution to the extent that many environmental issues, including climate change, are problems of scale. However, there are plenty of people that still live in Europe and on the East Coast of the United States. For Benford's solution to work, most human beings have to want to leave the Earth behind. *The Man Who Sold the Stars* assumes that the abandonment of the Earth will happen for economic reasons. Yet there are other authors that offer stronger reasons why humanity will leave. One of these is David Brin.

## The Mother that Consumes Other Mothers' Babies

Ursula Heise has read *Earth* as a planetary novel expressing a global perspective on environmental issues. This is undoubtedly accurate to the extent that *Earth* does explore the negative effects of global warming and other environmental problems. We read, for example, about the "three million citizens of the Republic of Bangladesh" who

[4] Current geo-engineering technologies derive from studies in terraforming carried out in the context of colonizing Mars and creating artificial environments in space stations. On this, see Olson and Oberg.

"watched their farms and villages wash away as early monsoons burst their hand-built levees" (loc. 375). Yet, this perspective suggests that *Earth's* villain, Daisy McClennon, is an environmentalist. Indeed, Brin has very little positive to say about environmentalists or environmentalism. *Earth* mocks those who protest a "pollution-free power plant" because it endangers "former wetlands" (loc. 3079). One of his heroes claims that "only people with full stomachs become environmentalists" (loc. 1346). Daisy is such a misanthrope that she gets angry when her daughter Claire resists being sterilized. The best explanation for Brin's conflicted relationship to environmentalism is the fact that *Earth* is not a planetary, but rather a post-planetary novel.

*Earth's* happy ending involves the transcendence of the planet. Humankind discovers technologies which allow it to master and control of quantum gravity. This allows humankind become a multiplanetary species capable of lifting entire cities into orbit. Though Brin does not spell this out in detail, one assumes this transcendence resolves the Earth's environmental problems. As one of Brin's heroes, the scientist Stan Goldman observes, humankind on Earth seems to be headed towards "Malthusian calamity" (loc. 9747), a collapse of the sort predicted by Jared Diamond and *The Limits to Growth*. The planetary options presented in *Earth* are hardly desirable. One possible future, and this is the one actively pursued by Daisy, involves a massive reduction of the human population and a return to low-tech. Another possible future, the one worked towards by Goldman and the other heroes of the book, involves using technology and innovation to leverage back the sustainable limits. As a scientist, however, Goldman understands the impossibility of unlimited growth within a finite system. We can extend ourselves for "one decade, then another and another," but we will eventually attain "a genteel decline to a sort of threadbare equilibrium" (loc. 9758). Such a prognosis hardly rings with optimism.

For a post-planetary future to be desirable, one needs to be willing to give up the Earth. To give up the Earth does not necessarily mean sacrificing it or destroying it in exchange for life off planet, though such comportment may well be entailed in any real efforts to leave Earth behind. Joyfully leaving the Earth simply requires believing that the Earth is not the best place for human life. An extreme form of this is a feeling of hatred or disgust towards the Earth. Such hatred of the Earth, or *misterranism*, is evident throughout Brin's novel. Simply put, Brin appears to see Earth as a violent and unpleasant place. Yet given that most of us don't see it that way, Brin apparently feels that he needs to teach us. He accomplishes this task through his depiction of the education of the budding philosopher Nelson.

Nelson is presumably meant to signify the reader, who alongside Nelson learns the way of the world from the Neo-Darwinian biologist and fictional Nobel Prize winner Jen Wolling. At the start of the book, Nelson has an idealized vision of nature. Like many environmentalists, he believes that the biological world is a place of peace and harmony whose balance and goodness is being poisoned by corrupt human beings and their destructive technologies. Then Brin paints a particularly striking scene to liberate Nelson from this delusion. Nelson is caring for a group of baboons. A low-status female comes towards him, trying to use him as a shield to protect her baby against the

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aggressions of higher-ranking females. Nelson does not think much of this, but soon the higher-ranking females and the leading males begin to menace him. Staring down his attackers, Nelson has a moment of reckoning:

> "Now … take it easy, eh? Peace an' love … uh, nature is harmony, right?" They didn't seem particularly interested in reason, nor in slogans borrowed from the Earth Mother movement. They spread to cut him off. I heard they can be pretty mean in their fights between females … I even saw one kill the baby of another. (loc. 1665)

Thinking through what he is seeing, this spectacle of the sheer brutality of existence, Nelson grabs a stick and beats off his attackers. The argument of the exemplum is clear. Earth is not a peace and love world. To survive, we need to learn that it is not some paradise. It is a world in which mothers kill each other's babies. It is a mother that eats other mothers' babies. Most of what seems charitable and kind is essentially an expression of self-interest: "individuals act in ways that promote the success for their descendants" (loc. 3679). "Much of the "generosity" we see in nature is actually quid pro quo—or "you scratch my back and I'll scratch yours" (loc. 3703). "Interdependence," "was usually a matter of eating one other" (loc. 3769). In the cruel functioning of this world, there is little to love. More to the point, our love is wasted on this world. Survival requires finding technological means to unsentimentally master that which challenges our existence.

Yet does our existence not depend upon this Earth? Should we not care about it and love it anyway? Brin's answer to this question is complicated, though ultimately no. As he has Jen Wolling explain, what matters for survival is only the whole:

> And the whole depends upon diversity. The radicals are right about that. Diversity is the key. But it need not be the same diversity as existed before mankind. Indeed, it cannot be the same. We are in a time of changes. Species will pass away and others take their place, as has happened before. An ecosystem frozen in stone can only become a fossil. We must become smart enough to minimize the damage, and then foster a new diversity, one able to endure in a strange new world. (loc. 2382)

The final line says it all. We need to save the whole, but the whole can endure in a strange new world. With the proper adaptations it can endure in space, or in any case in a world that is utterly unlike the Earth that we know and love. Our survival, then, in no way depends upon protecting the Earth, or on conserving things as they were. It demands that we be open to change, that we desire to change, that we unsentimentally accept that the future may lie elsewhere.

*Earth* is full of evocations of the beauty of this strange new world. This is perhaps most explicit in Brin's attempts to re-signify Anders' *Earthrise*, the iconic image of the blue planet that has historically symbolized planetary environmental consciousness.[5] Consider the following lines, which Brin places in the mouth of a heroine, Theresa:

> As yet, few constellations graced the shuttle's forward windows, and those glittered wanly next to the dazzling Earth, with its white, pinwheel storms and brilliant vistas of brown and blue. Sinuous rivers and fractal, corrugated mountain ranges—even the smokestack trails of freighters crossing sunburned seas—all added up to an ever-changing panorama, as Pleiades rotated out of launch orientation. Of course it was beautiful—only down there could humans live without utter dependence on

[5] On this, see Grevsmühl's extensive history.



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> temperamental machinery. Earth was home, the oasis; that went without saying. Still, Teresa found the planet's nearby glare irksome. Here in low orbit, its dayside brilliance covered half the sky, drowning all but the brightest stars. (loc. 538)

Here the image of the whole Earth is described as "irksome," presented as beautiful and boring. Earth is blocking the view, preventing the gaze from seeing elsewhere. The environmental movement has believed that there is 'nothing' to see elsewhere but vast, empty, lifeless space. But the misterran post-planetarist wants us to abandon this love affair with the Earth, this terranocentrism. Later in the book, Theresa again stares out into space and is rewarded by precisely seeing other life worlds: "It gets cold between the stars. Most of space is desert, dry and empty. But there are, here and there, beads that glitter close to steady, gentle suns. And though these beads are born in fire and swim awash in death, they also shimmer with hope, with life" (loc. 11932). Note the plural. There is not only one planet capable of supporting the whole. There is not only one home for life provided we are willing to take up the challenge. We must give up our sentimental and blinded attachment to Earth and to life as it is, wholly embracing the powers of technology and the ability of life to adapt to radical change, to become other than it is, to become alien.

Of course, Brin's "solution" depends on the presence of a *Deus ex Natura*, of a Gaia become real who aids humankind to discover how to transcend the planet. Brin's Gaia, like the Old Testament God, or like Hobbes' Leviathan, is a sublime and wrathful divinity. Gaia is not a god of love, but of terror. At the end of *Earth* humankind learns not to pollute, because shameless polluters are being ripped "to shreds with sudden deadly force." But despite all of this brutality, the recourse to the magical intervention of a big Other allows for humanity to avoid overly dwelling on questions of responsibility and even agency. The inclusion of Gaia, a transparent hand which weighs the dice of destiny, allows Brin to also ignore the relationship between risk and innovation, validating his claim (voiced by Goldman) that the principle of precaution is dangerous because it makes us "too paralyzed to act at all" (loc. 12155). It also means that his characters don't have to think about the trade-offs involved in getting off the planet, for the planet itself takes care of making their choice to transcend the planet for them. Yet perhaps the deepest reason why Brin requires recourse to a creator and divinity is psychological: the recourse to a creator allows for the naturalization of a form of existence that would otherwise be profoundly alienated.

By alienation, here, we mean not only a becoming alien in the sense of leaving the Earth behind, but a being alienated in the sense of losing an essential connection to the entanglements that make the self a self, a human being a human being.[6] Ignoring this point, and judging the flight from Earth from a clinically logical and purely material point of view, there may be nothing wrong with Brin's post-planetary vision of the future. Assuming that we do develop the required technology, if many of us are willing to uproot ourselves from planet Earth (and presumably to give up many of the physical attributes that make us human), our future will doubtless be brighter, at least as

[6] On alienation as rooted in a severing of relations see Jaeggi.



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measured in terms of material abundance, economic growth, and even in terms of the quantity of life in the cosmos.[7] Yet it may turn out that this abundance of life merely actualizes what Parfit has called the "repugnant conclusion": a future in which there is more life, but in which all of these lives are miserable. In this context, we might attend to Giorgio Agamben's distinction between *bios* and *zoe*, between qualified life and mere life, though here the distinction might be phrased as an opposition between earthling lives and alien lives, between modes of existence adequate to humans and those adequate to post-humans. There are reasons to doubt that we can abandon the Earthling within us. Based on significant empirical evidence, the psychologist and philosopher Glenn Albrecht has recently proposed the notion of "solastalgia" to articulate the pain and suffering felt by people whose land has been altered or destroyed by climate change. Would a future humankind not feel pain after leaving a devastated Earth? Would this not be a trauma? Might human culture not live to regret its choice of unlimited egoism in the cosmos over wise restraint on Earth, especially given that the hatred of the Earth may mean that there is no going back due to trade-offs accepted and justified in the name of planetary expansionism?

**For the Love of the Earth**

Perhaps no one has pushed this line of thought farther than Kim Stanley Robinson. Robinson is an interesting case, since based on the testimony of his early *Mars Trilogy* he is open to the colonization of other planets. What seems to bother him in the current wave of post-plantarism is not the idea of expanding out into space, but rather the motives that are driving this expansion. He is not a misterran and he stands at antipodes to Brin's post-planetarian (and Neo-liberal) idea that all is exchangeable. As Robinson explains in an interview with Asli Kemiksiz and Casper Bruun Jensen: "we co-evolved with Earth and are a planetary expression that needs to fit in with the rest of the biosphere here, […] we have no other choice about that—and this is an important story for science fiction to tell, given there are so many other kinds of science fiction stories saying otherwise" (121). Whatever we might imagine, and however much we might want to believe that we can, should, and will really quit the Earth, Robinson upholds that we are Earthlings.

In the following, we will consider the ways in which his recent writings are speculative anticipations aimed at helping us to adapt our culture to this reality—among other things by responsibly and seriously striving to address climate change—offering us a much more psychologically realistic and powerfully embodied vision of a hopeful future than anything to be found in Brin. The text that best illustrates this line of thought is *Aurora*. This is the story of a generation ship (a long-range space ark of the sort first imagined by Freeman Dyson) full of colonists to the planet Aurora, an Earth-like moon in the Tau Ceti system. The ship is a miniature reproduction of the diversity of Earth, containing twenty-four biomes and a population of around two thousand people. It is a

[7] Jeff Bezos has estimated that the post-planetary population will extend into the "trillions."

work of high-tech systems engineering integrating insights from latest NASA studies into the production of artificial ecosystems.[8] Despite all of the engineering and research that went into the project, the voyage is not a happy one. The first problems appear upon arrival. While Aurora is Earth-like (which is why the voyage was undertaken), it isn't Earth. Nor is it represented as being better because different from our current Earth (this is quite unlike the representation of Mars and other planets elsewhere in Robinson's oeuvre). The problem with Aurora is that in addition to the elements that seemed capable of supporting human life, the planet hosts a lethal prion-like pathogen: the "Alien." Not unlike Ebola and other zoontic diseases, the Alien is a micro-organism with which humans have not co-evolved. Contracting the alien is purely and simply fatal. The presence of the Alien renders Aurora uninhabitable—not unsuitable for life—but unsuitable for Earthlings…or at least for humans. Confronted with this setback, and with the fact that the Alien seems to be found everywhere on the new planet, the inhabitants of the ship begin to think about what to do next. Some voice viewpoints frequent among post-planetarists such as Elon Musk, claiming that they should terraform other planets in the Tau Ceti system. They hold fast to the belief that anything can be exchanged for anything, that even unpropitious looking worlds can be made Earth-like with a bit of effort: "Surely once life got started on a planet, it would change things fast. Bacteria reproduce very quickly in an empty ecological niche" (loc. 2985). Meanwhile others, drawing more cautionary conclusions from their experience on Aurora, recall that the development of a lifeworld suitable for humans on Earth "took a billion years" (loc. 2985).

As these debates rage, yet another problem comes to light. The artificial biosphere of the ship, just like real attempts to engineer a self-contained ecosystem during the *Biosphere 2* project, is breaking down.[9] This failure reminds us that even with the best current engineering know-how we still cannot fully terraform and render inhabitable even rather limited environmental systems. Ecological "imbalances," or what Robinson, echoing Marx and a whole line of Marx-inspired ecological thinking, calls "metabolic rifts" (loc. 2758), are appearing on the ship.[10] Certain things necessary for life are becoming scarce, while other substances are appearing in excess. More troubling than this imbalance is a phenomenon that Robinson calls "devolution." This is the "interrelated process of disaggregation" (loc. 2764), a separation of all of the parts of the "supraorganism" that ends up putting the ship and all of its inhabitants, from bacteria to human beings, at risk. If the quantity of life is not necessarily diminishing, the quality and forms of life that are enjoyed by the members of the expedition are. Some of the crew members—those with the greatest desire to abandon and replace the Earth—refuse to acknowledge this fact, remaining blithely convinced of the effectiveness of

[8] On the recent research in this domain, see Valerie Olson's *Into the Extreme: U.S. Environmental Systems and Politics Beyond the Earth*.
[9] On this experience, see Mark Nelson's stimulating *Pushing our Limits: Insights from Biosphere 2*.
[10] On this, see the excellent work by John Bellamy Foster, *Marx's Ecology*, as well as Andreas Malm's recent work.



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their geo-engineering prowess both with respect to the ship and with regards to other planets:

> "The ship got us this far," Speller went on. "It's a life-support system of proven robustness. It will last for centuries more, if we take care of it, which means mostly staying out of its way. All we have to do is restock the elements we're running low on. All those elements are common in the Tau Ceti system. So there is no cause for despair. We can still find a new home." (loc. 2807)

Like all good advocates of technological prometheanism, Speller refuses to accept the evidence of his project's failure, remaining committed to the idea that it is possible to technologically strong-arm out of us our Earthly dependencies. He has no fear of risk and no ability to learn from cases where theory—for instance the idea that all diversity is good diversity—doesn't work as anticipated. Against all evidence the advocates of abandoning Earth argue that we can't "know anything except by trying it" (loc. 3036), for in their eyes payoff—ultimately the continual technology-paved expansion of humankind, and above all the market—is worth the risk. In the end, however, and after a tight vote, avoiding the risk of collapse, of "zoo devolution. Co-devolution. Sicken and die and go extinct" (loc. 2991), is reckoned more important than forging onward. The explorers head home to Earth, embracing the narrative telos that dominated before a growing obsession with the inevitability of climate change prompted the latest wave of post-planetary dreaming. Robinson's narrative is clearly calculated to suggest the rightness of their decision. On the way home the carefully engineered onboard systems further break down. The birth weights of children and other animals born during the voyage get lower. But it is not just weights that are going down—so too are cognitive capacities. Various new bacteria are discovered, entities having been stimulated in their growth by the static electricity present in the walls of the ship, some of which are literally consuming the ship itself. To top it all off, on the way home the explorers learn that they were not sent off into space on some urgent mission to save humankind, but only to find new lands and resources for interplanetary economic expansion. Their real goal was to save capitalism and its need for infinite materials and infinite growth—not humankind.

Robinson also explores the meta-discursive foundations and logical fallacies that set current voyages—and irresponsible misterran post-planetary projects—up for failure. In a suggestive phrase that shows him to be a careful reader of ecological accounts of language such as David Abram's, Robinson muses that it is perhaps language itself that is to blame for the miscalculations that led to the disaster, an arrogant forgetting that language is made up of gaps and differences, a stupid overlooking of non-exchangeability of words and things. The likeness between Earth and Aurora was based upon "highly questionable analogies" (loc. 3971), a tendency to see things as alike which are in fact different. Confronted with that which is truly alien, Robinson suggests that science is unable to offer assurances, since its categories simply don't apply. For example, the "alien" that killed the settlers on Aurora is something properly unnamable by science, it is compared to a prion, but it isn't, it is compared to a tardigrade, but it is not that either. The weather in Bezos' Maui-like space cities may be clement, but such

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eternal clemency has nothing to do with the weather on Maui, which is what it is due to the very variability of weather. The point here is not that science is fatally flawed. The point is one that should resonate with students of science studies scholars such as Sandra Harding: scientific words have through time and experience been made to refer meaningfully to Earthly things. They are to a certain degree inseparable from the planetary conditions of their emergence. They can be made to refer as metaphors do to other objects or known objects in alien ecosystems, but in doing this referring they are paleonyms, their reassuring meanings fail to fit in unforeseen ways, they become misleading analogies, sources of error and danger as much as fonts of wisdom and orientation. Only a new language built upon a history of experiences with a place—Robinson has previously speculated that Arabic's gestation in the desert might make it suitable for seeding on Mars—can develop into a scientific language. Any other language, and any other approach to alien science, risks condemning itself to endless alienation, an endless failure to recognize where and when its words fail to articulate the relations among things.

But let us return to the tale. As the ship hurtles back towards Earth with all systems failing, it is no longer a symbol of a failed attempt to colonize a new planet, but rather becomes an analogy for life on Earth, a version of Buckminster Fuller's "spaceship Earth." The people are stuck on the ship, they have no other alternative but to head on home, to make do with what they have. Robinson, through his heroine Freya, recognizes that their only course is "maintenance and repair and recycling," just taking care, because the ship is "the house we live in," the only place where they can survive despite its flaws. When the ship returns to Earth at the end of the voyage, however, the readers and the crew breathe a sigh of relief. For the Earth (thankfully) is not a spaceship after all. It is neither a quickly thrown together nor intrinsically flawed and cramped ecosystem that we need to "maintain and repair and recycle" just to keep alive. Or perhaps we do, but the life that we can live on it simply has no comparison with life in a space ship. The Earth that they return to has its flaws, it is anything but a utopia, and it bears the scars of the tough love that humankind has given to the planet—and of the tough love that the planet has given back to humankind. It is also a terraformed Earth, a repaired Earth, a maintained Earth. Yet Robinson approaches the use of technology, and indeed the entire role of technology within the post-planetary project, in a way that wholly differs from Brin. His technologists do not wish to beat back the Earth as Brin's Nelson does the attacking baboons. Robinson does not confound technology driven change and progress. Robinson has a very specific attitude towards technology. He seeks out technologies that permit us to resonate with the Earth, to amplify it, to harmonize with it, and this is ultimately his view on post-planetary expansion as well: we will become post-planetary when this is the common and concerted expression of ourselves and the Earth.

Yet the way to accomplish this is not via hatred: it is through love. *Aurora* is not a book about transcending the planet, it is about returning to the planet, and understanding what it means to love it. *Aurora*, unlike *Earth*, draws attention to just how special the Earth is, and not just when seen from afar, but particularly when seen up



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close in a lover's embrace. This is brought out perfectly in the novel's closing scene. Freya is depicted engaging in an earthling ritual that for a Southern Californian like Robinson must symbolize communion with nature: she is surfing. Splashed by the waves, washed up upon the sand, Freya feels that she has been reborn, or perhaps that she has merely discovered living for the first time. What is the secret to this alchemy of wind, water, air, and sand that makes the Earth and the surf so magical? One might say that it just *is*, though if pressed I suspect the Robinson himself would talk about the historical co-evolution of humankind with planet Earth. Yet as readers, the real argument is perhaps our own affective experiences. Having surfed, having indulged in some other "focal practice" (in Borgman's sense), some usage of technology that does not alienate us from the life world but brings us into resonance with it by foregrounding our own relatedness to the earthly world, we know what Robinson is talking about. Moreover, we feel that this is indeed a plausible form that any successful geo-engineering or even sustainable development ought to take. When Freya "lets her head down and kisses the sand" (loc. 6752) she shows a love for the Earth that is fully corporal, expressive of an entanglement that binds her very destiny and being to that of the climate and Earthly embodiment. But she also recalls to us a feeling that we know. She is an Earthling, so too have we been. She acknowledges and loves this fact. She and we feel why Earth is not worth exchanging for the logic of exchange.

**Conclusions: Progress or Stasis?**

Some post-planetarists seem to feel that leaving Earth can provide a solution to climate change, while others, such as Charles Wohlforth and Amanda Hendrix, seem to see space colonization more as an inevitable plan B in the case of climate catastrophe: "But if the climate problem isn't solved, SpaceX is a backup. Getting people off the Earth" (93). Yet the post-planetary solution to climate change is ultimately no solution at all. What post-planetarists really aim to save is not Earth, but most likely the market, which is built upon the idea that what makes human life good is unlimited growth, and which justifies this viewpoint in the claim that all that we desire is capable of being rendered into the logic of the market, and that is to say a logic in which everything can be exchanged for everything else. From this point of view, the latest phase of climate change fueled post-planetarism is even a form of climate skepticism, not because it doubts whether the climate will really change, but because it articulates a doubt as to whether this should really matter to us as human beings. Post-planetary climate culture is thus a kind of hold out. For many of the world's cultures, climate change has already prompted cultural actors to strive towards adaptation, towards the discovery of new and more sustainable ways of living on Earth. Old cultural habits and rituals have been disrupted and are mourned, new cultural tools and modes of *buen vivir* are being developed to alter and reform the techno-social relations and imaginations that link humankind to the Earth. Eco-poets have begun to trace out the deep wounds that we are inflicting upon the planet, novels of climate change and climate catastrophe are attempting both to raise our awareness of the future and to illustrate and exemplify new

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and more vibrant ways of relating to the changing Earth. With every storm and melted ice flow the sense of urgency is redoubled, and climate responsible writers, thinkers, teachers, artists, politicians and other leaders strive to aid us to reform our cultural values, to reconfigure our relationship to technology and to the world in such a way as to perpetuate and ameliorate human dwelling on this beloved planet. The misterrans are not adapting, however. They hew to what they call realism; and they affirm a belief in the now-dated doctrines of infinite economic progress. They think that human nature will not change, that capitalism and the will to growth is rooted in the very marrow of life itself. They hope to make available the space resources that will allow humankind to precisely not change its social system with the coming of climate change.

The alternatives to Earth proposed by some climate change motivated post-planetarists verge on parody. Wohlforth and Hendrix, for example, believe that future human beings will live on the moon Titan, a choice that they justify based on the fact that it is made up almost entirely of hydrocarbons. According to their arguments, this makes Titan perfect because it will provide for all of our needs, providing us with infinite fuel and the resources necessary for making objects in plastic. With every proof of the negative effects of climate change on Earthly life, post-planetarists sink more money into developing rocket technologies to get themselves and their progeny off-planet. This money is invested in a future that should be a past. Post-planetarists may be changing the technologies that link them to the cosmos, but they maintain the ways of relating to the world that have alienated them from the Earth and its processes. Bezos and co. may indeed succeed in becoming aliens, post-Earthly post-humans. They may then be said to have progressed, though in reality they will most likely have ended up doubling down on the most failed aspects of progressive modernity. Flight into space will in no way have addressed the inequalities created by capitalism. It will set up a future in which not only wealth will be divided unequally, but the right to a livable climate, with a happy few dwelling in climate-controlled space stations, and the rest left behind to suffer what Nixon has called slow violence because of their love for an increasingly environmentally ravaged Earth. Even once in space there is no reason to believe that those fleeing from climate change will treat their new worlds as other than as "an excrement of some sky" (219) (to quote WCW's *To Elsie*). Even now this destruction of the cosmos is being prepared, with the first wave of our expansion into space being aimed not at creating habitats, but at establishing extractive zones with unmanned probes.

Though let us not be misunderstood: The dream of expanding into the cosmos and becoming a multi-planetary species is not wrong per se. Perhaps we will have a future on other planets. Perhaps space colonies and a flourishing life on Earth can co-exist. Yet these things will not happen in a way that is desirable for the Earth, or even for our probable future selves, if our primary reason for leaving Earth is to save ourselves from the ravages of a climate catastrophe that we ourselves are creating.

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# The Pathogenesis of the Modern Climate

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## Abstract

This article offers an exploratory semantic analysis of the concept of climate through the lens of Reinhart Koselleck's theory of historical semantics. After discussing reasons for its absence in Koselleck's own scholarly investigations into the semantics of modernity, the article argues that the word climate acquired the properties of a freestanding concept in the course of the eighteenth century. The steep rise in the word's relative frequency at that time is explained in terms of its relevance to contemporary perceptions of time, and more particularly the rise of the progress narrative as a driver of human-made history. The article equally traces the concept's decline in the course of the nineteenth century by pointing to developments in the sciences and the secularization of eschatology. Finally, the article reflects on the concept's revival since the latter half of the twentieth century. Focusing specifically on the recent emergence of collocations such as "climate crisis," the article argues that, in its orientation towards an open future, climate change communication reveals its reliance on the temporal framework of accelerating progress that it at the same time holds responsible for our warming planet. The article concludes with a plea to pay closer attention to the temporal presuppositions underlying climate change communication.

*Keywords*: Climate, historical semantics, Koselleck, secular eschatology, crisis.

## Resumen

Este artículo ofrece un análisis semántico del concepto de clima enfocándolo desde la teoría de la semántica histórica presentada por Reinhart Koselleck. Partiendo de las razones de la ausencia del concepto en las investigaciones acerca de las semánticas de la modernidad del mismo Koselleck, el artículo argumenta que el término clima surge como concepto propio a lo largo del siglo XVIII. El rápido incremento de la frecuencia en la que se usa el término en esa época se explica en base a su relevancia para las nociones contemporáneas del tiempo y sobre todo con respecto al ascenso del relato de progreso como motor de la historia hecha por el hombre. El artículo sigue también el descenso que vive este concepto durante el siglo XIX al indicar los avances en ciencia y la secularización de la escatología. Finalmente, el artículo medita sobre el resurgimiento del concepto desde la segunda mitad del siglo XX. Centrándose especialmente en la emergencia de combinaciones como "crisis climática" el artículo establece que la comunicación del cambio climático, orientada hacia un futuro abierto, confía en el modelo temporal de progreso en aceleración que al mismo tiempo hace responsable del calentamiento del planeta. El artículo concluye comentando la necesidad de prestar más atención a las presuposiciones temporales que subyacen en la comunicación del cambio climático.

*Palabras clave*: Clima, semántica histórica, Koselleck, escatología secular, crisis.

In May 2019, the *New York Times* reported that the Trump administration had ordered the United States Geological Survey, a science agency of the Department of the

Interior concerned primarily with geological research into natural hazards, to stop modeling climate impacts beyond 2040 (Davenport and Landler). Since most climate models predict a spike in global temperatures after this date due to tipping elements in the atmosphere, this decision on the part of the Trump administration was widely perceived as a politically motivated attempt to confound the conclusions of climate science, confirming a policy line initiated by earlier cuts in the USGS budget, along with the US withdrawal from the 2015 Paris Agreement.[1] But the controversy is no less remarkable for showing the extent to which modern society has futurized politics. Climate models, such as those used by the Intergovernmental Panel on Climate Change, commonly predict atmospheric patterns up to 2100. They bring the future into the present in ways not feasible before the development of complex simulation systems. Even climate change deniers are apparently compelled to accept the capacity of these mathematical models, if not their conclusions. While a number of scholars has critiqued the increasing dominance and reductionism of predictive models in climate science (e.g. Hulme), comparatively little scholarship has been devoted to this topic from the vantage point of the philosophy of history.

In this essay, I argue that "climate," understood as a singular atmospheric system spanning the globe that is realized projectively, is an inherently political concept that reflects the historico-philosophical concerns of modern society. I take my cue from the late German historian Reinhart Koselleck's observation that our relation to the future, in its modern articulation as an expression of linear, open-ended time, is profoundly paradoxical. Koselleck argued that, unlike the past, which the historian can research if not fully reconstruct, the future fundamentally escapes our experience. At the same time, society has to foresee this empirical "*Unerfahrbarkeit*" of the future, its inherent non-experienceability (*Zeitschichten* 205). As a result, temporal perspective and positional commitment are written into our modern knowledge infrastructure. Since modern society responds to increasing complexity by orienting itself towards an open future, which allows for the co-existence of mutually incompatible scenarios, it at once makes that future more controllable and multiplies opportunities for the politicization of scientific findings. The USGS controversy brings out this paradoxical relation to the future. Simulations of atmospheric patterns extending over hundreds of years involve factors and variables that can impossibly be foreseen by science. We do not know how society will develop, how it will adjust to climate change, what kinds of technologies will be introduced to curb or reverse concentrations of greenhouse gases, whether we will survive at all. To incorporate all these variables, our predictions would have to model not just future scenarios, but also anticipate people's responses to such scenarios, which, among other things, might include the decision to call a moratorium on modeling. Yet, the dominance of such highly uncertain simulations reveals a growing reliance on the future, which would not be plannable in this way if our calculations were

[1] One researcher warned that the results of climate modeling "should not be taken out of context for political reasons" (Tayag). Upon his appointment as the director of the USGS in March 2018, James Reilly, a former astronaut with links to the oil and gas industry, had still vowed to safeguard the agency from political interference (Doyle).



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not subject to continual revision and contestation. Paradoxically, what makes long-term simulations more reliable or scientific than short-term ones is precisely that they involve more risky calculations, thus opening up a broader space for political action.

Koselleck argued that modern society prepares itself for this process of futurization by means of the singularization and temporalization of concepts. In the course of the eighteenth century, words such as "revolution," "epoch," or "progress," which initially denoted gradual or cyclical spatial movement (all three are drawn from astronomy), were loaded with temporal significance and thus came to function as signifiers of political and social history.[2] Around the same time, "history" itself, as a singular concept rather than exemplary histories in the plural, was divorced from natural chronologies and came to represent the modern experience of time as a continuous, irreversible process. As I hope to show in what follows, this process of temporalization is equally visible in the semantic career of "climate," which has profound implications for how we address the problem of climate change today. We now understand the climate as a planetary atmospheric system in the name of which we act, allocate blame, organize political movements, and so forth. However, the original signification of the word was local rather than global. In singularizing the climate, we have made it serviceable for addressing issues of global concern. But, arguably, this has come at the price of its progressive derealization: we now think of the climate not as a localizable entity but as belonging entirely to a future that constrains our possibilities of action in the present. Insofar as it opens itself to the unknown, this future is understood as plannable but also as subject to manipulation and ideological contestation. It is this problematic that I explore below.

I start with a brief introduction of Koselleck's conceptual history and its usefulness (as well as limitations) for studying the climate and how we express it (I.). In a second step, I sketch out the semantic career of "climate" and its transformation from a local, spatial term into a global concept (II.). In contradistinction to other approaches in the field, I locate this shift during the eighteenth century when, according to Koselleck, experiential space was reconfigured in the direction of an open future. My aim here is not to offer a sustained conceptual analysis of "climate" but rather to provide a theoretical framework for the following discussion, which teases out the temporal presuppositions of recent climate debates (III.).[3] I will argue that these debates, while pointing to the unsustainability of the current economic system, issue from the immanent conception of time that is ingrained in the modern growth narrative. In other words, the article addresses a tension in much of today's climate change communication, which in its orientation towards an open future reveals its reliance on a quintessentially modern temporal framework of accelerating progress that it at the same time holds responsible for our warming planet. To illustrate this dynamic, I focus on the recent emergence of collocations such as "climate crisis," which bring out a modern temporal

[2] In this article, I use double quotation marks to highlight that a term constitutes a concept in Koselleck's sense.

[3] In a follow-up article, co-authored with Karl Berglund, I use the quantitative methods of distributional semantic analysis to empirically test out the hypotheses articulated here.

sensitivity by suggesting that we have reached an epochal moment in history that calls for prompt concerted action. While this way of conceptualizing the intractable problem of climate change may be useful for mobilizing political support for climate change policies, it at the same time serves to hide the original function of "climate" as a tool of differentiation, a function that the word continues to perform even in its abstract, derealized form. Even as they invoke a global addressee, climate change policies might thus indirectly reinstall hierarchies that the word climate as a local signifier was designed to uphold.

**The Historical Semantics of Climate**

Reinhart Koselleck, who died in 2006, never offered a sustained analysis of "climate." It is conspicuously absent from the *Geschichtliche Grundbegriffe*, the multivolume historical lexicon (1972-1997) to which Koselleck's name is indelibly linked. While the conceptual career of "nature" is reviewed in an extended entry, "climate" figures only tangentially under other concepts, such as "*Bedürfnis*" (needs). This might in part be explained by the fact that the lexicon focuses on the so-called threshold period (1770-1850), a time of accelerated semantic change that signaled the toppling of society towards a modern temporal consciousness. Another reason might be that the list of basic concepts was decided in the late 1960s and early 1970s, when the specter of nuclear disaster dominated the political agenda and climate change was just starting to appear on the horizon. The expression "climate change" only gained currency towards the 1970s, not coincidentally when computer modeling became standard scientific practice. In the introduction to the seventh volume of his lexicon, Koselleck did note that the history of ecological concepts remained to be written, although, significantly, he did not list "climate" among the concepts calling for further exploration ("Introduction and Prefaces" 33). A conceptual lexicon covering the most recent periods, if it were ever to materialize, could most likely not avoid including "climate" among its basic concepts.[4]

But we should also be prepared to consider the possibility of a perspectival bias built into Koselleck's own intellectual project. A search for "climate" in the English Google corpus reveals a sharp spike in its relative frequency during the latter half of the eighteenth century, precisely the threshold period when, in Koselleck's view, expectations and experience increasingly drifted apart and a new historical awareness emerged.[5]

[4] Christian Geulen and Christian Bermes are currently working on a German lexicon of political concepts in the twentieth century (*Politische Schlüsselbegriffe des 20. Jahrhunderts*) that is modeled on Koselleck's history of basic concepts. In a programmatic article introducing this project, Geulen highlights the importance of "environment" (but not "climate") as a basic concept of the twentieth century (Geulen 2010). A similar initiative is *Das 20. Jahrhundert in Grundbegriffen. Lexikon zur politisch-sozialen und -kulturellen Semantik in Deutschland*, a project conducted at the Leibniz-Zentrum für Literatur- und Kulturforschung. For various assessments of the desirability and value of a conceptual history of the twentieth century, see a 2012 roundtable in the journal *Contributions to the History of Concepts*.

[5] The curves for German "Klima" and French "climat" follow a roughly similar pattern. If we search for the plural "climates" in the English corpus, the downward curve after 1800 is even more impressive and there



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Ngram for climate in the English Google Books corpus (1700-2019)

After the 1770s, the word's frequency decreases steadily until it picks up again towards the 1950s, when the first scientific findings of anthropogenic climate change were presented. However, it never regained the relative frequencies that it attained in the late eighteenth century, which is significant in light of recent pronouncements that we are living through an epochal time of unprecedented climatic awareness.[6] A conceptual history of modernity should be able to account both for the importance of "climate" during the threshold period and its rapid nosedive in the period that followed. That the *Geschichtliche Grundbegriffe* did not pick up on this might be attributed in part to the architecture of Koselleck's theory. Modernity, in his view, emerged in the separation of society from nature. The historian's task as he understood it was to isolate the semantics of historical time as distinct from naturally determined chronologies. In this framework, the climate properly speaking does not possess a history of its own. It is of course highly questionable, given what we know about the warming atmosphere, whether we can still afford to segregate society from nature in such a way. If they are distinct, climatic and historical time intersect in ways that cannot be accounted for in a relatively linear narrative of modernization. Moreover, as the Google data reveal in however provisional fashion, the concept "climate" might itself be understood as a motor for the emergence of historical time in modernity. By presenting the natural world as a uniform stage for the emergence of modern historical temporalities, theories of modernization such as Koselleck's to some extent presuppose the denaturalization of socio-political space that they simultaneously diagnose.

In spite of these reservations, I would argue that Koselleck's theory can still provide us with a useful heuristic framework for bringing into focus the societal impact

is no upswing in the latter half of the twentieth century. Something similar goes for the cognate expression "airs." This indicates a clear tendency towards the singularization of such concepts. The concept "atmosphere" was likewise still often used in the plural during the eighteenth century. Robert Boyle, for instance argued that all bodies have their own "atmospheres" (Boyle).

[6] The view that we have arrived at a moment of ecological enlightenment is evident, for instance, in Steffen et al. Humanities scholars have likewise welcomed the idea of an epochal transition leading up towards a new climate regime (Latour).

of phenomena such as climate change. Koselleck understood his research into the temporal structures of concepts as part of a larger study of the "pathogenesis" of modernity.[7] By analogy, this essay offers a semantic exploration into what one might call the pathogenesis of the modern concept of "climate." Importantly, my aim is not to study actual fluctuations in temperature through time, along the line of climate history, nor do I intend to trace the development of climate as an idea in the fashion of intellectual history. Contrary to an 'idea', which can be said to remain relatively stable through time and may be expressed in a variety of ways, a concept constitutes an abstract linguistic expression that can absorb multiple, conflicting meanings and that is therefore inherently ambivalent. While it emerges from a specific linguistic context, it raises claims to universality (which does not therefore mean that it *is* universal). And, finally, it is linked to a given vision of time. For Koselleck, a concept does not simply convey certain meanings but creates them.

To be sure, one can level a number of objections against Koselleck's rather fuzzy measures for isolating the basic concepts of modernity. An attentive scholar will find semantic ambiguities, universalist claims, and temporal assumptions almost everywhere. In spite of such reservations, I would still like to maintain the specificity and value of conceptual history vis-à-vis adjacent fields. Recently, scholars including Lucian Boia, Mike Hulme, Paul Warde, Libby Robin, and Sverker Sörlin have done valuable work on the cultural history of the climate. What gets largely lost in their approaches, however, is the kind of sustained attention to the complex ligatures between linguistic forms and socio-political factors that still characterizes Koselleck's work. Rather than tracing ideas that can assume various linguistic realizations across time, conceptual history focuses on how certain terms circulate beyond their original domains and accrue new, contradictory semantic layers in the process. The difference might be one of emphasis (discontinuity rather than continuity) but it is nevertheless pertinent.

In what follows, I will argue that, as a concept, "climate" is a product of the eighteenth century, when it started to embody the modern compulsion towards the future. I offer this argument as a corrective to the widespread view that the global climate only emerged recently with the rise of modern climate science.[8] Such explanations, while not therefore wrong, strike me as too limiting insofar as they account for the emergence of the global climate as the product of scientific and technological advances (such as the development of general circulation models and the like) rather than of a larger experiential transformation of society—its reorientation towards an open future—of which climate science is but one manifestation among others. By projecting a longer time frame for the genesis—or pathogenesis—of the

[7] Koselleck's doctoral dissertation *Kritik und Krise*, defended in 1959 and published as a book in 1976, carried the subtitle "Ein Beitrag zur Pathogenese der bürgerlichen Welt," which the English translation renders as "Enlightenment and the Pathogenesis of Modern Society."

[8] This view is evident, for instance, in Warde, Robin, and Sörlin, when they argue that climate as a global condition emerged very recently, in the final decades of the twentieth century (101). While the authors do point out significant precursors for this "idea," the overall drift of their argument is to insist on its relative novelty.



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modern concept "climate," I do not therefore want to engage in anachronism, but rather mean to throw into relief the conflicting temporalities that remain co-present in the concept but that started to diverge during what Koselleck called the threshold period.

**The Derealization of the Climate in the Threshold Period**

Up until the early modern period, climates—typically in the plural—were conceived in spatial terms as latitudinal lines on a map derived from the calculation of the ecliptic. In this framework, they functioned primarily as tools of orientation, differentiation, and comparison. In antiquity, they demarcated the *oikumene* or inhabited earth. Since it was originally believed that neither the equator nor the poles were fit for human civilizations to develop, the ideal climate was assumed to be situated in the temperate zones between those extremes. Where exactly the ideal climate was located was a matter of continual dispute among geographers, whose biases often shine through in their accounts of climatic circumstances. However, what was beyond dispute was that the perfect climate should be somewhere in the middle, in a geographically localizable zone where the adverse effects of extreme heat and cold canceled each other out and thus generated the ideal conditions for civilization to flourish. Climates thus functioned to measure civilizational development and sanction empires. As Nicolás Wey Gómez has argued, the tripartite structure of ancient geography would prove remarkably persistent and may help us to understand the patterns of European empire building during the age of European expansion (Wey Gómez). Even as they were redrawing the boundaries of the inhabitable world, explorers and travelers relied on received geographical models, often for strategic reasons to justify their claims to new lands which, due to their position on the globe, were considered climatically overdetermined.

From the vantage point of conceptual history, two structural features deserve mention here. To begin, climates were primarily instruments of spatial orientation. They served to underwrite territorial boundaries. Second, the relation obtaining between them was generally one of contrariety: "genial," "happy," "serene," or "exquisite" climates took shape in opposition to ones that were deemed "fatal," "infamous," or "wretched." The fact that we no longer rely on this rich arsenal of epithets to qualify climates already suggests that this semantic regime has largely eroded. Its gradual decline can be traced back to the age of European expansion, when the inhabited earth as understood in the European imagination expanded dramatically. Travelers brought with them reports falsifying Aristotle's claim that the tropics were not fit for habitation. It was during this period that the age-old assumption that climatic conditions were deemed similar within the same latitudinal circle became increasingly untenable. The establishment of the first European settler colonies in the Americas raised the question of hemispheric climatic variation, which compromised the explanatory power of the equal-latitude doctrine (Kupperman). As Europeans discovered that atmospheric conditions in the Americas were more extreme than those in corresponding latitudes at home, they came to understand the differences between continental and oceanic

climates, which upended existing models for organizing the inhabited world (Gerbi). On the level of semantics, one might argue that a gap opened up between experience and expectation, which would eventually result in the temporal loading of "climate" and its development into a historico-philosophical concept expressing modern society's relation to time.

This semantic transformation completed itself in the course of the eighteenth century. At this juncture, the word climate became increasingly abstract and malleable. It was no longer understood exclusively in terms of pairs of territorially defined contraries, but instead came to denote the prevailing weather patterns of a given place, or the weather system as such. This shows, for instance, in Pierre Jean George Cabanis's *Rapports du physique et du moral de l'homme* (1802), which offers a remarkably inclusive definition of the climate: "The climate, therefore, is not restricted to the particular circumstances of latitudes, or cold and heat; it embraces, in an absolutely general manner, the totality of physical circumstances attached to each locality; it is that totality itself" (Cabanis II, 246; my translation).[9] To be sure, Cabanis's thinking was still at some remove from that of present-day science as he did not conceive of the climate as a global atmospheric system. However, he already thought of "the climate"—in the singular—as more than simply places or zones on a map. Rather, the word now referred to all the surrounding factors conditioning the physical and moral constitution of individuals. As an Enlightenment optimist, Cabanis believed these factors were in turn amenable to human influencing, or, in contemporary parlance, "improvement." With Cabanis, "climate" thus enters into public planning scenarios and acquires a temporal quality.

The novelty of Cabanis's definition comes out if we compare it to that found in Bernhardus Varenius's *Geographia Generalis*, first published in 1650 and later updated by Newton (the following quote is from the first English translation of 1733): for Varenius, "climate is the space included by two parallels, between the pole and the equator, into which when the sun comes, there is the difference of half an hour as to the length of the day" (II, 559). While Varenius invokes time here, his is still a relatively static definition that fits into a closed geographical imaginary. Varenius rejected the Aristotelian notion that the tropics were not fit for habitation. At the same time, he remained partly beholden to the experiential framework of classical antiquity, which divided the earth into territorially fixed climatic zones whose boundaries can be computed mathematically. Arguably, it is this fundamentally atemporal worldview that comes to be challenged in the course of the eighteenth century in the work of materialist philosophers such as Cabanis. As a result, what we denote by the word "climate" was transformed from a spatial entity into a process that, as the Enlightenment philosophers hoped, could be steered and possibly controlled.

[9] The French original reads: "Le climat n'est donc pint resserré dans les circonstances particulières des latitudes, ou du froid et du chaud: il embrasse, d'une manière absolument générale, l'ensemble des circonstances physiques attachées à chaque local; il est cet ensemble lui-même: et tous les traits caractéristiques par lesquels la nature a distingué les différens pays, entrent dans l'idée que nous devons nous former du climat."



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One way of reading this development is in terms of the optimization of instruments (the thermometer, barometer, hygrometer, eudiometer, etc.), the accumulation of weather data, and the eventual formation of climatology as a scientific discipline. But, in my view, such technological advances do not suffice to explain the proliferation of the word's use at this juncture. Instead, we should consider its semantic trajectory in light of Koselleck's reflections on the mounting pressure of time during the so-called threshold period. Eighteenth-century philosophers and naturalists were obsessed with the mutual influencing of people and the climate. This was because, as a signifier of limitation, the concept intersected with emergent rights discourses and the modern, transnatural definition of history. As a result, "the climate," in its singular form, acquired unprecedented political significance. It developed into a marker of historical time, a formula for prognosticating and planning an open, contingent future. This would explain why climate discourse entered into virtually all domains—from medicine, to constitutional law, to the arts—in ways that are scarcely conceivable today. It accompanied the collapse of the old absolutist regimes in Europe and the creation of modern nation-states, which appealed to atmospheric conditions to define the citizenry and to manage it. Politicians measured the state of society against the state of the air as a crucial influencing factor on the happiness and well-being of the population. Anti-slavery activists, likewise, invoked the unhealthful and immoral "climate" of slavery to mobilize public support for their cause.[10] Importantly, the concept could only fill this function because it had lost its original association with territorially defined circumglobal bands and had progressively become loaded with temporal significance.

The continued usefulness of conceptual history shows from the fact that we can mark out this transformation on the level of language. It shows for instance in the increasing use of "climate" as a freestanding term in the singular without a modifier or complement, or the coinage of new words such as "acclimatization" (as in the British acclimatization movement), "climatism" (particularly in the context of French colonial medicine), or "climatology" (which starts to circulate in the late eighteenth century). These derivations of the word "climate" already point to its dynamization and its increasing relevance to imperial politics and scientific programs. Further, in corpora of historical English usage, we observe shifts in the networks of co-associated words clustering around a token like "climate." Koselleck argued that some words might start their semantic career as one of the poles in asymmetric dualisms, but that they cease to function in such a way once they become more abstract and develop into collective singulars. From that moment on, they derive their legitimacy not from their opposition to an excluded other, but from political or ideological programs attached to them ("Introduction" 11). Oppositions such as those between "delightful" and "fatal" climates can be regarded as asymmetric counterconcepts in Koselleck's sense: they posit a

[10] See Golinski for early republican debates in the United States on public health in light of the climate. In the 1790s, William Wilberforce invoked the African "atmosphere" that in his view distorted the morality of slave traders (Coleman 63).

territorially defined boundary between a climate ideally suited for humans and one that is considered unhealthy, extreme, or dangerous. During the threshold period, such qualifying adjectives, which serve to grade and hierarchize between territorially specific zones, do not disappear from the English language completely but they become less frequently associated with "climate," and some fall out of usage altogether. At the same time, new collocations emerge, such as "moral climate," which points to a widened application of "climate," away from a physical location to the circumstances prevailing in that location. Climate here becomes an instrument of prognosis.

Crucially, the shift I have tried to sketch out above set in long before the emergence of modern climate science, which further intensifies modern society's reliance on the future. Put simply, that shift can be summarized as the transition from a fairly static semantic regime designed to sanction a given order of things towards a more dynamic one that more fully incorporates a vision of historical change. The conceptual history of "climate" thus allows us make sense of the reorganization of experiential space in modernity generally, and its reorientation towards an uncertain but plannable future as described by Koselleck. This is of course not to suggest that the term climate had no temporal relevance at all before the onset of the threshold period. Atmospheric circumstances have always been invoked to predict the destiny of nations and political entities. Exceptional weather events were interpreted as omens of disasters to come. But such predictions were still largely embedded in the old, cyclical semantics of time. This regime was eventually displaced by one projecting time as linear, unpredictable, and constructible. Of course, as Stephen Jay Gould has argued, an overly schematic opposition between time as cycle or as arrow is misleading, since both conceptions of time often co-exist in the same epistemological framework (Gould). But, in spite of such reservations, I believe we can still observe a general trend towards temporalization or futurization in modern society as a response to increasing social complexity. My aim here has been merely to show how "climate," which Koselleck did not include among his basic concepts of the threshold period, can be regarded as a central signifier in the broader reconfiguration of experiential space that his theory was designed to bring into focus.

Why, then, did "climate," so defining for the emergence of the modern semantics of time, progressively lose its attraction in the course of the nineteenth century? Why did this expectation concept dwindle away, to the extent that it hardly figures in modern historical lexica, while others continued to flourish? We can point out a number of factors, beginning with the decline of neo-Hippocratic ideas in medicine following the rise of germ theory. Further, emergent disciplines like sociology, intent on asserting their institutional legitimacy and specificity, showed a marked distaste for climatic explanations of the social.[11] To be sure, climate theories continued to be produced (for instance, in the work of the students of Friedrich Ratzel and the determinist school in geography), but they no longer enjoyed the same generalized acceptance as during the threshold period. Not surprisingly, the nineteenth-century semantic trajectory of

[11] See, for instance, Durkheim's *Le Suicide*, which dismisses "cosmic" factors in suicide statistics.

"climate" is inversely proportional to that of "environment," which is attached to a more dualistic worldview. Likewise, the new earth sciences, which challenged the biblical origins narrative by projecting much longer timescales, disqualified explanations of human diversity and evolution in terms of the climate as unscientific.[12] Climatic influencing, if not rejected altogether, was now understood as a slow and gradual process that could only be grasped by means of large data. Scientific developments thus might have insulated us from climatic variations and differences, while also taking away some of our agency in shaping and policing those conditions.

Possibly as a result of such developments, people ceased to read exceptional weather events for cosmic significance but instead assumed the continuity and constancy of the climate. The Swedish chemist Svante Arrhenius, who is credited with discovering global warming, reasoned, much in line with the findings of contemporary glaciation theory, that human life on earth coincided with a "genial time" succeeding the ice ages (Arrhenius 20). In this framework, the oppositional structures distinguishing between "genial" or "happy" climates and their contraries dissolved. Or rather, as the latter were reconceived as potential or as yet unrealized genial climates, the opposition acquired a temporal component. For Arrhenius, Pliny's genial season was generalized to encompass post-glacial time. At the same time, assuming that humans were not capable of fundamentally altering the climate on a global scale, Arrhenius was unable to fully imagine the implications of his own findings regarding the anthropogenic forcing of the climate. As time was reconceived as contingent rather than predetermined, climatic stability became the unspoken bedrock of the modern age. With the looming catastrophe of global warming, however, we can no longer confidently assert that we are living in a genial time, or at least, we have to envision the possibility that this genial time might be coming to an end.

**The Temporality of the "Climate Crisis"**

This raises the question as to whether we are about to cross another epochal threshold, resulting in a new refiguration of established conceptions of time. In my view, Koselleck's philosophy of history, in spite of the problems pointed out above, provides us with a potent framework for interpreting this particular juncture. One of Koselleck's most compelling and controversial hypotheses, partly derived from Carl Schmitt and Karl Löwith, is that the modern experience of the self-acceleration of progress constitutes a secularized version of the theological doctrine of the cosmic foreshortening of time. What both of these narratives share is that they respond to the human experience of temporal acceleration. Yet, in other respects, these two semantic frameworks logically exclude each other: whereas religious eschatologies conceive the end of the world as a prelude to God's Final Judgment, the secular narrative of progress reinterprets this apocalyptic narrative historically. In the secularized version of the

[12] Darwin insisted that "the degree of adaptation of species to the climates under which they live is often overrated" (139).

Apocalypse, it is not God but humanity itself that provokes the acceleration of time. This process of self-acceleration, moreover, depends on, and is measured against, continuous and universal chronological time (*Zeitschichten* 189). In other words, the Final Judgment is no longer located in the realm of the sacred, but rather gets woven into secular history itself. As a result, the theological idea of the Final Judgment gets normalized as a central ingredient of the modern temporal consciousness.

While Koselleck's hypothesis of the secularization of eschatology is vulnerable to all kinds of objections, it is still a stimulating thought experiment to pursue, specifically in the context of the climate change debate, if only because the narrative of temporal acceleration, and humanity as the main instigator for this process, is so prevalent in media coverage of this phenomenon.[13] On a daily basis, we are reminded that we are racing towards a do-or-die moment, when we will have to choose between a brighter future and a permanently uninhabitable planet. The scientific findings that come to us through the mass media continually outdate themselves by indicating that the situation is much worse than originally anticipated. Climate change fictions overwhelm us with anticipatory melancholia about the looming end of humanity. The reactivation of the semantics of climate in recent decades, after its long submergence over more than a century, shows how this concept, which originally signified limitation, has now come to function as a vehicle for expressing the modern, immanent experience of self-acceleration. Without therefore disputing the findings of climate science or disavowing the sentiments of pre-loss that the looming threat of a warming planet engenders, Koselleck's philosophy of history allows us to highlight how the conceptual framework through which we approach these issues reflects the modern temporal consciousness that it simultaneously diagnoses. To be sure, by pointing to the dramatic impact of human industry on the atmosphere, climate change communication radically critiques the historical optimism embedded in the modern progress narrative. In other ways, however, it reinstalls this semantic model by adopting an argumentative structure of acceleration and the multiplication of crises that is ingrained in the modern conception of time.

Symptomatically, the problem of climate change is now commonly understood as a "crisis" of global proportions. The phrase "climate crisis" emerged around the turn of the century. Climate activist Ross Gelbspan used it in the subtitle of in his book *The Heat Is On: The Climate Crisis, the Cover-Up, the Prescription* (2000). Not much later, Al Gore picked up the phrase in an address delivered to the New York School of Law in September 2006, where he argued that "we are now facing a planetary emergency—a climate crisis that demands immediate action to sharply reduce carbon dioxide emissions worldwide in order to turn down the earth's thermostat and avert catastrophe" ("Finding Solutions"). Gore's use of "climate crisis" should be read as a deliberate rhetorical move to gain political support for his suggested policies.

[13] For the classical critique of Koselleck's secularization thesis, see Blumenberg. For a recent critique from the perspective of medieval studies, see Davis. As Olsen notes, Koselleck's later writings (most recently translated under the title *Sediments of Time*) considerably nuance his earlier views on the self-periodization of modernity.



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Significantly, there is still no trace of it in his 1992 book *Earth in the Balance*, where "crisis" only occurs in conjunction with the terms "ecology" and "environment." However, in the foreword to the 2006 edition, Gore emphatically defines the situation in terms of a global "climate crisis." Invoking the double meaning attached to the Chinese expression for "crisis" as both danger and opportunity, Gore here suggests that global warming presents an opportunity for this generation to embrace a common cause and what he calls "the exhilaration of a compelling moral purpose" (*Earth* xix). More recently, activists such as Naomi Klein, while by no means committed to Gore's centrist politics, have likewise embraced the phrase "climate crisis" and its capacity for collective mobilization (Klein). At present, the phrase is routinely invoked in media coverage of global warming.

What, one may ask, are the implications of conceptualizing our relation to the atmosphere in this way? To address this question, we may draw inspiration from Koselleck's own reflections on the concept "crisis," which seems to have preoccupied him from the early beginning of his academic career. In his first book *Critique and Crisis*, he considered the common origin of these two concepts in the framework of the emergence of a bourgeois philosophy of history. He returned to the topic in the third volume of *Geschichtliche Grundbegriffe*, published in 1982, to which he contributed a lengthy lemma entirely devoted to the conceptual development of "crisis." Koselleck here describes in more general terms how the concept "has become the fundamental mode of interpreting historical time," to the extent that it can be regarded as "a structural signature of modernity" ("Crisis" 371-2). Finally, in 1985, he once more revisited these ideas in a lecture entitled "Some Questions Regarding the Conceptual History of 'Crisis,'" which will be my base text here.[14] In its original application, the word "crisis" had primarily medical applications, denoting a life-and-death situation that called for an instant response from the physician. The idea of making judgments was thus from the beginning part of the word's meaning, which significantly shows its close affinity with climate. In its original use, as indicated above, climate equally involved drawing distinctions and boundaries between temperate and intemperate, healthful and sickly, places . From this perspective, the collocation "climate crisis" almost reads as a tautology of sorts (commonly used expressions such as "crisis atmosphere" reflect this shared lineage). It is thus interesting to observe that these two concepts have now once more coalesced in the context of global warming.

As Koselleck documents, crisis eventually migrated from its original semantic field to other domains, such as theology, where it denoted the Final Judgment, and politics, where it could refer to a decisive change in the balance of power. However, it is only during the threshold period that the word starts to proliferate and enters into everyday, non-specialized language use. For Koselleck, this suggests that, the word now offered a "diagnosis of time" ("Some Questions" 239). Two elements are distinctive for this semantic transition. First, it rests on a sharp distinction between past and future,

[14] I use the translation that appeared in the 2002 collection *The Practice of Conceptual History*. For a useful introduction to Koselleck's writings on crisis, see Richter and Richter. For a more sustained engagement and application to the economic crisis of 2008, see Roitman.

which is imagined as radically different from everything that has gone before. And, second, it entails an urgent call to articulate a response to this new reality, to foresee and prepare for its coming. As Janet Roitman puts it, the concept of crisis in this sense "*posits history as a temporality upon which one can act*" (Roitman 7; italics in original). One can clearly discern these two structural dimensions in discourse on the "climate crisis." To begin with, this discourse reflects a sense that we have arrived at an epochal threshold. The ongoing debates on the Anthropocene as the name for a new geological epoch in which humanity has started to irreversibly alter the climate highlight this functionality of "crisis" as an instrument of (self-)periodization. But, related to this, most climate change communication also contains more or less explicit ethical injunctions to do something about the escalating situation.

What is essential to note about such crisis narratives, from the vantage point of Koselleck's somewhat schematic but nevertheless heuristically useful modernization thesis, is that they spring from a world-immanent interpretation of time; that is, they locate the end times not in a transcendent realm but in history itself. This means that any crisis narrative predicting the end of the world as we know it is vulnerable to the charge that it constitutes a "perspectival illusion" ("Some Questions" 244). Arguably, one reason for today's seemingly insatiable appetite for crisis narratives about melting glaciers, floods, droughts, and the like, is precisely that the idea of an absolute end to history is no longer credible in the modern, immanent conception of time, which, paradoxically, allows for the unbridled dissemination of often incompatible end times narratives. If only through their sheer diversity, these narratives indirectly contribute to the open future that they simultaneously foreclose. Koselleck's hypothesis of a secular eschatology moreover allows us to understand why global warming is so often thematized in conjunction with other crises. It is significant, for instance, that Naomi Klein describes her commitment to the cause of climate activism as gaining urgency as a result of her own "fertility crisis" in mid-life (422). In this connection, we may also mention the cultural significance of phenomena such as the school strike for climate movement. Perhaps not coincidentally, the emergence of childhood as a viable identity position towards the eighteenth century derived from the same processes of temporalization that also produced the modern concept of climate.[15] This connection appears, for instance, in the pronouncements of action groups such as Fridays for Future, which reinforce the generalized sense of crisis inherent in the modern vision of time in such sloganesque statements as "we must escalate together" (Thunberg). By thus claiming a form of enhanced enlightenment for the new generation, such crisis narratives indirectly betray their indebtedness to the modern temporal schema of linear progress that they at the same time hold accountable for the "climate crisis."

However, Koselleck does more than simply insist that such secular apocalypticism constitutes a fallacious interpretation of history. In a remarkable turn, he argues that the multiplication of crisis narratives in modernity might itself "be

[15] On the eighteenth-century discovery of childhood as a manifestation of temporalization processes in modernity, see Lepenies (who connects the work of Koselleck with that of Philippe Ariès).



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comprehended as crisis … decisions are due, scientific or not, wanted or unwanted, which will determine whether and how survival on this earth is possible or not" ("Some Questions" 245-6). While these words were written in response to the nuclear weapons race and the threat of mutually assured destruction, they are no less pertinent to the so-called climate crisis today. The accumulation of crises in modernity is thus not purely a perspectival illusion but might indicate that we are reaching "a limit ... that can no longer be overstepped by technological and scientific progress" (247). Most climate advocates will be receptive to this dire prognostication, and will take it as a call to find alternatives for the modern growth narrative. But what Koselleck's intellectual endeavor asks us to attend to is that, on the level of semantics, modern crisis communication is itself partly complicit in the expedition of the final crisis. Koselleck concludes his essay in his characteristically epigrammatic style by suggesting that we might not be capable of addressing the final crisis of humanity in purely secular terms, thus hinting at the continued relevance of nonsecular conceptions of time. In my view, this admittedly suggestive conclusion resonates in interesting ways with Amitav Ghosh's recent argument that only religious movements will be capable of mobilizing support for the climate cause, since, contrary to international law and politics, they allow us to question the idea that, as Pope Francis phrases it in his encyclical *Laudato Si*, "human freedom is limitless" (Ghosh 159).

Yet, Koselleck's position should not be interpreted as a call for a return to traditional forms of knowledge. Indeed, as he repeatedly insisted, the aim of conceptual history is not simply to isolate the pathogenic roots of modernity, but to analyze the temporal structures that "define as unreal the empirical content of both theological eschatology and historico-philosophical utopias" (*Futures* 103). In the same fashion, he would probably insist on the unreality of the currently prevalent dystopian scenarios about climatic collapse. This is to say that what Koselleck's work calls for is a more attentive examination of the contingent semantics undergirding our own predictions and diagnoses. In this regard, it is useful to examine the semantic trajectory of climate now that it has once again become one of the basic concepts organizing our political life. Today, we think of the climate self-evidently as a global atmospheric system on which humanity depends for its survival. We project a global future that is unpredictable, unique, and steerable. Even though it is agreed that climate change will affect more vulnerable nations and populations first, the assumption is that everybody will be exposed to its consequences in one form or another, which thus calls for concerted measures applied globally. While such measures are indeed necessary, we should also be wary of strategic interests hiding behind false universalist claims. In spite of its universalist overtones, the modern concept of "climate" has preserved its original function of evaluation and comparison. This shows, for instance, in debates about the allocation of climate debts and credits among developed and developing nations, or in the way environmental performance indexes distinguish between laggards and forerunners in the transition towards a new economy. As it did for the ancient Greeks, the climate marks the line between winners and losers. What, then, sets "climate" as a global metaconcept apart from its earlier incarnations is its abstract, transnatural

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quality, which tends to blind us to its constitutive function of drawing lines and distinctions.

In this respect, it is vital to focus our attention not exclusively on the politicized rhetoric of climate change skeptics or deniers but also on what makes the word "climate" vulnerable to politicization in the first place. From the vantage point of historical semantics, a collocation such as "climate neutrality" is far from neutral. The same can be said about 2019 Oxford Word of the Year, "climate emergency." The controversy surrounding the European Parliament's decision, in the run-up of the UN Climate Change Conference COP 25, to declare a global "climate and environmental emergency" clearly illustrates that concepts do not simply convey reality but co-produce it. Following the European Parliament's declaration, it was argued that this decision not only served to obfuscate the real work of transforming the economy, but might also be used to suspend basic human rights in the name of planetary emergency.[16] Given this, we should be prepared to question the temporal presuppositions built into our own predictions of the future. However sophisticated, climate modeling is not free from bias or teleology. Put simply, such simulations are political in the sense that they issue from a conception of historical time that presents itself as natural while being temporally specific and contingent. Should it surprise that both radical bloggers and global asset managers alike now use phrases such as "climate progress"—as if making progress (however defined) is the natural and only way forward?[17] The assessment cycles of scientific institutions follow their own, denaturalized logic of self-acceleration. By prioritizing the future over the past, the predictions of climate science invite new and incompatible perspectives, which might include the assertion that the climate is not changing at all. This kind of denialism is no less a response to the mounting pressure of time in modernity than the prognoses of climate scientists.

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[16] The word "emergency," moreover, evokes different connotations in different languages. As German MEPs pointed out, the word "Notstand" has troubling connections with the Nazi era (Rankin).

[17] "Climate progress" is the title of an influential blog by Joe Romm, a physicist and fellow of the Center for American Progress (Romm). The asset management company Schroders developed a "climate management dashboard" that measures "the progress being made towards decarbonizing the global economy" (Schroders).

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# Scaling High Places.
# Mountaineering Narratives as Climatological Tales

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## Abstract

Christoph Ransmayr's 2006 novel *Der fliegende Berg* and Thomas Glavinic's *Das größere Wunder* (published in 2013) confront very different ideas of mountaineering. Glavinic's protagonist Jonas joins a commercial expedition to summit the world's highest mountain. These highly criticized commercial endeavors are in contrast to Ransmayr's scenario in which two brothers, Patrick and Liam, embark on a journey to a mythical peak—the only Himalayan mountain yet to be summited. The commercial sporting extravaganza and the ultimate independent adventure represent two extremes of a practice aimed at producing intense physical encounters with nature. Both novels confront the possibility of such encounters with an account of the life of their protagonists within a thoroughly modern world. In aligning biography with the ascent of the respective peak, the narratives present themselves as mediations between personal and planetary scales. Climate, thus, is present not only as an obstacle to overcome, but as a narrative device negotiating increasingly precarious relationships between humans and nature. In comparison with non-fictional mountaineering accounts, these narratives reveal an understanding of climate which is not exhausted in a "weather-biased understanding of the atmosphere" (Fleming/Jankovic 2). Instead, they resurrect apparently discarded notions of climate as a local and bodily entity. Using Fleming/Jankovic's concept of *Klima*—an understanding of climate which combines natural and cultural facts—this paper investigates the methodological and narrative aspects of scaling, acclimatization and high-altitude in order to unearth the myth underlying these climatological tales and their (possibly) productive and destructive effects on current discourses on human-nature-relationships in the Anthropocene.

*Keywords:* climate, mountaineering, high-altitude climbing, Everest, scaling, modern myth, Christoph Ransmayr, Jon Krakauer, Thomas Glavinic, Robert MacFarlane, environmental humanities.

## Resumen

En las novelas *Der fliegende Berg* (2006) de Christoph Ransmayr y *Das größere Wunder* (2013) de Thomas Glavinic, se enfrentan dos ideas radicales en torno al alpinismo. Jonas, el protagonista de Glavinic, participa en una expedición comercial para encumbrar la cima del monte más alto del mundo. Esta clase de proyectos comerciales tan fuertemente criticados se presenta en total oposición a lo representado en la novela de Ransmayr, en la que los hermanos Patrick y Liam se embarcan en un viaje personal a una montaña mítica – el último monte del Himalaya que nadie había logrado subir. La extravagancia deportiva y comercial y la aventura totalmente independiente representan los dos extremos de una práctica que tiene como objetivo la producción de enfrentamientos intensamente físicos con la naturaleza. Las dos novelas confrontan la posibilidad de estos enfrentamientos con relatos de las vidas de sus protagonistas en un mundo completamente moderno. Ajustando las biografías con la subida a las montañas correspondientes, los relatos se presentan como mediaciones entre escalas personales y planetarios. El clima, por lo tanto, no sólo está presente como un obstáculo a superar, sino como un recurso narrativo que negocia las relaciones cada vez más precarias entre humanos y naturaleza. Comparados con relatos alpinistas de no-ficción, estas narraciones revelan una concepción del clima que no se circunscribe únicamente en una mera "concepción de la atmósfera siempre afectada por el tiempo/clima"

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(Fleming/Jankovic 2). En su lugar, renuevan percepciones aparentemente rechazadas del clima como entidad local y corporal. Usando el concepto de *Klima* desarrollado por Fleming/Jankovic—una noción del clima combinando hechos naturales y culturales—este artículo investiga los aspectos metodológicos y narrativos de la escalada, la aclimatación y la alta montaña para sacar a la luz el mito que subyace estos relatos climatológicos, además de mostrar sus (posibles) efectos productivos y destructivos en discursos contemporáneos sobre las relaciones entre humanos y naturaleza en el Antropoceno.

*Palabras clave:* clima, alpinismo, escalada de altura, Everest, escalada, mito moderno, Christoph Ransmayr, Jon Krakauer, Thomas Glavinic, Robert MacFarlane, humanidades ambientales.

All too often, mountaineering narratives—fictional and non-fictional—are read exclusively as stories of individual transformation and success. Even more often, they are scaled up to phantasms of universal human achievement.[1] However, ecocriticial researchers have pointed out that the relationship between humans and mountains is less modernly clear-cut than it may seem (Ireton/Schaumann 5), nor can the seemingly intimate confrontation of 'man and mountain' be separated from the accumulating planetary impact of mass tourism (Mazzolini 2010). In fact, criticism of high-altitude climbing in particular (see Narula 2019) has called into question once again the reasoning that drive people, or, rather, seem to draw people up the highest peaks. Altitudinal and longitudinal 'high places'—that is, mountain-peaks and places beyond the polar circle (Cosgrove/della Dora)—hold sway over the human imagination. Despite their seemingly exhaustive exploration, they still mark 'ends of the earth', but not only have the 'highest places' lost their character as "primary places of authentic wilderness" (8), they appear to have moved much closer. A trip to Antarctica or up Mount Everest—at least to Base Camp—is no big deal anymore, only a question of money time. However, the appeal to visit 'extreme' places where (mostly white, male, Western) humans cannot or do not dwell, is unbroken.[2] The illusion of uninhabited places leads, paradoxically, to crowding on cruise ships and climbing tours, because the fantasy of 'pure motives' remains disconcertingly successful and is only beginning to be widely accepted as a destructive force. 'High places' are regarded as 'extremes' that allow for unmediated experience of oneself and one's environment; they hold the promise of 'pure' knowledge. Here, modern scientific perspectives meet the (gendered) individualist attempt to will one's body into anything. This is intimately connected with atmospheric conditions and the manipulation thereof. In this paper, I aim to show how current mountaineering narratives contribute to and challenge notions of purity; how they construct 'high places' as narrative devices; and how they thereby produce climate as an entanglement of human and other-than-human, material and imaginary things, becoming a crucial element of our present culture of climate (change).

[1] Ian Bogost criticizes the tendency to draw "life lessons" from climbs (reaffirming, in turn, notions of 'purity'): www.theatlantic.com/health/archive/2019/06/free-solo-alex-honnold-lessons/592513/.

[2] Equally disconcerting is the tendency of mountaineering accounts, travel narratives and advertising to disregard the fact that people do live in or close to those places and the "deserted" wildernesses are often cleared for the tourist's pleasure.

Confrontation with 'extreme' climates—that is, atmospheric conditions unsuited to sustain (human) life—is a cultural icon for the malleability of environments. 'Extreme' qualifies both the conditions on a mountain (altitude, weather, environment) and the amount of energy and determination necessary to physically and mentally endure the perils of the endeavor. It refers thus to a relationship between humans and nature that is framed both in terms of opposition (e.g. humans 'conquering' the mountain) and of continuity (e.g. humans connected to, or on the same scale as the mountain). If 'extreme' means "situated at the farthest possible point from a center" (Merriam-Webster), high-altitude mountaineering produces a world in which center and periphery are very similar to classical notions of climate. "The actual meaning of the word 'climate' was expressed through the word 'zone', which meant 'belt'. The Earth was circumscribed by 'zones', bands lying between parallel circles and characterized by specific climatic conditions" (Boia 18). This cultural geography of climate connects latitudinal and altitudinal 'high places' with tropical mountains mirroring global climate zones, so that climbing amounts to a metonymical journey around the world:

> It was a commonplace of modern physical geography in the nineteenth and twentieth centuries that the altitudinal belts of tropical mountains such as Chimborazo or Kilimanjaro allowed the climatic belts of the globe to be observed and studied over the limited space of a few miles, and within sight of the equator. (Cosgrove/della Dora 3)

Taking up the image of the mountain-as-globe, mountaineering narratives reactivate an idea of climate that is not exhausted in a "weather-biased understanding of the atmosphere" (Fleming/Jankovic 2). Rodger Fleming and Vladimir Jankovic introduce the term "Klima" to denote their understanding of "climate [as] a discoursive vehicle capable of naturalizing matters of social concern into matters of natural fact" (2). Mountaineering tales draw on climate as a 'discoursive vehicle' because it appears to be undeniably 'natural'—it represents a pure confrontation with 'nature'; that is, the encounter happens undisturbed by other life forms. Thus, questions of responsibility and reciprocal relationships apparently have no effect on the mountain or the mountaineer. Moreover, *Klima* acts as a naturalizing force and, thus, invalidates and refutes its own cultural and social character. This can yield troubling effects in regards to the perception of human-nature-relationships. Where it serves to naturalize certain culturally produced environments and relationships over others, *Klima* as a discoursive vehicle becomes a potentially dangerous device. It conceals the cultural nature of the human made world in and outside of fiction.

In this paper, I want to argue (1) that the motivation to scale 'high places' has always been a negotiation of how far human environment production can reach, and (2) that literature is a privileged site not only of the production of environments but also of the (potential) disguise of harmful cultural practices and material consequences. I will read and analyze mountaineering narratives as climatological tales; that is, as stories negotiating cultures of climate and human-environment-relationships in terms of experimenting with scales and scaling.

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## Scalar Encounters

The confrontation with deep time that has been part of mountain imaginaries for centuries (Rigby 131) is intensified by anthropogenic climate change, biodiversity loss and pollution or, in more general terms, the geo-cultural concept of the Anthropocene. One of the Anthropocene's defining characteristics, according to Timothy Clark, is a "derangement of scales" (Clark, "Scale" 150), e.g. the uncanny realization that everyday actions have global consequences. This leads not only to well-meaning but nonsensical environmental advice but undermines societal structures and cultural norms: "Received concepts of agency, rationality and responsibility are being strained or even begin to fall apart in a bewildering generalizing of the political that can make even filling a kettle as public an act as voting" (151). This is due to "scale effects," which occur when increasing the scale of a given thing leads to fragility or malfunction:[3]

> As a result of scale effects what is self-evident or rational at one scale may well be destructive or unjust at another. Hence, progressive social and economic policies designed to disseminate Western levels of prosperity may even resemble, on another scale, an insane plan to destroy the biosphere. (150)

'The Anthropocene' names the growing realization that there is no "outside". [4] But what is its effect on narrative ascents of Earth's highest peaks? If climbing—like filling a kettle—becomes a public act, one that further implicates the climber in environmental degradation, which insights beyond a simple dismissal of the practice can be gained from reading mountaineering narratives? How can stories of scaling (a mountain) contribute to understand the conflict between the temporal and spatial range of the Anthropocene and the inescapable 'terrestriality' of human beings?[5]

The historian Deborah Coen proposes to circumvent the intellectual gridlock of conflicting scales by adapting a "history of scaling" (132). Instead of accepting the apparent incompatibility of the human (terrestrial) and planetary (global) scales with which current environmental crises confront us, scaling analyzes "the work of mediating between different systems of measurement, formal or informal, designed to apply to different slices of the phenomenal world […] in order to arrive at a common standard of proportionality" (132). A critical reading, or "scale critique" (Clark, "The Value" 40) of seemingly innocuous tales of individual success contributes to the project of a 'history of scaling' what Timothy Clark terms "scalar literacy" (38). Shifting the focus from confrontation to mediation, then, reveals insights beyond the statement that the modernity in which mountaineering narratives mattered is over, or has never been modern in the first place. Instead, I aim to demonstrate how applying Coen's idea allows for a thorough investigation of proportionality not only in history, but in literary and cultural studies as well.

[3] Clark exemplifies this with conflicting scales on a map (you try to find a certain address and someone gives you an image of the whole earth.

[4] See. California and the disappearance of the outside…

[5] "Terrestriality, defined as that 'normal' prereflective sense of scale inherent to embodied human life on the Earth's surface, forms a kind of transcendental, one that both underlies and exceeds any view that it is merely our social context that determines our understanding of ourselves" (Clark, *Ecocriticism* 33).

In a way, reading mountaineering stories as climatological tales is a challenge to the myth that the turn from 'Mountain Gloom to Mountain Glory', which Marjorie Hope Nicholson famously described, marks the end of pre-modern ignorance toward and the beginning of modern dominance over non-human and human nature. This supposes that physically scaling heights helps to achieve a literal vantage point, producing a disconnection of body and mind, thus, overcoming terrestriality. But, as Nicholson already showed in 1959 and scholars such as Kate Rigby (2007) and the contributors to Sean Ireton and Caroline Schaumann's excellent collection *Heights of Reflection* (2012) explored further, even in regards to mountains: we have never been modern (Latour 1993). Regardless of the groundbreaking scientific discoveries (Rigby 138), the distance of even the highest peaks is not enough to escape our own 'terrestriality', neither physically, nor scientifically. Terrestriality, it appears, is a matter of atmosphere (Nitzke, "The End").

Hence, in stories of high-altitude climbing the quasi-transcendent goal of achieving a position 'above' the world is undermined because the climber not only finds nothing but 'world', s*he *makes* world as s*he climbs the mountain. From this perspective 'climatological tales' turn out to be stories about the consequences of human actions, the inescapable connection of human and other-than-human worlds through body and atmosphere. Breathing, moving, digesting; all the basic bodily functions become—often inadvertently—subversive acts insofar as they undermine meta-poetic notions of climbing-as-writing[6] and challenge epistemic claims to objectivity and 'pure' reason. Climate emerges as an entanglement of physical and imaginary actors, calling into question what can be known and told about the mountain (climate) at all.

Comparing *Der fliegende Berg* and *Das größere Wunder,* I will show how the novels mediate different modes of gaining and presenting knowledge by means of scaling. Both the narrative and the narrated bodies become a medium of this technique. The protagonists are in constant exchange with their environments and hence are not moving through static spaces or 'nature' but produce sites and atmospheres as dynamic environments, of which they are an integral part. There is no confrontation but a mutual production of environment and organism; in other words, the 'natural' environments are not to be understood as a *surrounding* outside of the characters but are in constant exchange with and depend on the characters and the narration.[7]

## Acclimatization and Scaling

The excessive attention to atmospheric phenomena in mountaineering narratives is more than instrumental to the ascent. It is crucial both for the climbers and the climatological reach of the narrative. Accounts of mountaineering devote large parts to the description of acclimatization, because it is literally vital knowledge. But it is also a narrative scaling device that engages the reader in a sort of metonymic pact; that is, the

[6] Berwald 2012.

[7] This is a paraphrase of what I have elsewhere coined "ökologisches Erzählen" (ecological storytelling, Nitzke, "Prekäre").



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promise that identification is founded on the material basis of common terrestrial experience—the 'extreme' quality of the environment intensifies the metonymic technique (Verfahren) of realist storytelling (Baßler 3).

This concerns non-fictional narratives as much as it does fictional ones, Jon Krakauers *Into Thin Air* (1999), for example, uses detailed descriptions of the techniques, resources and time that different commercial providers deem necessary to a proper ascent, in order to compare their levels of responsibility and ultimately assess their part in the 'disaster-season' of 1996. A sudden change in weather conditions cost the lives of 30 climbers, among them several experienced guides. Krakauer, though an experienced mountaineer and "outdoors-writer", joins a commercial Everest-expedition as an amateur high-altitude climber. He frames his text as a participating observation to determine the validity of increasing criticism towards commercialized climbing expeditions. By subjecting his own body to the climate of the mountain and the skills of his guides (or lack thereof), Krakauer calls upon the metonymic pact. He insinuates a double perspective: that of the able, though relatively inexperienced participant in a specific commercial Everest-tour and that of a journalistic observer of commercial high-altitude climbing as a whole. Thus, the relationship between human and environment is primarily focused on practical considerations. Krakauer draws conclusions about the moral and ethical consequences as a context to his experience and evaluation of specific ways of scaling the mountain, focusing particularly on the technique of acclimatization.

Adaptation to the low oxygen levels of high altitudes above approximately 5000 m (Everest Base Camp) requires a weeks-long process of ascending and descending the mountain in stages. Above 8000 m begins the so-called 'death zone' where the oxygen saturation of the atmosphere is too low to sustain life. Acclimatization is in equal shares a physical and a mental process, requiring the climber not only to pull through a range of unpleasant and dangerous bodily sensations but to put off the goal time and time again. Although crucial to a successful ascent, it is easy to see why the tedious and exhausting praxis beguiles some into cutting corners. Krakauer argues that responsible tour guides know how to select and prepare their participants by helping them to incorporate literally the knowledge that is necessary to achieve their goal. This is important, as many claim that the Mount Everest-business has reached a point where, if you are rich enough, you can practically pay Sherpas to carry you to the top. The interconnectedness of knowledge in an abstract sense and the ability to discipline one's mind and body according to that knowledge is significant in respect to the central claim of mountaineering narratives. While traditional associations of mountaineering, which according to Denis Cosgrove and Veronica della Dora figure "high places as spaces of muscular and masculine challenge" (4) are still prevalent, Krakauer shifts focus to a somewhat more environmentally aware narrative. His emphasis on responsibility contrasts responsible and irresponsible climbing businesses in terms of their attempt to control both corporeal and atmospheric conditions vs. an attempt to adapt to them.

Krakauer, like many others, claims to take part in the kinds of climbing efforts that are 'pure' in that they are based on an interest in immersing oneself, albeit with technological support, into natural environments, rather than on conquering and

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controlling them. Nonetheless, the technological process of adaptation to the nearly unbreathable atmosphere evokes a "discourse of purity" (Gordon 1) or, in other words, a claim to naturalness.

In order to reach Mount Everest's summit, the majority of climbers rely on supplemental oxygen, hence, creating a separate, individual breathing environment within and apart from the 'death zone'. While Krakauer allows for a "purity of motivation" (1), advocates of 'gasless climbing' despise any form of mountaineering that requires 'technology'. Reinhold Messner, arguably the most famous advocate of this style of mountaineering, claimed to reach Mount Everest's summit by "fair means", that is, without supplemental oxygen, "or not at all" (1).

Attaching moral value to a style of mountaineering—whether in regards to means or motives—creates precedence for relationships between human and non-human agents on a much larger scale. Even though it can be argued that there is hardly any way for a human being to climb a mountain without technological aides (such as ropes, boots, measurement instruments etc.), the tendency to judge encounters with nature according to a perceived spectrum of alienation is decisive. Instead of shifting the discussion to the question whether all mountaineers are inevitably cyborgs and thus claiming that the usage of supplemental oxygen to be regarded as an arbitrary rule of a sport (Gordon 2), I propose to regard acclimatization as a technique of scaling: Aside from the literal scaling of rock and ice, acclimatization entails that humans *cannot*, in fact, be placed just anywhere on Earth. From this perspective, hypoxia, or altitude sickness, is the dangerously real 'scale effect' (Clark) of high-altitude mountaineering. It debunks the modern fallacy that life on a 20th century consumer level can be continued as it is in the changing climate of the future. Acclimatization and its effect on the narratability of experience is explored in the literary texts to which I will turn my attention in the following. On the surface, Thomas Glavinic's *Das größere Wunder* and Christoph Ransmayr's *Der fliegende Berg* hardly are futuristic narratives that explore artificial climates and prospective human-nature-relations. Nevertheless, the respective 'scalings' of climate and biography outline both problematic and promising ways in which bodies and atmospheres form cultures of climate.

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**Climate and Biography**

The different types of mountaineering presented in the novels are mirrored in a significantly different form. Much like Krakauer, Thomas Glavinic's protagonist Jonas attempts to summit Mount Everest as part of a commercial tour, whereas the brothers Liam and Patrick in Ransmayr's text attempt the first summit of Phur-Ri, the "Flying Mountain". While both texts allude to the mythical qualities of a journey this extreme, Ransmayr's novel even assumes the form of an epos.[8] Close to the spoken word, first-person-narrator Patrick's recollection of the endeavor to reach one of the 'last white spots' on the world map, formally exhibits the story as "work on myth".[9] It confronts

[8] On Ransmayr and the specific poetics and form of his narrative texts, see Nitzke, *Widerständige Naturen*.
[9] See Müller Funk 2008 (Die unendliche Arbeit am Mythos).

vastly different timescales and presents a version of the mountaineering narrative which, though eerily reminiscent of for example Reinhold Messners *Der nackte Berg* (2002), maps out a narrative environment (Um-Welt) which explores the force of narrating itself as a crucial part of the physical reality of mountaineering. *Das größere Wunder* on the other hand provides a narrative that comes much closer in form to mountaineering narratives such as Krakauer's in negotiating physical mountains and "mountains of the mind" (MacFarlane).

It is no surprise that there are significant overlaps and similarities between mountaineering accounts such as Krakauer's and literary renderings. However, it is less a relationship of adaptation (of 'real' events into more thrilling 'fictions'), but one of co-evolution. The 'reality', or rather, plausibility of the climber's environments rests on metonymic techniques in both cases. Narrative techniques play a particularly important role in texts that reside in the borderlands between fact and fiction. There, the "precarious nature" of ecological relationships becomes the engine for the reflection and, more importantly, the production of environments (Nitzke, "Prekäre Natur"). A crucial difference between these modes of writing about mountaineering, however, is whether narrative techniques are considered as a means to an end (to convey a 'story' or something that 'really happened') or the narrative text is itself the end. Still, this is no categorical difference but a gradual one and one that gains importance only in sight of rigid ideas about reality, objectivity and a subsequent expectation of discipline. Interestingly, mountaineering narratives continue a legacy that blurs these perceived disciplinary borders more than it affirms them. This has a significant impact on the cultural nature of atmospheres and climate.

As many of the essays in Cosgrove and della Dora's collection as well as Deborah Coen's research show (2011), even the distinction between 'narrative' and 'scientific' accounts is a relatively recent development in the history of geographical and climatological science. Coen focuses on the Austrian climatographer Heinrich von Ficker in the early 20th century to show how the identity of mountaineer and researcher actually enhanced the scientific value of his writings. Beyond providing the means to organize the vast Habsburg-empire, Ficker's "climatographies" used what he called "meteorological travel narrative" to synthesize data. As Coen outlines, this type of science was soon to be rendered irrelevant by the systematic institutionalization and later computerization of science and the end of the "heroic age of individual exploration" (62). While they are marked and marketed as 'novels', I read Glavinic's and Ransmayr's publications as versions of 'meteorological travel narratives' that continue the work of the researcher-explorers of the nineteenth century. Thus, they are viable sources for an understanding of cultural climates precisely because they focus—though with different success—on the poetological conditions of writing as much, or even more than, on the environmental conditions of the mountains.

*Das größere Wunder* lays strong emphasis on the protagonist's travel and subsequent personal development and adheres in many ways to the conventions of the *Bildungsroman*. As a child, Jonas and his brother are taken in by a wealthy patron because their mother is not able to care for him and the disabled Mike. Jonas conceives

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of travel as a form of communication between himself and "the world as a whole", or, in other words, as a practice of scaling between world and self: "Jonas lernte, dass Reisen an sich eine Form von Kommunikation sein konnte, Kommunikation mit sich selbst und mit der Welt in ihrer Gesamtheit […] ihre Erlebnisse waren wie Nachrichten an jenen Teil ihrer selbst, die sie noch nicht kannten" (56). When both his brother and his adoptive brother die, Jonas continues to travel the world alone. His inherited wealth affords him to find truly solitary places and communicate with himself and the world as a whole without risking contact with other human beings. Without necessarily dwelling too long on his privilege, Jonas is aware that his relation to 'wilderness' is one that cannot be universalized or scaled up. Solitude appears to be a privilege of the rich.[10] However, he seems to prefer places that are abandoned by humans rather than 'untouched' or 'truly wild', not necessarily because there are no such places left, but because he prefers human presence as a memory or absence rather than to confront himself with 'his kind' directly. That changes when he meets a woman, Marie, who rather stereotypically 're-socializes' him. The attempt to summit Mount Everest, for Jonas, is a way to deal with the subsequent break-up and an overall feeling of loss. Continuing a tradition to watch solar eclipses, Jonas climbs Mount Everest as much in search of yet another message to his inner self as to follow his death-drive. The tedious nature of acclimatization is above all a distraction from his lovesickness; most of the time, he is too preoccupied with his bodily reactions—which resemble exaggerated symptoms of lovesickness—to think much about his lost love. Instead, he joins the "Fight for Everest",[11] watching his fellow mountaineers succumb to hypoxia, and mental and bodily break down. True to metaphor, they appear as victims of a war: "Die meisten Mitglieder seines Teams schienen angekommen zu sein […] ein wenig erinnerten sie Jonas an die Opfer eines Giftgasangriffs" (462). The choice of words is significant—Giftgasangriff (toxic gas attack)—does not only suggest the mountain as an active opponent, but as an adversary not shying away from the worst possible means of combat. Despite their prosthetic breathing devices, the weapon that is the mountain's atmosphere threatens to defeat them. The unquestioned assumption that humans have a place anywhere on Earth is, thus, violently refuted.[12] Acclimatization as preparation for 'hostile' climates, here, is equated with military training for an advance into hostile territory. Consequently, it is met with a counter-attack. But since the opponent, Mount Everest, is indistinguishable from nature, the narrator's comparison falls short of making evident the vulnerability of the environment. Instead, it reiterates the phantasm of an all-powerful nature whose conquest is basically human self-defense. Nevertheless, this image effectively blurs the line between mountain and mountaineers whom the

[10] Here, the novel implicitly repeats what William Cronon already critcized in his seminal essay "The Trouble with Wilderness", albeit, it seems, without being aware of the problematic stance at all.

[11] Title of an Account of the 1924 Expedition by N.F. Norton and others which Robert MacFarlane calls upon as the reason for his fascination with mountaineering (1).

[12] In his essay *Luftbeben* (2002), German philosopher Peter Sloterdijk links the toxic gas attacks from 1915 to a radical change in human-nature-relationships. The weaponization of the atmosphere itself, he claims, eradicates the un-questioned assumption of its breathability and thus transforms the environment from a state of latency into one of evidence (Sloterdijk 7).

breathing equipment was supposed to safeguard. Lacking energy and oxygen, the mountaineers lose the ability to control their own actions and thoughts and feel hardly more than the penetration of their bodies by the mountain's *Klima*; that is, both the expectations and imaginations of the mountaineering history of Mount Everest and its physical atmosphere. In *Das größere Wunder*, the acknowledgement of the radical otherness or non-human nature of the mountain is the last attempt to remain separate, to distinguish oneself from one's environment:

> Es war kalt. Es war so kalt. Nicht einmal in der Antarktis hatte er so gefroren. Der Wind peitschte in gnadenlosen Böen gegen die Wand, und Jonas spürte, wie Ernst die Lage war, wie leicht nun ein Fehler den Tod bedeuten konnte. Alles um ihn war Gefahr, Menschen hatten hier keine Existenzberechtigung, sie durften nur auf einen Passierschein hoffen, auf ein Visum mit äußerst kurzer Rechtskraft. (460)

Despite the hostile climate and the death toll, the mountain cannot keep the climbers off its back. Yet, crowded as it is, the vision of Mount Everest as a pristine site of untouched natural force is proven wrong again and again. Jonas constantly encounters climbers unwilling to accept and respect that they are not the ones dictating the conditions of 'their' trip (and not all of them are the subject of poetic justice). Making up for his own short-comings with respect for the mountain and the professional mountaineers—like Krakauer, Jonas claims to be a rather inexperienced mountaineer when it comes to extreme heights—Jonas is humbled in a way that lets him seem, if not able, at least not delusional: "Ich habe hier nichts verloren, war sein einziger Gedanke. Echte Höhenbergsteiger sind Giganten. Ich bin keiner, Ich bin ein Eindringling in einer Welt, die für mich zu groß ist. Ich bin ein Hochstapler" (480).

Ironically, this thought as well as his final ascent are framed by hypoxia. Despite all warnings, and the stunning number of bodies covering his path, Jonas ends up on the summit all by himself. Deprived of oxygen, he succeeds in his unlikely endeavor and, almost against his will, becomes a somewhat pure climber. He scales the peak without supplemental oxygen since most of his group's supplies were stolen by other, less prepared climbers. However, it is this 'loss' that turns his solo ascent into the transformative experience he was seeking all along. [13] The exaggerated summit experience even leads to a personal happy ending. After a more than unlikely descent, Jonas' will to live is finally restored by a reunification with Marie. This can be read either as another ironic turn, a subversion of the idea of a 'pureness of motivation', or a deepening of the impression that the narrative is less than reliable and Jonas is in fact the imposter he fears to be.

Although centered on a single character, Glavinic's novel offers, sometimes inadvertently, an interesting picture of the collective effort necessary to scale 'high places' and its environmental consequences. The remarkable descriptions of the littered slopes and the apparent obliviousness of his fellow climbers to their destructive force

[13] Jonas' summit is in many respects a reversed version of Ulysses' journey to the underworld. He seeks clarity, if not divination, to complete his personal odyssey and find a way to return to the woman he loves—only in the extreme climate of the top of the world, it seems, Jonas is actually able to confront himself. In lieu of an underworld filled with spirits, the confrontation with the death-zone serves as a real-world transgression aimed at giving direction to an otherwise disoriented life.



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paint a grim picture of the chances to locate a spot on Earth that is not thoroughly pervaded by human beings—it appears likely only under the conditions of absolute oxygen depletion. Under these conditions, however, the high-altitude atmosphere ends up having surprisingly little effect. Despite the detailed descriptions of acclimatization and climbing techniques, the novel falls short of offering a position or a stance beyond that which Krakauer and others have criticized for years. Even Jonas' supposed transformation remains hollow as he does not appear to have changed at all.

Where *Das größere Wunder* culminates in a transformative experience, *Der fliegende Berg* begins with one.[14] The first chapter, called "Auferstehung in Kham. Östliches Tibet, 21. Jahrhundert", contrasts the practicalities of the narrator's encounter with death with the rhythm of verse and stanza:

> "Ich starb/
> 6840 Meter über dem Meeresspiegel/
> am vierten Mai im Jahr des Pferdes.
> Der Ort meines Todes/
> lag am Fuß einer eisgepanzerten Felsnadel,/
> In deren Windschatten ich die Nacht überlebt hatte.
> Die Lufttemperatur meiner Todesstunde/
> betrug minus 30 Grad Celsius,
> Und ich sah, wie die Feuchtigkeit
> Meiner letzten Atemzüge kristallisierte
> Und als Rauch in der Morgendämmerung zerstob." (9)

The contrast between form and content provides a sense of the sublime for the miserable fact that a sudden change of weather (Wettersturz) marks the prosaic difference between life and death. Neither the stunning vista of the stars nor the measurements of the mountaineer's instruments can provide a way out. When both ancient and modern means of navigation fail, the narrator loses orientation: "Als zuerst diese Zahlen/ und dann auch die Sterne verblaßten/ Und schließlich erloschen, hörte ich das Meer […]/ War ich am Grund des Meeres?/ Oder am Gipfel?" In a way, the opening scene confronts two ways of orientation: Stars and instruments refer to navigation by technological means, while the apparent disorientation of the protagonist makes room for another way to relate to the world: human relationships. His brother Liam, who finally finds and saves him, takes as much part in his apparent resurrection as the thought of his lover Nyema, whom Patrick met on the way to the mountain. The ocean that he believes he hears brings to mind the Irish sea, thus producing a precarious continuity between his home and his, or rather, his brother's destination. On the mountain, close to death, the instrumental network of latitudes and altitudes ceases to enforce world-shaping dominance. The world between the Himalayan summit and Ireland, between Patrick and Liam, Patrick and Nyema is emphatically not distinguished into objective and subjective, known and unknown, real and imaginary things. Here, I disagree with Olaf Berwald's reading of the novel. Berwald's interpretation of the narrator's death or dissolution as a "step into the uncontrollable danger of language itself" (347) relies very much on the suspension of disbelief. As his own analysis of the

[14] This reading of *Der fliegende Berg* is part of an essay on Ransmayr's specific poetics of time, see Nitzke, *Widerständige Naturen*.



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contrasts of the brother's approaches "competing but codependent methods of conceptual ascent" (336) and their eventual dissolution shows, the narrator is losing everything but control over the narrative. Quite the opposite is true: Throughout the text, the narrator demonstrates that, where all else fails, his voice and writing is, in fact, the only capable, if not reliable medium for their experience.

Climate becomes an agent in this account equal to human characters in the novel. It denotes the thin line between life and death that determines the course of the story. Although the narrator's death in the beginning of the novel seems to violate the inherent rules of realist fiction—e.g. "I" can never report their own death—the novel manages to balance realistic and seemingly fantastic elements of the plot. It instrumentalizes the atmospheric conditions to set up a precarious relationship between characters, narrator, reader, and environment which allows for a further subversion of straight dichotomies, such as those between climber and mountain, human and nature, the brothers and their approach to the ascent, and, finally, between fact and fiction. On the mountain, these distinctions turn out to be sea-level phantasms without consequence. What becomes apparent, instead, is the connection between living 'things'. In other words, the scale shifts from an opposition of human and nature to one in which biosphere and geosphere become significant, if not equal, actors of natural history. As a result, 'the human', at least for a moment at the beginning, is removed from the center of meaning making.

Tellingly, the novel achieves this by linking Patrick and Liam with butterflies that perish in the sudden cold spell. Just as the mountaineer depends on absolutely perfect climatic conditions, a drop in temperature, a storm or sudden windfall can kill off whole swarms of the butterfly. But the butterflies, which need to cross the Himalayan Mountain, Apollo, appear to be innocent of any intention to 'conquer' the mountain. Rather, the narrative speculates, their path is older than the mountain range they are crossing:

> Sie flatterten selbst über höchste/ schneeverwehte Pässe in unbewohnte,/ von Schmelzwasserbächen durchzogene Täler,/ folgten vielleicht einer Nahrungskette,/ die blühende Sümpfe mit Gletschern verband,/ vielleicht aber auch bloß/ einer zum Irrweg gewordenen Route/ einer Erinnerung, die in jene Urzeit zurückreichte,/ als sich zwischen dem Ort ihres Aufbruchs/ und ihrem Ziel/ noch kein Eisgebirge erhoben hatte,/ sondern nur sanftes, fruchtbares Hügelland. (17-18)

The Mountain Apollo represents a deep-time memory that reaches beyond the existence of the Himalaya. A species memory spanning geological time seems to render the life-time of an individual human utterly insignificant, and yet, this outlook does the opposite: They become part of a history that does not end with the death of an individual. [15]

In the novel Patrick *has been* dead, although his brother saves him and Liam *does live* on, although Patrick is not able to find him under the snow that has buried him and leaves the mountain alone. Again, purity of climbing style and of motivation are pitted against each other. It seems as if Liam's skills, knowledge and determination, rather than enabling his survival, condemn him, because he continually seeks control. Like Jonas in

[15] Sabine Frost reads the butterflies as black signs on white ground, resembling the letters on a page thus opening a level of poetological reflection.

Glavinić's text, Liam's desire to summit is a means to get away from and master an internal challenge. He does so in a twofold manner: first, by reconstructing old photographs of the thus far undiscovered mountain peak and using geodetic technology to model the unknown area and, second, by proving his own model right through to verifying it in person. At the same time, he seeks to prove the reality of his projected self-image. The project to control his sexual desires—his homosexuality stands in conflict with his familial upbringing – resembles the relationship between his geodetic models and the mountain: both appear as problems of control. Liam is certainly no amateur climber, but he fails to step out of his *idea* of the mountain—he climbs a simulation, albeit a very 'realistic' one, rather than dealing with the facts of the actual environment. The type of scaling that Liam's technology provides, accurate as his simulations might be, does not account for the *Eigensinn* or agency of the mountain.

Ransmayr's narrative is devoted to the effort of scaling. Even though the text contests all attempts to take control over climate and biography, the brothers do reach the peak of Phur-Ri and thus complete their journey. The straightforward success of Liam's computer model and the discovery of Phur-Ri is, nonetheless, put into perspective by the more complex negotiation of scales reflected in Patrick's narrative. Here, confrontations between the indigenous knowledge of Nyema's (Patrick's lover) tribe and Liam's simulation, between the past and the present, the physical and epistemological conditions of the environment are subject to continual negotiation.

In both novels, the intricate relationship between different local climates, the process and practices of acclimatization and the narrative structure which parallels biographical *Klima* and geographical 'high place' takes up a project that has lain dormant since the historical climatographies Deborah Coen investigated. The relationship of body and atmosphere as a feature of knowledge production and epistemological value is reflected in these texts, not as a deterministic feature, but as condition and result of putting oneself in relation to one's environment. Whether on the crowded and littered paths of Mount Everest or the untouched slopes of Phur-Ri, by his presence alone, the mountaineer connects climates on different scales, thus proving, after all, that the world he might have attempted to leave behind, literally sticks to his soles.

The perspective of *Klima* as a multi-faceted entanglement of nature and culture, body and atmosphere, fact and fiction, then, is a chance and a challenge to position oneself within an atmosphere. This perspective allows for a re-evaluation of mountaineering stories as climatological insofar as it challenges the notion that there is a 'natural' nature that somehow lies 'under' layers of cultures. Or, in Robert MacFarlane's words: "[a]t bottom, mountains, like all wildernesses, challenge our complacent conviction—so easy to lapse into—that the world has been made for humans by humans" (MacFarlane 274). Quite the opposite, the world, as encountered in narrative texts, *is* made not only for but by humans. Dying in a 'hostile' climate affirms that 'man' can in fact penetrate even the untouched slopes and leave a lasting mark on any mountain. The corpses littering Mt. Everest's peak signify, even more impressively than any flagpole, the reach of human beings. The bodies themselves become (frozen) monuments to human reach. Other than tropical climates, the planetary death-zones

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keep the dead in place, affirming the claim to universal human dominance and the (assumed) right to be virtually everywhere.

What Timothy Clark calls the "derangement of scales" (Clark, *Ecocriticism* 125) is at work, here, with a heightened sense of urgency: were it only one or two humans in 'contest' with a mountain and its *Klima*, the impact of said humans was indeed negligible. More than anything, the elaborate artificiality of *Der fliegende Berg* demonstrates the precariousness of such an assumption. Furthermore, from an ecocritical perspective, it risks to slide too far into purely 'literary' mountains, clinging to the modern illusion of human existence as an ultimately traceless phase of Earth's history. The construction of a plausible last 'white spot' on the world map, Liam and Patrick's solitude on the mountain and the almost entirely undisturbed contact with Nyema and her tribe in Tibet present, from this perspective, a problematic form of narrative nature conservancy. Despite its descriptive accuracy in regards to scenery, technique and plausible characters, it seems to be 'construed' as in 'unreal' because it is intensely reminiscent of a (wild) world that no longer exists. The narrative produces—precisely through this artificiality—a type of immediacy that for others is only available in extreme circumstances. Like Jonas' hypoxia-solo-summit of Mt Everest or a momentary delusion of solitude during a sudden snow storm,[16] the novel reactivates a dream of solitude that is, in the Anthropocene, a mere illusion.

Mountaineering, with its idea of immediate contact with wild, untouched nature resurrects an image of the world that is structured by spatially arranged climate zones; only now, in contrast to the classical order, the farther you are from the climate of the 'civilized' center, the better, because the 'extreme' seems to offer a spot away from the mess. Hence, they produce a nostalgic *Klima* which, if taken too literally, contributes to a type of benevolent denial of the ecological, social and ethical crises at hand. At the same time, they uncover a simultaneity of climate concepts which—instead of an ever forward moving motion—enriches the present with the past. In place of progress and order, it exposes mess and precariousness and in it a possible space to rethink and retell these all too familiar climatological tales.

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[16] "The world beyond the whirled snow became unimportant, almost unimaginable. I could have been the last person on the planet" (Macfarlane 277).



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# "She Moves Through Deep Corridors": Mobility and Settler Colonialism in Sharon Doubiago's Proletarian Eco-Epic *Hard Country*[1]

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## Abstract

This article analyzes Sharon Doubiago's American long poem *Hard Country* (1982) from the joined perspectives of ecocriticism and mobility studies. It argues that *Hard Country* is a proletarian eco-epic that rethinks human-nature relations from a working-class perspective shaped by different kinds of (im)mobility. In my analysis, I show how the text revises the American epic tradition by foregrounding working-class people's desire for meaningful relationships to place in light of histories of environmental injustice and displacement. Doubiago's text promotes traditional place-based notions of belonging, but it also challenges ideas about what kind of sense of place can be environmentally suggestive. In doing so, it allows for the emergence of a proletarian "ecopoetics of mobility" (Gerhardt) that emphasizes the bodily experiences of Doubiago's mobile narrator as well as U.S.-American histories and cultures of mobility. Among these cultures of mobility, settler colonialism stands out as a system of violent domination and form of environmental injustice (Whyte) that calls into question working-class people's desire to move or settle on dispossessed indigenous lands. As such, settler colonialism poses a challenge to Doubiago's proletarian ecopoetics of mobility, which must engage with the fact that white working-class people in the United States have always been perpetrators as well as victims of both environmental and mobility injustice.

*Keywords:* American literature, epic poetry, mobility, social class, settler colonialism.

## Resumen

Este artículo presenta un análisis del extenso poema americano *Hard Country* (1982) de Sharon Doubiago, combinando la perspectiva ecocrítica con la de los estudios de movilidad. El argumento principal es que *Hard Country* es una epopeya ecológica proletaria que reconsidera las relaciones entre los seres humanos y la naturaleza desde una perspectiva de la clase obrera, influida por diferentes tipos de (in)movilidad. En mi análisis, demuestro cómo el texto revisa la tradición épica americana, focalizando el deseo de la gente de clase obrera de tener relaciones significativas con el lugar ante las historias de injusticia medioambiental y de desplazamiento. El texto de Doubiago fomenta nociones de arraigo tradicionales basadas en el lugar, pero también cuestiona ideas sobre qué sentido del lugar puede ser medioambientalmente sugerente. Así pemite la emergencia de una "ecopoética de movilidad" (Gerhardt) proletaria que enfatiza tanto las experiencias corporales de la narradora móvil de Doubiago, como historias y culturas de movilidad estadounidenses. Entre estas culturas de movilidad, el colonialismo de los asentamientos destaca como un sistema de dominación violenta y como una forma de injusticia medioambiental (Whyte) que cuestiona el deseo de gente obrera de moverse o de establecerse en tierras

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arrebatadas a los indígenas. De esta forma, el colonalismo de asentamiento plantea un desafío para la ecopoética de movilidad proletaria de Doubiago, que debe comprometerse con el hecho de que la gente blanca de clase obrera en los Estados Unidos siempre haya sido tanto víctima como responsable tanto de la injusticia medioambiental como de la injusticia de movilidad.

*Palabras clave*: Literatura americana, poesía épica, movilidad, clase social, colonialismo de asentamiento.

Sharon Doubiago, a contemporary American poet living in Southern California, is the author of several books of poetry, stories, and essays. Among ecocritics, she is primarily known as the author of the essay "Mama Coyote talks to the Boys" (1989), a scathing ecofeminist critique of deep ecology.[2] Doubiago's poetic works speak to her ecofeminist politics as well, but they also go beyond it. In her first published book of poetry, *Hard Country* (1982), Doubiago already began to explore human-nature relationships while simultaneously foregrounding problems of poetics and positionality that remain crucial for debates surrounding ecopoetics, ecocriticism, and environmentalism in the United States today. *Hard Country* develops "from the [U.S.-American] tradition of sprawling didactic cultural collage exemplified by Olson's Maximus Poems" (Keller, *Forms* 6) and is characterized by "its massive scale and public sweep, elliptical and paratactic construction, didactic societal critique, quest-based exploration of both past history and the nation's current state, and speaker at once individual and collective" (Keller, *Forms* 27). Written at least partly in response to the U.S. Bicentennial celebrations of the mid-1970s (Doubiago, "Afterword" 268), *Hard Country* is a postmodern American epic (Brennan et al. 509) that combines autobiographical, historical, and mythical elements.[3] Organized primarily around the places that its female narrator Sharon inhabits or visits during extended travels through the United States and pervaded by "the ancient migratory theme" (Doubiago, "Afterword" 271), Doubiago's long poem explores the nation's past, present, and future by focusing on U.S.-American places and mobilities.

*Hard Country* foregrounds the ways in which different kinds of mobilities have shaped U.S.-American places and their histories. In this effort, it chronicles the narrator's

[2] Sharon Doubiago's "Mama Coyote talks to the Boys" criticizes the deep ecology movement for its sexism. This sexism, the poet argues, not only manifests in deep ecology's promotion of ecomasculinist, pseudo-universalist positions that refuse to recognize the gendered nature of human-nature relations, but also, more concretely, in deep ecologists' failure to acknowledge ecofeminist scholarship and its propositions for the kind of radical new ecological consciousness that deep ecology demands. Doubiago ends her short essay with the following appeal: "And so the paradigm change I am presenting to you: Ecologists must become feminists. If you don't, you are doomed to remain outside the real work of saving Earth" (44).

[3] A long debate exists about the nature of the (post)modern American epic and its relationship to the (post)modern long poem. Considerably less has been said on the "female" (Schweizer 10), "feminist" (Dewey 72), or "woman's epic" (Keller, "To Remember" 307). When this largely neglected, yet highly diverse tradition is discussed, as in Lynn Keller's influential study *Forms Expansion: Recent Long Poems by Women* (1997) or Jeremy M. Downes's *The Female Homer: An Exploration of Women's Epic Poetry* (2006), Sharon Doubiago is usually identified as one of few female American poets whose work can be clearly identified as epic.



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own travels, her grandparents' move from Tennessee to West Virginia, and her parents' work-related migration to California. It also evokes other historical mobilities, for example two legendary pre-Columbian explorations of North America, settlers' westward movement along the Oregon Trail, Native American removal, and the arrival of refugees in California after the Vietnam War. Commenting on this double-emphasis on place and (histories of) mobility, Jeremy Downes notes that the text's overarching narrative—the "circular journey of the hero and her current lover" (167)—is continuously interrupted by "many layers of subnarrative" (166) that have cumulative effect. In my reading of Doubiago's epic, I explore how narratives of mobility produce "places of depth" (Downes 167) in *Hard Country* and how they shape the representation of complex human-place relations in the text. I agree with Lynn Keller that Doubiago's epic text expresses an "urgent ecological awareness of the danger humans pose to themselves through failing to understand their place as part of the natural world" (*Forms* 39). Like Keller, I also find it noteworthy that the poet continuously highlights "the mixed positionality of the oppressed" (*Forms* 42) in an effort to challenge existing power hierarchies. Indeed, I see these two concerns as connected. In discussing how different kinds of (im)mobilities shape the lives of working-class people, Sharon Doubiago reveals the contradictory position that the working poor occupy in a nation built on capitalist exploitation and settler colonialism. Especially white working-class people, her long-poem indicates, are victims as well as perpetrators of both environmental and mobility injustice.

**Revising the American Epic Tradition**

Sharon Doubiago's poetry is both representational and rich in imagery, both narrative and lyrical. As Lynn Keller notes, Doubiago's "omnivorous free verse" (*Form* 19) is overall characterized by "straightforward documentary syntax" (27) but simultaneously relies on "fragmentation and parataxis, and on elaborate interweaving of motifs" (27). In its narrative passages, *Hard Country* chronicles a woman's life on the California coast and a road trip this woman, the narrator Sharon, takes across the United States. Throughout the epic poem, the narrator's experiences on the road are interspersed with personal memories and passages that link family histories to national histories of marginalization and oppression, allowing Doubiago to challenge "the discourses of nationalism with which the epic is entwined" (Goodman 449; see also Crown 80). Like other female poets revising the American epic tradition, Doubiago has to "wrestle with the mixed legacy of the largely male-authored modernist collage long poem, finding different strategies for capitalizing on its liberating dimensions while evading its misogynist ones" (Keller, *Forms* 16). Throughout *Hard Country*, Doubiago's narrator foregrounds a female perspective on hegemonic (patriarchal) accounts of national history, emphasizing those histories that resist triumphalist nationalist narratives:

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> [...] wading through stories and flesh,
> and dislocation and death, searching for the key
> to this overstuffed country, stories and people and land
> I have pulled to myself, like sperm to the egg:
> The American soul, hard, isolate, stoic, and as Lawrence said:
> a killer. [...] (81)

Overwhelmed by the abyss that is the "American soul" but unable to turn away from the "stories and people and land," the narrator begins her very personal critical examination of "this overstuffed country" by turning to the coastal landscapes of her childhood:

> In a land hard to love, in a harsh, masculine land
> this was the first, these rhythmic, low-wide mesas
> coming west from the mountains we lived in as girls
> down to the sea, the first land I loved. (34)

Alluding to the book's title, the above passage denounces the United States as "a harsh, masculine land" that is "*hard* to love" (emphasis added). The grown narrator's desire to love her country with a devotion comparable to the one with which she used to love the "rhythmic, low-wide mesas" of Southern California as a young girl is one of the underlying themes of Doubiago's revisionist American epic. The impossibility of this desire is the poem's greatest tragedy, but it is also its most important lesson.

One reason why Doubiago's adult narrator cannot love the entire country as she loved the landscapes of her childhood is that she refuses to approach places as if the realm of nature was distinct from politics. When Sharon thinks about her beloved California coast, she must also take into account the ecological, social, and political realities of her day and the histories that produced them:

> [...] I write this in verse, this letter to you
> as a poem, this news story, these many stories, this essay,
> this spilling and collecting of my life in these hills.
> The details are ominous, journalistic, the experience
> deepest poetry: how the San Onofre Nuclear Generating Station
> and Richard Nixon
> share the south and north rim of the lagoon
> down in which
> the refugees and marines are camped,
> at the mouth of which
> beneath this bridge we cross over,
> Mexican farmworkers are bent
> all in a row
> for our food.
>
> We are blonde, we are never stopped at the border
> checking stations, though I wonder
> of everyone's exile here
> where during the war I passed and saw
> a doomed California Brown Pelican
> rowing her prehistoric, now DDT lope
> between the San Clemens White House
> and the weeping juices of the setting sun (35)

Addressing environmental pollution, U.S. militarism, the plight of Vietnamese refugees, the racist logic underlying U.S. border policies as well as the exploitation of migrant workers, Doubiago's narrator resolves to write "deepest poetry" that reaches beyond the personal experiences of her "life in these hills." Her poetry, as Kathleen Crown puts it, "[bears] witness to the stories of the dispossessed" (80-1), wherever she encounters them. Such an endeavor entails a critical examination of her own social position. For even as the narrator muses whether everyone's relationship to the polluted lagoon may be viewed as one of "exile," she recognizes the privileges her racial background and citizenship status afford her. Not least, these include the privileges of whiteness and mobility: neither will Sharon be "stopped at the border" like the "Mexican farmworkers" mentioned in the excerpt, nor will she have much trouble traveling across the United States later in the epic poem.

Like in the above excerpt, Doubiago's epic poem repeatedly addresses issues of environmental degradation. *Hard Country* for example evokes the devastating effects of "atomic testing in the Pacific" (18), the "mountains sucked hollow for bombs" (87), or the logging of the ancient "Redwood Empire" (98) of Albion Ridge (see also Crown 81). At the same time, Doubiago is concerned with the lives and struggles of working-class people, whether she refers to the Mexican migrant laborers in the excerpt above, to waitresses like the narrator's mother (70), to seasonal farm workers like the narrator's father who used to catch "the freight to make the wheat harvest" (19), to a "black worker/ against East Texas oilfield" (211-212), or to striking Arizona miners who were "hauled out to the desert to die" (225) during the Bisbee Deportation of 1917. Linking environmental degradation with social injustice, Doubiago's long poem critiques the disruption and distortion by the capitalist system of the desire of working-class subjects for meaningful relationships to the more-than-human world. *Hard Country* can therefore be called not only an American eco-epic, but also a *proletarian* eco-epic.[4]



**Sharon Doubiago's Proletarian Eco-Epic**

Doubiago frequently addresses the place of working-class people in the nation by embedding the stories of her immediate and extended family into larger historical, political, economic, and environmental contexts. "Signal Hill," the very first poem of *Hard Country*, alludes to the narrator's own working-class background as well as to the complex relationship between California's oil industry and the United States' status as a military superpower. Because the narrator's mother is in hospital to be treated for tuberculosis, her father—who is described in other poems as either unemployed or doing odd-jobs—goes drinking "*every Friday when he gets paid*" (5; emphasis original),

[4] Michelle M. Tokarczyk examines what she terms the American "working-class epic" in her article "Toward Imagined Solidarity in the Working-Class Epic: Chris Llewellyn's *Fragments from the Fire* and Diane Gilliam Fisher's *Kettle Bottom*" (2014). She also mentions Doubiago (869), without however identifying her as a possible precursor to the works she discusses.

leaving the children alone in the car outside a bar. From the parked car—a symbol of physical and social mobility in U.S. Culture as well as an emblem of the "human 'mastery' of nature" (Urry 51)—the children see the city that "*spreads beneath [them]/ in a rainbow-spilled oil puddle*" (5). In the distance, they perceive *the giant robots that pump/ the fields*" (5) and the "*battleships/ that strain at their ropes/ toward bigger war across the sea*" (5). The references to the pump robots and the oil puddle evoke the environmental costs of California's coastal oil industry, costs addressed again in a later passage that mentions the "polluted waters/ beneath Signal Hill" (240). The mention of a "*bigger war across the sea*" points to the "smaller" wars at home, which include, as Doubiago's epic suggest, the exploitation of the working poor by big industry, of nature by humans, of women by men, and of Native peoples by white settlers.

Doubiago's narrator traces her working-class background back several generations, often locating the disenfranchisement of America's working poor in a troubled relationship to place and to the non-human world. These troubled relationships have very real, material consequences: they manifest physically in people's bodies. This is why Sharon's great-grandmother, whose entire family worked in North Carolina's textile mills, "witnessed/ seven of her ten children die/ of tuberculosis" (198) and eventually died from the disease herself. Her granddaughter, the narrator's mother, was orphaned by the disease as a child and became sick herself as an adult. Passed down from generation to generation, tuberculosis not only functions as a marker of working-class heritage in Doubiago's proletarian eco-epic; it is also used as a signifier for how social class influences human-nature relations and vice versa:

> Once a doctor asked me
> if the family was from North Carolina
> as if the place itself
> tells the story
> of swampy, humid lungs
> […]
> of the *thing* still carried
> in the breath of my children (199; emphasis original)

As the narrator indicates, the "place itself" does not "tell[/] the story" of her maternal family's long history with pulmonary tuberculosis. However, the vulnerable bodies of her relatives tell the story of "the place" her ancestors lived in ("North Carolina"), just as her children's bodies tell the story of her family's working-class background. Working-class bodies here record the frequently precarious relationships of the poor to their places of residence and the long-term effects that acts of environmental injustice committed against the laboring poor can have even after relocation.

On her father's side of the family, the narrator's relatives suffered doubly from the interconnected exploitation of working-class people and the land. Sharon's grandfather worked in the copper mines of Tennessee, which eventually left him and many of his fellow miners unemployed and sick, with "*nothing but the black dust that filled their lungs*" (186; emphasis original). *Hard Country* here evokes another case of




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environmental and labor injustice. Yet, the most unsettling passages set in the Copper Basin of Polk County focus not on Sharon's grandfather, but on her grandmother and her son, the narrator's father. As the reader learns, Sharon's paternal family lived in Ducktown, one of the cities located within a roughly 30-km$^2$ area of Tennessee that had been stripped almost completely bare of vegetation by the early twentieth century because of logging and the toxic sulfuric emissions of the local swelters (see Mathews and Harden 7).[5] In the passages focusing on her family's life in the Copper Basin, Doubiago's narrator evokes working-class people's desire for intimate relationships to the more-than-human world, the distortions of these relationships by capitalist exploitation, and the harrowing physical and psychological consequences of those distortions.

One section of the sequence "Headstone," appropriately entitled "The devastation that remains," addresses matters of environmental degradation alongside matters of (re)productive justice by juxtaposing images of a devastated (Mother) Earth with images of the equally devastated body of the narrator's grandmother:

> [...] your husband crawling
> beneath all borders
> deep in the earth's mind
> the light on his forehead
> leading the way
> and five children crawling through you.
> You never healed, you told me,
> *the Edens' head too large* (17; emphasis original)

Comparing the act of copper mining to that of giving birth, Sharon represents both as productive and destructive, leaving the Earth/woman with lasting scars and open wounds ("You never healed"). The juxtaposition of her grandmother's husband "crawling/ beneath all borders/ deep in the earth's mind" and of her "five children crawling through [her]" highlights the fact that the South's labor-intensive extraction industry relied on the ongoing re/productivity of "*Edens*" and other working-class families like them. It not only required working-class people to remain in "this poisoned corner of Tennessee," it required working-class bodies to remain re/productive, despite the horrific working and living conditions in the Copper Basin.

Doubiago's proletarian eco-epic links the environmental and mobility injustice inflicted on the miners and their families to a long-term exposure to pollution on the one hand and to a class-based immobilization on the other. A form of "slow violence" (Nixon 2), this immobilization can be described as a "displacement in place" (Nixon 17) that leaves a community "stranded in a place stripped of the very characteristics that made it

[5] This large-scale clearing was already the second in the region. During a first heyday of copper mining in the Basin between the end of the Civil War and 1879, roughly 130 km$^2$ of forest had been cut to produce fuelwood and charcoal for the refinement of the mined copper (Mathews & Harden 6). When the copper mines of Polk County were closed in 1879, some of the local vegetation began to grow back, only to be cut down again during the second heyday of the Copper Basin, which began in 1890.



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inhabitable" (19).[6] The Tennessee Copper Basin is such a place, even if Sharon's father did not realize so as child:

> Daddy
> who thought the whole earth
> without trees, without flowers, without grass
> the way it's supposed to be, he thought, death-cracked
>
> blood-red rain-rotted tree-split body-ripped hillskulls
>
> who swam in a green river of cupric chloride
> and copperheads (18)

The narrator's paternal family could not move away from the place their own labor helped to destroy because they were dependent on the income that the mining industry offered. They had no choice but to live in a devastated environment made toxic by "a green river of cupric chloride." *Hard Country* denounces these ignoble living conditions. Even more, it acknowledges working-class people's desire to live in places of natural beauty. For Sharon's grandmother, this desire remained tragically unfulfilled, the narrator indicates:

> Sometimes, Grandma, you walked to the Georgia border.
> I make it up. You must have walked
> to North Carolina looking for a tree.
> How else did you bear
> That poisoned corner of Tennessee? (17)

For the narrator's father, by contrast, a new opportunity for such fulfilment arose when he left the Copper Basin to move to California:

> We moved to the country
> to start over. [Daddy…]
> was climbing a hill and when he came to the crest
> the sky went inside him.
> Time blew around like a cloud
> And he saw the earth for the first time.
> She was green, not red. (27)

Representing the father's hike in the "Sierras" (27) as a spiritual experience, this passage describes the moment in which the narrator's father begins to develop an intimate connection to his new place of residence. He not only awakens to the beauty of California's mountains, he also begins to realize the extent of the devastation he was surrounded with as a child. It is only after moving and by moving from one place to

[6] Nixon uses the terms "displacement in place" (17) and "displacement without moving" (19) interchangeably. Both describe the experience of groups of people, indigenous or non-indigenous, who live in places where "an official landscape is forcibly imposed on a vernacular one" (19). According to Nixon, a "vernacular landscape" is one that "is shaped by the affective, historically textured maps that communities have devised *over generations*" (19, emphasis added). Although Nixon speaks about human-place relations that are produced by long-term inhabitation, which is not necessarily the case with Doubiago's working poor, I would maintain that the term "displacement in place" is still useful for a situation like theirs, in which rapid environmental degradation makes it impossible for a community to create a stable "vernacular landscape" in the first place.




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another that the narrator's father is able to overcome the displacement in place suffered by his family and so many working-class people like them.

Doubiago's proletarian eco-epic depicts working-class people who are alienated from the more-than-human world but long for what one might describe as a proletarian sense of place unimpeded by capitalist exploitation and environmental destruction. The sense of place promoted in these passages is often a traditional one that views "the local as the ground for individual and communal identity and as the site of connections to nature that modern society is perceived to have undone" (Heise 9). This emphasis on the local also becomes apparent when Sharon stops at the Eden family graveyard during her travels through the U.S. South. Musing about her early European ancestors, the narrator imagines one of the headstones as an outgrowth of the body buried beneath it. Then she reflects on the radically changed landscape the headstone surveys:

> The broad human head
> and shoulders rise from the forest floor.
> The nose, the mouth, the eyes
> look from the ridge out over the land
> that has disappeared beneath the waters
> of Dale Hollow Lake on the mid-
> Tennessee-Kentucky line (7)

The valley near the Tennessee-Kentucky border which the family graveyard overlooks, the reader learns, was flooded, when the completion of a dam in 1943 created "Dale Hollow Lake," a water and flood control reservoir that permanently displaced the narrator's paternal family from the land that their ancestors had inhabited for several centuries. Unlike many later passages in *Hard Country*, this one does not acknowledge the displacement of indigenous people by European settlers from what had originally been Cherokee lands. On the contrary, by using the family graveyard to speculate about a settlement history that reaches beyond official historical records—Doubiago suggests that the first Eden was buried in the graveyard in "1558/ […] 50 years/ before Jamestown"(7)—this passage reveals the tension that arises when Doubiago's examination of her family's relationship to place comes into conflict with histories of Native American displacement. Rather than addressing this conflict, the gravestone passage speaks to the hierarchy that the nation establishes among (white) settler-citizens of different socio-economic backgrounds. This hierarchy comes to the fore when working-class people's claims to the land go against corporate or state interests, whether these interests be economic or environmental.[7]

[7] While Dale Hollow Dam was officially built for power generation and flood control, Dale Hollow Lake has since become a widely popular recreational area. Similar projects were undertaken in several other places along the Tennessee and Cumberland River during the 1930s and 40s. T. Crunk's poetry collection *New Covenant Bound* (2010) deals with the consequences of two such "federal land- and water-management projects" (Crunk "Memoriam")—Kentucky Lake and Lake Barley, which today form the Kentucky Woodlands National Wildlife Refuge—and the resulting forced removal of "between 28,000 and 30,000 people" ("Memoriam").




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The graveyard passage is not only significant from an ecocritical perspective interested in mobility because it highlights that working-class people have sometimes been displaced for reasons of environmental development and thus been turned into "conservation refugees" (Nixon 18). The fact that Sharon imagines a gravestone as an ancestor's body that "rises[s] from the forest floor" to survey the lost family lands is also significant because it speaks to the narrator's desire for rootedness and belonging. This desire for rootedness and belonging is tied to the kind of human-nature intimacy that is often associated with people who have inhabited and worked a particular piece of land for decades, if not generations. Doubiago's evocation of Wendell Berry's poetry a few lines later (7; see also Doubiago, 259, n. 3) reinforces the ecolocalist idea of rootedness as an environmental ideal. After all, Berry has long been known not only as a regionalist ecopoet who celebrates the "simplicity of farm life" (Hönninghausen 285), but also as a poet-farmer who cultivated his Kentucky farm without the use of modern technology. By promoting this particular brand of land ethics, the beginning of *Hard Country* stands in tension with other passages in Doubiago's epic poem in which the travelling speaker relinquishes ideals of rootedness at least partly, replacing them with what I would describe, in drawing from Christine Gerhardt, as a more "mobile sense of place" (425).

Writing about Emily Dickinson's and Walt Whitman's ecopoetics and questions of mobility, Gerhardt identifies three tactics that imbue the works of these two proto-ecological poets with a mobile sense of place:

> the construction of places that are significantly shaped by mobilities, of speakers whose environmental insights are critically informed by their geographical movement, and of broader cultural frameworks characterized by overlapping movements of people, materials, goods, and ideas. (426)

All of these tactics are crucial for Doubiago's ecopoetics. Indeed, when the poet discusses working-class people's relationship to the land, she not only evokes matters of environmental injustice and "displacements in place," she also evokes different histories and experiences of displacement. In other words, she discusses different kinds of materialities—the land, bodies, and the material conditions of production and reproduction that connects them to each other—and different kinds of (im)mobilities. As I will argue, *Hard Country* is thus not merely characterized by an "ecopoetics of mobility" (Gerhardt 425), that is, by "a way of poetic world-making that conceives of natural phenomena and human-nature relationships in particular places as both ecologically suggestive and fundamentally geographically mobile" (425). Rather, it is characterized by a *proletarian ecopoetics of mobility* that reflects on how different kinds of mobilities and cultures of mobility shape (white) working-class peoples' relationships to place and to the more-than-human world.




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**Sharon Doubiago's Proletarian Ecopoetics of Mobility**

Mobility studies scholarship by critics such as John Urry (*Mobilities* 2007), Mimi Sheller (*Mobility Justice* 2018), Peter Adey (*Mobility* 2009), or Tim Cresswell (*On the Move* 2006) emphasizes that (im)mobilities, along with the particular forms and meanings they assume at a given moment, must be analyzed in their specific social, political, and cultural contexts. This perspective also informs Gerhardt's discussion of an "ecopoetics of mobility, which considers "places of mobility" (426), "mobile speakers" (432) and "mobile cultures" (437). Such an approach is also useful when analyzing Doubiago's epic poem *Hard Country.* In the section "Avenue of Giants," for instance, Doubiago's mobile narrator Sharon is driving from Southern California to Oregon when she begins to reflect on how "cars travel/ the mythical highway north/ through iridescent, silver-blue columns/[w]hile loggers haul south/ *Trees of Mystery*" (107, emphasis original). These unassuming lines draw attention to the West coast of the United States as a place that is shaped by different kinds of mobilities, all of which are ecologically significant. The passage mentions U.S. car culture and the human labor involved in the commercial logging of old growth giant redwoods on the coast, which in many places was still underway when Doubiago wrote *Hard Country* (see Newton). In doing so it points to the paradoxical fact that both the efforts to preserve charismatic megaflora such as Sequoias and the exploitation of the environment for leisure by nature parks such as *Trees of Mystery* have been made possible, at least partly, by the rise of automobility.[8] Finally, by reading this passage with a triple focus on the environment, mobility, and social class, it is revealed that all the industries alluded to here—the logging industry, the transport industry, the automobile industry, and the tourist industry—heavily depend on the mobilization of working–class people for labor and leisure. These industries thus influence working-class people's perspectives on the non-human world as well as a working-class culture of mobility that informs both the experience of Doubiago's narrator and Doubiago's ecopoetics.

A few pages before the narrator starts on her road trip across the United States, Doubiago places a "Prayer for the beginning of a Journey" that also speaks to her ecopoetics of mobility. In order to complete the task the narrator has set for herself, namely to report on "*what is seen and heard*" (101) in her native country, the traveling poet asks to be plunged "*into deepest earth*" (101) hoping to re-emerge with a better understanding of the places she visits, of the histories of the people "*who have preceded* [*her*]" (101) and of the hopes of "*those who come after*" (101). The image of going

[8] Christof Mauch discusses the paradoxical link between discourses of preservation and exploitation in the United States. Suggesting that the relationship of the American people to nature has always been ambivalent and dominated by economic concerns, he uses the example of national parks to argue that while the railway was used to open up the "American wilderness" to the public, it was the rise of automobile tourism during the 1920s and the promotion of nature tourism as a patriotic adventure at the home front during the two World Wars that turned national parks into sites of mass consumption (see esp. 11-13).



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underground used in the poem recalls the myth of Persephone, a mythical traveler between places. It also ascribes an explicitly experiential and indeed physical (one might also say environmental) dimension to the act of writing, which the text conceives of as involving intimate, bodily encounters with the more-than-human world. It is this combination of movement and intensive engagement with the materiality, histories, and mythologies of places, this "mov[ing] through deep corridors" (131), as Doubiago puts it elsewhere, that characterizes the proletarian ecopoetics of mobility developed in *Hard Country*.

As she travels the country, engaging with places and their histories, the narrator's white, female, working-class body emerges as an instrument of sense-making, an orientation device indicative of a poetry of witness that values the poet's subjective and yet mobile and thus shifting perspective on the world:

> *I understand*, in this moment of wind
> I understand we are each stranded
> in our essential Body
> […]
> I understand we come from a truth
> we each wholly and separately possess
> to a particular house and street in time
> to tell only the story our body knows
> and our tragedy will be
> we will not tell it well
> because our witnesses
> will be telling their stories
> […]
> my own story
> is understanding our singleness
> that I am destined to move my body and time
> into the body-time
> the story
> of Others. (8-9; emphasis original)

While this passage maintains that the narrator's bodily experiences determine her ability to tell some stories better than other ones, it also expresses the narrator's conviction that poets must try to tell stories that go beyond their personal experience. The best way to do so, the narrator suggests, is by "mov[ing one's] body and time/ into the body-time […] of Others." Movements of the imagination seem to be as important to Doubiago's narrator here as traveling to those places where history happened to engage them with her "essential Body."

Especially those parts of Doubiago's eco-epic that focus on the narrator's travels through the Midwest and the South indicate that Sharon's movements provide her with a more acute sense of how U.S. cultures, national mythologies, and histories of mobility have shaped the country's non-urban environments:

> the countless trips back and forth across the country
> the road we've grown so old on
>
> animal paths, old Indian foot trails




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become superhighways, interstates, buffalo

tearing their way across it, covered wagons
covering it, the flesh
our feet have walked upon, the fear
we still have alone at night
of the land (88)

Linking the narrator's own eastward movement to the westward expansion, the poem implies that whereas the "covered wagons" of the early treks began to disrupt ecologies in the American West, modern "superhighways" and "interstates" are in the process of obliterating them. Despite their ongoing efforts to conquer nature by "covering" the ground with tar and concrete, white working-class Americans like the narrator have been unable to overcome their "fear […] of the land," which the speaker imagines as "flesh," a metaphor that seems to refer both to a dangerously unstable, living land and to the genocide against indigenous people by which the West was won.

Several poems in *Hard Country* evoke historical migrations and displacements together with environmental histories. The sequence "Heartland," for example, conjures up the catastrophic hygienic conditions on the Oregon Trail, a westward trek that took several hundred thousand emigrants from Missouri and nearby states to the Pacific Coast during the mid-nineteenth century. Rather than presenting these migrations as a heroic feat of brave pioneers, Doubiago describes a "trail to Oregon through/ garbage heaps" with "wells and latrines, too close" that left behind "seepage/ and stink" (119). A later poem, "The Heart of America: Yellowstone," elevates the destructiveness of the westward expansion to even grander proportions by associating it with the movement of tectonic plates. It can be argued that this kind of geological imagery naturalizes the westward movement, deflecting blame and responsibility away from the settlers and thus erasing the devastating effects of settler colonialism. Yet, I would argue that Doubiago primarily uses geological imagery here to emphasize the epochal nature of the European settlement of North America together with its lasting impact. Indeed, voicing a critique of the westward expansion and its underlying ideology, "The Heart of America" suggests that U.S. settler-colonial appetites remain as boundless in Doubiago's time as they were 150 years prior. Just as the "continents" are constantly "sliding" (136) against each other under the surface of Yellowstone, the poem ominously concludes, "America is always coming from the East,/ overriding everything in her path" (137). *Hard Country* thus also explores ambivalences that arise in the relationship of white working-class subjects with the land because they are migrants and settlers.

## Doubiago's Proletarian Ecopoetics of Mobility and Settler Colonialism

Doubiago's narrator frequently addresses the migratory histories of her European ancestors. She describes her maternal family as "seatossed here a hundred years before the Revolution" and as a family of "westwalkers" driven by the "mania" of




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"starting over" (196). Where Doubiago mentions such family histories of migration without addressing the histories of Native American displacement, a tension arises in *Hard Country*. This tension is especially noticeable when Doubiago employs what Eve Tuck and K. Wayne Yang describe as "settler moves to innocence" (10), that is, "strategies or positionings that attempt to relieve the settler of feelings of guilt or responsibility without giving up land or power or privilege" (10). When Sharon lays claim to several indigenous female ancestors (Doubiago 197), for example, she is using a rhetoric of "settler nativism" (Tuck & Yang 10).[9] And when she mixes nature imagery and sexual imagery implying that women's bodies are being colonized like the land, she employs "colonial equivocation" (Tuck & Yang 17). Doubiago's use of settler strategies of evasion is problematic because they do the cultural work of legitimizing settler colonialism regardless of the author's intent. Yet, I would argue, her epic poem also works against relieving settler guilt and against evading settler responsibility. One strategy *Hard Country* employs to this effect is addressing the role (white) working-class subjects have played in the dispossession of indigenous people and the devastation of Native American ancestral lands. Another is foregrounding the narrator's own whiteness and the privileges that results from this racialization.

In one passage from the section "Headstone," Doubiago explicitly links the dispossession of indigenous communities and the devastation of Native American ancestral lands to the environmental degradation caused by copper mining:

> the place of silence where there are no birds
> the place where there are no seeds, only scars
> of your having been there
> a wide red-rock copper river
> named for a chief named Duck
> whose trees are gone, who now is lost, whose babies
> crying in the kudsu
> crawl back onto the hills (19)

Providing yet another powerful description of the "place of silence" in which the narrator's father grew up, these lines depict an environment in which native vegetation has been replaced by "kudsu," an invasive vine that has been spreading uncontrollably in the South ever since it was introduced at the beginning of the twentieth century as a means to revitalize exhausted soils. The absence of birds and trees in this excerpt points to the removal of the Cherokee from the region, while the mention of kudsu points to the "invasion" of indigenous lands by white settlers. At the same time, the quoted passage describes the destruction of indigenous ancestral lands by industrial copper mining. It thus points to the troubled position (white) working-class people such as the members

[9] Doubiago also claims Native American ancestors for herself. In the afterword to the 1999 reprint of *Hard Country,* she refers to government records that identify two of her great-grandparents as members of the "North Carolina Lumbee" and "Eastern Boundary Qualia Cherokee" (272). While she cherishes this heritage, she also acknowledges the "righteous Native contempt" for culturally non-indigenous, white-identified "wannabes" (272) like herself.




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of the narrator's family hold in U.S. history: they are victims of environmental injustice and displacement, yet, they are also perpetrators of environmental destruction and agents of settler-colonial domination, which, as Kyle Whyte notes, is necessarily a form of environmental injustice, because it "disrupts human relationships with the environment" (125).

While the narrator of *Hard Country* sometimes identifies with indigenous peoples and even occasionally assumes their perspective, Sharon usually speaks "specifically as a *white* woman" (Goodman 455; emphasis original):

> and in dreams I am Goldilocks still
> wandering through cities and woods
> searching for the place
> that will fit me
> *just right,* Goldilocks
>
> the ache to be
> Bear, little white person
> without roots (21; emphasis original)

Like the story of Goldilocks, *Hard Country* is a text about a "little white person" in search for a home ("roots"). The quoted passage suggests that Sharon's "ache" to be Native ("to be/ Bear") is futile but also unnecessary, because as white person she can take up residence wherever she chooses, even if the home in question is already occupied. As Doubiago suggests a few pages earlier, her narrator's "white body" can function "as place/ of sanctuary" (10) and as "city of refuge" (11) until she has found a "place/that will fit [her]/ *just right*" (21; emphasis original). What the narrator gradually realizes during her travels, then, is that being a "little white person" in America means having mobility and settler privilege. Yet, it also means that she is a "betrayer of the Body, the Earth" (256) and a "*consort, abettor, accomplice*" (256; emphasis original; see also Keller, *Form* 57) to the settler-colonial violence committed for her benefit.

By foregrounding the embodied perspectives of a white working-class poet, Doubiago points to a problem that cannot be easily resolved: if a non-indigenous person moves from place to place in search of a home in a settler nation like the United States, especially if she is white, her mobility can never just be a strategy to gain a better understanding of places and their histories because her movement and desire for emplacement also perpetuate settler colonial violence. This is why writing poetry about human-nature relations and (histories of) mobility presents white settler poets like Doubiago/Sharon with a dilemma:

> I took a vow to never be a poet
> because the art I was taught
> is too delicate to sing of genocide.
> But what else could I sing
> while people were being murdered
> in my name? (144)




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Settler poets who want to write about the nation can be silent about (settler-colonial) histories of violence, or they can write about them, although the poetic models available to them will be inadequate to the task. Doubiago has resolved "to sing," which is why she must address the history of settler colonialism with whatever language is available to her, not least because, as her narrator asserts, all the people murdered for the sake of the (settler-colonial) nation, "were being murdered/ in [her] name" as well.

*Hard Country* is not a decolonial text, which would require for it to support, if not explicitly demand a "repatriation of Indigenous land and life" (Tuck & Yang 1). However, Doubiago's proletarian eco-epic is critical of settler colonial violence and thus examines the heritage and the burden that comes with being a white settler. "*It was our grandparents who did it*" (142), the poet writes in the poem "Wyoming," adding:

> Now when we reach for this land
> we think of invasions
> from Outer Space
> because for so long we were
> the alien inhuman invaders (142)

Using the plural "we," Doubiago counts her narrator among "the alien inhuman invaders" and thus among those Americans who inflict settler-colonial violence by "reach[ing] for this land." Although the ambiguous use of tenses in the excerpt might indicate that the narrator treats settler colonialism as a matter of the past, Doubiago does consider the relevance of settler colonialism for the nation's present. Trying to understand what her self-positioning as a (descendant of) white settler(s) means, Sharon not only asks, "How did we do it?" but also "How do we bear it?" and, even more importantly, "How do we live now?" (143). Doubiago does not claim to have the answers to these questions. What she vows to do is to continue searching for answers, even if these answers must remain flawed and provisionary, by writing poetry that looks to the past to examine the present and, ultimately, to shape more viable futures.



## Conclusion

One of the last sections of *Hard Country* looks to the future by returning to several passages from the long poem that also address the three topics at the center of this essay: working-class people's relationships to place, American histories of (im)mobility, and settler colonialism. Revising the passages set in Tennessee's mining country, Doubiago writes:

> I tell you everyone I know has one of these stories,
> the end of love, the rivers damned, the earth mined,
> the gems carried out to make the bomb.
> Once I took a vow never to be a poet, but now,
> this manmade desert back of us, this 200th anniversary,
> how can I not polish and string
> these beads of blood and light?
> […]


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> I tell you your hometown is just symbolic
> of what could happen.
>
> the whole earth
> without trees, without flowers, without grass, or birds,
> the way it's supposed to be, our children will think, plutonium
>
> splashed blood-red rain-rotted tree-split body-ripped hillskulls. (243)

Transposing her description of the Copper Basin's "manmade desert" onto "the whole earth" and shifting attention from the past to the future, Doubiago warns her readers of nothing less than planetary destruction. In order to prevent such a catastrophe, Doubiago ends *Hard Country* with a Whitmanesque gesture that is as grand as it is desperate:

> [...] I am the Pelican:
> the consumed heart between the White House and the Sun
> the human between the male and the female
>
> with only love for hope
> look back onto the whole country, its lethal tide
> its love of death
> its hatred of love
> and warn you (258)

Entrusting poetry with the impossible task of bridging differences that may be unbridgeable, Doubiago positions herself as an arbiter for the "whole country" (see also Goodman 460). The poet's "hope" for America is a "love" that acknowledges difference (and indeed *Hard Country* is most effective when it examines these differences carefully), while also transcending it to find common ground based on shared experiences. For many of us, Doubiago's proletarian eco-epic *Hard Country* suggests, one such shared experience (albeit one heavily burdened by history) is the longing for belonging that results from displacement; another is the experience of living on an increasingly damaged planet.

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# Thinking Globally, Acting Locally: Ecology and Human Rights in Gioconda Belli's *Waslala*[1]

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## Abstract

Gioconda Belli's futuristic novel *Waslala* reveals the many tensions that arise when one explores human rights within a context of planetary ecological crisis. While the novel criticizes human exploitation of natural resources and the resultant differential development and economic inequality, at the same time it affirms access to and control of resources as a fundamental human right. Using Steve Stern and Scott Straus's framework of the "human rights paradox" and Jason Moore's description of the "Capitalocene," I argue that *Waslala* demonstrates two fundamental tensions between human rights and environmental issues. First, the novel shows how attention to the universal principles of global ecological balance may undermine the human rights of individuals constrained by geography or economic class. Second, it demonstrates how the human right to property is implicated in global ecological crisis. Although *Waslala* purports to privilege human rights over ecological concerns, at the same time it highlights the impossibility of separating the two, prompting a rethinking of the definition and practice of human rights within the context of global ecology.

*Keywords:* Gioconda Belli, human rights, ecocriticism.

## Resumen

*Waslala*, novela futurística de Gioconda Belli, revela las múltiples tensiones que surgen cuando se exploran los derechos humanos en el contexto de la crisis ecológica global. Mientras la novela critica la explotación humana de recursos naturales y la resultante desigualdad de desarrollo humano y económico, a la vez afirma el acceso a y control de los recursos como un derecho humano fundamental. Haciendo uso de las teorías de Steve Stern y Scott Straus sobre "la paradoja de los derechos humanos" y del concepto del "Capitaloceno" de Jason Moore, postulo que *Waslala* demuestra dos tensiones fundamentales entre los derechos humanos y los problemas ambientales. Primero, la novela muestra cómo atender a los principios universales del balance ecológico global puede socavar los derechos humanos de individuos limitados por razones geográficas o económicas. Segundo, demuestra cómo el derecho humano a la propiedad está implicado en la crisis ecológica global. Aunque *Waslala* intenta situar los derechos humanos por encima de los temas medioambientales, al mismo tiempo hace hincapié en la imposibilidad de separar a los dos, lo cual provoca que se reconsidere la definición y práctica de los derechos humanos dentro del contexto de la ecología global.

*Palabras clave:* Gioconda Belli, derechos humanos, ecocrítica.

[1] I am grateful to Victoria Christman, Andy Hageman, Elizabeth Steding, and Linda Winston for feedback during the writing process. Thanks to Mackenzie Zenk for research assistance and to the anonymous reviewers for comments that shaped the essay.

In 2008, Ecuador became the first nation in history to grant legal rights to Nature, or the Pachamama. The new Constitution included articles affirming Nature's "right to integral respect for its existence" as well as "the right to be restored." Since that landmark moment, other countries have made similar moves to recognize the rights of nonhuman entities. For example, the Whanganui river in New Zealand was granted legal personhood in 2017, thereby ending 140 years of litigation by the Maori tribe to recognize the river as an ancestor. Gerrard Albert, lead negotiator for the Whanganui tribe, celebrated the decision for dismantling "the traditional model for the last 100 years of treating [the river] from a perspective of ownership and management."[2] In these and other cases, the granting of rights to nonhuman beings affirms the claim that Nature should be considered a legal agent. At the same time, bestowing rights traditionally reserved for human beings to nonhuman entities questions not only the boundaries but also the established hierarchies between the human and nonhuman spheres. If rivers or mountains can be considered on equal footing as humans, what are the implications for the definition and practice of human rights?[3] Can a human right to a resource such as water exist if the water itself possesses rights? How does the anthropocentric perspective of human rights relate to a biocentric view of planetary ecology?

Situated at the uncomfortable crossroads of human rights and environmental issues, Gioconda Belli's futuristic novel *Waslala* exposes the many tensions that arise when one examines human rights within a context of planetary ecological crisis. Set in a not-so-distant future, in which the world is divided between industrialized nations that have eliminated their green spaces and isolated territories that exist merely as oxygen producers and garbage dumps for developed countries, *Waslala* aims to critique the fallout of neoliberal economic policies in Latin America. In brief, developing nations must pay the price for the wasteful actions of their more developed neighbors, as regions in the global south are mandated to preserve green spaces by order of the Environmental Police, the enforcement arm of a global Corporation of the Environment which controls the production of oxygen. Previous unsustainable practices in developed nations are compensated for by controlling the "progress" of others, exemplifying the lingering effects of colonial projects based on resource extraction.[4]

Yet while the novel strongly criticizes human exploitation of natural resources and the resultant differential development and economic inequality, at the same time it affirms access to and control of resources as a fundamental "human right." By critiquing consumption rather than property, *Waslala* demonstrates the paradoxes that arise when human rights are predicated upon the control of nonhuman "resources." As both human rights and global ecology are framed in terms of economy—human "worth" and natural

[2] Other examples of legal rights of nonhuman entities include Bolivia's 2010 "Ley de Derechos de la Madre Tierra," which guarantees Mother Earth a series of rights, including the "right to life," "right to diversity," "right to water," and "right to regenerate," among others. The Ganges River also claims legal personhood, and in July 2019, Bangladesh became the first country to grant all its rivers the same legal status as humans.
[3] The nonhuman sphere also includes sentient beings such as animals.
[4] For more on colonialism and resource extractivism, see DeLoughrey and Handley, Nixon, and Shiva.



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"resources"—the novel exposes the fissures between "thinking globally" and "acting locally." Mindful of how ecological crisis is both interpreted and experienced differently in the developed and developing worlds, *Waslala* reveals two tensions between environmental issues and human rights. First, the novel shows how attention to the universal principles of planetary ecological balance may undermine the human rights of individuals constrained by geography or economic class.[5] Second, it demonstrates how attention to the human right to property is implicated in global ecological crisis. The novel therefore illustrates not only how global ecology and human rights are fundamentally interconnected, but how the universal ideals underpinning both concepts pull in opposite directions. In brief, although *Waslala* purports to privilege human rights over ecological concerns, at the same time it highlights the impossibility of separating the two, prompting a rethinking of the definition and practice of human rights within the context of global ecology.

**The Paradoxical "Nature" of Human Rights and Ecology**

Both human rights and planetary ecological crisis may best be understood through what historian Steve Stern and sociologist Scott Straus term a "double-pull" between global and local (22). In *The Human Rights Paradox*, Stern and Straus note that while human rights are universal—rooted in principles that transcend specific contexts—local conditions determine how rights are defined, interpreted or addressed, and this double-pull between global and local informs any analysis of the landscape of human rights (9). Applying this concept to ecological issues, the idea of the "Anthropocene," the proposed geologic era marked by human impact on climate, represents the global aspect of the double-pull, due to its far-reaching scale. As Mark Anderson explains in his introduction to *Ecological Crisis and Cultural Representation in Latin America*, the current ecological crisis flattens an understanding of both space and time: temporally, the concept of the Anthropocene conceives of ecological processes on a geologic rather than human timeframe; meanwhile, the interconnectedness of globalization causes a loss of a sense of place. The local emerges with the parallel idea that not all of humanity has impacted the planet equally, and one must consider local environments and different cultural groups when analyzing ecological crisis. In other words, flattening all the "Anthropos" into one group (thinking globally) ignores differential development and fundamental inequalities at the local level.

Anderson's central question: "how does concern for local environments and cultural groups intersect with the vastness of planetary ecological crisis?" (xxi) echoes the

[5] This first paradox has received the majority of critical attention. For an exploration of how *Waslala* exemplifies "third wave ecocriticism" by rejecting "neo-imperialist anti-development", see DeVries. For more discussion of how the novel critiques first world environmentalism, see Barbas-Rhoden, "Greening Central American Literature." See also Chapter 4 of Barbas-Rhoden, *Ecological Imaginations in Latin American Fiction*.

one posed by Stern and Straus regarding the understanding of human rights.[6] Just as universal human rights are informed by local conditions, global ecological issues intersect with local environments. Looking at *Waslala* through this framework of global versus local highlights the double-pull between universal concepts related to planetary ecological balance and the pressing daily needs of individuals struggling for survival and for whom a more universal view seems a luxury.

Through its treatment of this tension, *Waslala* appears to exemplify what scholars Elizabeth M. DeLoughrey and George B. Handley refer to as an "aesthetics of the earth" in environmental literature of the global south (36). Given the central role environmental issues have played in empire building, DeLoughrey and Handley explain the postcolonial suspicion that surrounds any privileging of planetary ecological crisis;[7] a focus on the global at the expense of the local is at best elitist and at worst a form of what Richard Grove terms "green imperialism." An "aesthetics of the earth" resists such elitist tendencies, for it "calls attention to the universalizing impulses of the global" (DeLoughrey and Handley 36). By highlighting the dangers of attending primarily to planetary ecology and repeatedly insisting on the importance of considering local concerns, Belli's novel shines a spotlight on the universalizing impulses of global ecology, even as it reveals the concomitant universalizing impulses of human rights.

**People versus Principles Part I: Global Ecology, Local Rights**

*Waslala* is set in the fictional region of Faguas (a clear pseudonym for Nicaragua), one of the marginalized green spaces reserved for oxygen production and waste depository for the developed world. It tells the story of Melisandra, a young woman who goes in search of Waslala, a mythical utopian community established by a group of poets, which vanished mysteriously along with all its inhabitants. Accompanied by a foreign journalist appropriately named Raphael, her quest to find the lost land takes her to the corrupt heart of her country, where powerful drug lords control both the economy and the populace. Melisandra's search for Waslala becomes a journey to create a brighter future for the inhabitants of her country, who struggle against both local corruption and global politics that have caused widespread environmental degradation as well as the stark imbalance of political and economic power.

[6] For more on this global/local tension in the context of ecology, see Morton's *The Ecological Thought*. Morton argues that a consideration of ecological issues necessitates contemplating both the vastness of the planet and local concerns. However, he posits that most conceptions of nature or ecology imagine a position "outside" from which to analyze relationships between human and nonhuman, without recognizing that this "outside" position is both impossible to attain and necessarily anthropocentric.

[7] Many scholars of postcolonial theory have noted how the ecological movement has traditionally been associated with North America and Northern Europe, meaning there has been a notable blind spot regarding the global south. The call for "deep ecology," for example, has been viewed as simply another form of colonialism, as it implies imposing a foreign model of empire on former colonies. For an excellent discussion of the ways in which ecological criticism and postcolonialism differ, see Nixon's "Environmentalism and Postcolonialism." For a discussion of how patents and intellectual property rights over biotechnology embody a new form of colonialism, see Shiva, *Biopiracy*.



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*Waslala* highlights the many paradoxes of the double-pull of "thinking globally" (attending to principles) and "acting locally" (attending to people), revealing how a commitment to a higher cause often leads to unintended consequences that undermine or question the universal ideal. First, the novel articulates a tension between a global need for oxygen production and local demands for livelihood. *Waslala* makes clear that the needs of the planet trump those of the people of Faguas when it comes to decisions regarding the management of natural resources. By arranging a situation in which oxygen is exchanged for electricity and other goods from the First World, the Corporation of the Environment ensures that Faguas and other "oxygen-producing nations" do not maintain local control over their own territory. Helicopter patrols search for illegal logging, while acts of "ecological terrorism" such as incinerating areas of forest are severely punished with sanctions affecting the distribution of electricity or other material goods (Belli 110). Developed nations maintain strict control over the management of timber resources, thereby ensuring that places such as Faguas remain in a state of perpetual underdevelopment. The Corporation of the Environment serves as an updated colonial power, replacing resource extraction with resource preservation, but to the same end of control and dominance. The ideal of "ecological balance" brings devastating consequences to the local population, for it imposes an external model of conservation that Scott DeVries terms "neo-imperialist anti-development" (44).

The port of Las Luces exemplifies how this "neo-imperialist anti-development" has affected the economic progress of Faguas. When the travelers arrive to Las Luces at sundown, Raphael's first impression of the place is of "a mirrored shantytown," as the sun's reflection glitters off the buildings (96).[8] Closer inspection reveals a town constructed entirely of recycled materials, where airplane wings and submarine hatches serve as doorways, and windows are comprised of discarded computer screens and skylights. The poignantly ironic image of doors of global transit machines now embedded in place and computer screens no longer providing windows to the world emphasizes the contrast between global abundance and local poverty and also underscores Faguas' role as serving the world's needs rather than its own. The town embodies this contradiction between progress and poverty, with pothole-ridden roads shared by modern electric vehicles and horse-drawn carts, prompting Raphael to muse that Las Luces represents an intersection "between human habitat and garbage dump" (99). Although Las Luces exhibits evidence of technological development, the omnipresent dust bathes the town "in a sepia tone," which Raphael describes as "the light of past times" (100); Faguas literally appears to exist in a former era.

Although painfully aware of global economic inequalities, even the protagonist Melisandra voices the perspective of the Corporation of the Environment, stating "It's much more logical to use [recycled] materials in place of wood […] It's more important for the trees to produce oxygen]" (98). Yet the same "logic" that prohibits the construction of

[8] All translations from the Spanish are my own.

wooden homes also leads to widespread poverty and corruption. Unable to utilize their natural resources for any type of production other than oxygen, the inhabitants of Faguas subsist within a makeshift economy. Some make their living sorting through the tons of trash that arrive daily in barges from the developed world, rescuing or repurposing the detritus to sell. Others resort to less legal opportunities for advancement, including the cultivation of filina, a hybrid of marijuana and cocaine, the strong demand for which in the developed world has caused a healthy network of trafficking in the region. The production and transport of filina generates conflict between rival factions and has resulted in the consolidation of power in the hands of the Espada brothers, drug lords who install and remove governments at their will and ensure that the country remains in a state of permanent armed conflict. The global demand for filina, coupled with the lack of opportunities for economic advancement, preserves the imbalance of power between Faguas and the rest of the developed world.

This interplay between global and local also manifests itself through the characters that populate the novel's pages. The visitors who arrive at Melisandra's home on the river are all foreigners from the more developed world: a journalist and a scientist from the United States, two Dutch women, and a gold dealer from Germany. Even the representative from the Spanish-speaking world hails from Argentina, considered more European than other Latin American nations (and which merits its own name in the novel, rather than a pseudonym like "Faguas"). The problematic power relationship between Faguas and the surrounding world plays out among the characters as well, as the majority of the visitors are smugglers who remove minerals and other resources from the country in exchange for arms and coveted merchandise from the developed world (19). Described as the root cause of some of the country's biggest problems, these individuals seek financial enrichment for themselves at the expense of the local population, whom they hope will "sell themselves to the highest bidder" (18). The same regions that once exploited Faguas in order to facilitate their own development are now linked to the Corporation of the Environment's current policies of preservation of green space.

At the same time that the novel critiques differential development, *Waslala* also indicates that technological solutions from the developed world cannot simply be imported to Faguas. Put simply, the principle of progress (seen in advanced technology) does not always serve the needs of local inhabitants. For example, the traditional mode of river transport, the bongo—a shallow vessel powered by rowers—proves superior than modernized boats. Experiments with hovercraft-type vessels propelled by airplane engines failed, as increased speed precluded maneuverability, and ultimately "nothing had been able to match the efficiency of the primitive crafts" (67). Updated with a few modern touches—a transparent covering that provides sun protection yet allows unimpeded views of the scenery, and nightlights powered by rechargeable batteries—the bongos survived "almost unaltered" (68) due to the craft's ability to adapt to "the humors and differing depths of the river, as well as the abuse of the river captains" (67). The novel implies that any solutions to Faguan problems must respond to local needs, thereby



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questioning the doctrine that external definitions of "progress" equal better living.[9] In the double-pull of (universal) principles versus (local) people, *Waslala* indicates that people come first.

Belli's novel clearly demonstrates how overconsumption and greed in the developed world have led to environmental disaster, the effects of which disproportionately affect the people of Faguas. In this, the work makes visible what Rob Nixon has termed "slow violence," a non-spectacular violence caused by environmental degradation, the consequences of which may be hidden or invisible due to the temporal distance between cause and effect (Nixon, *Slow Violence and the Environmentalism of the Poor*). This slow violence is perhaps best seen in the central episode of the novel: the fatal contamination of several garbage workers with Cesium-137, a toxic radioactive substance found in one of the trash containers sent from the developed world. Enamored of the beautiful glowing powder, some of the adolescent workers paint their bodies with the radioactive substance, discovering too late that their momentary diversion with what they took for "phosphorescent paint" has proved to be a fatal mistake (184). Engracia, the woman who oversees the sorting and repurposing of the garbage, is similarly contaminated, to the horror of her lover Morris, a North American scientist with a metallic arm that can measure toxins. Speaking to the exposed individuals, Morris enumerates the aftereffects of contamination: "In a few hours you will suffer vomiting, fever, headaches, burns, your skin will sting. You will lose fluids and electrolytes in your intercellular spaces, you will suffer spinal cord damage, your hair will fall out…" (185-86). His description of the prolonged process of dying emphasizes the temporal distance between cause and effect, as the deaths of the workers occur months after the radioactive material was illegally discarded. Geographical distance is also highlighted, as the garbage pickers who suffer the consequences of contamination live a world away from those who disposed of the radioactive substance. The added fact that the discarded toxin comprised part of a now-outdated remedy for cancer in the developed world further underscores the agonizing distance—both temporal and geographical—between Faguas and the rest of the world. As Melisandra poignantly and pointedly asks Raphael, "If these things happen, I wonder what all this development was for" (190).[10]

The episode of radioactive contamination not only exemplifies "slow violence" but also underscores the central tension between admirable principles and the ugly

[9] For a discussion of how *Waslala* uses the science fiction genre to question technological advancement, see V. Anderson.

[10] Belli includes an author's note at the conclusion of the novel that emphasizes this nonspectacular slow violence, explaining that she based this episode on a toxic event that took place in the Brazilian city of Goiania in 1987, when garbage pickers discovered a tube of brilliant blue powder and similarly celebrated the novelty. 129 people were contaminated, and seven people died, including a six-year old girl whose birthday party had been illuminated with the glow of the fascinating powder. Citing Eduardo Galeano's description of the event, Belli notes that although it was "the worst nuclear accident in the Americas" and occurred only a year after the well-publicized Chernobyl disaster, this event was condemned to oblivion (342), further underscoring the way in which such episodes of "slow violence" do not attract media attention.



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consequences they may engender. The description of the incident is replete with contrasts between the stunning beauty of the radioactive material and the dire results of its manipulation. As Melisandra contemplates the contaminated bodies, she thinks, "They looked so beautiful. Engracia seemed like an ancient Goddess, terrible and magnanimous, recently arrived after a starry journey. The boys had the magnificence and lightness of androgynous ephebes who had emerged from the sacred forest [...] It was difficult to imagine that something so beautiful was deadly" (187). The remainder of the scene develops this contrast between beauty and ugliness, as the characters spend the evening dancing and singing in a gorgeously tragic affirmation of their lives.

The contrast between the beauty and ugliness seen in the incident of radioactive contamination mirrors a wider distinction between worthy principles and harmful effects that is developed in *Waslala*. In several key moments the novel emphasizes the ethical imperative to choose people over principles. For example, as a journalist, Raphael repeatedly faces a conflict between his obligation to the story and his responsibility to the human subjects whose lives are affected by his reporting. When faced with a choice to broadcast a news story about the illegal cultivation of filina in Timbú, a community of orphans who raise the drug for survival, he ponders these dueling obligations. Krista, a Dutch woman who has traveled to Timbú to adopt an infant, warns Raphael that if he publishes the report the environmental police will burn the plantations, effectively eliminating the only source of income for the village. When Raphael makes the moral argument "While the orphans live off of the cultivation of filina, their idyllic existence is tainted with perversity. In fact they are the Espada brothers' accomplices," Krista counters that sending toxic garbage is equally immoral, and concludes: "For me principles will never come before people" (232). Caught between the admirable imperative to tell the truth and the sobering consequences of his actions, Raphael seeks a middle path, yet the narrative's message regarding the relative value of principles versus people remains consistent.

The tension between universal principles—however admirable—and local realities occurs in several contexts in the novel, including its discussion of utopia embodied in the place of Waslala. The group of poets who founded Waslala sought a way to escape the ravages of war in their country; its structure and existence rests upon universal values of community and harmony. Yet attending to this universal goal of brotherly love signifies ignoring the immediate needs of their country, as the group believe that a new society can only flourish if cut off from existing politics and warfare. As one poet-founder proclaimed: "We need the island to build the Utopia" (53). Rather than dedicate their talents and vision to addressing the pressing issues of poverty and inequality in their country, the poets chose to cut themselves off from society and begin anew, privileging the universal values they hoped to cultivate in their isolated community rather than the local needs of the population. Their idea was to create "the original nucleus" of a society, which after several generations would be populated only by individuals "who had never known ambition, power, greed, evil" (53). However,



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Melisandra's grandfather Don José, another founding member of the community, recalls that while he lived in Waslala "I began to ask myself if the cell would ever reproduce, or if perhaps there existed a danger that we would close ourselves off so much that we would repel external influences, becoming a type of modern Avalon, an island in the mist, unreachable by most mortals, an impenetrable fortress" (56). Unable to fully choose principles over people, Don José leaves the community to find Melisandra's grandmother and is never able to find his way back to Waslala. The pull between the universal ideals of the utopian vision and local concerns related to politics and governance causes an irresolvable tension summed up succinctly in Engracia's final message to Melisandra: "do not let the idea, the dream, become more important than the well-being of the most humble human being" (287).

Through its rhetoric of people before principles, *Waslala* reveals the paradoxes of thinking globally and acting locally. Akin to how the breathtakingly beautiful radioactive powder conceals a deadly after-effect, the admirable principles of global ecological balance (as practiced in *Waslala*) hide the slow violence against humans. The related tension between utopia and realism is mirrored by that of human rights and ecological balance, in which the local actors in Faguas are obligated by outside powers to respond to global needs (for oxygen) at the expense of their own basic necessities (for shelter and a stable government). In the struggle between principles and people, even when the principles themselves are admirable, *Waslala* suggests that people come first.

**People versus Principles Part II: Human Rights and the Economy of Ecology**

With its focus on social justice and critique of the extractivist practices of the developed world, *Waslala* clearly condemns the imposition of external notions of environmentalism on the local realities of Faguas. Global principles of ecological balance cannot supersede the basic human rights of all citizens. However, at the same time the novel reveals an irresolvable tension between the universal ideals of human rights and ecological considerations. For while the novel strongly criticizes practices of unfettered consumption, it does not question the underlying principle of private property or ownership. Moreover, not only does *Waslala* imply that property comprises a fundamental human right, but it also suggests that possession and ownership are biologically "natural:" property pertains to both economy and ecology. On one hand, the novel acknowledges a global view—the earth's resources are for *everybody*—yet on the other it advocates a local position—the earth's resources can be owned and controlled by *individuals*. Furthermore, the implication that property rights are somehow natural (in an ecological sense) conflates ecology with economy and serves to undermine the novel's broader critique of neoliberal policy. Through its treatment of ecology in terms of economy, Belli's novel highlights the impossibility of attending equally to global planetary concerns and universal human rights.



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Considering the right to water within the framework of human rights makes apparent some irresolvable tensions that arise when ecological issues are considered in the context of human rights. As Richard P. Hiskes notes in his analysis of "environmental human rights," they are at once universal (ignoring national borders) and local (because the effects of policy and protections are felt at the local level) (238). But the very term "environmental human rights" may embody a different sort of paradox, for the pull to consider environmental issues (e.g. opposing resource extractivism) may tug in the opposite direction of human rights (e.g. the fundamental right to consume a natural resource). Hiskes' claim that environmental human rights rest upon the premise of humans as *"superior in important ways to animals*" presupposes a fundamentally anthropocentric rather than biocentric view as well as a hierarchy between human and nonhuman which may work against a consideration of ecological issues on a planetary scale (242; emphasis added).

The human "right" to a natural resource (such as oxygen, or water) is additionally predicated upon economic concepts of consumption, value, and ownership, which (paradoxically) are both questioned and affirmed in *Waslala*. For example, the novel mounts a scathing critique of conspicuous consumption in the developed world, best seen in the minute descriptions of the discarded items that arrive in garbage containers and are sorted and sold. The pier where the garbage arrives resembles "the beach where modern civilization deposited the spoils of its shipwreck," and the extensive and detailed description of the mountains of items, ranging from doorframes to washing machines, offers a sense of the vast scale of waste (133). Lengthy sentences listing item after item combine to form an enormous paragraph, creating a sensation of the magnitude of the piles of discarded articles. The workers marvel at the sheer number of items that arrive in perfect working condition, due to consumers' desire to have the latest products, prompting Melisandra to condemn such excessive waste as "a sin" (136).[11]

Nevertheless, at the same time the novel appears to uphold the capitalist impulse in which the natural world is comprised of "resources" for human use. The opening line of the novel expresses Melisandra's disappointment that she can't "wrap the river around her throat like a stole made of water" and take it with her on her travels, and is followed by a poetic description of the river, "whose tumultuous or docile flow marked the seasons and the passage of time" (13). In her analysis of the novel, Laura Barbas-Rhoden explains how this opening passage highlights the contradictions in the novel at the level of metaphor. On one hand, the poetic description "signals the spiritual value of the river," while on the other it "posits the natural world as fashion accessory" (*Ecological Imaginations in Latin American Fiction* 155). Notably, Barbas-Rhoden's reference to the "spiritual value" of the river signals the way in which the language of economy—

[11] DeVries similarly notes that Belli uses the "imagery of murder" to describe the waste (43). The terminology of "sin" and "murder" categorizes the exportation of garbage as worthy of both divine and earthly punishment.



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conceiving of elements of the nonhuman world in terms of "value"—permeates any consideration of ecology, both in the novel itself and analyses of the work.

This framing of the nonhuman world primarily in terms of resources and value situates *Waslala* within Michael Hardt and Antonio Negri's idea of "the common" and historian Jason Moore's framework of the Capitalocene, both of which posit an intimate connection between economy and ecology. As Hardt and Negri claim in *Commonwealth*, the notion of "the common"—"the air, the water, the fruits of the soil, and all nature's bounty"—pertains to all humanity and implies a nonhierarchical relationship between human and nonhuman spheres (viii). Their work explores the negative effects of neoliberal economic policies that seek to transform everything from "information, ideas, and even species of animals and plants—into private property" (viii). Private property is seen as the defining characteristic of geopolitical systems that lead to oppression of humanity and exploitation of the nonhuman realms.

Moore notes a similar connection between economy and ecology. Rather than consider the geologic era marked by human influence on global climate as the "Anthropocene," which treats humans in general as the source of climate change, Moore proposes the term "Capitalocene" as a more accurate representation of the causes of ecological crisis. He explains, "Capitalism is not an economic system; it is not a social system; it is *a way of organizing nature*" for it is predicated upon relations (both human-human and human-nonhuman) that lead to differential use of natural resources and a false distinction between Nature and Society (2). Moore dates the beginning of this new era to the Columbian exchange, when the seeds of modern capitalism arose, and suggests we ask not what capitalism does to nature, but "how nature *works for* capitalism" (12). By calling attention to not simply *the effects* of humans on the nonhuman environment, but *the relationships* between producer and product, Moore effectively fuses notions of economy and ecology, emphasizing the inability to consider one without the other, while at the same time dismantling the idea of the "Anthropos" as an undifferentiated mass of humanity that affects climate change as a group.

*Waslala* supports a more nuanced consideration of humanity, for it exposes the human costs of differential development, but it also upholds the idea of Nature as a valuable resource. The novel condemns individuals who exploit Faguas for economic gain, such as the gold prospectors, drug traffickers, and Corporation of the Environment who view the natural world in purely economic terms. Yet at the same time the work appears to substitute one type of value (economic) for another (aesthetic or spiritually beneficial), thereby upholding the conceptual model of nature as "valuable." Examples abound in the text of poetic descriptions of the natural world, where the "greens are greener" (243), or the earth is "virginal" (39). Raphael is constantly amazed by the beauty of the natural world in Faguas, describing one sunset as "the most poetic vision he ever remembered seeing" (76). Meanwhile, the prospector Hermann contrasts the untamed beauty of Faguas with the civilized, organized gardens of Germany. Hermann travels to Faguas in search of an elusive spiritual peace that can only be found in the natural world, noting that

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"one only had to go upriver to recover one's lost perspective and discover anew man's smallness faced with the exuberance of centuries of greenness" (72). Hermann's awe at the untamed natural world of Faguas is reflected in his home, which boasts picture windows and a terrace from which to admire "a sea of frothy plants climbing the mountains toward the horizon" (300). Finally, the chapters in the novel that either begin or end with a poetic description of the natural world—birds flying over the water, waves lapping against the bongo, or the soft call of nocturnal animals—underscore the aesthetic value of the nonhuman world.[12]

Nature, in *Waslala*, equals beauty, yet this excessive admiration all conforms to a greater or lesser degree to what Timothy Morton considers a "fetishization" of Nature. In his words, "Putting something called Nature on a pedestal and admiring it from afar does for the environment what patriarchy does for the figure of Woman. It is a paradoxical act of sadistic admiration" (*Ecology Without Nature: Rethinking Environmental Aesthetics* 5). Put another way, conceiving of Nature as beautiful or pristine, in need of protection or care, fails to recognize the complexity and messiness of ecology. Although highly critical of human exploitation of natural resources, *Waslala* upholds an image of the nonhuman world in which Nature's worth and value remains determined by humans.[13]

This concept of natural resources for human use even extends to the utopian community established to escape the world of conspicuous consumption. One of the signature elements of Waslala is the "Corridor of Winds," a valley in which the breezes blow so regularly that the inhabitants use it to quick dry their laundry (54). The community utilizes the nonhuman world for sustenance, creating gardens, orchards, and farms; they also channel the energy of wind, sun and water, by building windmills and diverting the stream. Although the novel criticizes the excessive consumerism of developed nations, it also upholds the fundamental capitalist notion of the nonhuman world as comprised of "resources" for human use. While it could be argued that such usage denotes survival rather than capitalism, the underlying premise of nonhuman resources controlled and consumed by humans aligns exactly with the roots of the capitalist project as outlined by Moore. The cultivation of filina in Timbú and the management of the river plantation owned by Melisandra's grandparents provide other examples of recourse control that lie outside critique in the novel—in Hardt and Negri's terms, the novel criticizes the exploitation of "the common wealth" but does not fully affirm "the common."[14]

Finally, the novel's consideration of property and ownership demonstrates a similar ambiguity. The poets establish Waslala as a place where truly communitarian ideals can flourish. Like the original Utopia conceived of by Thomas More, the inhabitants

[12] See for examples the concluding portions of Chapters 9 and 14.

[13] Part of the problem arises from the difficulty of conceptualizing "Nature." As Morton argues in *The Ecological Thought*, there is no such thing as "Nature" that exists outside of our rhetorical constructions.

[14] While one could claim that a key difference lies in scale—ownership and control of natural resources does not necessarily lead to overconsumption—the roots of overconsumption lie in the consideration of natural resources as elements that can be owned and managed by and for humans.



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seek to eliminate notions of ambition and greed. By cutting themselves off from the rest of the world, the poets hoped to foment true goodness in future generations; their ideal was to create an egalitarian society that could be reproduced. However, they soon discover that the inhabitants of Waslala are unable to have children. Melisandra suggests that "those who populated Waslala to a certain extent had to give up biological reproduction, the most primary, elemental notion of property" (324). In other words, the communitarian model of Waslala is predicated upon giving up something innately natural: the ability to procreate.

This link between property and biological reproduction lends itself to competing interpretations. On one hand, it implies that property and ownership, far from pertaining solely to the capitalist realm, comprise an essential element of a natural process crucial for human survival. Although the poet-founders of Waslala describe the utopian project in natural terms—"planting the seed" of human goodness (323) and hoping the "cell" would "reproduce" (56)—the ground proves infertile, thereby implying that this communal vision is somehow unnatural. Put simply, the novel suggests that the utopian dream of Waslala rests upon an impossible (and unnatural) sacrifice, as the complete renunciation of property leads to human extinction.

By extending the communitarian ideal of Waslala to its logical (if surprising) conclusion, Belli's novel echoes Gayatri Chakravorty Spivak's feminist deconstruction of Marx's theory of production and alienation. In her essay "Feminism and Critical Theory," Spivak notes that the concept of childbirth destabilizes Marxist categories of use- and surplus-value, for a child is not a commodity, produced for consumption or exchange, and theories of production are inadequate to explain biological reproduction (57-61). Melisandra's observation therefore prompts a consideration of the complicated relationship between production and reproduction and highlights the failure of any model that entails a rejection of property. While the capitalist attitude of the Corporation of the Environment and others who see Faguas purely in terms of privately-owned resources or commodities is soundly criticized, the novel implies that a truly communitarian alternative is either unnatural or unsustainable. [15]

At the same time, the connection between property and reproduction also questions capitalist notions of productivity and value. As Vandana Shiva argues in *Staying Alive: Women, Ecology and Development*, the western masculine model of progress defines production in terms of technology and commodities, and consequently "[n]ature and women working to produce and reproduce life are declared 'unproductive'" (43). Shiva cautions that a worldview that fails to recognize the central importance of women's life-giving work may ultimately threaten the survival of humanity. In this sense, by foregrounding the lack of reproduction in Waslala, the novel offers an implicit critique of how women's reproductive power "has been rendered invisible" (Shiva, 5), for it makes clear that the ability to procreate (or not) is the key to the utopian space's survival. By

[15] The implied critique also aligns with a reading of *Waslala* as highlighting the failure of the socialist revolutionary project in Nicaragua (see Moyano).

making visible the literal "unproductivity" of Waslala, Belli's novel therefore exposes the limitations of considering biological reproduction in terms of western masculine economic models.

The novel does not resolve the ambiguity inherent in the pairing of procreation with property; both the communitarian model and the western masculine capitalist vision of production prove literally unsustainable. Nevertheless, through this linkage *Waslala* not only implies that ownership is "natural" but also upholds the fundamental importance of owning property as a basic human right, as enshrined in Article 17 of the Universal Declaration of Human Rights. Alongside the implied critique of Waslala's communitarian model, examples abound in the novel of the important connection between control of property and human rights. In the first place, the narrative emphasizes the misery associated with Faguans' fundamental lack of control over their own destinies. The central park of Cineria, for example, abounds with games of chance ranging from roulette and slot machines to marbles and monopoly. As Maclovio explains, "Cinerians have elevated gambling to an art form," and enumerates the vast array of bets that are placed, everything from guessing the sex of unborn children to "the number of water droplets that fill a glass" or "the mistakes made by a blind woman" (151). The fact that such extreme (and seemingly meaningless) betting occupies the time of so many inhabitants underscores the lack of control Cinerians have over their own lives. With no way to meaningfully shape their existence, there is little difference between making a living or rolling the dice.

In addition to highlighting the daily despair that results from lack of control, the novel also links dignity with control of property—the worth of individuals is measured by their ability to shape their surroundings. For example, local "ecological terrorists" who work to undermine the Corporation of the Environment through illegal logging or burning forest reserves justify their actions with the slogan "We'll do what we want. *This land is ours*" (110, emphasis added). The attitude that privileges local control also extends to Engracia's enterprise sorting, repurposing, and selling the garbage that arrives. Her business provides jobs for young men who otherwise would have no options other than working for the Espadas or joining local gangs. By controlling the trade and distribution of the detritus, Engracia demonstrates the dignity that comes from exercising control over one's own domain. She reflects, "It was her control of garbage as a resource, the dependency she had managed to create over the years, that granted her authority" (205). The respect she commands comes directly from her control over resources. Don Jose's plantation on the riverbank represents another example of private property that is above criticism, as it is owned and managed by Melisandra's grandparents, benevolent hacendados who offer refuge to the inhabitants of neighboring villages (47). Although the Espada brothers are roundly criticized for amassing property by absconding with the funds sent to Faguas in exchange for oxygen, citizens such as Engracia or Don José who manage their own property responsibly remain above critique. Ownership and property



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are not the problem; rather, overconsumption, mismanagement, and exploitation.[16] *Waslala* condemns a world divided between "haves" and "have nots," but never questions the right to "have."

Through its critique of consumption rather than ownership, *Waslala* demonstrates the extensive reach of the organizing principles of neoliberalism, which conceives of the world in terms of control and consumption of resources. Furthermore, the link between biological reproduction and property—the inability to reproduce within the peaceful confines of Waslala—suggests that any attempt at isolation is not only impossible but unnatural. Economy and ecology remain intimately connected, revealing an irresolvable tension between the universal human right to property—which considers the nonhuman world in terms of resources—and the concomitant planetary degradation which often results from such an anthropocentric view, ultimately suggesting the impossibility of attending equally to universal principles of human rights and global ecology.

**Conclusion: The Paradox of the "Green Stain"**

One of the most notable passages in the novel occurs in the initial description of regions such as Faguas that are condemned to a state of perpetual underdevelopment. The narrative offers a brief history of how certain areas in Latin America and Asia gradually lost any sense of their borders and appear on contemporary maps as "green stains without markings, with no indication of cities: isolated regions, cut off from development, civilization, technology; reduced to jungles, forest reserves, serving as lung and garbage dump for the developed world that exploited them only to plunge them afterwards into the realm of the forgotten" (19). The absence of borders reinforces how these nations have lost any type of independent political definition; although no longer official subjects of a colonial power, they remain subjugated to economic forces that organize the world according to control of natural resources. The only value these areas possess is ecological, not political. Through its sharp critique of the terrible human fallout of such differential development, *Waslala* undermines the notion of considering the "Anthropos" of the Anthropocene as an undifferentiated mass. The novel suggests that just as one should be able to distinguish between Faguas and other "oxygen-producing nations," one should similarly differentiate between groups of humans in terms of their responsibility for (or experience of) planetary ecological crisis. Considering humanity as an undifferentiated mass is akin to drawing maps with large green stains; such a broad, global view ignores important local realities. By highlighting the tension between global planetary crisis and local human rights, *Waslala* demonstrates how for postcolonial

[16] Further evidence of the way in which ownership remains above reproach can be seen in the discussion of the modern products that appear in Engracia's garbage bazaar. Josué, the manager of the site notes the "high demand" for solar powered washing machines, and Raphael cheerfully notes Melisandra's interest and that Josué appeared to have made "his first sale of the day" (135). Unequal distribution of goods is critiqued, the ownership of such goods is not. As Laura Barbas-Rhoden notes, "In *Waslala*, the benevolently powerful confront those who are malevolently so" (Greening 11).

regions, first world environmentalism smacks of "green imperialism," and the era marked by human impact on climate is better described as "Capitalocene" than "Anthropocene." Put simply, when forced to choose between the principles of ecological balance and the needs of people, *Waslala* suggests that people should win.

Nevertheless, just as the "Anthropos" is not an undifferentiated mass of humanity, neither is nonhuman ecology. Interestingly, although *Waslala* critiques the politics of the "green stain"—erasing borders robs Faguas of human agency—it does not address the ecological implications of considering the region as an undifferentiated mass of oxygen-producing forest. The novel places both the universal and local contexts of human rights in dialogue with global ecological considerations—the individual rights of Faguans to control their surroundings, firmly rooted in the universal human right to property, trump any global ecological concerns. At the same time, the narrative exhibits a notable absence of any meaningful treatment of local ecology, which has not gone unnoticed by critics. Both Barbas-Rhoden and Steven F. White comment on the "shallow" treatment of ecology in *Waslala*. While Barbas-Rhoden acknowledges that both "deep" and "shallow" positions have merit in Latin American letters, White is less forgiving in his assessment of the novel, claiming that Belli "loses the possibility of creating convincing ecological texts" due to her facile treatment of the natural world as background or decoration. (98, translation is my own). A discussion of the relative merits of deep versus shallow ecological approaches lies outside the scope of this article; however, it is important to note that by eliminating any meaningful treatment of flora or fauna endemic to Nicaragua/Faguas, *Waslala* fails to distinguish Faguas from its neighbors in ecological terms, thereby reproducing the rhetoric of the region as a "green stain" and in a certain sense upholding the destructive human attitudes toward the nonhuman world it aims to critique. *Waslala* highlights the problematic consequences of considering the world in terms of undifferentiated humanity, but not in terms of undifferentiated nonhuman ecology.

In the final analysis, the decidedly anthropocentric vision presented in *Waslala* highlights the many tensions that arise when considering human rights and ecology. The double-pull of global ecological considerations versus local human rights is mirrored by a similar conflict between universals: the ideals of planetary ecological balance versus the foundations of human rights, which appear to move in opposite directions. Global principles of ecological balance that do not distinguish between the human and nonhuman spheres are fundamentally opposed to the naturally anthropocentric foundation of human rights. The novel critiques the practices of unsustainability (overconsumption), rather than the principles underpinning ecological degradation (property and ownership), thereby revealing how one of the fundamental principles of human rights is implicated in planetary ecological crisis and demonstrating the impossibility of escaping the organizing principles of neoliberalism. Although *Waslala* aims to focus on the human costs of global environmental considerations, outwardly privileging human rights over ecological concerns, ultimately it demonstrates both the fundamental interconnectedness of the human and nonhuman spheres and the opposing



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pull between the biocentric view of planetary ecology and the anthropocentric position of human rights. The novel itself offers no escape from these fundamental paradoxes—its "solution" of "good capitalism" does nothing to resolve the central tensions—leaving the reader to draw the inevitable conclusion that just as attention to human rights impacts global ecology, planetary ecological crisis will reshape the meaning, practice, and role of human rights.

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# Landscapes of Extraction and Memories of Extinction in Patricio Guzmán's *Nostalgia de la luz* and *El botón de nácar*

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## Abstract

Focusing on Guzmán's essay films *Nostalgia de la luz* (2010) and *El botón de nácar* (2015), in this article I argue that the ambiguity between reference and abstraction that pervades the visual representation of landscape in late capitalism offers a productive way to map out the processes of extinction caused by continual histories of extraction. This ambiguity not only reveals the limits of the landscape-form to convey the degradation of nature, but also the progressive disappearance of the human subject from the center of history in such spaces where capital seeks time and time again to resolve its internal contradictions through new forms of resource extraction. In this fashion, Guzmán's totalizing aspiration to represent the historical, archaeological, and even cosmological pasts through the landscapes of the Atacama Desert and Patagonia becomes a way to explain how capital has moved from the human to the planetary, which entails a larger alteration of ecological metabolism and transforms extinction into the only historical horizon. I conclude that the memory of past processes of extraction and extinction inscribed in these landscapes can also function as a prolepsis of a future without us, thus presenting an opportunity to reactivate the subject's historical potential to change the way we relate to nature.

*Keywords:* Patricio Guzmán, extraction, extinction, landscape, memory, history.

## Resumen

Basándome en los ensayos fílmicos *Nostalgia de la luz* (2010) y *El botón de nácar* (2015) de Patricio Guzmán, en este artículo sostengo que la ambigüedad entre referencia y abstracción que caracteriza la representación visual del paisaje en el capitalismo tardío ofrece un mecanismo productivo para mapear los procesos de extinción causados por historias continuas de extracción. Esta ambigüedad no solo revela los límites de la forma-paisaje para comunicar la degradación de la naturaleza, sino que también expone la progresiva desaparición del sujeto humano del centro de la historia en aquellos espacios donde el capital busca una y otra vez resolver sus contradicciones internas a través de nuevas formas de extracción de recursos. De esta manera, la aspiración totalizadora de Guzmán de representar el pasado histórico, arqueológico e incluso cosmológico a través de los paisajes del desierto de Atacama y la Patagonia se convierte en una forma de explicar cómo el capital se ha desplazado de lo humano hacia lo planetario, lo que implica una mayor alteración del equilibrio ecológico y de paso transforma la extinción en el único horizonte histórico. Concluyo señalando que la memoria de aquellos procesos pasados de extracción y extinción inscritos en el paisaje puede funcionar como una prolepsis de un futuro sin nosotros, presentando así una oportunidad para reactivar el potencial histórico del sujeto para cambiar nuestro modo de relacionarnos con la naturaleza.

*Palabras clave:* Patricio Guzmán, extracción, extinción, paisaje, memoria, historia.



 

## Introduction

The relationship between extraction and extinction is, at least, twofold: ever since industrialization of the modes of production, capitalist modernization has relied on the extraction of fossil fuels resulting from processes of extinction that took place millions of years ago. At the same time, the expansion of these very modes of production on a planetary scale has been determinant for the extinction of multiple species in the new geological epoch driven by human intervention in the environment known as the Anthropocene (Crutzen and Stoermer 2000). Moreover, the alarming biodiversity loss due to climate change and global warming provoked by fossil fuel industries might be leading to a Sixth Extinction event (Kolbert 2014). We witness a massive recording of these processes of extraction and extinction in images and narratives that convey how we see not only our past as species, but also our future (Heise 2016). In this context, it is crucial to ask about the role of the landscape, within the growing field of artistic and critical explorations of the global ecological crisis, in the making and representation of environments where extraction and extinction are articulated.

Recurrent depictions of landscapes intertwining extraction and extinction focus mostly on non-human environments significantly altered or even in the process of ruination as a consequence of capitalist crises. These landscapes often appear depopulated or precariously inhabited, thus indicating past or ongoing extinction processes. They also often appear accompanied by geological or cosmological imagery that projects a world without us. Patricio Guzmán's essay film *Nostalgia de la luz* (2010) on the memories of colonialism and political violence in Chile's Atacama Desert; David Maisel's photographic work on opencast mining in the US in *Blacks maps* (2013) and the Atacama Desert (*Desolation desert*, 2018); Allan Sekula's *The Forgotten Space* (2010) on the catastrophic effects of the global economic crisis in urban space; Nikolaus Geyrhalter's film *Homo sapiens* (2016) on the nuclear disaster ruins in Fukushima and Chernobyl; or Karim Aïnouz's and Marcelo Gomes' film *Viajo porque preciso, volto porque te amo* (2009) about the disappearance of landscape and social life prior to the implementation of an up-scale irrigation canal in the Brazilian Sertão are thought-provoking examples that come to mind.

Despite their critical importance for the study of the intersections between extraction and extinction, the pictorial drive that lies in these visual works conveys natural and material landscapes as abstract forms, making viewers lose sight of the social relations that organize them as environments. In that sense, they privilege abstraction and the painterly rather than documentation and reference, which works towards a memorialization of the past. According to Jens Andermann (2018), this reveals the exhaustion of the landscape-form—and so of the colonial/modern horizon of Western aesthetics—as a utopian space and time outside capital where accumulation of nature seems endless. In other words, landscape as a form has become incapable of showing the

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ever-increasing loss of natural world that has characterized the relentless violence of extractive capitalism. While I agree with this view, in this article I discuss how the ambiguity between documentation and abstraction that pervades the visual representation of the landscapes of extraction may offer a productive way to map out the destruction of planetary ecologies. On the one hand, I argue that extinction is not just an apocalyptic event, but a slow process that affects environments as well as social and cultural formations unevenly depending on their position in the capitalist world-system. As Donna J. Haraway (2016) puts it, "extinction is a protracted slow death that unravels great tissues of ways of going on in the world for many species, including historically situated people" (38). On the other, as Alberto Toscano (2015) has claimed with reference to Allan Sekula, depopulated landscapes highlight how human beings "increasingly appear as supplements, extras or surplus" in places where "dead labor" takes center stage in the shape of the man-altered landscapes of contemporary capitalism. In other words, the planetary expansion of infrastructures of extraction and circulation is making human beings redundant to the production of value.

Taking these two arguments as a point of departure, I contend that the destruction of forms of life on a planetary scale is linked to specific transformations in the capitalist system, where the extraction of value directly from nature emancipates accumulation from labor and thus provokes an even larger alteration of the ecological metabolism in the peripheries of global capital. Understanding the link between extraction and extinction in this way—namely, as specific historical transformations and world divisions of nature and labor—demonstrates how the notion of the Anthropocene is insufficient to explain the ecological crisis in a more systematic way. As Justin McBrien (2016) points out, recognizing geological changes as anthropogenic is part of the systematic conceptual exclusion of capitalism as their main cause. In fact, accumulation by extinction has been fundamental to capitalism from the beginning of what Jason W. Moore (2016, 2017) designates as the Capitalocene, that is, the historical stage dating back to the genocide of native Americans in the 16th century in which nature is transformed into a commodity for the world markets. Drawing on deeper historical roots than the industrial revolution, which is often cited as the starting point of the Anthropocene, Moore's concept of Capitalocene therefore emerges as a better way of understanding the expansion of capitalist modes of production that is putting the life of the planet at risk. What is more important, a critique of the Anthropocene in terms of capital accumulation allows us to see the seemingly depoliticizing depiction of the landscapes of extraction in contemporary visual production as a way to deconstruct the spectacle of apocalyptic futures and restore our capacity to intervene in history.

Patricio Guzmán's cinema offers an interesting case in point of these problematics. His documentary films can be defined as archaeologies of Chile's historical memory, with particular reference to the human rights violation that followed the demise of the revolutionary project in the early seventies. Even the significant trilogy *La batalla de Chile*



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(1976-79), which Guzmán conceived originally in terms of direct cinema,[1] ultimately represented an attempt to recompose the fragments of a broken past: the years between Salvador Allende's election in 1970 and the military coup of 1973 that instituted a brutal 17-year-long dictatorship resulting in thousands of people being executed, "disappeared", tortured, or exiled. The consequences of the dictatorship also shape Guzmán's second film trilogy—the films *Chile, la memoria obstinada* (1997)*, El caso Pinochet* (2001), and *Salvador Allende* (2004)—in which the focus is on the memories of the victims of human rights violations and the amnesia of Chilean society after the 1990 democratic restoration. In this respect, *Nostalgia de la luz* (2010) and *El botón de nácar* (2015) represent a significant turn in Guzmán's exploration of the past. Constructed as essays rather than documentary films, they privilege subjective narration instead of historical accounts and emphasize natural landscapes for the representation of memorial sites and historical subjects.[2] The portrayal of human rights violations in the Atacama Desert or the Patagonia during the dictatorship is also connected to other histories of violence, such as the exploitation of the labor force during the nitrate boom in the North or the extermination of indigenous people from Tierra del Fuego. Furthermore, Guzmán explores the geological and cosmological dimension of the past contained in these landscapes, stretching the temporal and spatial scope of his view. In this fashion, as Martin-Jones (2013) has observed, Guzmán transforms the landscape into an archive of the memory of the universe and advocates for a non-anthropocentric view of historical time.

Guzmán's emphasis on the individual subject rather than history and his choice of the essay form rather than documentary have been criticized for moving away from the political emphasis of his previous films (Klubock 2003). According to Andermann, indeed, in his vindication of the potential of the landscape to reveal the past, Guzmán overlooks the present of the Atacama Desert and Patagonia, which endure multiple conflicts

[1] A variation of *cinéma vérité*, direct cinema seeks to directly capture the truth of reality in the present. Accordingly, Guzmán conceived his project for *La batalla de Chile* as a newsreel to register Allende's socialist government day by day. Chris Marker, after watching *El primer año* (1971), the first part of the project, helped Guzmán to distribute the film in Europe through SLON and provided him with filmstrip to continue the project. By the third year, needless to say, the military coup interrupted brutally both the documentary project and Allende's political experiment. The enormous footage accumulated was secretly transported to Sweden, and then to Cuba, where Pedro Chaskel reassembled it (Rufinelli 2001). In the montage room, the linear narrative of the film was transformed into a circular one, starting with the defeat of Allende's government and ending with the popular empowerment that marked the first year of his presidency. As a result, the film represents the history of the events as a future moment in which the Chilean revolution is still pending (Pérez Villalobos 2001).

[2] Both *Nostalgia de la luz* and *El botón de nácar* should be seen in relation to other minor documentaries previously made by Guzmán about collective memory and the landscape. *Barriers of Solitude* (1995), for instance, is a portrait of a small agrarian town in the state of Morelos, Mexico, whose inhabitants are more interested in the frequent cosmological events that occur in the sky, such as aurora borealis and comets, than in the historical changes of the country. In *Mon Jules Verne* (2005), Guzmán explores his own personal memories of Jules Verne's books, and the experiences of people who have materialized his voyages and adventures around the globe. Likewise, the documentary *Robinson Crusoe* (1999) focuses on the landscape of this remote island in the Pacific Ocean to reveal the collective memory of its inhabitants. In all of these films, astronomy and science fiction play a significant role in stretching the cinematic scope of Guzmán's films from history to landscape and from the human to the planetary.



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between nature and capital in the present. This is not because of Guzmán's negligence or omission, but because of the landscape's incapacity to expose the violence of extractive capitalism (340). This explains the mesmerizing effect of the images of natural sites shown in these films as well as the explicit lack of reference to mining projects taking place right now at the Atacama Desert and Patagonia. This is particularly problematic, insofar as these regions constitute historical frontiers where capital seeks time and time again to resolve its internal contradictions through new forms of resource extraction. Nevertheless, I argue that it is precisely the ambiguity between document and abstraction in the representation of the landscape in these films which can shed light on the intertwining between extraction and extinction in contemporary capitalism. Based on this, in the following pages I analyze how *Nostalgia de la luz* and *El botón de nácar* seek to portray not only the memories of extraction and extermination during the colonial and modern periods, but also the progressive disappearance of the human subject as the center of history in contemporary capitalism. I contend that there is not a historical present to tell, because history has become something other than the tale of human alteration of the world that we call progress. In this fashion, Guzmán's totalizing aspiration to represent the historical, archaeological, and even cosmological pasts through the landscape becomes a way to explain how capital has moved from the human to the planetary, which entails a larger alteration of ecological metabolism and transforms extinction into the only historical horizon. Following Toscano and Kinkle (2015), I also contend that Guzmán's films must be read as an attempt to create a cartography of the capitalist system and its structural crises beyond the human conceptions of time. Read in this way, Guzmán can help us to understand the global ecological catastrophe in relation to the deep time history of capitalist accumulation and to appreciate the role of the Anthropocene in obscuring the specific political regime responsible for the ongoing waves of extinction.

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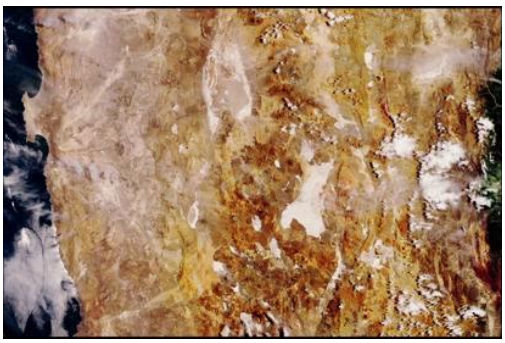
### *Nostalgia de la luz:* Extraction of the Past and the Futures of Extinction

*Nostalgia de la luz* examines three different enquiries into the past conducted in the Atacama Desert at the same time: that of the astronomers and their study of the cosmological past; that of the archaeologists who investigate the traces of indigenous cultures; and that of a group of women looking for victims of the dictatorship whose remains were scattered in the sand. Guzmán shows how these seemingly separate searches overlap in the desert, where the total absence of humidity allows the long-term preservation of material traces. The Atacama Desert is described by Guzmán in this way as "a great open book of memory" situated in a country that paradoxically turns its back on history, eager to forget rather than remember. Throughout the film, we see the different conceptions of time at stake in these searches of the past. For astronomer Gaspar Galaz, for instance, any phenomenon that the telescopes or antennas capture in outer

space is just an echo of something that happened in cosmological time. The present time of perception, therefore, does not exist. The title of the film seems to originate in this contradiction: the light coming from the stars was emitted in the past and is a memory of itself even if constitutes our present. From the perspective of archaeologist Lautaro Núñez, however, the desert is a palimpsest of multiple times and communities present in the material landscape. Everywhere we see the traces of continuous waves of occupation and extraction, from pre-Columbian sites and Spanish settlements to modern mines and futuristic telescopes. Núñez points out that our treatment of these different pasts is uneven. Whereas the ancient cultures of the North are carefully preserved in museums, the abandoned mining sites from the nitrate boom are monumentalized and commercialized, and the cosmological pasts are scientifically observed through telescopes, the remains of the disappeared are forgotten in the desert. This leads us to the third conception of time as justice, which is represented through the "Mujeres de Calama", the group of women who comb the sand of the desert looking for the remains of their relatives. For these women, the past is an open wound caused by the human rights violation committed during the dictatorship, and the desert their last hope of finding their relatives and obtaining justice for their disappearance.

In the initial sequence of the film, we see a massive telescope capturing cosmological images such as lunar maria, the aurora borealis, and star showers. Guzmán combines these images of the telescopes with satellite pictures of the Earth that lead to the geospatial localization of the Atacama Desert. The desert is present as a brown patch in an image of the planet evoking "The Blue Marble", the famous photograph taken by the Apollo 17 crew in 1972. Ursula K. Heise (2008) has identified this picture as one of the milestones in the "sense of planet" that underpins consciousness of the Earth as a living organism in our present. Using more satellite images, the film scales down to the desert's surface, a vertical movement which suggests the imperialist gaze behind geological explorations, military interventions and extractive projects (Parks 2015). In this manner, Guzmán seems to switch not only scales of observation, but also forms of appropriation of local and global landscapes through a technological gaze.





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At this point, the film presents a montage of salt crystals, rocks, bones, and finally the impressive telescopes and antennas of ALMA.[3] The first signs of human presence also emerge in the film: the astronomers and operators of the telescopes at the observatory, which Guzmán depicts like the setting of a science fiction film. The domes that cover the telescopes resemble houses in an alien landscape, and the astronomers appear as colonizers from another planet. Images of rock paintings and ancient roads also evoke traces of inhabitants from distant pasts and worlds. In addition, the shaking camera suggests a rover exploring a post-human, even extraterrestrial landscape. The whole sequence transforms the Atacama Desert into a token for extraterrestrial imagery familiar from the last few decades. The Atacama Desert has in fact become a preferred location for science fiction films about Mars as well as training for potential travels to the red planet. Furthermore, the astronomers that work with the telescopes from ALMA are close to discovering an exoplanet—a planet like our own that orbits around a star like the Sun at such a distance that liquid water can exist on its surface (Messeri 2016). However, Guzmán uses this otherworldly imaginary to represent the estrangement of human beings from their history, which appears through Chacabuco, the former nitrate mining town located not far from the observatory park that the dictatorship converted into a concentration camp in 1973.

Chacabuco came to life first as Oficina Salitrera Chacabuco in 1924, at the end of the nitrate boom, and closed after the Great Depression in 1935. *Oficina* was the name given to the mine sites established in the second half of the 19th century during the nitrate boom. Apart from sites of extraction, these were units of colonization of indigenous communities and locations to which workers from the South were displaced to work the mines. In 1971, Salvador Allende transformed the *oficina* into a Historical Monument to commemorate the nitrate workers, but between 1973 and 1975 the Junta Militar used it as a prisoner of war camp and torture center for Allende's supporters. Surrounded by anti-personnel mines until 1997, Chacabuco exemplifies the low intensity warfare that Pinochet's regime implemented against Allende's supporters. Moreover, the site embodies the continuity between the exploitation of the miners in the 19th century and the destruction of the working class that created the political conditions for the transition to a new stage of capitalist accumulation in Chile after the democratic restoration of 1990 (Spira 2012).

The film presents the relationship between Chacabuco and the observatory park by means of an extended sequence displaying archaeological, historical, and cosmological artifacts and events. First, a mummy from the Chinchorro culture, from which the oldest examples of artificially preserved human remains derive, blends with the image of a

[3] ALMA (Atacama Large Millimeter/submillimeter Array) is a massive observatory park situated between Calama – site of Chuquicamata, one of the largest copper opencast mines – and San Pedro de Atacama, the starting point of the Spanish colonization. This observatory, managed in partnership by the US, the EU, and Japan, among other countries, is one of the largest of its kind and focuses on the study of the early universe. It expects by 2020 to host 70% of the telescopes of the world, which will require enormous infrastructures to store and transport the information extracted (Messeri 2016).

supernova. Following this, views of indigenous rock paintings, salt crystals and blue sky precede a slow exploration of the mining site. Inside the mining site we see close-ups of forsaken objects: a boot, a bulb, bottles, spoons. The camera then explores a cemetery next to the mining site. The remains of a miner lead to iconic images of Luis Emilio Recabarren, founder of the Partido Obrero Socialista and one of the driving forces in the political organization of the workers of the North. A train crosses the horizon, dividing the screen in two. The metallic noise of the train switches to the aerial noise of the observatory park, where still photos of the impressive telescopes intersect with aerial footage of Chacabuco. At this point, Guzmán explores the architecture of the site through interviews with survivors of the concentration camp, who examine the inscriptions on the remaining walls.

In my view, the whole sequence comprises the history of capital accumulation in the Atacama Desert from the point of view of extinction. First, the sequence connects the appropriation of labor-force and land during the colonial period, which led to the extermination of indigenous cultures, to the nitrate boom in the 19th century that entailed the deaths of thousands of workers in the name of the industrial revolution. Secondly, the cargo train on the horizon symbolizes the extraction of minerals that provide the means for the accelerated capitalism that Chile is currently experiencing. Transnational corporations now extract around 43 million cubic tons of mineral per year from the Atacama Desert, particularly metals like copper, molybdenum, nitrate, lithium, and borax that are crucial for industries such as electronics, informatics, transportation, pharmaceutics, and food substitutes. As a result of these extractive processes, many urban and rural centers of the North have been transformed into sacrifice zones, which impacts profoundly on the social and ecological conditions of the region (Folchi 2003). Northern Chile is indeed a space of intersection of multiple criminal activities, such as money laundering or human trafficking, with disastrous rainy seasons, massive flooding, and



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earthquakes. At the same time, the images of telescopes moving mechanically suggest the radical automatization of the labor process in contemporary capitalism, in which telescopic extraction of material and virtual resources contributes to the disappearance of the historical subject. This illustrates with precision why Elizabeth Povinelli considers the desert a central geontological figure. The desert is a place full of materials forms, like fossils, that were once "charged with life", but that as a form of fuel or energy can provide the conditions for a specific form of life – "contemporary, hypermodern, informationalized capital" (17).

In contrast to these processes of extraction and extinction, the last section of the film concentrates on the "Mujeres de Calama", the group of women who search for the remains of their relatives killed by the Pinochet regime. Guzmán depicts them pacing around the desert as if they were also collectors of the bones of an extinct species. The sequence reminds one of William Dyce's *Pegwell Bay, Kent—a Recollection of October 5th 1858*, a painting centered on the encounter between human and cosmological time through women who gather meteorites. The "Mujeres de Calama" look for remains of their relatives, but in a similar way to the women in Dyce's painting, they find rocks and fragments of meteorites in the process. Their search for future justice thus becomes intimately connected to the material traces of the geological and cosmological past. This is tragically expressed in the exhumation of a woman executed during Pinochet's regime that Guzmán's film crew came across during the shooting of the film. The exhumation is depicted by Guzmán as an archaeological site, where the forensic anthropologists are disinterring not just the skeleton of a disappeared person, but also the fossils of another species. Later on in the film, Guzmán interviews astronomer George Preston, who explains how the calcium in the bones of the disappeared was made shortly after the Big Bang, meaning that we are constituted by the same matter as the Universe: "We live among the trees, but we also live among the stars [….] The calcium in my bones was there from the beginning". The film points thus towards the coalescence of human and cosmological time in the Atacama Desert, which becomes an archive of rocks and bones where the memories of past and future extinctions are written. As Nilo Couret (2017) claims, this shows how the object of longing in *Nostalgia de la luz* is not located in the future or the past, but "in the meeting point between both", which allows Guzmán to tell the history of human rights violation "not in a retrospective mode but instead in a subjunctive mode" (88). In this fashion, the demand for memory and justice carried out by these women stands against the primacy of profit and presentism in neoliberal Chile, where no future other than capital is possible. Instead of possessing extractive value for the global markets, the bones of the disappeared that these women look for are valueless and "do not matter to anyone".



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From left to right, William Dyce, *Pegwell Bay, Kent—a Recollection of October 5th 1858* and the "Mujeres de Calama" in *Nostalgia de la luz*

By juxtaposing the search for justice with the struggle against neoliberalism, *Nostalgia de la luz* subtly reveals the radical transformation of the Atacama Desert into one of the major extractive zones of the planet after the dictatorship (Arboleda 2015). Now, if these processes of extraction are not explicitly depicted in *Nostalgia de la luz*, is because in the current stage capital accumulation has become progressively emancipated from labor. In this way, the film opens an explicit but negative dialogue with *La batalla de Chile*. By looking at the ruins of the revolutionary culture in the desert, Guzmán shows the disappearance of the working class not only as the engine of history, but also as a subject in documentary film. Furthermore, through images of desolate landscapes, where only forensic searches of the past can take place, *Nostalgia de la luz* makes manifest the anticipated memories of extinction caused by the new waves of extractivism in the Atacama Desert. The question posed by the film is whether the production of life in extractive capitalism will increase the levels of death and desertification until history is no longer possible. This is even more significant in a landscape whose resemblance to Mars materializes the desire to expand capitalist life to other worlds. Mars, however, symbolizes not only the imagination of other worlds, but also how the planet Earth could become, in Elizabeth Povinelli's words, a place "once awash with life, but now a dead orb hanging in the night sky" (36). In this sense, Guzmán shows how the exploration of other planets contributes to subordinating the continuity of life to the discovery of other worlds and new frontiers of extraction, and not to a change in the regime of accumulation responsible of the global ecological crisis. In other words, the film is saying that, if we continue relating to nature as an endless source of material for accumulation, and the desert as if it were merely a deposit of lifeless minerals, then our memory as historical subjects will be only the memory of an extinct species. And those who dare to unearth our remains in the future will do so only to discover our exterminating nature.



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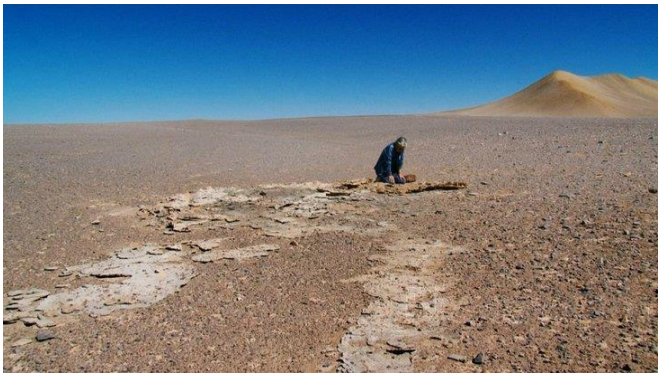


**The Debris of History in *El botón de nácar***

In *El botón de nácar*, Guzmán explores the intersecting histories of extraction and extinction in Patagonia. In the same way as the desert in *Nostalgia de la luz*, water becomes an archival device that preserves material traces from the past, tying together the seemingly discontinuous histories of the indigenous people from Tierra del Fuego and the dictatorship. The point of connection between these histories is a pearl button found with one of the sections of railroad track used to sink the bodies of political prisoners into the sea by agents of the military regime, which Guzmán links to the pearl button in exchange for which the Yaghan native Orundellico—later known as Jemmy Button—was extracted by Captain FitzRoy from Patagonia to England in 1830. According to Guzmán, these different buttons tell "una misma historia de exterminio", proving that water does not just have a voice but also memory ("el agua tiene memoria").

The film begins with the image of a 3,000-year-old quartz rock containing a drop of water found in the Atacama Desert, followed by views of telescopes of the observatory park. Mesmerizing views of Patagonia's desolate marine landscapes fill the following minutes of the film, accompanied by the sound of rain pouring, rivers running and icebergs cracking—a reminder of the effects of global warming in the Antarctic. As one of the last frontiers for global capital, Patagonia is currently experiencing huge ecological

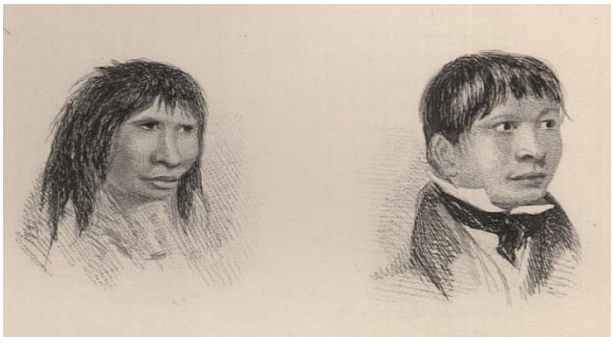
distress due to the extraction of resources such as natural gas, oil, and coal as well as the use of water for hydroelectricity and fish farming. Guzmán captures this extractive view through satellite images of Chile's 2,670-mile oceanic coastline, which despite its importance for Chilean identity and national economy, is now overwhelmingly occupied by transnational fishing corporations as a result of the neoliberal reforms that granted rights of exploitation to private companies almost without public regulation.[4] At this point, Guzmán concentrates on the history of the indigenous peoples of Tierra del Fuego—Selk'nam, Kawésqar, Aónikenk, Haush, Yaghan—that were exterminated by colonial settlers between 1890 and 1910. In this way, the genocide of these indigenous peoples appears as a counterpoint to the beautiful sights of the Patagonian landscapes that open the film, and to the massive commodification of water that guides the ecologically devastating economic success of contemporary Chile.

Using ethno-visual documents created by the missionary priests Alberto Maria de Agostini and Martin Gusinde, and Paz Errázuriz's extraordinary photographic work in *Los nómades del mar* from 1996, Guzmán reflects on different moments in the genocide of these native groups that established themselves in the region around ten thousand years ago, after the last interglacial period. The origins of the genocide can be found in the early 19th century, when the Chilean Nation State began the occupation of the territory. This led to the sheep farming boom and the gold rush of 1890-1910, which attracted large number of Argentinians, Chileans, and Europeans. The new dominant class of settlers began a violent process of appropriation of pristine ecosystems and extermination of indigenous peoples.[5] The Chilean State openly supported the extermination by persecuting and relocating the indigenous people of Tierra del Fuego on Dawson Island, where European settlers such as Julius Popper hunted them down for bounty. In less than 50 years, the Fuegians were decimated to the point of extinction. Guzmán interviews three survivors of the Yaghan genocide (Gabriela, Martín, and Cristina) as if they were the last reservoirs of a memory doomed to disappear. One of the striking passages of the film occurs when the filmmaker asks Gabriela to translate some Spanish words into Yaghan language. All of the words have a meaning in Yaghan, namely "foca, ballena, canoa, remo, papá, mamá, niño, Sol, Luna, estrella, playa, cholga, botón", except "dios" and "policía", two key words in the process of colonization operated by Western imperialism that led them to extinction.

[4] A defining moment in the recent history of Chilean Patagonia was the acquisition by deep ecologist and magnate Douglas Tompkins of more than 2 million acres to protect wilderness from appropriation and exploitation, resulting in a process of "green" dispossession and ecological imperialism that only opened the door for further exploitation. Such transformation of Patagonia into a commodity frontier can be seen symbolically expressed in the 200 ton Antarctic iceberg that Chile brought to the Seville Expo of 1992. This event, brilliantly depicted in Ignacio Agüero's documentary film *Sueños de hielo* (1992), was according to cultural theorist Nelly Richard (2001) a performance of "identity marketing" that intended to show not only the country's capacity to export and to transport resources from remote regions, but also the image of a nation cleansed of the past and open to a future of extraction and pillage.

[5] Settler colonialism, unlike colonialism as such, did not work in Patagonia by exploiting the indigenous population economically, but by removing and exterminating them, naturalizing extinction as a condition for progress (Harambour and Barrena 2018).

Dawson Island serves in the film as the first link between the genocide of the indigenous people of Tierra del Fuego and the military dictatorship of 1973-1989, which established a concentration camp where around 700 political dissidents were imprisoned and tortured. Guzmán interviews a group of survivors of the camp, making them pose in front of the camera in similar ways to the Fuegians of the 19th-century pictures, thus connecting their histories of defeat as well as survival. Guzmán takes this analogy to draw together the history of Yaghan native Jemmy Button and teacher Marta Ugarte, a member of the Chilean Communist Party assassinated by DINA, Pinochet's secret police. Though these poetic operations can be seen as weakening the historical dimension of Guzmán's recent films, which makes them essays rather than documentaries, they make manifest the relationship between different instances of racial and political violence operated by both colonialism and neoliberalism in the peripheries of global capital. The story of Jemmy Button is crucial to understanding this relationship. He was one of the four Yaghan taken back to England in 1830 by Captain Robert FitzRoy in the *HMS Beagle*. As Benjamin Subercaseaux tells in his novel *Jemmy Button* (1950), the visit of the Yaghan to London constituted a public sensation and they even were received by the Queen. The Yaghan not only contributed to the kind of archaeological pleasure that fossils, ancient artifacts and prehistoric animals afforded in museums and public exhibitions in Victorian England (Dawson 2013). At the same time, they represented a central point of comparison for evolution theory. *Beagle's* crew member Charles Darwin, who travelled with the Yaghan back to England, despite calling them "animals", considered them "fellow-creatures, and inhabitants of the same world" (1839: 309). The Yaghan, in other words, were an example of the continuity of natural history, and thus threw "more light on the appearance of organic beings on our earth, and their disappearance from it" (253). Darwin's claims reveal not only the imperial gaze behind evolution theory, but also the effect that the negative environmental changes provoked by industrialization had in 19th-century England. In this sense, Jemmy Button's travel to England meant a clash not only between present-time British and past-time Fuegians, but also a collapse between the time of nature and the time of capital in the industrial revolution, which contributed to the large-scale transformation of the planet's metabolism that is putting us on the same path of extinction as the Yaghan and the Victorians in the past.



Jemmy Button before and after his journey to England. Robert FitzRoy (c. 1830-1834)



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The assassination of Marta Ugarte, whose body was thrown into the sea and then washed up by the Humboldt Current on Los Molles beach in September of 1976, is also relevant to the intertwining of extraction and extinction of bodies displayed in the film. Ugarte was the first of the "disappeared" whose remains were found and publicly claimed as proof of state terrorism during the dictatorship. In this section of the film, Guzmán reconstructs—with the help of journalist and human rights activist Javier Rebolledo—Ugarte's murder and the attempt to conceal her corpse. Rebolledo's reconstruction is a dark passage in the film that reveals the technologies of death that Pinochet's regime used against its opponents. It evokes the forensic nature of Guzmán's *The Pinochet Case* (2001), in which images of bones of the disappeared relentlessly haunt Chilean democracy in the present, as depicted in the film. Apart from the electric bed or the lethal drugs used during Rebolledo's reenactment, Guzmán focuses particularly on the sections of rail that the secret police used to put on top of the bodies before throwing them into the sea. Some of these rails are on display in Villa Grimaldi, one of the torture centers of Pinochet's secret police, as a reminder of the techniques and non-human alliances developed by the dictatorship to kill dissidents. At the same time, the rails evoke the trains we see in *Nostalgia de la luz* crossing the desert in search of minerals. Interestingly enough, they are one of the symbols of the deindustrialization practiced by the dictatorship, which dismantled the train system that used to connect the country's long territory. The rails thus illustrate the transition from an era centered on development and emancipation, which Allende had chosen to symbolize with "el tren de la Victoria" ("the victory train") during his 1958 presidential campaign, to another era centered on automatization of the labor process and disappearance of the working class. Furthermore, they link the history of technology with the memories of violence during the dictatorship, and so the history of extraction with the memories of extermination.

As a critique of Chilean indifference to these past histories of violence represented by Jemmy Button and Marta Ugart, Guzmán displays the unfolding of a large-scale cardboard map of Chile made by painter Ema Malig. By slowly panning across the map in slow motion, he uncovers the memories of violence that shape national landscapes. In *Nostalgia de la luz*, Guzmán shows that the landscape of the desert can store the past, but in *El botón de nácar* he is proposing waterscapes as a way to connect and even to



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remember the two histories of extraction and extinction. The idea that water has memory, however, implies that the past is actually fluid and cannot be entirely fixed either in time or in space. As the only chemical compound that can be found as a solid, a liquid, and a gas, water is the most formless materiality of all. Every trace of information contained in water will eventually disappear due to its fluidity, but this very information will return in another form without form. For this reason, the film follows the signals, indications and vestiges of history as if they were pure vibrations of liquid matter. Many sections of the film present sounds and vibrations produced by water, from waves and rain to icebergs collapsing into cold lakes to bodies falling into the sea and oars sinking in the waterways. In parallel, the film inserts aural fragments from the languages of Fuegians. Anthropologist Claudio Mercado also performs a series of vibrating chants in the film that resemble the sound of water. In this way, *El botón de nácar* is flooded with sonic encounters with the formless memory of water. At the end of the film, the sad and sometimes soporific Guzmán's voiceover sets the tone of this sonic encounter. While we see images of a Quasar recently discovered, which holds 120 million times more water than the Earth in the shapeless form of vapor, Guzmán wonders how many wandering souls might, like the indigenous people of Patagonia or the victims of the dictatorship, find refuge in this vast ocean drifting in the cosmos. Perhaps the answer to that question wanders in the water of our planet.

## Conclusions

Patricio Guzmán's *Nostalgia de la luz* and *El botón de nácar* show how the relationship between reference and abstraction in the representation of landscapes of extraction is directly proportional to the processes of extinction developing in the Capitalocene. The apparent incapacity of the landscape form to represent the violence of extraction responds to capital's capacity to work beyond the zones of extraction already available. In other words, the extractive view operates by producing historical natures – through science, technology and power—as abstract value to be appropriated (Moore 2017). The production of these historical natures implies a regime of visibility of the frontiers of appropriation that sees accumulation as endless. In this illusion, capitalism sets in motion its strategies of destruction, including its own. The landscape form responds to this totalizing impulse of capital, but fails reciprocally to represent a future with us. The result can only be the fragments of a broken totality without human presence.

Like the landscape as a form of representation, there is an opacity and obliqueness in the apparatus of extractivism that renders invisible its own activities. In this way, the fantasy of transparency in visual representations of commodity chains, which promotes ethical consumerism as a possible solution to environmental issues, epitomizes the "new kind of opacity" that occludes the increasing scale of the capitalist system (Toscano and Kinkle 2015). In contrast, the failed transparency of the landscape might be able to better expose the anticipated memories of extinction that can result from the expansion of

extractive practices to planetary levels. Guzmán's use of landscapes as archives of the past functions in this way as a sort of prolepsis of world loss in the exact moment when the planet is becoming fully appropriated by capitalist modes of production. Memory, in this case, does not amount to memorialization, but to warning and awareness. As Diana Colebrook (2014) puts it, the discourse on the end of the world "relies on looking at our own world and imagining it as it will be when it has become the past" (24). While this might sound pessimistic at first glance, Colebrook claims that "in imagining this world after humans we are reading what is not yet written or inscribed" (24). I argue that what is not yet written are the conditions for socio-historical change needed to halt the process of accumulation by extinction in late capitalism. In this respect, *Nostalgia de la luz* and *El botón de nácar* show there is an immanent force in the landscape that offers submerged perspectives on the social/natural relations which can challenge such processes—perspectives bearing on the very histories of extraction and extinction already inscribed in the matter of the landscape. These histories may concern disappeared subjects, but their capacity to remain in the landscape can serve as an image for a future in which we are still here.

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# Editorial

## Creative Writing and Art Cultures of Climate

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In a chapter of *Europe (In Theory)*, Roberto Dainotto explores how Montesquieu updated the Aristotelian identification of climate as the natural cause that divides progressive nations from backward ones according to a north/south dichotomy meant to detect the negative Other of European identity within Europe itself (63-64). In reporting a famous passage of *De l'esprit des lois* [1784] in which Montesquieu establishes a connection between the effect of heat and cold on a sheep's tongue and the socio-cultural identity of Southern European countries, Dainotto comments upon how climate in the eighteenth century became a crucial element in determining "a metatheory of the law" in which "the relationship between physical realities and political formations was not a casual but a necessary one" (57). Whether the story of Montesquieu directly dissecting the sheep is credible or not, what the French philosopher found in the animal's tongue was visible, physical evidence capable of materializing the connection between two entities that would otherwise have been as difficult to pinpoint as both climate and cultural identity. Today the anatomical part of the dead sheep tells instead a story of a double historical violence inflicted upon both a nonhuman creature and Mediterranean people in the name of modern science and climatology.

The trajectory of this story, involving one of the most influential political thinkers of modernity, climate, and a sheep's tongue, illustrates with remarkable precision one of the underlying concerns of this issue of *Ecozon@* devoted to "Cultures of Climate. On Bodies and Atmospheres in Modern Fiction." Moving from the dead body of the animal to the scientific paradigm of climatology, then returning to the body politics and cultural identities of allegedly primitive nations, Montesquieu's narrative unwittingly outlines how there is no truth in the "prevailing concept of the climate" as one in which "bodies and actions, cultures and societies play no significant role" (as stated by Nitzke and Horn, the two guest editors, in their CFP). Instead, the story of the sheep's tongue invites us to consider how the history of climate often coexists with a slow violence that otherwise would likely remain unrepresented. Paraphrasing Rob Nixon, we may say that, when read against the grain of its own theoretical ambitions, Montesquieu's account becomes one of those "arresting stories, images, and symbols" adequate to the representational challenge of conceptualizing the relationships between socio-cultural violence and climate (3).



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As evidenced not least by the Montesquieu anecdote, climate has often been used as "a discursive vehicle capable of naturalizing matter of social concerns into matters of natural fact" (Fleming and Jankovic 10). To hide this ideologically charged process, climate is conversely described in contemporary discourses as an index, i.e. as a quantitative but abstract set of patterns. Yet, we encounter the climate and its agency not in abstraction but first and foremost in the noosphere, the layer of air within two meters of the ground that is as "intimately close as our next breath" (4). Ironically, this layer has never been and will likely be never adequately explored, because it remains "contaminated" by our very presence and therefore useless for modern science and its attempts of objectivity on a global scale. This also means that the very proximity of the noosphere to our embodied existences and concerns is what makes it invisible, out of sight, reducing our encounter with climate into "an abstract three-dimensional geophysical *system*, rather than an intimate ground-level *experience*" (4, emphasis in the original).

What the arts' engagement with the climate can do, however, is bring back a sense of experiencing this atmospheric layer that is so close to us by rendering it visible. Such engagement is not meant to summarily reject or ignore science, technology, and contemporary climatology. Rather, it means to draw focus to the absence of abrupt thresholds "between the human phenomenological experience and machinic agents" (Randerson, Salmond, and Manford 18) and to create assemblages of art and meteorological science capable of repositioning "the atmosphere system as [a] political [entity] rather than a passive receptacle upon which humans act" (18). In an age like ours in which we are no longer dealing with information scarcity, contemporary art can in fact help us understand climate and our connection with the atmosphere by "articulating the hopes, polemics, anxieties and antagonisms that emerge from a crisis that often seems beyond representation" (23). In this way, representing climate becomes more a matter of affectivities than data, more an issue of manifesting the relational embodiment of both beings and airs than one of naturalization and abstraction.

As exemplified by the cover image, the work of the first artist in the Creative Writing and Arts section of this issue of *Ecozon@* is all about rendering visible (a specific) atmosphere through a machinic agent, a photo camera in this case. Berndnaut Smilde is a Dutch artist whose work consists of installations, sculptures and photography. As he states in his biography, Smilde explores the physical de-construction and re-construction of materials, light, space, atmosphere and experience in relation to architectural environments. The *Nimbus* series represented in this issue of *Ecozon@* was recognized by *TIME* Magazine as one of the "Top Ten Inventions of 2012," and it is surely the result of a prodigious scientific manipulation. The marvelous images in this series offer transitory moments of climate presence in a specific location: the clouds are there only for a few second before they disintegrate. Yet, they surprise us with their appearance indoors, their ephemerality makes visible what is instead the invisible permanence of air. Smilde's clouds are thus truly numinous, as they exist at the edge between different but contiguous

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worlds, indicating the presence of a new sense of the Pan-like[1] immanence of the atmosphere. And just as humans were only permitted to enjoy the physical presence of the gods for a mere moment, so the photograph functions as the crucial document of an embodied encounter between ourselves and the air we breathe, an encounter that has become visible in a specific location and now returned to its realm of constant but out-of-sight existence. In a sense, Smilde's *nimbi* leave us with a double environmental awareness: they draw attention to the airspace we share with other elements as much as they remind us of the agency and life of the elements themselves.

Science and the rarely-visible elements that both surround and produce the matter of our trans-corporeal existence are also protagonists of the second contribution in our section. Alex Dreppec is a German author and poet with hundreds of publications in German journals, school books and anthologies. Notably, in the late 2000s he started the so-called *Science Slams*, performative events in which scientists are challenged to compete, presenting their research on a stage in front of an audience. Dreppec's contribution for this issue of *Ecozon@* is a short series of eco-poems (three in English and one in German) entitled *Periodic Poetry*. The reference becomes clear at first sight: Dreppec's poems use the chemical symbols of the periodic table of elements as syllables capable, when poetically combined, of producing a text. Unsurprisingly, the elements describe an atmospheric experience characterized by pollution and atmospheric degradation: Dreppec, who was awarded the "Wilhelm Busch" Prize for humorous poetry in 2004, experiments with abstraction such as scientific symbols to give ironic visibility to a material world in which climate change is not an accident but rather the result of nations negating their own socio-political responsibility while promoting "more waste" (as in "Negation Nations," the second poem anthologized here).

A contrasting sense of unironic connectivity and quasi-numinous embodiment is at the core of Karen Poppy's poetic message. Poppy, an American poet whose work has been published in *The American Journal of Poetry and The Gay and Lesbian Review Worldwide, introduces us to what she describes in an interview as "a layered world that provides so much richness, so much opportunity to create."* Both poems anthologized here portray a cosmos of immanence and sensuous presences, in which our existence relates to everything else, a feeling that is meant to make us reflect upon "how little we matter, and how much" ("Love Song of Existence"). For instance, in her second poem for *Ecozon@*, entitled "Pollination," Poppy takes the perspective of a bee to display how each creature is constantly made and surrounded by a vibrant energy: the poem sadly concludes with the sobering reality that no one knows "what will happen / when we bees all die, are gone."

An almost surreal and dreadful feeling of not knowing what will happen also characterizes the moment in which I am writing this editorial. In these final days of March 2020, I am self-isolating at home due to the Covid-19 pandemic, and I am surrounded by a general cultural climate of fear toward embodied exchanges and atmospheric contagion. Let me therefore render visible what is usually concealed in scholarly writings—namely

[1] 'Pan', the name of the pastoral god of Arcadia, reflects his embodiment of the whole of nature.



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my own personal fears and hopes—and conclude the Creative Writing and Arts section of this Spring issue of *Ecozon@* devoted to "Cultures of Climate" with a text full of optimism about how things eventually work out and the combinatory power of nonhuman environments and arts. "More Virulent than Disease" is a chapter of Stephanie Gage's fictionalized biography of neuroanatomist Santiago Ramon y Cajal (1852-1934), who won the Nobel Prize in 1906 in Physiology of Medicine. In the excerpt anthologized in *Ecozon@*, Gage—who is also a molecular biologist—writes in Cajal's voice at a pivotal moment of the neuroanatomist's life where, while recovering from tuberculosis, he realizes that his path will lead him to scientific investigation. As the title of the chapter suggests, Cajal overcomes the disease and the suffocating atmosphere of the sanatorium in which he is living with a daily combination of "walks about this beautiful mountain" and "drawings and photography." My hope is that Cajal's fictional example may provide some solace and restore with at least some hope and joy our own "current state of existence, with its anxieties and struggles too."

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# Nimbus

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## Nimbus De Groen

**Photo: Cassander Eeftinck Schattenkerk**

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**Nimbus Roeburne**

**Photo: Bewley Shaylor**

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**Nimbus Diocleziano Aula V**

**Photo: Cassander Eeftinck Schattenkerk**

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**Nimbus Maxxi**

**Photo: Alberto Bravini**

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All images courtesy the artist and Ronchini Gallery

# Periodic Poetry

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| 85 | 42 | 16 | 15 | 1 | 68 | 53 | 55 |
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| **At** | **Mo** | **S** | **P** | **H** | **Er** | **I** | **Cs** |

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| $O_2$ | $O_2$ | $O_2$ | $CO_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $CO_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ |
| $O_2$ | 6 | 8 | 8 | 19 | $O_2$ | 90 | 85 | $O_2$ | 16 | 13 | 42 | 7 | $O_2$ | $O_2$ |
| $O_2$ | **C** | **O** | **O** | **K,** | $O_2$ | **Th** | **At** | $O_2$ | **S** | **Al** | **Mo** | **N** | $O_2$ | $O_2$ |
| $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ |
| $O_2$ | $O_2$ | 16 | 79 | 58 | $O_2$ | 32 | 117 | $CO_2$ | 16 | 22 | 6 | 19 | 39 | $O_2$ |
| $O_2$ | $O_2$ | **S** | **Au** | **Ce** | $CO_2$ | **Ge** | **Ts** | $O_2$ | **S** | **Ti** | **C** | **K** | **Y.** | $O_2$ |
| $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ |
| $O_2$ | 84 | 74 | 68 | $O_2$ | 5 | 92 | 81 | 68 | 16 | $O_2$ | $O_2$ | $CO_2$ | $O_2$ | $O_2$ |
| $CO_2$ | **Po** | **W** | **Er** | $O_2$ | **B** | **U** | **Tl** | **Er** | **S** | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ |
| $O_2$ | $O_2$ | $O_2$ | $O_2$ | $CO_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ |
| $O_2$ | $CO_2$ | $O_2$ | 6 | 1 | 18 | $CO_2$ | $O_2$ | 24 | 8 | 15 | 16 | $CO_2$ | $O_2$ | $O_2$ |
| $O_2$ | $O_2$ | $O_2$ | **C** | **H** | **Ar** | $O_2$ | $O_2$ | **Cr** | **O** | **P** | **S.** | $O_2$ | $CH_4$ | $O_2$ |
| $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ |

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| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| $O_2$ | 15 | 13 | 16 | $O_2$ | 90 | 8 | 34 | $O_2$ | 6 | 8 | 8 | 19 | 16 | $O_2$ |
| $O_2$ | **P** | **Al** | **S,** | $O_2$ | **Th** | **O** | **Se** | $O_2$ | **C** | **O** | **O** | **K** | **S** | $O_2$ |
| $O_2$ | $O_2$ | $O_2$ | $O_2$ | $CO_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ |
| $O_2$ | 16 | 6 | 75 | 74 | $O_2$ | 92 | 15 | $O_2$ | 90 | 85 | $O_2$ | $O_2$ | $O_2$ | $O_2$ |
| $CO_2$ | **S** | **C** | **Re** | **W** | $O_2$ | **U** | **P** | $O_2$ | **Th** | **At** | $O_2$ | $O_2$ | $O_2$ | $CO_2$ |
| $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $CO_2$ | $CO_2$ | $O_2$ | $O_2$ |
| $O_2$ | 15 | 33 | 73 | $O_2$ | $CO_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | 102 | $O_2$ | 53 | 58 | $O_2$ |
| $O_2$ | **P** | **As** | **Ta.** | $O_2$ | $O_2$ | $O_2$ | $CO_2$ | $O_2$ | $O_2$ | **No** | $O_2$ | **I** | **Ce** | $O_2$ |
| $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $CO_2$ | $CO_2$ | $O_2$ | $CO_2$ | $CO_2$ |
| $O_2$ | $CO_2$ | $O_2$ | $O_2$ | 6 | 75 | 95 | $O_2$ | 53 | 117 | $CO_2$ | 8 | 9 | 9 | $CO_2$ |
| $O_2$ | $O_2$ | $CH_4$ | $O_2$ | **C** | **Re** | **Am,** | $O_2$ | **I** | **Ts** | $CO_2$ | **O** | **F** | **F.** | $O_2$ |
| $CO_2$ | $O_2$ | $CO_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $CO_2$ | $CO_2$ | $CH_4$ | $CO_2$ | $O_2$ | $CO_2$ |

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| 10 | 31 | 22 | 8 | 7 | $O_2$ | 11 | 22 | 8 | 7 | 16 |
|---|---|---|---|---|---|---|---|---|---|---|
| **Ne** | **Ga** | **Ti** | **O** | **N** | $CO_2$ | **Na** | **Ti** | **O** | **N** | **S** |

| $O_2$ | $CO_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| $O_2$ | 2 | 85 | $CO_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | 42 | 75 | $CO_2$ | 2 | 85 | $CO_2$ |
| $O_2$ | **He** | **At,** | $O_2$ | $O_2$ | $O_2$ | $CO_2$ | $O_2$ | $O_2$ | **Mo** | **Re** | $O_2$ | **He** | **At.** | $O_2$ |
| $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $CO_2$ |
| $O_2$ | 4 | 89 | 2 | 16 | $O_2$ | 17 | 8 | 34 | $CO_2$ | 17 | 8 | 16 | 68 | $O_2$ |
| $O_2$ | **Be** | **Ac** | **He** | **S** | $O_2$ | **Cl** | **O** | **Se,** | $O_2$ | **Cl** | **O** | **S** | **Er.** | $CO_2$ |
| $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $CO_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ |
| $O_2$ | $O_2$ | 10 | 31 | 22 | 8 | 7 | $O_2$ | 11 | 22 | 8 | 7 | 16 | $O_2$ | $O_2$ |
| $O_2$ | $O_2$ | **Ne** | **Ga** | **Ti** | **O** | **N** | $O_2$ | **Na** | **Ti** | **O** | **N** | **S** | $O_2$ | $O_2$ |
| $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $CO_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ |
| $O_2$ | 59 | 8 | 42 | 52 | $O_2$ | 42 | 75 | $O_2$ | 74 | 33 | 52 | $O_2$ | $CO_2$ | $O_2$ |
| $O_2$ | **Pr** | **O** | **Mo** | **Te** | $O_2$ | **Mo** | **Re** | $O_2$ | **W** | **As** | **Te,** | $CH_4$ | $O_2$ | $O_2$ |
| $O_2$ | $O_2$ | $CO_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ |
| $O_2$ | $CO_2$ | $O_2$ | $CO_2$ | $O_2$ | 42 | 75 | $O_2$ | 74 | 33 | 52 | $O_2$ | 31 | 16 | $CH_4$ |
| $O_2$ | $O_2$ | $O_2$ | $O_2$ | $CO_2$ | **Mo** | **Re** | $O_2$ | **W** | **As** | **Te** | $O_2$ | **Ga** | **S,** | $O_2$ |
| $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $CO_2$ | $O_2$ | $O_2$ | $O_2$ |
| $O_2$ | 114 | 85 | 52 | 7 | $O_2$ | $O_2$ | 88 | 49 | 9 | 8 | 75 | 16 | 117 | $O_2$ |
| $O_2$ | **Fl** | **At** | **Te** | **N** | $O_2$ | $CO_2$ | **Ra** | **In** | **F** | **O** | **Re** | **S** | **Ts,** | $O_2$ |
| $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $CO_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ |
| $O_2$ | 24 | 89 | 19 | $O_2$ | 90 | 85 | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $CO_2$ | $O_2$ | $O_2$ | $O_2$ |
| $O_2$ | **Cr** | **Ac** | **K** | $CO_2$ | **Th** | **At** | $O_2$ | $CO_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $CO_2$ |
| $O_2$ | $O_2$ | $CO_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $CO_2$ | $O_2$ | $O_2$ | $O_2$ |
| $O_2$ | $CH_4$ | $O_2$ | $O_2$ | $O_2$ | $CO_2$ | $O_2$ | 24 | 39 | 8 | 16 | 15 | 2 | 75 | $O_2$ |
| $O_2$ | $O_2$ | $O_2$ | $CO_2$ | $O_2$ | $O_2$ | $O_2$ | **Cr** | **Y** | **O** | **S** | **P** | **He** | **Re.** | $O_2$ |
| $CO_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $CO_2$ | $CO_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ |

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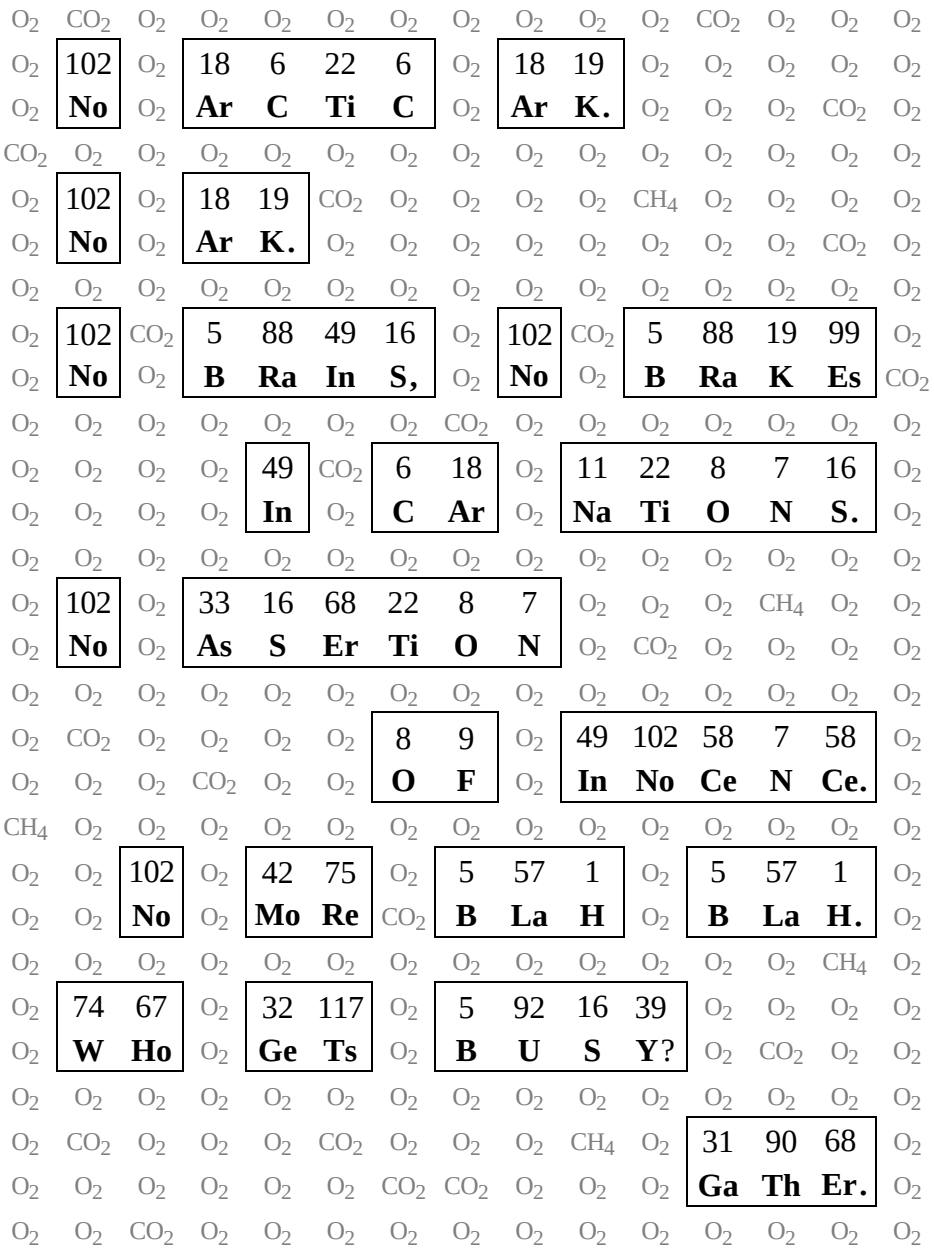


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| 8 | 88 | 7 | 32 | $O_2$ | 84 | 74 | 68 |
|---|---|---|---|---|---|---|---|
| **O** | **Ra** | **N** | **Ge** | $CO_2$ | **Po** | **W** | **Er** |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ |
| $O_2$ | 2 | $O_2$ | 13 | 8 | 10 | $O_2$ | 53 | 16 | $O_2$ | 90 | 85 | $O_2$ | $O_2$ |
| $O_2$ | **He** | $O_2$ | **Al** | **O** | **Ne** | $O_2$ | **I** | **S** | $O_2$ | **Th** | **At** | $O_2$ | $O_2$ |
| $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ |
| $O_2$ | $O_2$ | $O_2$ | 16 | 92 | 15 | 68 | 68 | 92 | 78 | 53 | 8 | 7 | $O_2$ |
| $O_2$ | $O_2$ | $O_2$ | **S** | **U** | **P** | **Er** | **Er** | **U** | **Pt** | **I** | **O** | **N.** | $CO_2$ |
| $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ |
| $O_2$ | 2 | $O_2$ | 6 | 1 | 18 | 32 | 16 | $O_2$ | 90 | 53 | 16 | $O_2$ | $O_2$ |
| $O_2$ | **He** | $O_2$ | **C** | **H** | **Ar** | **Ge** | **S** | $O_2$ | **Th** | **I** | **S** | $O_2$ | $O_2$ |
| $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ |
| $O_2$ | $O_2$ | $O_2$ | $O_2$ | 7 | 95 | 5 | 39 | - | 15 | 95 | 5 | 39 | $O_2$ |
| $O_2$ | $O_2$ | $O_2$ | $O_2$ | **N** | **Am** | **B** | **Y** | | **P** | **Am** | **B** | **Y** | $O_2$ |
| $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ |
| $O_2$ | 15 | 57 | 10 | 117 | $O_2$ | 85 | 42 | 16 | 15 | 2 | 75 | $CO_2$ | $O_2$ |
| $O_2$ | **P** | **La** | **Ne** | **Ts** | $O_2$ | **At** | **Mo** | **S** | **P** | **He** | **Re** | $O_2$ | $O_2$ |
| $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ |
| $O_2$ | $O_2$ | $O_2$ | 74 | 53 | 90 | $O_2$ | 74 | 33 | 52 | $O_2$ | 31 | 16 | $CO_2$ |
| $O_2$ | $O_2$ | $O_2$ | **W** | **I** | **Th** | $O_2$ | **W** | **As** | **Te** | $CO_2$ | **Ga** | **S,** | $O_2$ |
| $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ |
| $O_2$ | 85 | 73 | 6 | 19 | 16 | $O_2$ | 6 | 1 | 53 | 10 | 34 | $O_2$ | $CH_4$ |
| $O_2$ | **At** | **Ta** | **C** | **K** | **S** | $O_2$ | **C** | **H** | **I** | **Ne** | **Se** | $O_2$ | $O_2$ |
| $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ |
| $O_2$ | $O_2$ | 9 | 13 | 34 | 1 | 8 | 8 | 110 | $O_2$ | 74 | 53 | 90 | $O_2$ |
| $O_2$ | $O_2$ | **F** | **Al** | **Se** | **H** | **O** | **O** | **Ds** | $O_2$ | **W** | **I** | **Th** | $O_2$ |
| $O_2$ | $O_2$ | $O_2$ | $O_2$ | $CO_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ |
| $O_2$ | 42 | 75 | $O_2$ | | | | $CO_2$ | $O_2$ | $O_2$ | 89 | 58 | 78 | $O_2$ |
| $O_2$ | **Mo** | **Re** | $O_2$ | **C** | **O** | **2.** | $O_2$ | $CO_2$ | $O_2$ | **Ac** | **Ce** | **Pt,** | $O_2$ |
| $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $CO_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ |

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| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ |
| $O_2$ | 2 | $O_2$ | 56 | 90 | 99 | $O_2$ | 114 | 85 | 57 | 60 | 68 | 16 | $CO_2$ |
| $CO_2$ | **He** | $O_2$ | **Ba** | **Th** | **Es** | $O_2$ | **Fl** | **At** | **La** | **Nd** | **Er** | **S.** | $O_2$ |
| $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ |
| $O_2$ | 90 | 53 | 16 | $O_2$ | 13 | 103 | 8 | 92 | 60 | 68 | $O_2$ | $O_2$ | $O_2$ |
| $O_2$ | **Th** | **I** | **S** | $O_2$ | **Al** | **Lr** | **O** | **U** | **Nd** | **Er** | $O_2$ | $O_2$ | $O_2$ |
| $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ |
| $O_2$ | $O_2$ | 32 | 117 | $O_2$ | 27 | 33 | 117 | $O_2$ | 17 | 8 | 16 | 68 | $O_2$ |
| $O_2$ | $O_2$ | **Ge** | **Ts** | $O_2$ | **Co** | **As** | **Ts** | $O_2$ | **Cl** | **O** | **S** | **Er,** | $O_2$ |
| $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $CO_2$ | $O_2$ |
| $O_2$ | 2 | $O_2$ | 21 | 8 | 75 | 16 | $O_2$ | $O_2$ | $CH_4$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ |
| $O_2$ | **He** | $O_2$ | **Sc** | **O** | **Re** | **S,** | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ |
| $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ |
| $O_2$ | $O_2$ | $O_2$ | $O_2$ | $CO_2$ | $O_2$ | 2 | $O_2$ | 21 | 8 | 8 | 15 | 16 | $O_2$ |
| $O_2$ | $O_2$ | $CH_4$ | $O_2$ | $O_2$ | $O_2$ | **He** | $O_2$ | **Sc** | **O** | **O** | **P** | **S.** | $O_2$ |
| $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ |
| $CH_4$ | 102 | $O_2$ | 90 | 75 | 85 | 16 | $O_2$ | 4 | $O_2$ | 16 | 92 | 75 | $O_2$ |
| $O_2$ | **No** | $O_2$ | **Th** | **Re** | **At** | **S.** | $O_2$ | **Be** | $O_2$ | **S** | **U** | **Re,** | $O_2$ |
| $O_2$ | $O_2$ | $O_2$ | $O_2$ | $CO_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ |
| $O_2$ | 75 | 34 | 18 | 6 | 1 | 68 | 16 | $O_2$ | 16 | 8 | 8 | 7 | $O_2$ |
| $O_2$ | **Re** | **Se** | **Ar** | **C** | **H** | **Er** | **S,** | $CO_2$ | **S** | **O** | **O** | **N** | $O_2$ |
| $O_2$ | $O_2$ | $O_2$ | $O_2$ | $CO_2$ | $O_2$ | $O_2$ | $O_2$ | $CO_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ |
| $O_2$ | 102 | $CO_2$ | 42 | 75 | $O_2$ | 53 | 58 | $O_2$ | $O_2$ | 27 | 75 | 16 | $O_2$ |
| $O_2$ | **No** | $O_2$ | **Mo** | **Re** | $O_2$ | **I** | **Ce** | $CO_2$ | $O_2$ | **Co** | **Re** | **S,** | $CO_2$ |
| $O_2$ | $O_2$ | $O_2$ | $O_2$ | $CO_2$ | $O_2$ | $O_2$ | $CO_2$ | $O_2$ | $CH_4$ | $O_2$ | $CO_2$ | $O_2$ | $O_2$ |
| $CO_2$ | 75 | 34 | 18 | 6 | 1 | 68 | 16 | $O_2$ | 16 | 8 | 8 | 7 | $CO_2$ |
| $O_2$ | **Re** | **Se** | **Ar** | **C** | **H** | **Er** | **S,** | $CH_4$ | **S** | **O** | **O** | **N.** | $O_2$ |
| $O_2$ | $O_2$ | $O_2$ | $CO_2$ | $O_2$ | $O_2$ | $CO_2$ | $O_2$ | $CO_2$ | $O_2$ | $CO_2$ | $O_2$ | $CO_2$ | $CO_2$ |

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| 11 | 22 | 8 | 7 | 13 | 10 | 31 | 22 | 8 | 7 |
|---|---|---|---|---|---|---|---|---|---|
| **Na** | **Ti** | **O** | **N** | **Al** | **Ne** | **Ga** | **Ti** | **O** | **N** |

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $CO_2$ | $O_2$ | $O_2$ | $O_2$ |
| $O_2$ | 15 | 1 | 88 | 34 | 7 | - | 5 | 57 | - | 5 | 57 | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $CO_2$ |
| $O_2$ | **P** | **H** | **Ra** | **Se** | **N** | | **B** | **La** | | **B** | **La** | $CO_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ |
| $O_2$ | $O_2$ | $CH_4$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $CO_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ |
| $O_2$ | 23 | 68 | 19 | 71 | 7 | 32 | 7 | $O_2$ | 56 | 6 | 1 | $O_2$ | 9 | 92 | 68 | $O_2$ | $O_2$ |
| $O_2$ | **V** | **Er** | **K** | **Lu** | **N** | **Ge** | **N,** | $O_2$ | **Ba** | **C** | **H** | $O_2$ | **F** | **U** | **Er** | $O_2$ | $O_2$ |
| $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ |
| $O_2$ | $O_2$ | $CH_4$ | $O_2$ | 56 | 6 | 1 | $O_2$ | 79 | 16 | 32 | 74 | 44 | 7 | 32 | 7 | $O_2$ | $O_2$ |
| $CO_2$ | $O_2$ | $O_2$ | $O_2$ | **Ba** | **C** | **H** | $CO_2$ | **Au** | **S** | **Ge** | **W** | **Ru** | **N** | **Ge** | **N** | **?** | $O_2$ |
| $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ |
| $O_2$ | 84 | 57 | 75 | 53 | 16 | 21 | 1 | 74 | 92 | 60 | $O_2$ | $O_2$ | 91 | 28 | 19 | $O_2$ | $O_2$ |
| $O_2$ | **Po** | **La** | **Re** | **I** | **S** | **Sc** | **H** | **W** | **U** | **Nd** | **?** | $CH_4$ | **Pa** | **Ni** | **K** | **?** | $O_2$ |
| $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $CO_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ |
| $O_2$ | 10 | 49 | $O_2$ | 2 | 19 | 22 | 19 | $O_2$ | $O_2$ | 10 | 49 | $O_2$ | 56 | 92 | 68 | 7 | $O_2$ |
| $O_2$ | **Ne** | **In.** | $O_2$ | **He** | **K** | **Ti** | **K** | **?** | $O_2$ | **Ne** | **In.** | $O_2$ | **Ba** | **U** | **Er** | **N** | $O_2$ |
| $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $CO_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ |
| $O_2$ | $CO_2$ | $O_2$ | $O_2$ | $O_2$ | 89 | 19 | 68 | 7 | $O_2$ | 23 | 68 | 32 | 4 | 7 | 16 | $O_2$ | $O_2$ |
| $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | **Ac** | **K** | **Er** | **N** | $CO_2$ | **V** | **Er** | **Ge** | **Be** | **N** | **S** | **?** | $O_2$ |
| $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ |
| $O_2$ | 87 | 8 | 1 | $O_2$ | 92 | 60 | $O_2$ | 32 | 57 | 16 | 34 | 7 | $O_2$ | 34 | 49 | $O_2$ | $O_2$ |
| $O_2$ | **Fr** | **O** | **H** | $O_2$ | **U** | **Nd** | $O_2$ | **Ge** | **La** | **S** | **Se** | **N** | $O_2$ | **Se** | **In.** | $O_2$ | $O_2$ |
| $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ |
| $O_2$ | 72 | 7 | 102 | $O_2$ | 114 | 95 | 109 | $CO_2$ | 79 | 9 | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $CO_2$ | $O_2$ | $O_2$ |
| $O_2$ | **Ta** | **N** | **Ne** | $O_2$ | **Fl** | **Am** | **Mt** | $O_2$ | **Au** | **F** | **?** | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ |
| $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $CO_2$ | $O_2$ | $O_2$ | $O_2$ |
| $O_2$ | 79 | 32 | 7 | $O_2$ | 5 | 3 | 60 | $O_2$ | 8 | 1 | 75 | 7 | $O_2$ | 72 | 92 | 5 | $O_2$ |
| $O_2$ | **Au** | **Ge** | **N** | $O_2$ | **B** | **Li** | **Nd,** | $O_2$ | **O** | **H** | **Re** | **N** | $O_2$ | **Ta** | **U** | **B.** | $CO_2$ |
| $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ |
| $O_2$ | 34 | 53 | $O_2$ | 16 | 52 | 117 | $O_2$ | 3 | 5 | 68 | 13 | $O_2$ | 92 | 60 | $O_2$ | $CH_4$ | $O_2$ |
| $O_2$ | **Se** | **I** | $O_2$ | **S** | **Te** | **Ts** | $CH_4$ | **Li** | **B** | **Er** | **Al** | $O_2$ | **U** | **Nd** | $O_2$ | $O_2$ | $O_2$ |
| $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ |
| $O_2$ | 87 | 99 | 34 | $CO_2$ | 16 | 72 | 92 | 5 | $O_2$ | $O_2$ | $O_2$ | $O_2$ | 88 | 92 | 6 | 2 | $O_2$ |
| $O_2$ | **Fr** | **Es** | **Se** | $O_2$ | **S** | **Ta** | **U** | **B.** | $CO_2$ | $O_2$ | $O_2$ | $CO_2$ | **Ra** | **U** | **C** | **He,** | $O_2$ |
| $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $CO_2$ | $O_2$ | $O_2$ |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| $O_2$ | $O_2$ | $CO_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ |
| $O_2$ | 74 | 13 | 114 | 99 | 92 | 6 | 1 | 68 | $O_2$ | $O_2$ | 88 | 92 | 6 | 2 | $O_2$ | $O_2$ | $O_2$ |
| $O_2$ | **W** | **Al** | **Db** | **Es** | **U** | **C** | **H** | **Er,** | $O_2$ | $O_2$ | **Ra** | **U** | **C** | **He.** | $CO_2$ | $O_2$ | $O_2$ |
| $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $CO_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ |
| $O_2$ | $CO_2$ | $O_2$ | $O_2$ | 7 | 92 | 7 | $O_2$ | 72 | 92 | 6 | 2 | $O_2$ | 114 | 89 | 2 | 16 | $O_2$ |
| $O_2$ | $O_2$ | $O_2$ | $O_2$ | **N** | **U** | **N** | $O_2$ | **Ta** | **U** | **C** | **He,** | $O_2$ | **Fl** | **Ac** | **He** | **S** | $O_2$ |
| $CO_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $CO_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ |
| $O_2$ | 87 | 53 | 99 | 57 | 60 | $O_2$ | 72 | 92 | 6 | 2 | $O_2$ | $CO_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ |
| $O_2$ | **Fr** | **I** | **Es** | **La** | **Nd,** | $CO_2$ | **Ta** | **U** | **C** | **He.** | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $CO_2$ | $O_2$ |
| $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ |
| $O_2$ | $CO_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $CO_2$ | 19 | 95 | 68 | 92 | 7 | 68 | $O_2$ | 99 | 34 | 7 | $O_2$ |
| $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $CO_2$ | $O_2$ | **K** | **Am** | **Er** | **U** | **N** | **Er** | $O_2$ | **Es** | **Se** | **N** | $O_2$ |
| $O_2$ | $O_2$ | $O_2$ | $CO_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ |
| $CO_2$ | 23 | 68 | 5 | 3 | 6 | 2 | 10 | $O_2$ | 9 | 79 | 68 | 7 | $O_2$ | $O_2$ | $CH_4$ | $O_2$ | $O_2$ |
| $O_2$ | **V** | **Er** | **B** | **Li** | **C** | **He** | **Ne** | $O_2$ | **F** | **As** | **Er** | **N,** | $O_2$ | $O_2$ | $O_2$ | $CO_2$ | $O_2$ |
| $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $CO_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ |
| $O_2$ | 74 | 77 | $O_2$ | 23 | 68 | 32 | 4 | 7 | $O_2$ | 92 | 7 | 16 | 75 | 7 | $O_2$ | $O_2$ | $O_2$ |
| $O_2$ | **W** | **Ir** | $O_2$ | **V** | **Er** | **Ge** | **Be** | **N** | $O_2$ | **U** | **N** | **S** | **Re** | **N** | $O_2$ | $CO_2$ | $O_2$ |
| $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $CO_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ |
| $O_2$ | $O_2$ | $O_2$ | $CO_2$ | $O_2$ | $O_2$ | $O_2$ | $CH_4$ | $O_2$ | $O_2$ | $CO_2$ | 23 | 68 | 31 | 16 | 68 | 7 | $O_2$ |
| $O_2$ | $CO_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $CO_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | **V** | **Er** | **Ga** | **S** | **Er** | **N.** | $CO_2$ |
| $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $CO_2$ | $O_2$ | $O_2$ |
| $O_2$ | 74 | 77 | $O_2$ | - | $O_2$ | 74 | 77 | $O_2$ | 14 | 60 | $O_2$ | 92 | 7 | 16 | $O_2$ | $CO_2$ | $O_2$ |
| $O_2$ | **W** | **Ir** | $O_2$ | | $CO_2$ | **W** | **Ir** | $O_2$ | **Si** | **Nd** | $O_2$ | **U** | **N** | **S** | $O_2$ | $O_2$ | $O_2$ |
| $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $CH_4$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $CO_2$ | $O_2$ | $O_2$ | $O_2$ |
| $CO_2$ | $O_2$ | $O_2$ | $CO_2$ | $O_2$ | $CH_4$ | $O_2$ | $O_2$ | 22 | 68 | 53 | 21 | 1 | $O_2$ | 52 | 92 | 68 | $CO_2$ |
| $O_2$ | $O_2$ | $CO_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $CO_2$ | **Ti** | **Er** | **I** | **Sc** | **H** | $O_2$ | **Te** | **U** | **Er.** | |
| $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $CO_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ |
| $O_2$ | 1 | 53 | 68 | $CO_2$ | 9 | 75 | 53 | 19 | 18 | 52 | 7 | $O_2$ | 9 | 92 | 68 | $CO_2$ | $O_2$ |
| $CO_2$ | **H** | **I** | **Er** | $O_2$ | **F** | **Re** | **I** | **K** | **Ar** | **Te** | **N** | $CO_2$ | **F** | **U** | **Er** | $O_2$ | $O_2$ |
| $O_2$ | $O_2$ | $O_2$ | $CO_2$ | $O_2$ | $O_2$ | $O_2$ | $CO_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $CO_2$ | $O_2$ | $CO_2$ | $O_2$ | $O_2$ |
| $O_2$ | $O_2$ | $CO_2$ | $O_2$ | $CO_2$ | $O_2$ | $O_2$ | 92 | 7 | 16 | 68 | $CO_2$ | 26 | 32 | 9 | 63 | 68 | $CO_2$ |
| $CO_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $CO_2$ | **U** | **N** | **S** | **Er** | $O_2$ | **Fe** | **Ge** | **F** | **Eu** | **Er.** | $O_2$ |
| $O_2$ | $CO_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $O_2$ | $CO_2$ | $O_2$ | $O_2$ | $O_2$ | $CH_4$ | $O_2$ | $O_2$ | $O_2$ | $CO_2$ | $O_2$ |

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# Poems

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DOI: HTTPS://DOI.ORG/10.37536/ECOZONA.2020.11.1.3017

## Love Song of Existence

We are and that is everything.
Minute, and also infinite.
Defined, and beyond our own comprehension.
Every pattern and symbolism,
Yet, unique and unmatched.
We are the flesh and the seed.
Each apple as it falls, collapses into its own decay,
Marries the earth.
Each blossom born to bloom, become new fruit, then ripen.
We are here, and in a distant universe,
Dry, barren sand. Each grain and the whole.
Soon, too soon, ice glaciers will melt, and sweep
Over us, destruction that will drench us into life again.
We are also these glaciers that melt to ocean, every drop, cohesion.
Our own undermining, death, and reincarnation.
Some deny our warming, but it is no illusion.
Neither is the coldness that spells out our universe, or each
Extinguished reminder of burning, that burned hot
Somewhere in time, and in our eyes, burns forever.
Also real: every fragrance, taste, touch, sound, and each feeling
That we say is another sense.
We are darkness and every sky, pinched to nothing and expanding.
That is how little we matter, and how much.

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**Pollination**

It is all pollination—
Creation—
The most fertile place.
Deep recess,
Soft petaled vibration,
Sun-steeped
Exploration. Discovery.
Pollen on stamen.
We dust our feet with it,
Dance
The shape of language.
Hive and lace
Every surface, imperfect,
Yet perfect.
Every barrier, an opening.
Geometric.
Slow rush of destiny within
Honeycomb.
Inflect of tongue, golden,
Brought to womb,
A room, inner chamber, a lair.
Percolation.
Every sweetness, every fruit,
Every root,
Owes itself to this obsession.
Each generation
Much improved by the last one.
What will happen
When we bees all die, are gone?

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# More Virulent than Disease

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DOI: HTTPS://DOI.ORG/10.37536/ECOZONA.2020.11.1.3191

## Interlude

San Juan de Pena, Spain
1879

I write tonight from my room in the monastery of San Juan de Pena in an attempt to record the last few years of my life. I feel as though a shroud has finally been lifted from my soul, my spirit slowly and gently reclaimed every day. It has been a very long, arduous convalescence. But let me start from the beginning.

The brigadier, whom I owe my life, delivered my discharge application personally to the Captain-General which produced the desired effect. The remaining men in the infirmary were transferred to larger garrisons, and I underwent a medical examination to obtain my final discharge as unfit for service. As I expected, I was afflicted with acute malarial cachexia, which is incompatible with military service. I set out for Havana where I obtained my back pay, passport, and awaited the steamer to return to the Peninsula.

I discovered that there in Havana Father's draft had come through but was being held up by those greedy functionaries. To think they reason that by stealing from Spain they are hurting no one, when in truth they are hurting everyone! Eight or nine installments of pay were due to me, too, on account of this rampant embezzlement. My economic difficulties were serious. I ran the risk of having to pass several months in Havana collecting what was owed to me, just when my health required as quick a return as possible. I finally succeeded in collecting my dues—not, however, without leaving in the clutches of the greedy administrator between forty and fifty percent of their amount. Without counting Father's money, I collected 600 pesos, with which I erased some small debts and acquired what I needed for the voyage home. Oh, our inveterate administration abuses, and how dearly poor Spain has paid for them, always impoverished, always bleeding, and always forgiving and forgetting!

Aboard *Espana* my health slowly improved. Many soldiers were ill like me, but less well cared for. They travelled third class, herded together in quarters and subjected to a diet not adequate for healing or nourishment. It gave me satisfaction to attend to them, procuring for them the medicines they needed, and encouraging their hopes. After all, they were almost home! The hope of seeing their native land and the joy of returning to their families are the two supreme spiritual tonics. It broke my heart to see so many

lose the battle before witnessing the joy awaiting them. At dawn I watched as their remains were tossed into the sea, into their watery graves for eternity.

After resting for a few days in the capital, I had at last the unspeakable joy of returning to Zaragoza and embracing my parents and my brother and sisters. They found me yellow and emaciated with an unhealthy appearance that distressed them greatly. I refrained from telling them that my appearance was much improved from only a few months prior. What would they have said previously?

I became much stronger in my native land with nourishing food and the unreplaceable care of my mother. But even now I do not expect to recover my former vigour or succeed in getting rid entirely of the malarial anemia. From time to time the fever returns, but now quinine is more efficacious.

When I began to show signs of improvement, it was time for me to think about my future again. Father confessed that my weakened health would not permit the physical effort required for medical services with an urban clientele. And with his words, I discovered, quite painfully, that through my ill-fated voyage overseas, I lost both my health and my career. If I wanted to marry, I would be considered an unsuitable husband.

But I do still cherish lofty ambitions. I continue to struggle with an excessively shy and retiring disposition, but I aspire to be something—to emerge triumphantly from the plane of mediocrity and to collaborate—if my powers permit—in the great work of scientific investigation. I am resolute in this patriotic desire, though all my contemporaries consider it pure insanity if not presumptuous pretentiousness.

But let me not get too ahead of myself, there are hazy pictures and even actual gaps in the cinematograph of memory, corresponding to the periods when the attention, like photography on a dull day, had not enough energy to impress the film of the brain. Such was my prolonged recovery at the baths of Panticosa. Let me attempt to recollect them now and events leading up to it.

I was sitting with my dear friend Don Francisco Ledesma playing a strenuous game of chess when I was suddenly attacked by a pulmonary hemorrhage. I was deeply absorbed in the consideration of a move, and not wanting to alarm my friend, I continued until conclusion. Hastily eating supper that evening with my family and speaking very little, I removed myself from the table and retired to bed immediately. In a short time, I was seized by another formidable hemorrhage. The blood was red and foaming, ascending with a rush from my lung to my mouth, threatening to choke me. I called to Father, who was visibly alarmed, and he prescribed for me the treatment usual in cases such as mine. The pallor, and progressive emaciation which he noticed in me for some months, combined with the effects of malaria—which are never completely eradicated—led him to make a most serious diagnosis, which he attempted to conceal from me naturally. But a physician rarely deludes himself of his own condition. After what I experienced in Cuba, how could I ignore the textbook signs of its pathology? I possessed a high fever, a hemorrhagic seizure, the dyspnea, the persistent cough, the perspiration, the emaciation—all the features of my illness coincided point for point

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with my consumptive soldiers: Tuberculosis. Oh, what agony to be a physician and a patient at the same time!

My physical ailments, however, were far less pressing than the depression that washed over me, of which I have only begun to recover. I plunged into a state of despair—into depths of which I have never known, even in my darkest desperation of the war. If I am truly honest with myself, which is the goal of maintaining this journal, I will admit that my thoughts drifted to suicide, and all that madness boiled down to one thought that was impossible to eradicate from the forefronts of my mind. It was the distressing idea of death. It clung to my overwrought sensibilities with the obstinacy of a bull to its matador. I considered my career at an end, my destiny fulfilled, my idea of contributing to the common heritage of Spanish culture a pure chimera. It was this idea of the irremediable uselessness of my existence that plunged me into the deepest anguish. One afternoon, seized with a fit of gloomy melancholy, I scaled a lofty crest, breathless, my lungs protesting, and rested alongside a stone. I conceived the plan of letting myself die with my face to the stars, with no other witnesses than the eagles or any other shroud than the approaching snow of autumn. What madness!

During these dark times, I concluded bitterly, and ludicrously, that the wild romanticism, the likes of which spurned my ill-fated voyage, the works of Chateaubriand, Lamartine, Victor Hugo, Lord Byron and others—had poisoned my mind. In desperation, I became a misanthrope and got to the point of despising the most holy and venerable things. The excessive optimism of my youth, which I believe now to have spared me in Cuba, was lost somewhere too, buried within the Quixotic nature of my former self. Perhaps religion could have saved me—that is if I were not so well-versed in philosophy.

Father placed me into a healing program to breathe the fine air on the summit of the famous Monte Pano. I was put on a regime in which I was to drink from the famously healing nitrogenous waters. Curiously, the more serious my depression became, the more my mind was removed from my medical maladies, and in effect, my illness became less serious to my mind. After some time, I ignored the advice of my doctors, my system of healing being that I do everything contrary to their recommendations.

Despite my expectations, my condition improved. After some weeks the bringing up of blood ceased; my fever diminished, and my lungs and my muscles, which were subjected to barbaric tests, functioned better and better. It was demonstrated to me, most poignantly, that one does not die when one thinks to do so. It is when least expected that the horse which was once considered contemptible and weak can turn out more spirited than the rider.

The turning point in my condition, I believe, was the courage, and affability of the other consumptives. It is well known that bravery is contagious. None of those tuberculosis patients, most of them young like myself, had any idea of their disease. They referred to it as, “stomach trouble,” or “catarrhs.” Some said that they came to the baths not from any need, but purely out of their gratitude for their famous powers of healing. These words of confidence, or rather delusion, sounded bitterly ironical. When to look at them, one could see that the livid circles beneath their sunken eyes or their

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feverish cheeks were a sign of anything but stomach trouble. Even those confined to bed seemed mostly satisfied, cherishing a belief that they soon would be cured. It is true that they are not physicians!

There was one young lady from Cervera, in particular, with her quiet courage that ultimately made me feel ashamed of my misanthropic behavior. It appears women have a power of resistance to the disease which we men lack. I believe that it is instinct which gives them incredible strength. The poor lass, believing nothing was wrong with her, talked excitedly of her upcoming wedding; her fiancé and the children she would have, her new home. I grieve to write that she died a month prior to her anticipated event.

From her courage, I determined not to be ill. My brain decreed that all was unjustified apprehension, autocratically imposing itself over my lungs. The meticulous details of the regimen were over for me. I halted the prescriptions of the works of hygiene and the pharmacopeia. I refused to drink of the nitrogenous waters. I just desired to have a normal life. Of course, my lungs protested, my heart beat faster than it should, but I was contented to let them do as they liked!

My sister, Paula has come to my aid, and has been my ideal nurse here. She has installed us within this monastery of San Juan de la Pena, and I have had all the indications of a real convalescence. The peace and picturesqueness of this place, a nutritious diet of meat and milk, daily rambles through the forest, and interesting excursions to the neighboring village of Santa Cruz del Denos has finally brought me to the point that I should live a life of physical strength and mental tranquility.

I have come to find that the sun, the open air, silence and art are great physicians. Sun and the open air invigorate the body, functioning as tonics, whilst silence and art still the vibrations of sorrow. These great physicians free us from our own virulent ideas, sometimes more dangerous than disease itself. They guide our sensibilities towards the world around us, the fount of the purest and most refreshing pleasures. My drawings and photography especially, have helped. They have been the source of inspiration for my walks about this beautiful mountain, obliging me to take continual exercise, and to satiate my daily cravings for artistic expression. It is along these ramblings that restored my current state of existence, with its anxieties and struggles too.

It is here where I have realized that there is a career open to me still. I shall strive to wear the venerable gown of the schoolmaster and contribute to Spanish culture with nothing more than the patriotic desire to pursue scientific inquiry. A life of study in a quiet corner sounds most agreeable indeed.

My convalescence; painstaking, arduous, and contemptible that it has been, has managed to bring about a most important realization. Perhaps my time has not yet come.

4 April 1879 S. Ramon Cajal

# New Directions in African American Ecocriticism

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Sonya Posmentier, *Cultivation and Catastrophe: The Lyric Ecology of Modern Black Literature* (Baltimore: Johns Hopkins University Press, 2017), 304pp.

Lindgren Johnson, *Race Matters, Animal Matters: Fugitive Humanism in African America, 1840–1930* (New York: Routledge, 2018), 212pp.

John Claborn, *Civil Rights and the Environment in African-American Literature, 1895–1941* (London, New York: Bloomsbury Academic, 2017), 216pp.

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The past two decades have seen an increasing ecocritical engagement with African American literature and culture, creating what some have called an "African American ecocriticism." While this term seems problematic—it does not capture influences beyond African American studies and ecocriticism, e.g. from fields like postcolonial ecocriticism or Black Geographies, and appears to suggest a kind of ecocritical "subfield"—the body of scholarly work included under this label has grown considerably. Apart from a pioneering essay collection edited by Mayer (2003) and major studies, e.g. by Smith (2007), Outka (2008), or Ruffin (2010), an increasing number of scholarly articles has contributed to shaping a field that is marked by a set of characteristic ideas. There is, for example, the common assessment that the environmental dimensions of African American literature may only be addressed through broader definitions of what we mean by "environmental"; a shared perspective on intersections between environmental degradation, race, and other forms of oppression; or an often-found "tragic view" of African American relations to nature, which (over)emphasizes trauma and alienation (Claborn 7). The recent publication of the three monographs under review, by Sonya Posmentier, Lindgren Johnson, and John Claborn, gives an opportunity to reexamine some of those ideas and highlight current developments in the field. In diverse ways, the three studies provide new directions that substantially expand the scope of African American ecocriticism.

Sonya Posmentier's *Cultivation and Catastrophe* (2017) continues the field's tradition of employing broad terminology, stating the need to "think of ecology in a broader sense" (214) and work with a wide definition of "lyric." Theorizing and tracing what Posmentier calls "lyric ecologies" in twentieth-century Caribbean and U.S. writing and music, the capacious study adds an important new perspective through its

theoretical framework, which draws on writers like Sylvia Wynter, Édouard Glissant, and Kamau Brathwaite, and through its transnational scope and postcolonial lens.

In two main parts, Posmentier uncovers an alternative lyric history through what she reads as two "intersecting frameworks for approaching black diasporic experiences" (5): cultivation and catastrophe. "Part 1: Cultivation" explores how the language and concepts of cultivation shaped diasporic experience, producing new subjectivities. While the first chapter turns to Claude McKay's sonnets via the "provision ground," the plot on the edge of the plantation, to suggest a diasporic consciousness in the New Negro movement, Chapter 2 juxtaposes the metaphoric negotiation of the provision ground in mid-century Caribbean magazines to developments in the U.S., where Posmentier sees a "reterritorialization" of "black writing in the city" (88). Chapter 3 continues the study's detailed dissection of entangled yet distinct developments in U.S. and Caribbean writing by reading Derek Walcott's "The Star-Apple Kingdom" as an imagination of the Caribbean as "a space of dwelling rather than ownership" that suggests the destructiveness of property relations (104).

"Part 2: Catastrophe" is devoted to musical and poetic responses to environmental catastrophe, stressing the temporal, sonic, and collective dimensions of such responses in creating diasporic "archive[s] of black culture" (223). In Chapter 4, Posmentier turns to the Mississippi River floods of 1927, arguing that responding through songs and poetry provided new ways of thinking time by portraying the flood's "continuing catastrophe" (152). A related temporal dimension of catastrophe lies at the heart of her reading of the literary storm in Hurston's *Their Eyes Were Watching God* (1937) in Chapter 5. Interpreting the novel in conjunction with sound recordings, Posmentier intriguingly argues that Hurston portrays the storm through a rhythmic shift to "lyric time" and "diasporic sound" to express a collective experience of disaster (178). Chapter 6 explores such expressions in the more recent past considering Jamaican artistic reactions to the 1988 Hurricane Gilbert. While demonstrating that Lloyd Lovingdeer's dancehall hit "Wild Gilbert" performed collective cultural work through a critique of Jamaican class structure, Posmentier views Brathwaite's poetry as a "diary of water" that contextualizes the hurricane's destruction within a larger diasporic history of migration and displacement.

Both main parts of *Cultivation and Catastrophe* offer key insights: whereas Part 1 demonstrates how the geography of the plantation shaped modern lyric content and forms, Part 2 suggests that although environmental catastrophe has threatened black culture, it "also occasioned its production" (159). Although one might wonder how "intersecting" Posmentier's two frameworks might truly be, and fear a loss of focus in a treatment of both African American and Caribbean traditions, it is precisely here that we may locate major strengths of *Cultivation and Catastrophe*, which speaks to the fields of ecopoetics, new lyric studies, and postcolonial ecocriticism, as well as to African American ecocriticism. By revealing connections between African Americans and Caribbean people as "common inhabitants of an heterogeneous zone" (5), and highlighting a longstanding diasporic lyric ecological presence, Posmentier's study stresses a transnational dimension that needs to be more thoroughly taken into account

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in African American ecocriticism. Additionally, the claims of the second part have broader implications as they emphasize the importance of turning more attention to alternative epistemologies and interconnected temporalities. It would be intriguing, for example, to read the discursive relations to "Catastrophe" Posmentier's study traces in a wider context of other forms of temporality related to disaster, e.g. through notions of risk or speculation.

The distinctive feature of Lindgren Johnson's well-researched *Race Matters, Animal Matters* (2018), which offers meticulously contextualized readings of nineteenth-century black autobiography and fiction and concentrates on institutions like slaughterhouses and discourses of hunting and lynching, is its focus on African Americans' relations to non-human animals. Through his theory of "fugitive humanism," which draws on insights from animal(ity) studies and posthumanism, Johnson spotlights places in the African American tradition where nineteenth-century blacks "rupture liberal humanist constructions of both animality and humanity" (10), and reveals how new slaughtering practices, sport hunting or animal welfare intersected with racial politics.

Chapter 1 traces a "fugitive humanism" in antebellum slave narratives by Moses Roper (1838, 1848) and Frederick Douglass (1845). Johnson notes that both work "out of an abolitionism grounded in exclusions of […] the nonhuman animal world" (45), thus echoing earlier assessments of the slave narrative as "anti-nature writing" (Outka 172). Moving beyond this view, Johnson sees Roper's narrative as an example that shows how non-human animals were harnessed by the peculiar institution, while his reading of Douglass's narrative provocatively yet convincingly identifies an alternative abolitionist ethic that involves forms of resistance residing where humanity and animality intersect.

The subsequent chapters may be read in pairs, as two thematic clusters. In Chapter 2, Johnson revisits the *Slaughterhouse Cases* of 1873, the first Supreme Court interpretation of the Fourteenth Amendment, to illustrate a broad shift that, in his view, was vital to reinterpreting and relocating both black and animal bodies. Chapter 3 offers a nuanced reading of three of Charles W. Chesnutt's conjure stories as negotiating such relocations. Against a dominant view of "conjure" in Chesnutt as empowering "fluidity," Johnson regards "failings" of conjure as a means to force readers to rethink relations between human and non-human animal bodies. Although more attention could have been paid to potential implications of the fact that one of the stories, "Dave's Neckliss," does *not* involve conjure, this chapter makes a crucial point by suggesting that Chesnutt creates a "fugitive humanist" position that confronts both white and human exceptionalism.

Chapter 4 revisits lynching history by examining animal killing and subjectivity. Johnson draws attention to sport hunting iconography's significance to lynching photography and emphasizes the centrality of pseudo-scientific racist theories to the construction of a "black bestiality" that supposedly had to be "domesticated." In this context, Chapter 5 discusses writings by anti-lynching activists of the turn of the century (Douglass, Ida B. Wells, Mary Church Terrell) and the early decades of the twentieth century (NAACP leaders James Weldon Johnson and Walter White), who deployed



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animal welfare ideology against lynching violence. Closing with a short Epilogue, *Race Matters* frames its findings within more recent contexts and highlights the potential of a "fugitive humanism" for African American ecocriticism, the fields of animal studies and posthumanism, and for contemporary activism. Johnson criticizes early twenty-first-century exhibitions of lynching photographs for replacing "past white aggression with current white 'compassion' for animals" (183), arguing instead for a perspective that recognizes the convergence of race matters with animal matters in African America that has become apparent through his highly original study.

John Claborn's *Civil Rights and the Environment in African-American Literature, 1895-1941* (2018) is in some ways the most traditional study, focusing primarily on African American prose literature's environmental dimensions and modes of representation, and rereading canonical authors like Booker T. Washington, W.E.B. Du Bois, Zora Neale Hurston, and William Attaway. Concentrating on a historical period that lies between the time frames treated by Posmentier and Johnson, its focus on civil rights and its methodology make Claborn's contribution valuable to African American ecocriticism. By combining an eco-historical approach with Marxian and intersectional frameworks, Claborn revisits literary genres and spaces to explore, in his words, "how the color line and the ecological line […] parallel, intersect, and veer apart" (11).

After an introduction that provides an accessible primer for readers unfamiliar with the field, Chapter 1 traces what Claborn sees as Washington's "covert promotion of ecological agencies" (15). Turning to *Working With the Hands* (1904), he argues that Washington transplants a tradition of maroonage to the "inside" of the plantation system (29), developing alternative forms of black agriculture. Although readers might ask why this Georgic stance is not more thoroughly contextualized within Washington's problematic social Darwinist ideology and why Claborn claims that Washington's environmental ethos figures "covert" (15) and "unconsciously" (21)—since it seems to be very explicit in a book that reads like a farmer's manual—his reading of *Working With the Hands* is important for drawing (eco)critical attention to a text that has often remained in the shadow of *Up From Slavery* (1901).

While Chapter 2 focuses on another canonical text, *Darkwater: Voices from Within the Veil* (1920), to illustrate how Du Bois extends his famous idea of "double consciousness" to portrayals of non-human nature, Chapter 3 is, perhaps, the most innovative part of *Civil Rights* with respect to its choice of primary texts. Here, Claborn looks at Du Bois' editorial work for the NAACP's *The Crisis* and understudied bird-poems by amateur naturalist Effie Lee Newsome to demonstrate the magazine's engagement with the "color line" as well as with conservation. Newsome's writings do not simply engage in a "New Negro nationalism" (100), but gain a double meaning: as texts concerned with natural history and, within their editorial context, as contributing to civil rights advocacy.

The last two chapters of *Civil Rights* examine environmental dimensions of two central literary spaces of early-twentieth-century African America, the swamp and the industrialized urban landscape. In the context of African American literary representations of swamps and of developments in cultural ecology, Chapter 4 analyzes



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the swamp as "a space for ecological community" in Hurston's *Mules and Men* (1935) and *Their Eyes Were Watching God* (1937) (112). Chapter 5 focuses on anthropogenic crises of industrialized landscapes and pollution in Attaway's *Blood on the Forge* (1941) to expose the text's figuration of ecological degradation. Claborn views the novel through a paradigm shift in scientific ecology in the 1930s to demonstrate its interrogation of a black "subjective experience of this social and environmental history" and its anticipation of Aldo Leopold's land ethic (145).

When Claborn concludes that his overall aim is to provide "a usable past" (170), the same holds true for Posmentier's and Johnson's studies, which share in a general mission to reveal that environmental aesthetics and ethics have a long and rich tradition in African America. Accordingly, all three books contribute to refuting a primarily "tragic view" of African American environmental relations (Claborn 7), for instance, by drawing attention to how environmental literary modes such as the sublime or the pastoral figure in alternative—but by no means "deficient"—ways in black literature. Although the studies intersect in treating writers like Hurston or Washington, and share certain themes through a focus on time, sound, and an environmental ethics rooted in working relationships to the land, their true potential shows in the specificity of their individual arguments and methodological lenses, which offer input beyond the field of African American ecocriticism. Johnson's concept of "fugitive humanism," for example, may prove productive not only for animal studies and posthumanism, but also for environmental justice activism or the black vegan movement that is currently gaining strength, while Posmentier's study hints at the implications of research in African American ecocriticism for examining the role of race in the Anthropocene. In such ways, all three books attest to the ways in which African American ecocriticism has grown into more than a mere "subfield" of ecocriticism, and has the potential to interlink productively with a variety of environmentally interested fields and discourses.

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Nicole Seymour, *Bad Environmentalism: Irony and Irreverance in the Ecological Age* (Minneaopolis: University of Minnesota Press, 2018), 291 pp.

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Like the emancipatory schools of thought that preceded it (I am thinking of Marxist, feminist, and postcolonial criticism in particular), ecocriticism has its roots in personal commitment to the environment. For most, if not all of us, to a greater or lesser extent, our relationship to environmentalism is not just one of scholarly interest, but a form of engagement in the wider world in which we are emotionally and affectively invested.

From this standpoint, Nicole Seymour's *Bad Environmentalism* is a doubly important contribution to the field of Environmental Humanities more broadly, and ecocriticism in particular. The book examines a diverse archive of texts—including novels, films, and performance art—that she considers examples of "bad" environmentalism, that is, environmentalism that is not performed with the requisite degree of gravity, or by the right kind of person. Her work both gives us scholars the vocabulary we need to analyse a whole new range of texts in terms of their environmentalism, and also encourages us to consider our own environmentalism more fully.

Taking the scholarly angle first, Seymour's analysis shows convincingly how texts that have generally been ignored or dismissed by scholars display in fact an outlier but nonetheless important and sometimes radical environmental position. Her five chapters each supply a different set of case studies configured around a mainstream affective mode—the centrality of "expert" knowledge, the role of awe in nature documentaries, and the straightness, whiteness, and middle-class-ness respectively of environmental activists—and present us with multiple examples of "bad" environmentalisms that question, subvert, or challenge these modes while nonetheless showing concern for environmental issues, presenting us thereby with alternative ways of doing environmentalism.

Her solid and extensive theoretical labour lays out the ways in which bad environmentalisms are not merely an alternative to the mainstream, but complex offerings that show up its blind spots and failings; bad environmentalisms are often ambiguous and depend on the affective complicity of their audience in challenging assumptions or displaying what these assumptions even are. As she writes in her introduction, "the works in my archive do not simply offer alternative modes of environmental engagement—which readers could take or leave; they teach us



 

something crucial about what is intrinsic to environmentalism as most of us know it, and what environmental stewardship already is or entails." (p.5)

The archive Seymour draws on in *Bad Environmentalism* is diverse in the extreme, encompassing poetry, performance art, film, YouTube clips, animations, novels, and stand-up comedy; some of these works have achieved a degree of commercial success or critical acclaim (e.g. Edward Abbey's novel *The Monkey Wrench Gang* and *The Simpsons* movie) whereas others are little known or indeed, considered beneath criticism by all but the most unflinching of cultural scholars (e.g. IDA live shows, *Wildboyz*). The somewhat arbitrary impression given by the range of genres serves to underline the innovation in Seymour's work; she has cast the net wide to make her arguments, leaving plenty of ground still to be covered by subsequent studies, and allowing her theoretical insights to speak to a wide range of scholars and disciplines. Her ability to draw on such a breadth of sources without seeming random is a signal of the clear focus of her approach, as well as tribute to her thoughtful and well-grounded work; while her critical examinations of the texts themselves comprise close readings, the overall work of the book is a much broader and more daring interpretation of entangled cultural currents.

On the other hand, the works Seymour examines in her book are restricted almost exclusively to North American texts, with a few excursions into other Anglophone areas (Australia and Great Britain) and one example drawn from Austria. This makes for cultural coherence, but cries out for answering research in other cultures and language areas to bring out differences and similarities to the North American model.

Moving beyond the significance of Seymour's book for the study of environmentalist art and literature, I want to raise the issue of its repercussions for those of us whose scholarship is bound up in our own personal concern and advocacy for the environment. Reading the book could be discomfiting for any of us (and will be for many of us) who subscribe to some or all of the modes of environmentalism Seymour has identified—trusting in science, awed by the natural world, straight, white, and middle-class. It is always hard to acknowledge, especially perhaps for those of us who pride ourselves on our inclusiveness and liberalism, how exclusive the church of environmentalism at times can be. But ultimately, *Bad Environmentalism*, besides reminding us to check our privilege and our blind spots, gives us permission to employ affective modes that we might, in these troubling times, be tempted to suppress. Perhaps it's not wrong to laugh as well as cry, even as the Amazon burns. Perhaps we can allow ourselves to be irritated by the sanctimony of some environmentalist voices. And anyway, who are "we"?

*Bad Environmentalism*'s answer is an inclusive one. The "we" that sees and is threatened by a changing planet is diverse, fairly strange, and full of conflicting feelings. We need to be open to and embrace all manifestations of environmental concern, improper and proper, to get any hold on the wicked problem of climate change—both as scholars, and as human beings.

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Elizabeth M. DeLoughrey, *Allegories of the Anthropocene* (Durham & London: Duke University Press, 2019), 280pp.

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Elizabeth DeLoughrey's *Allegories of the Anthropocene* inscribes itself in a scholarly tradition seeking to redress discussions on anthropogenic climate change–and its cultural and artistic representation—by redefining them through their colonial and neo-imperial entanglements. This book does this by engaging with postcolonial and Indigenous perspectives, which are often neglected, if not completely erased, in the discourse. Hence, the book is part of a broader project in the environmental humanities aiming to rehumanise and decolonise geology, which has been engaging with the pitfalls of the term "Anthropocene". Many authors have engaged with these limitations, raising them in relation to the multiple erasures the term implicates, given its homogenisation of the global population and the implication of uniform environmental impact, to its obliteration of violent histories of dispossession and oppression.

By decolonising geological discourse, as well as scholarship about climate change more broadly, *Allegories of the Anthropocene* challenges climate change epistemologies and realities to illuminate the continued, violent atmospheric changes confronting spaces formerly colonised as the consequence of their imperial and military repression and exploitation. The specific focus is on works produced by artists from different islands in the Atlantic and the Pacific. These are chosen because of the special importance given to (geographical) insularity, not only in Western colonial discourse—as DeLoughrey notes in considering *Robinson Crusoe*–but also in a contemporary climate change discourse infused by sensationalism and what DeLoughrey terms "salvage environmentalism" (170). Indeed, by inscribing itself in a history of white saviour rhetoric, contemporary discourse in the Global North of climate crisis often fetishizes and reifies islands and their populations; they are victims to be saved from rising tides with the sole purpose of preserving Edenic vacation destinations. Such understandings of insular spaces continue to perpetuate western colonial rhetoric and practices. Hence the importance of this timely study, which elevates and engages with, in various ways, island artists' own definitions of their identities and their relations to the environment. And, crucially, it does so through postcolonial, indigenous and feminists' epistemologies.

As DeLoughrey argues, these artists' works offer "counterallegories" to western conceptualisations of the tropical island, challenging these figurations suffused with colonial rhetoric. Each chapter of the book considers what should be seen as obsolete colonial allegories of these spaces and provides new ones conceptualised by postcolonial artists. The first chapter, "Gendering Earth", investigates Erna Bordber's novel *The*

*Rainmaker's Mistake* (2007). It explores its excavation of lost Caribbean history and of the dissolved relation people have with the Earth and soil under the imperial violence of plantation agriculture. Chapter two, "Planetarity", engages with radiation imperialism and solar ecologies by considering allegories of light and apocalyptic imageries in the works of Māori writers Hone Tuwhare and James George and the Tahitian author Chantal Spitz. It considers how, in these cultural productions, radiation produced through Cold War nuclear fallout permeates both the atmosphere and oppressed indigenous bodies, with a particular focus on James George's *Ocean Roads* (2006) and drawing on Gayatri Chakravorty Spivak's concept of planetarity. Chapter three considers neo-imperial practices in the Caribbean and engages with allegories of waste embodied in technofossils "collected" by artists. It does so by looking at different pieces by Dominican Artist Tony Capellán, including the powerful installation used as the cover image of the book *Mar Caribe* (1995), Kamau Brathwaite's poem "Dream Haiti" (1995) and Orlando Patterson's novel *The Children of Sisyphus* (1964). The chapter challenges the supposed disposability of former colonies and their inhabitants in colonial discourse, which has sought to rationalise the violent practices of exploitation which have exacerbated and precipitated the climate crisis in these spaces.

Chapter four and five shift the focus from the excavation of erased histories in the previous chapters towards considering possible futures where interspecies relations and indigenous feminist ethics of care become central to the relations we have both amongst each other as well as with our endangered world. Thus, chapter four, "Oceanic Futures", represents a shift in the book as a whole. The apparent inverted chronology of the works investigated in the first three chapters culminates on what DeLoughrey has previously theorised as "critical ocean studies", which is crucial in the conceptualisation of historicity and time in *Allegories of the Anthropocene*. DeLoughrey's work thus formally challenges western historical linearity and does so by engaging with indigenous conceptions of time and history. DeLoughrey's adoption of Kamau Brathwaite's "tidalectics" in conceptualising historicity is significant in that it brings together historicity and the ocean, since they are tightly connected and developed through the environmental kinship of Caribbean authors. "Tidalectics" engages with the ocean as a meaningful space for island artists, not as *aqua nullius*, but rather as a repository of history—famously expressed by Derek Walcott in his poem "The Sea is History"--and as an active part of Atlantic—and by extension Pacific–identities and aesthetics. In light of this, chapter five, "An Island is a World", emphasises again the importance of postcolonial and feminist indigenous ontologies in challenging the dichotomy in western discourse which alienates "human" and "non-human" nature. In doing so, DeLoughrey reaches the conclusion that, for our future, caretaking ethics and improved empathic relations must be forged and practiced. This also engages with an impulse to decolonise ontologies and ethics in addition to geology and discussions around our current climate emergency.

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Adeline Johns-Putra, ed., *Climate and Literature* (Cambridge: Cambridge University Press, 2019), 312 pp.

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Most of us check the weather at least once a day: we open our most trusted forecast website or mobile app, and then decide what clothes to wear and what plans to make. We all experience the weather—it is something we can easily understand because it is part of our personal and collective past and present. The same cannot be said of climate. Despite the increasing public debates on climate change and the worldwide "skolstrejker for klimatet," the notion of climate escapes many of us, for it is technical, mediated, and above all it requires spatial and temporal scales too large to be comprehended by our daily experience. The collection *Climate and Literature* (2019), edited by Adeline Johns-Putra, works precisely on the intersections of these two dialectic concepts, the "visible" weather and the "invisible" climate (230), and on the ways literary practices – which have always been interested in the realm of both the visible (reality) and the invisible (imagination) – have included and depicted them in different historical periods, from the classical age to the present day. "Climate, as weather documented," Johns-Putra writes in the introduction, "necessarily possesses an intimate relationship with language, and through language, to literature" (1-2). In order to explore this relationship, the volume is divided in three main sections that bring together Western debates on weather and climate with the development of different aesthetic sensibilities and literary forms.

The first section, "Origins," opens with two far-reaching contributions that reflect on the changes climate impose on the literary representation of time (Robert Markley) and space (Jesse Oak Taylor). In Tess Somervell's chapter the cycle of seasons is presented as "one of the most prevalent means by which literary texts and other artworks engage with and represent climate" (45). As the author states, traditional narratives have always been influenced by seasonal climate while at the same time contributing to the understanding of climate as cyclical and predictable. The next two chapters engage in different ways with the evident connection between weather/climate and sociopolitical practices, inaugurating a more diachronic discussion. Daryn Lehoux writes that the imperial experiences of both ancient Greece and Rome shaped the classical concepts of regional climates and their related effect on human health. P.S. Langeslag shows how, centuries later, the medieval Nordic sagas recorded the emergence of innovative survival strategies and necessary adjustments to old laws and regulations, no longer applicable to new geographical contexts with different climatic conditions. In the final chapter of this section, Lowell Duckert engages with "the climate of Shakespeare," mentioning the



 

reasons for re-reading early modern texts in anthropocenic times and critically re-examining "the entangled relationships between climate and culture in our current moment of . . . 'portentous' change along a longer climatic continuum" (97).

In its second section, "Evolution," the volume deals with modern notions of weather and climate, together with those of nation and world. According to Jan Golinski, it is in the age of Enlightenment that "the notion of climatic alteration" (112) enters the European cultural debate, thanks mainly to the contrast between the "normalized climate of the homeland" (ibid.) and the climatic variations of the colonies. Together with the relationship between climate and civilization, this new perspective fosters the idea of climate as a global system. This is why, David Higgins argues, British Romantic authors write in response to volcanic eruptions in Iceland and Indonesia, imagining "climate as an interconnected system in which changes in one region of the world could affect other regions" (130). In the next two chapters the discussion of a global climate is complicated by the study of transatlantic exchanges about the meaning of climatic difference (Morgan Vanek) and historical traditions of climatic medicine that influenced nineteenth- and early twentieth-century colonial discourses (Jessica Howell). With chapter eleven, Justine Pizzo deepens into the relationship between climate and gender, from the Victorian age to the Modernist period, culminating in Virginia Woolf's "distinctly non-masculinist concept of climate" (182). Turning to more recent and popular literary forms, Chris Pak demonstrates that twentieth-century sci-fi narratives centered on terraforming, i.e. on the transformation of a planet to make it suitable for human life, represent "an escalation of the imperialist colonial imagination to climatic scales" (197). Andrew Nestingen, whose focus is the contemporary Nordic noir, discusses climate as both a construction of locality and a real actant, the true "source of the crime" (226) in many Scandinavian texts.

The final section of the volume, "Application," directly addresses many of the ongoing questions around the limits and potential of Anthropocene narratives. Claire Colebrook invites readers to rethink the idea of extinction, commenting on the intertwined tradition of apocalyptic and post-apocalyptic imaginaries, while Daniel Cordle works on the practice of "nuclear criticism" and its ability to "provoke a positive sense of our capacity to exercise agency in the present" (297). The two chapters written by Adeline Johns-Putra deserve special attention as they both engage in depth with the always urgent question of realism. The first one, co-authored with Axel Goodbody, follows the emergence of the climate change novel and its narratological challenges. Climate change exists in fact outside immediate experience, the authors write, is constructed by the rational discourse of science, requires large scales of space and time, and "resists the sort of resolution which comes with normal plots and their expectation of closure" (236). The traditional notion of realism does not seem to satisfy all these needs, as Johns-Putra underlines in her second chapter. Thanks to an engaging discussion of the framing of time in realist narratives through Chakrabarty, Sartre, Benjamin, Jameson, and Lukács, Johns-Putra finally suggests that a new form of realism, Anthropocene realism, should make the reader aware of "the myriad connections that constitute species history" (259), speaking to both intra- and inter-species relations and "situating the reader ecologically" (ibid.).

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The richness and scope of *Climate and Literature* escape simple summary. The collection provides an informed mapping of the concepts of weather and climate over time and allows for an engaging point of view to breathe new life into urgent cultural discussions. More indigenous perspectives and less Europe-centered contributions could perhaps have enriched this stimulating journey even more. However, the dialogue between different interpretative methods and disciplines – history, philology, philosophy, literary criticism – allows readers to gather useful notions to inform their understanding of and their participation in the contemporary debate on Anthropocene narratives. The collection's multifaceted investigation of the question of realism without a focus on a single literary genre, such as science fiction, proves to be an effective way to reconsider past and present literary debates while showing their ability to envision rich epistemological possibilities for our future.

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Ben Holgate. *Climate and Crises: Magical Realism as Environmental Discourse* (London and New York: Routledge, 2019), 234 pp.

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Urged by the accelerating pace of climate change and its related social-economic and political challenges, recent ecocritical studies more than ever question the potentialities of the arts to represent the anthropogenic crisis in all its manifold manifestations and ramifications. The literary modes and genres commonly examined from an ecocritical standpoint comprise science fiction, the Gothic, fantasy, the fable, and the apocalyptic tale. Ben Holgate's *Climate and Crises* usefully sheds new light on the contribution of magic realism, as detected in late twentieth- and early twenty-first-century works of fiction, to what he calls "environmental discourse."

Holgate's monograph at long last explores the connection between magic realism and environmental criticism, one which previously remained either at the stage of embryonic intimations or was restricted to isolated academic pieces. This omission might be explained, the critic argues, by the fact that critical scholarship of magic realism began nearly a century ago, much earlier than that of ecocriticism. More importantly, magic realism and ecocriticism constitute two notoriously "amorphous" literary concepts, which are still the object of tense discussions (4). From the close readings of his selected corpus, Holgate draws "four commonalities of magical realist fiction and environmental literature" (2). First, these narratives display "a postcolonial perspective, with writers frequently reacting against colonial legacies" (2). Second, both magic realism and environmental literature strive "to develop new kinds of expression and language in order to portray ideas and ways of seeing the world that counter dominant ontologies and epistemologies, usually the [Enlightenment-inherited] scientific rationalism" that separated human and non-human spheres (3). Finally, they share a "biocentric [...] focus on the interconnectedness of all [existing] things" and "a transgressive nature that dismantles [ontological] binaries" (3). With these characteristics, magic realism aptly depicts the multi-scalar complexities of the Anthropocene era, climate change, and the (neo)colonial and eco-imperialist practices of industrialisation. To demonstrate this, Holgate narrows down the definition of magic realism as a writing mode to a single trait, i.e. "the representation of the magical or supernatural in a quotidian manner that is embedded within literary realism" (16-17). Holgate argues that such a "minimalist definition," (17) inspired by Derrida's genre theory, better highlights the porous delimitations of magic realism transcending geographical parameters, as well as its fluctuating associations with other literary genres and forms.

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Holgate's book certainly offers an innovative perspective on magic realism. However, Holgate's use of *genre* theory is at first disconcerting as it emphasises the flexibility and openness of magic realism as a *mode* of writing. On the other hand, this approach is understandable inasmuch as it criticises the tendency of some scholars and the market industry to cast this mode as a fixed tool for understanding and classifying fictional texts. By contrast, in light of "Derrida's notion of a single, common trait for each genre," the narratives examined in Holgate's study may be said to "participate" in magic realism without necessarily "belonging" to it in an immutable and comprehensive fashion (16). Holgate's argument is solidly anchored in magic realist scholarship. Yet, his homogenisation of the "North American" deployment of magic realism overlooks the substantial discussions around this mode of writing in Canadian literature.

Regarding his literary corpus, Holgate opts for a transcultural and transnational focus. Some of these works are already milestones within magic realist and ecocritical scholarship: i.e. *Carpentaria* and *The Swan Book* by Indigenous Australian Alexis Wright, *Death of a River Guide* and *Gould's Book of Fish* by Tasmanian Richard Flanagan, *The Whale Rider* by Māori Witi Ihimaera, and *The Bone People* by Māori Keri Hulme. However, the real innovative nexus of Holgate's thesis of "magic realism as environmental discourse" can be found in the last two chapters, which are devoted to the literary input of Mo Yan (China) and Wu Ming-yi (Taiwan). Holgate's bold but righteous move of including novels from Asia reinforces the versatility of magic realism with regard to other epistemologies and literary forms, and helps inscribe this mode into the global scope of environmental world literature. Indeed, in such a comparative exercise, Holgate is wary of artificially transposing Euro-American understandings and techniques of magic realism: in the case of Mo Yan's and Wu Ming-yi's novels, this mode constitutes an inspirational stepping stone from which the authors can experiment respectively with Chinese literary techniques, Chinese folklore, and Taiwanese nature writing, while retaining the cultural and spiritual idiosyncrasies—such as Taoism—that shaped these literatures. Furthermore, Holgate's comparative study frequently alludes to other major magic realist writers, including Morrison, Rushdie, Okri, and Marquez, so as to better contextualise his thesis and encourage further exploration of magic realism through ecocritical lenses.

Overall, Holgate's approach is decidedly postcolonial, thereby revealing how the critic conjoins magic realist studies with the postcolonial branch of ecocriticism. In Holgate's analyses, the magic realist mode remains associated with the postcolonial strategy of giving back their voice to those silenced by imperialist, authoritarian, and capitalist structures. Including animals and the non-human environment as part of those entities re-empowered through magic realist techniques allows Holgate to foreground the issues of species boundaries—with instances of metamorphosis, cannibalism, environmental toxicity—and of non-human agency.

As it happens, specialists in ecopoetic form and aesthetics might regret the lack of a more ecocentric structure in Holgate's close-readings. While his unveiling of the ramifications between postcolonial and environmental issues is illuminating, one might wish for a better balance between social justice and environmental justice aspects. For instance, the problem of rewriting "official" history, which is primarily connected to the

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social and political marginalisation of some human groups, tends to be examined first, as part of a novel's and an author's background information. In some chapters (e.g. those on Flanagan and Mo Yan), these notions are investigated at such length that discussions concerning the non-human agentic/aesthetic voice are relegated to the end of some analyses, explaining what and how animals, plants, or natural elements intervene in the context of eco-imperialism and the postcolonial resistance thereof. Could this order of argumentation be reversed, foregrounding first the *bios* in itself? Of course, balancing the human and non-human is a multi-faceted challenge for all ecocritics, as these realms are intricately interlocked in physical and conceptual terms. One also has to admit that Holgate never claimed to offer a formalist study per se.

All in all, *Climate and Crises: Magical Realism as Environmental Discourse* offers a long-awaited study of the connections between the magic realist mode and environmental criticism. Holgate refreshingly demonstrates that this mode can be deployed not only in Commonwealth but also Asian literatures, thereby paving the way for further investigation of its contribution to the sublime, science fiction, eco-cosmopolitanism, and the traumas of climate change.

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Gregg Mitman, Marco Armiero, and Robert S. Emmett, eds., *Future Remains. A Cabinet of Curiosities for the Anthropocene* (Chicago and London: The University of Chicago Press, 2018), 225pp.

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The Anthropocene rests on an inherent and, by now, well-known paradox. On the one hand, it refers to the historical moment in which the concept of the human species as a geomorphic force is about to be ratified by the announcement of a new geological age. At the same time, it is a moment in which 'humanity' has to grapple with the facts that 'it' is neither as clearly defined nor as in control as the concept might suggest. One can subscribe to the notion that it is time to acknowledge the anthropogenic shape of the entire Earth-System, or else regard "the Anthropocene [as] a Joke" (Brannen n.p.). In either case, to observe, discuss, and conceptualize the Anthropocene, consequently, means to shape it, literally and figuratively.

*Future Remains* reacts to this by presenting a collection of "object stories" in order to spark curiosity, "make visible the uneven interplay of economic, material, and social forces that shape the relationship among human and nonhuman beings" (x), and explore the Anthropocene as a "narrative about space, as well as time." This notion is quickly challenged by the first essay, Rob Nixon's "The Anthropocene. The Promise and Pitfalls of an Epochal Idea" (1-18). After looking at the "interdisciplinary energy" on which much of the appeal of the concept rests, Nixon takes up the task of challenging the "hasty universalism" of the Anthropocene "that masks the connection between our conjoined crises—between accelerating environmental devastation and rising inequality" (11). Thus pointing out the fact that conceptualizing the Anthropocene as a "narrative" tends to overshadow the economic and material consequences of the entanglement of crises in this 'epochal idea'. Herein lies a great strength of this volume: The intriguing concept of presenting objects and making their (hi)stories comprehensible runs danger to illustrate the crises all too beautifully and thereby forgetting the actual danger posed by the Anthropocene. Nixon's as well as essays by Gregg Mitman ("Hubris or Humility? Genealogies of the Anthropocene" 59-68), Laura Pulido ("Racism and the Anthropocene" 116-128), and Marco Armiero ("Sabotaging the Anthropocene; or, In Praise of Mutiny" 129-139) frame the object stories with challenges of the concept that brought them together in the first place. This is a strength, not because it contrasts "the whimsy, wonder, and the unexpected" (165) with more conventional seriousness, but because the collection performs the inherent contradictions of the Anthropocene and refuses simplistic or sentimental assessments. The future perfect position of the collection—imagining a future from which to look



 

back on the present as the past—thus, avoids the reduction of possibilities in favor of a multitude of voices. Within this frame the object stories enfold the particular force of different approaches and styles, spanning the academic and the artistic.

The collection is divided into four parts: Hubris, Living and Dying, Laboring, and Making, covering objects ranging from, among others, a glass of sand from Wrightsville Beach ("The Anthropocene in a Jar", Thomas Matza and Nicole Heller, 21-28), a "Technofossil" (Jared Farmer, 191-199), human imitations of birdsong (Julianne Lutz Warren, "Huia Echoes", 71-80) and the "Cryogenic Freezer Box" (Elizabeth Hennessy, 108-115). These stories are connected by the attempt to follow and track—much like the "Marine Animal Satellite Tags" (Nils Hanwahr, 89-98)—the objects in focus and connect them to, or rather, unveil their connections to the Anthropocene. That is, their anthropogenic nature is pitted against a supposedly natural existence, as in case of the sand on the beach which is piled up both by the tides and the ships "dump[ing] millions of cubic yards of sand and shell every four years" (23). In a similar vein, Warren's exploration of a recording of the song of an extinct bird imitated by a Maori voice intently nests media and (re)mediation practices within natural and cultural forms of competition, environmental and historical pressure. This demonstrates how the Anthropocene calls for a 'parallax view', one that is able to always already view things as both 'natural', that is, not made by humans, and 'unnatural' that is heavily influenced by humans. This technique is brought to a climax in "Concretes Speak: A Play in One Act" (Rachel Harkness, Cristián Simonetti, and Judith Winter, 29-39), in which a choir representing concrete addresses the human species, and enlightens them about their service and effect on people and planet. This is what one of the editors, Robert S. Emmett, might in his own essay on "Anthropocene Aesthetics" (159-165) call "the whimsy." Although there is some lightheartedness to it, this serves a clear and somber purpose: Many of the texts serve either as agents of estrangement in a Brechtian sense or present to the reader a kind of "mirror test" (Sörlin, 169-181), asking not only whether "Anthropocene" is an appropriate concept to describe our current epoch, a question all too often dominated by the wish and fear, respectively, to be part of an age that will go down in (geological) history.

*Future Remains*, however, explores the ways in which scholarship and art can come together to experiment with the consequences of thinking the oxymoronic power and powerlessness of humans entailed by the implications of an age of humans. It is able to both eulogize and mock the losses and aspirations that the anthropogenic illusion of control has brought about the planet. It is a book that in many ways fulfills its aim to collect and present a cabinet of curiosities. Thus, it cannot and should not be held to the rigorous expectations one might direct at a scholarly collection. Rather, it should be read as an invitation to start collecting by asking objects for their stories, their specific entanglements with humans and nature and, hence, to contribute object stories to this *Wunderkammer* in the hope that it is more alive than it might seem at first glance.



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David Lombard, *Techno-Thoreau: Aesthetics, Ecology and the Capitalocene* (Macerata: Quodlibet, 2019), 91 pp.

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David Lombard's *Techno-Thoreau: Aesthetics, Ecology and the Capitalocene* provides a contemporary outline of how the Thoreauvian foundations of environmentalism still remain relevant in the age of capitalism and the Anthropocene. The central idea that Lombard's book orbits is the interconnectedness of nature and culture. The author's return to the basis of environmental thought in his discussions feeds the very root from which ecocritical studies have emerged. The book, therefore, strongly calls to mind the intricate relations between the past and the present, not only in literary and philosophical terms in the broadest sense, but in ecocritical, technological, and political terms as well.

The initial chapter, "Thoreau and the Techno-natural Landscape," presents the author's view of Thoreau's ecophilosophy as a means of reconciliation between the idealistic and the empirical within "natural and technological landscapes, objects and situations" (7). Lombard argues that "there is a connection between the self, human senses, and the environment" (10). Drawing links between toxicity and Thoreau's emphasis on the sublime, he problematizes the ecocritical negligence of the concept of the eco-sublime, questions the idealization of nature as a self-contained entity that is perceived as separate from the human realm, and underlines the inextricability of the aesthetic and the toxic.

The following chapters deepen Lombard's arguments. In "Deconstructing the Natural Sublime," the author starts by opening to discussion the various known definitions of "wilderness" by referring to its "sublime" qualities. He presents a critique of how the concept has come to be associated with "otherness." Pointing out that Edmund Burke's approach to sublime still segregates the divine natural landscape from humankind, Lombard critically questions David Abram's views on the concept of the "more-than-human." Then, he ties these critiques with his analysis of 19th-century transcendentalism, viewing the sublime as an aesthetic concept, in Emersonian and Whitmanesque terms. The author concludes this chapter by noting that Ralph Waldo Emerson's and Walt Whitman's understanding of "wholeness" is more progressive than primitive or romanticized and that they have embraced a notion of interconnectedness that revalues the aesthetic in what we currently come to think of as toxic and detrimental. Those links woven in this chapter form a metaphorical bridge between the origins of environmental thought and its current premises.

In the third chapter, "Thoreau, Capitalism and the Technological Sublime," Lombard scrutinizes Thoreauvian texts "alluding to the technological sublime and the metaphorical toxicity of landscapes and situations" (35). For Lombard, Thoreau follows a poetic language model that is similar to what was proposed by Russian formalist Viktor Shklovsky, which shows the playfulness between the empirical perception and the subjective imagination of the writer (42-43). It is also important here to note that Lombard is well aware of the necessity to make a distinction between the Anthropocene and the Capitalocene in reading Thoreau, but he does so in a footnote in order not to disrupt the flow of his discussion, which mainly focuses on reading the imagery in Thoreau's juxtaposition of the techno-scientific with the pristine. In other words, the chapter's analytical concerns mainly revolve around the depictions of technological images in comparison to the idealized concept of nature. Retaining this juxtaposition in the background, Lombard builds associations between the recent critiques of the Anthropocene and Thoreau's *Walden*. For Lombard, the former's emphatic criticism on the unnecessary reinstatement of a Cartesian dualism between nature and culture resembles the latter's stress on a "capitalist conception of technology" which "alienates humans from an ecological perspective on the physical world they inhabit" (49). Broadly speaking, through this chapter one can understand the reason why Lombard prefers the term 'Capitalocene' over 'Anthropocene.' He hints at the idea that the 'Capitalocene' views the environmental crisis as more of a systematic problem, rather than simply attributing the problem to the greedy practices of a uniform 'human' figure.

The fourth and the fifth chapters, "Toxic Mechanization: Senses and Environment" and "Toxic Waste: Self and Environment," are more firmly knotted to one another than any other chapter in the book. They strengthen the web-like structure that Lombard constructs throughout. In the fourth chapter, Lombard reads extracts from Aldo Leopold's *A Sand County Almanac* and turns his attention to how Leopold reverses the human/nonhuman quandary that presumes human superiority over the nonhuman due to reasoning and thinking faculties. By referring to Daniel Berthold's views on Leopold's style, he concurs that what Leopold employs is 'poetic science,' thus breaking the boundaries between the language of science and that of poetry. This chapter mainly deals with how Leopold regards technology and mechanization as "poison," deteriorating the sensorial perception of natural facts and breaking the humans' bonds with their ecological sense of place (60).

The fifth chapter moves back and forth in its references to Thoreau and Leopold, while at the same time turning the reader's attention to how Rachel Carson and Don DeLillo assessed toxicity. Lombard shows his awareness of both the conventional and the contemporary modes of reading in environmental thought when he reads Carson's *A Fable for Tomorrow* using Timothy Morton's theory of hyperobjects and the concept of the mesh. He discusses the toxic sublime through *Silent Spring*, which he marks, borrowing from Greg Garrard, as the beginning of modern environmentalism. He applies Morton's "the mesh" into the analysis of DeLillo's *White Noise* as well, especially when he blends the analysis of the toxic sublime into the aesthetic aspects evoked by the empirical perceptions of audio-olfactory senses mentioned in DeLillo's text. The

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emphasis here is again on the devastating impacts of technology and capitalist consumerism, which reduce humans to a state of "organic consuming machines" (74).

The final chapter, "Post-Thoreauvianism and Ecocriticism," argues that the legacy of Thoreau is likely to continue as it enriches "the debate on the Anthropocene and the Capitalocene" and challenges "the accepted notions of the relationships between aesthetics and ecocriticism" (75). This claim finds its supporting evidence in the analysis of Jon Krakauer's *Into the Wild* and Carine McCandless's *The Wild Truth*. Before his closing remarks, Lombard also touches upon Ken Ilgunas's *Walden on Wheels*. Although the inspiration that Lombard draws from Ilgunas's work implicitly spreads throughout the entire book, it is in this chapter that such impact becomes clearer. Lombard brings his book to a conclusion by underlining that the extension of the toxic sublime into a set of methods can be beneficial as a tool to overcome the Cartesian dualisms of human/nonhuman and nature/culture, which will likely help us fight the Capitalocene. Overall, one can argue that Lombard's book brings a fresher outlook to American nature writing by explicating the relations between nature, power, and capital, and by employing a deconstructive methodology that highlights the boundary breakdowns between the natural and the technological landscape.



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## *Mission Statement*

This journal of ecocriticism, founded in 2010, is a joint initiative of GIECO (Ecocritical Research Group in Spain) and EASLCE (European Association for the Study of Literature, Culture and Environment) and is published by the University of Alcalá as of 2014. Its principal aim is to further the study, knowledge and public awareness of the connections and relationship between literature, culture and the environment. As a virtual space, it provides a site for dialogue between researchers, theorists, creative writers and artists concerned with and by the environment and its degradation. Its pages are open to contributions on all literatures and cultures, but its special mission is to reflect the cultural, linguistic and natural richness and diversity of the European continent.

Contributions, which are subject to double-blind peer review, are accepted in five languages, in order to increase visibility and broaden the participation of scholars who are not part of the English-speaking world. *Ecozon@* publishes original research articles, in addition to creative writing, visual arts and book reviews. Publication is open to scholars interested in ecocriticism from around the world. We recommend membership of EASLCE to our contributors and readers, but it is not a requirement for either.

*Ecozon@* is currently indexed in MLA, OAI, DOAJ, ERIH PLUS, Latindex, Dialnet, ISOC and EBUAH, the institutional repository of the University of Alcalá.

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