



Vanishing Glaciers, the Becoming-Unextinct of Microorganisms, and Fathering a More-Than-Human World: Climate Change Horror in the Alps

Michael Fuchs

Abstract: Marketed as Austria's response to *The Thing* (1982), the horror-science fiction hybrid *Blutgletscher* (2013) depicts the re-emergence of seemingly extinct (or not known to have existed) microorganisms from thawing permafrost, which combine and recombine the genetic information of any lifeform they contact. As this article demonstrates, the Austrian film thus focuses on one of climate change's many unintended effects, the longer-term consequences of which are unpredictable. The film's transnational incorporation of *The Thing* adds to the effect, as it not only exposes the spatial and temporal flows in a globalised world but also scales up the viewer's imagination in an attempt to represent humanity's present and future in a climate-changed world. Indeed, this article suggests that *Blutgletscher's* ending, in which the protagonist decides to raise a humanoid creature produced by the interaction between the microorganism and other lifeforms, imagines the end of humankind as it is known. Notably, this seemingly dark outlook conveys a cautious optimism about the prospect of a post-human future: life on Earth will continue; and some species carrying *Homo sapiens's* genetic imprint will emerge from the ashes of human civilisation.

Keywords: Anthropocene; climate fiction; permafrost; science fiction; eco-horror; Austrian film.

It all started with a tiny chunk of dirt. The sample of 30,000-year-old permafrost, a frozen layer of soil from the Siberian tundra, weighed just a fraction of an ounce. But ... that scrap was carrying within it ... a

gargantuan virus, the largest known to science, and still, despite having been in suspended animation for millennia, quite deadly.

Greenwood

The passage quoted above might read as if it was taken from a hackneyed piece of genre fiction; however, this is the opening paragraph of a *Time* report about the discovery of a giant DNA virus in Russian permafrost in early 2014. The study observes that the “average temperatures of the surface layer of Arctic permafrost have increased by 3°C” in the twentieth century. As a result, “permafrost in the Northern Hemisphere has diminished by 7%”, which, in turn, has caused the “release of microorganisms from previously frozen soils, an unknown fraction of which was revived upon thawing” (Legendre et al. 4278). In other words, due to climate change, microorganisms that had been conserved in permafrost for millennia are thawing and returning to life. As “infectious microbes emerg[e] from a deep freeze” (Goudarzi), the imminent effects of climate change become not only a present-day reality but, in fact, harbingers of an even darker future shaped by humankind’s past actions.¹ What seemed to be speculation has infiltrated the real, and reality has become indistinguishable from fantastic imaginations, undoing traditional patterns of differentiation.

Although Russian researchers discovered viable microorganisms in permafrost as early as 1911, it took another eighty years until scientists came to understand that thawing caused by global warming would lead not only to the disappearance of large chunks of permafrost (Maxwell) and the attendant release of methane trapped in the ice (Pearce), but also to an “increase in microbial activity”, which would “further stimulate the emission of greenhouse gases resulting from the decomposition of organic matter stored in permafrost” (Gilichinsky and Wagener 249). Whereas David Gilichinsky and Stefan Wagener’s mid-1990s study primarily focused on the exponential growth of greenhouse gases due to microorganisms’ activity, 21st-century popular culture has been conjuring the coming of “zombie bacteria” (Douceff), which will (potentially) end human dominance on Earth.

Dubbed “Austria’s answer to *The Thing*” by the *Hollywood Reporter* after its international premiere at the 2013 Toronto Film Festival (Kit), *Blutgletscher* (2013; distributed as *Blood Glacier* in English-speaking countries) imagines such a scenario. The film demonstrates that the causes of climate change are “diffuse, partly unpredictable and separated from their effects by huge gaps in space and time” (T. Clark 11). *Blutgletscher* renders tangible the “nonlocal” nature of the hyperobject of climate change (Morton 1) through a microorganism revived in a very particular locale. The movie hence makes explicit the entanglements between the local and the global in our age. Since these traditionally separate domains “have collapsed into each other”, Stacy Alaimo has argued that “they also reach across the unthinkable scale of the anthropocene as climate change, ocean acidification, extinction, and the production of xenobiotic chemicals make the location of each person’s ethics and politics extend through vast geographical and temporal expanses” (*Exposed* 10).

If the Anthropocene is defined by complex entanglements of nature and culture, human and nonhuman, living beings and physical forces, then the traditional

¹ My use of “human” and its derivatives draws on Dipesh Chakrabarty, who has stressed that “we can become geological agents *only historically and collectively*, that is, when we have reached numbers and invented technologies that are on a scale large enough to have an impact on the planet itself” (206–07; my italics). According to Edward Wilson, species-thinking might be the only salvation for humankind because it allows for thinking in planetary terms (xii).

conceptualisation of “the human” is constantly under erasure, as “the human” becomes “inseparable from ‘the environment’” (Alaimo, *Bodily* 2). Alaimo’s concept of trans-corporeality hence conceives of the human as “always intermeshed with the more-than-human world” and emphasises the “movement across bodies”, which “opens up a mobile space that acknowledges the often unpredictable and unwanted actions of human bodies, nonhuman creatures, ecological systems, chemical agents, and other actors” (*Bodily* 2).

Blutgletscher taps into the symbolic reservoir of trans-corporeality by featuring a microorganism that combines and recombines the genetic codes of various species. The creature’s need to create an animate being fit for survival in the Anthropocene leads to unexpected outcomes. As the organism constantly renews and remodels itself, it also attacks “the human” by producing a post-human lifeform, unnaturally delivered by a dead dog. Somewhat paradoxically, this monstrous next step in the evolution of humankind, I will argue, embodies a cautious optimism about the planet’s future. I adapt the phrase “cautious optimism” from Jared Diamond. In contrast to his trust in human ingenuity and commitment to “solve our [environmental] problems” because “we are the ones in control of them” (521), my optimism is tainted by the “super wicked” character of our ecological dilemma (Levin et al.) and more in line with Lauren Berlant’s “cruel optimism”: “A relation of cruel optimism exists when something you desire is actually an obstacle to your flourishing” (1). The future flourishing of life on Earth depends on the end of “the human” as it is known.

Adapting *The Thing*

After *Blutgletscher*’s release, numerous reviewers used the Austrian film’s appropriation of the John Carpenter classic against it. For example, Drew Taylor referred to *Blutgletscher* as the “latest unofficial ‘The Thing’ rip-off”, which is “unable to capture the same kind of awe and terror that made ‘The Thing’ so powerful”. Similarly, Ignatiy Vishnevetsky noted that *Blutgletscher*’s director “Marvin Kren and screenwriter Benjamin Hessler seem like the kind of guys who’d pop in a Blu-ray of *The Thing* on a weeknight”. Since the filmmakers have “internalized much of the John Carpenter classic’s snowbound imagery”, the outcome is a “movie viewers have seen dozens of times before, and will see again, with slight variations, because it embodies a fundamental quality of B-horror entertainment”. While Vishnevetsky acknowledged that recognising this repetition-with-a-difference generates one of the main pleasures of watching low-budget films, he failed to elaborate on the differences between *Blutgletscher* and Carpenter’s iconic motion picture. Indeed, even though *Blutgletscher* may be considered a “rip-off” of *The Thing*, the “material, historical and political conditions which surround and penetrate the moment of production and subsequent moment(s) of reception” (Mazdon 26) produce a unique cultural artefact whose significance – at least in part – lies in its differences from the Carpenter movie.

Blutgletscher opens with an insert which makes the film’s ecological context and environmental message explicit right away: “In 2014, the last skeptics fall silent. The climate disaster is worse than ever imagined. Antarctica’s ice will be gone within a decade. The Alpine glaciers will disappear. The consequences are unclear but we know one thing. Life on Earth will change forever. We will change.”² This paratext makes clear that *Blutgletscher* explores how a planetary transformation such as climate change

² While I have taken the illustrations from the Austrian Blu-ray, I quote from the dubbed version available in the United States.

“might affect particular places and individuals” such as the regions in the Eastern Alps above the timberline and the few scientists working and living there (Heise, *Sense* 206).

The film’s narrative centres on a team of three Austrian scientists and a technician working at a remote climate-research station in the Tyrolean Alps between Austria and Italy. The day before an Austrian minister visits the facility, Janek, the technician, and Falk, a mineralogist, discover the titular blood glacier (Figure 1). As a responsible and thoughtful scientist, Falk instantly takes a sample of the unknown substance. Back at their camp, the scientists conclude that single-celled organisms have been liberated from permafrost due to snowmelt. Unbeknownst to the scientists at first, the organisms infect and alter all living beings they contact. As a result, various genetic mutants begin to appear (Figure 2) as the microorganisms seemingly try to find a form ready for survival in a world that has been irrevocably altered by human activities and their unintended consequences.



Figure 1: Janek and Falk discover the blood glacier.



Figure 2: These are some of the monstrous hybrids that appear in the movie.

After the scientists and Janek have come to understand what type of threat they are facing, the hybrids begin to attack the research station, in which the humans are sequestered. The resultant confrontation between humans and monstrous nature

draws on the idea that the forbidding environment above the timberline, which provides the setting for the film, is characterised by the “overmastering presence of nature”, which has the power to “overwhelm ... the individual”, to draw on Yi-Fu Tuan’s elaborations on frosty environments (154–55). Janek, his former (and by the end of the film seemingly future) partner Dr Tanja Monstatt (a climatologist), Minister Bodicek, the reporter Irene, and the senior alpinist Bert survive the attacks, but the film concludes on what traditional humanists might consider a downbeat note, as *Blutgletscher* confronts its viewers with possible genetic and evolutionary alterations that climate change will entail for human beings and other lifeforms.

Scaling Up *The Thing*

While the plot and basic premise of *Blutgletscher* are clearly indebted to *The Thing*, the relocation from Antarctica to the Alps reveals the interrelations between the local and global in the early 21st century. Symbolically, the setting of *The Thing* feeds into some of the film’s main themes. At first, Antarctica may seem to be a very particular cartographic marker located at the southern tip of the planet as it is known (or, rather, imagined). However, the first few moments in the narrative present of *The Thing* make clear that Antarctica is an empty space devoid of human reference points. As Elena Glasberg has observed, “The opening shots emphasize Antarctica as a place of cultural and cognitive dissonance where the structures and expectations created for the rest of the globe do not apply: It is a place where nothing – or anything – can happen” (67). Accordingly, the “ice-covered landscape of the Antarctic” provides a “hostile, unearthly, and surreal” setting which is “remote, antipodean, and uninhabited” (Leane, “Locating” 226). “Antarctica” is an empty signifier, a free-floating idea which may take on very distinct and diverse meanings to different people, as the continent’s remoteness entails that it is mediated like few other places on Earth.

Indeed, Elizabeth Leane asserts in her book *Antarctica in Fiction* (2012) that

the poles are characterized by paradoxes. They are points of cartographical and astronomical significance but are marked by no physical feature.... They are both central (points on the axis around which the earth turns and cartographically where lines of longitude intersect) and marginal (remote, relegated to the edges of maps). (35)

In science fiction, writers and filmmakers have “projected onto the southern void fantasies of paradise or visions of the sublime”, but also humankind’s “deepest phobias”, as Antarctica frequently represents the “dark other, the alien planet – the antihuman, the monstrous” (E. G. Wilson 145–46).

The Thing exploits these ambiguities to add to the Thing’s liminal character, as the film’s monster is caught in a seemingly never-ending process of becoming. The Thing constantly changes its shape – its “Thingness” only becomes (remotely) humanly graspable when the microorganic lifeform inhabits and transforms a material body known to humans. Similarly, Antarctica is a nowhere-place that could simultaneously be everywhere. Space thus loses its cartographic anchor and – quite literally – “becomes”, as space exists only temporarily in the moment of its production. The attendant embrace of the fleeting qualities of signification are in line with the postmodernist ethos of Carpenter’s film (Piñedo 19; Fuchs 79–80), which

results in the uprooting from a particular geographic place, thereby transporting the diegetic events into a hyperreal space separated from material reality.

Blutgletscher's intertextual incorporation of *The Thing* produces a similar effect. After all, any markedly intertextual cultural artefact is characterised by an "endless circuit of intertextuality with no originating text, no basic reference point" (Kuhn 178). As the text devours the intertext, the boundaries between the two begin to disappear. However, through its setting in the Eastern Alps, *Blutgletscher* resists the concomitant postmodernist pull to symbolically end up in a nowhere-place, for the setting acknowledges that "we are all ... embodied and physically located" (Tomlinson 149). In so doing, *Blutgletscher* recognises that the "paradigmatic experience of global modernity for most people ... is that of staying in one place but experiencing the 'dis-placement' that global modernity *brings to them*" (Tomlinson 9). In fact, if the "climate disaster" leads to the disappearance of Alpine glaciers and entails that "Life on Earth will change forever", as the opening paratext suggests, then *Blutgletscher* showcases how global climate change affects local life in the heart of Europe (or even the heart of the globe, as the Austrian national anthem maintains). At the same time, the setting in the barely humanly inhabited high mountains enhances the critique of human-caused climate change, as even this "innocent" place, largely removed from human experience (but definitely not from the cameras and other surveillance technologies observing Alpine glaciers), suffers from global warming.

Susanne Moser has suggested that the effects of climate change become most apparent in remote and uninhabitable places (e.g., the polar regions and open seas), which "have to compete for attention with immediately felt physical needs, professional demands, economic necessities, or social obligations" (34). The Alps, however, are in the centre of Europe and are key to tourism-related industries. Accordingly, Alpine glaciers have, in fact, become (at least local) icons of climate change – and they have been affected in similar ways as the polar regions. More than twenty years ago, Swiss scientists Wilfried Haeberli and Martin Beniston pointed out that global warming "causes pronounced effects" in the Alps, with the increase in air temperatures being about twice the global average, a development that has become even more marked since the 1980s. As a result, the volume of Alpine glaciers decreased by about 50% between the 1850s and 1990s. These effects are even more dramatic in the Eastern Alps (east of Lake Constance), as they are on average lower than the Western Alps (Haeberli and Beniston 258–60). The Vernagtferner Glacier in the Austrian Ötztal Alps (less than seventy kilometres from where *Blutgletscher* was shot) provides a telling example, as researchers have collected data since 1889, when its volume was estimated at about 600 million tons. By 2010, its volume had dropped by about 65% (Braun, Reinwarth, and Weber 92). Current estimates suggest that by 2025, the glacier will have disintegrated into five separate ones, which might entirely vanish as soon as 2035 (Braun, Reinwarth, and Weber 101–02).

Blutgletscher taps into these realities of life in the Anthropocene. As the minister's team is hiking up the mountains, Dr Monstatt echoes (real-world) glaciologists' conclusions, noting that the "glacier is retreating much faster than we expected – at an exponential rate! ... [I]t's a concern because it proves that science has reached its limits. All prognoses were wrong – even the bleakest ones." In addition to acknowledging glacier melt, Dr Monstatt's rather simple statement exposes the inability of science not only to keep pace with the changes anthropogenic actions have been causing across the globe, but also to fully explain the

environmental catastrophe humankind has driven the planet into, an idea supported by *Blutgletscher*'s substitution of the extra-terrestrial monster featured in *The Thing* with a decidedly terrestrial one.

A scene during their hike up the mountains depicts the environmental devastation. Looking at a practically ice-free glacier on the other side of the mountain range, Bert, the alpinist guiding Minister Bodicek and her entourage to the research facility, reminisces: "It's hard to imagine, but as a kid, I went sledding over there." As he looks to the right and points at a spot in the distance, Bert continues, "The glacier stretched that far. Now, it's all gone." Notably, up until this point, pictures of green meadows evoking the naïve and innocent life in harmony with nature characteristic of the *Heimatfilm* accompany the journey of Minister Bodicek's group, evoking the beauty of nature and the human characters' connectedness to it so typical of the genre. However, starting with this scene, the colour palette employed and the overall tone of the film changes dramatically as the group traverses barren landscapes and the natural environment incrementally turns into an enemy. The stark contrast on the representational level evokes the radical transformation the glaciers in the region have gone through in the last couple of decades. In turn, the relatively quick transformation of the glacier (a hyperobject that does not usually display change within the scale of human time) points at the uncontrollable power of nature, which becomes manifest seconds later when a supersized mosquito bites photographer Urs.

Spatially, the entanglements between the local and the global question the conceptual separation of these two categories; temporally, the film's pastiche-like quality achieves a similar effect. As indicated above, *The Thing* is woven into the fabric of *Blutgletscher*. This close intertextual connection collapses temporal categories, as traditionally conceived, as the past (*The Thing*) becomes a present (*Blutgletscher*) that is inseparable from the future (*The Thing* + *Blutgletscher*).

Arguably, this "repetition-as-difference" (Miller 1–21) is typical of genre cinema, as individual genre films are always "dependent on traces of other stories, familiar images and narrative structures, [and] intertextual allusions" (Spooner 10). The attendant reliance on genre conventions, Yvonne Leffler has argued, creates a determinist pattern "so intense that the fictional world ... contain[s] nothing that is unique" (191). *Blutgletscher* instrumentalises the resultant "pan-determinism" (Hills 65) in an attempt to mirror life in the Anthropocene, which is characterised by the constant oscillation between power and powerlessness. After all, in the Age of the Human, humankind has become both "*perpetrator and victim*", and suffers from the shock of having lost "sovereignty over assessing the dangers to which one is subjected" (Beck 38, 54). *Homo sapiens* has inadvertently caused changes across the planet and is increasingly confronted with the "unintended consequence[s] of human choices" (Chakrabarty 210). Humankind might "rival the great forces of Nature" (Steffen, Crutzen, and McNeill 614), but humanity simultaneously becomes increasingly aware of its constant state of "out-of-control-ness" (N. Clark 88). Humanity might have become a geological agent, but the outcome of specific actions can be neither forecasted nor planned.

In addition, the temporal confusion is typical of science-fiction texts struggling to make sense of (and hence represent) climate change, as these texts "envision the present as a future that has caught up with us" (Heise, "Introduction" 4). Whereas the inexorable progress toward a future predefined by the present and the past implies determinist tendencies, "indeterminacy, uncertainty, and the possibility of a variety of

different outcomes” define the Anthropocene future (Heise, *Sense* 142). Undoubtedly, human-caused climate change, biodiversity loss, ocean acidification, and most of the other markers of the Anthropocene will be realities of life on Earth for centuries to come, but the exact shape of the planet’s life in – say – a thousand years from now is unsure and hazy.

Fathering a More-Than-Human World

In her techno-utopian book *Scatter, Adapt, and Remember* (2013), in which she tries to assuage fears pertaining to humankind’s impending extinction (or at least radical reduction in terms of pure numbers), Annalee Newitz stresses that whereas humans tend to “envision a far-future full of people who look just like us, zinging around the galaxy in ships that are basically advanced versions of rockets”, in reality the “humans of tomorrow will be nothing like us – their bodies will have been transformed by evolution, and their civilizations by the kinds of culture-changing events that have already marked human history” (148). Newitz’s emphasis on evolutionary processes is particularly noteworthy here, for they play a key role in *Blutgletscher*. After performing an autopsy on a “hybrid of a woodlouse and a fox”, the science team’s resident biologist, Birte, explains that the microorganisms that have appeared due to snowmelt

are something like tiny gene laboratories, and they are incubators at the same time. They penetrate the body through the food and use the host’s DNA and the DNA of any other animal in the host’s stomach. They combine these to form a new kind of species – completely randomly. They follow the trial-and-error principle – or, the evolutionary principle.... Any mixture you can think of is possible. Maybe the legends of wolfmen and mermaids are based on biological realities.

Birte’s remark that “any mixture is possible” points at the interrelatedness of all living beings and their environments that is at the heart of evolution. While the biologist is informing the rest of the group about her findings, Janek begins to suspect that a human-dog-whatever-else hybrid might be growing inside his loyal dog Tinnie, which was attacked by one of the creatures and then licked blood from a wound on Janek’s forehead. Whereas the “essential horror of *The Thing* was in the Thing’s total disregard for and ignorance of the human body” (Brophy 10), the microorganisms in *Blutgletscher* target the conceptualisation of “the human” as such. As they do so, the Alpine horror movie exposes the “foolishness of human exceptionalism” (Haraway 244), for human environments and their very being are defined by a never-ending process of becoming. And “becoming is always becoming *with*” (244).

Janek functions as a stand-in for the “average Joe” who is shocked by what the scientists (who believe they are on the verge of making the “greatest scientific discovery possibly ever”) reveal and the potential implications of their discoveries. Upon first catching a glimpse of what he believes to be a rabid fox, Janek stresses that the creature “looks like a beetle”. Seconds later, he assures himself that it “must be the rabid fox”, only to add that the creature “looked totally deformed. Its face was all mangled”. The oscillation between trying to confirm accepted knowledge and established categories (“it must be a fox”) and questioning them (“looks like a beetle”) underlines the ontological anxieties the hybrid’s mere existence unleashes

in Janek, which are only exacerbated once he comes to understand that “there are fox-bear-beetle monsters on the loose”. Janek’s use of a variety of descriptors for the monsters the team confronts acknowledges the linguistic difficulty faced when trying to capture their incessantly shape-shifting nature. These hybrids are what Gry Ulstein has called “Anthropocene monsters” – “seemingly out-of-control creatures” (75) that evoke “oppressive, claustrophobic horror[s]” (Morton 132), as the real-world future of vanishing glaciers seems inevitable. What is truly disturbing, however, is that the consequences of this ecological disaster are uncertain at this point.

Notably, *Blutgletscher* ends when a helicopter takes off with the survivors and the human-dog-whatever-else mutant aboard. On the one hand, the lack of narrative closure leaves room for the sequel; on the other, it generates additional ambiguity, in particular concerning the characters’ futures and the question of what will become of the mutant. Crucially, a number of scholars discussing climate change narratives have argued that climate fiction tends to deny a sense of closure, as well. According to Frederick Buell, this narrative openness implies that humankind might adapt to global warming. This adaptation is an unfinished process, as climate change is ongoing and can no longer be stopped (30–31). In addition, the narrative openness suggests that any countermeasures to human-caused environmental changes will again entail unintended ecological effects. In other words, simple cause-and-effect logics (and thus also a straightforward chronology featuring narrative closure) no longer do apply, as the consequences of seemingly insignificant actions such as taking one’s petrol-fuelled car to get to the office might cause ruptures across the globe. Hence, any kind of solution offered can be little more than an illusion – if not delusion.

However, the response to the complexity of the problems entailed by the “radical intrusion” (Colebrook 87) that is the Anthropocene cannot be paralysis and hopelessness. Some might argue that humans need to confront the “most super wicked problem of our times” (Levin et al. 148) and keep on going for the “hell of it and for the love of the world” (Braidotti 278). *Blutgletscher*, indeed, does not just present an alarmist message about the possible effects of global warming and its inevitable long-term consequences. It also offers a cautious optimism by emphasising that life on Earth will continue to thrive – but in different forms. As the film comes to a close, Tanja discovers the humanoid hybrid that has burst out of Tinnie’s body. Although Janek is initially determined to kill the creature, Tanja easily convinces him not to do so. They take the creature, which resembles a human baby (Figure 3), with them into the helicopter. Notably, Robin L. Murray and Joseph K. Heumann have argued that the early 21st-century eco-apocalypse has introduced a “new eco-hero”: father figures “seeking to save their own children or children they adopt as their own from an environment that humanity has made toxic in multiple ways” (6). *Blutgletscher* undermines the humanist and often patriarchal notions accompanying these paternal figures, as Tanja reveals a post-human future to Janek, which he embraces by making sure the hybrid (and with it the microorganism) not only survives, but, in fact, returns to civilisation.



Figure 3: The post-human offspring embodies a cautious optimism about future life on the planet.

Adam Trexler has observed that for a long time, “climate change was imagined as a final disaster that could be endlessly deferred” (loc. 4559). In *Blutgletscher*, climate change is an accepted reality and has exposed what was hidden beneath a layer of ice for thousands, if not millions, of years. Glacier melt not only releases long-disappeared microorganisms but also triggers horrifying evolutionary processes. All of this sounds rather bleak. For humans, *Blutgletscher*’s monsters hold few – if any – future promises beyond guaranteeing that there will be post-human life (in the sense of life after humankind) on the planet – humans will not manage to eradicate all life on Earth. By apparently wanting to raise the post-human creature, Janek “embraces the possibilities of becoming in relation to a radical otherness” (Alaimo, *Exposed* 18) and takes the first step toward erasing the human. Of course, the post-human future that Janek thus embraces is hazy; but his decision to nurse the hybrid anticipates the microorganism’s spread across the globe and the attendant end of the human as it is known. Humankind’s footprint in the Earth’s crust and its effect on the atmosphere would remain traceable for hundreds of years to come, but this act of effective self-extinction (with the aid of a natural agent) will help the planet adapt to what *Homo sapiens* has done to it.

Acknowledgements

This article expands on a section of my chapter “Redefining the *Heimat*: Austrian Horror Cinema and the ‘Home’ in a Global Age”, published in *Dark Forces at Work: Essays on Social Dynamics and Cinematic Horrors*, edited by Cynthia J. Miller and A. Bowdoin Van Riper (Lanham, MD: Lexington Books, 2020), 33–51. Work on this article was supported by the Austrian Science Fund (FWF), project number I-4187, which is part of a GENDER-NET Plus ERA-NET project titled “Gendering Age: Representations of Masculinities and Ageing in Contemporary European Literatures and Cinemas” (MASCAGE, GNP-9).

Biography: Michael Fuchs is a fixed-term assistant professor in American studies at the University of Graz in Austria. He has co-edited six essay collections, most recently

Intermedia Games—Games Inter Media: Video Games and Intermediality (2019), and (co-)authored more than fifty published and forthcoming essays on horror and adult cinema, American television, science fiction, videogames, intermediality and media convergence, and contemporary American literature. For further information on Michael's past and ongoing research endeavours, please see www.michael-fuchs.info.

Works Cited

- Alaimo, Stacy. *Bodily Natures: Science, Environment, and the Material Self*. Indiana UP, 2010.
- . *Exposed: Environmental Politics and Pleasures in Posthuman Times*. U of Minnesota P, 2016.
- Beck, Ulrich. *Risk Society: Towards a New Modernity*. Translated by Mark Ritter, Sage, 1992.
- Berlant, Lauren. *Cruel Optimism*. Duke UP, 2011.
- Blutgletscher*. Directed by Marvin Kren, performances by Gerhard Liebmann, Edita Malovčić, Brigitte Kren, and Santos, Allegro Film, 2013.
- Braidotti, Rosi. *Transpositions*. Polity, 2006.
- Braun, Ludwig, Oskar Reinwarth, and Markus Weber. "Der Vernagtferner als Objekt der Gletscherforschung." *Zeitschrift für Gletscherkunde und Glazialgeologie*, vols. 45/46, 2011/2012, pp. 85–104.
- Brophy, Philip. "Horrorality: The Textuality of Contemporary Horror Films." *Screen*, vol. 27, no. 1, 1986, pp. 2–13.
- Buell, Frederick. "A Short History of Environmental Apocalypse." *Future Ethics: Climate Change and the Apocalyptic Imagination*, edited by Stefan Skrimshire, Continuum, 2010, pp. 13–36.
- Chakrabarty, Dipesh. "The Climate of History: Four Theses." *Critical Inquiry*, vol. 35, no. 2, 2009, 197–222.
- Clark, Nigel. "Panic Ecology: Nature in the Age of Superconductivity." *Theory, Culture & Society*, vol. 14, no. 1, 1997, pp. 77–96.
- Clark, Timothy. "Introduction: The Challenge." *The Cambridge Introduction to Literature and the Environment*, edited by Timothy Clark, Cambridge UP, 2011, pp. 1–11.
- Colebrook, Claire. *Death of the PostHuman: Essays on Extinction*. Open Humanities Press, 2014.

- Diamond, Jared. *Collapse: How Societies Choose to Fail or Succeed*. Penguin Books, 2005.
- Doupleff, Michael. "Are there Zombie Viruses in the Thawing Permafrost?" *NPR*, 24 Jan. 2018, <https://www.npr.org/sections/goatsandsoda/2018/01/24/575974220/are-there-zombie-viruses-in-the-thawing-permafrost>. Accessed 15 May 2018.
- Fuchs, Michael. "A Horrific Welcome to the Desert of the Real: Simulacra, Simulations, and Postmodern Horror." *Landscapes of Postmodernity: Concepts and Paradigms of Critical Theory*, edited by Petra Eckhard, Michael Fuchs, and Walter W. Hölbling, LIT Verlag, 2010, pp. 71–90.
- Gilichinsky, David, and Stefan Wagener. "Microbial Life in Permafrost: A Historical Review." *Permafrost and Periglacial Processes*, vol. 6, 1995, pp. 243–50.
- Glasberg, Elena. *Antarctica as Cultural Critique: The Gendered Politics of Scientific Exploration & Climate Change*. Palgrave Macmillan, 2012.
- Goudarzi, Sara. "As Earth Warms, the Diseases That May Lie within Permafrost Become a Bigger Worry." *Scientific American*, 1 Nov. 2016, <https://www.scientificamerican.com/article/as-earth-warms-the-diseases-that-may-lie-within-permafrost-become-a-bigger-worry/>. Accessed 15 May 2018.
- Greenwood, Veronique. "Secrets of the Giants, Ancient, Frozen, Killer Virus." *Time*, 7 March 2014, <https://time.com/14705/giant-virus-in-permafrost/>. Accessed 15 May 2018.
- Haeberli, Wilfried, and Martin Beniston. "Climate Change and Its Impacts on Glaciers and Permafrost in the Alps." *Ambio*, vol. 27, no. 4, 1998, pp. 258–65.
- Haraway, Donna J. *When Species Meet*. U of Minnesota P, 2008.
- Heise, Ursula K. "Introduction: The Invention of Eco-Futures." *Ecozon@: European Journal of Literature, Culture and Environment*, vol. 3, no. 2, 2012, pp. 1–10.
- . *Sense of Place and Sense of Planet: The Environmental Imagination of the Global*. Oxford UP, 2008.
- Hills, Matt. *The Pleasures of Horror*. Continuum, 2005.
- Kit, Borys. "Toronto: *The Station* is Austria's Answer to *The Thing*." *Hollywood Reporter*, 7 Sept. 2013, <https://www.hollywoodreporter.com/heat-vision/toronto-station-is-austrias-answer-623648>. Accessed 15 May 2018.
- Kuhn, Annette. "Intertexts: Introduction." *Alien Zone: Cultural Theory and Contemporary Science Fiction Cinema*, edited by Annette Kuhn, Verso Books, 1990, pp. 177–82.

-
- Leane, Elizabeth. *Antarctica in Fiction: Imaginative Narratives of the Far South*. Cambridge UP, 2012.
- . "Locating the Thing: The Antarctic as Alien Space in John W. Campbell's 'Who Goes There?'" *Science Fiction Studies*, vol. 32, no. 2, pp. 225–39.
- Leffler, Yvonne. *Horror as Pleasure: The Aesthetics of Horror Fiction*. Translated by Sara Death, Almqvist & Wiksell, 2000.
- Legendre, Matthieu, et al. "Thirty-Thousand-Year-Old Distant Relative of Giant Icosahedral DNA Viruses with a Pandoravirus Morphology." *Proceedings of the National Academy of Sciences of the United States of America*, vol. 111, no. 11, 2014, pp. 4274–79.
- Levin, Kelly, et al. "Overcoming the Tragedy of Super Wicked Problems: Constraining Our Future Selves to Ameliorate Global Climate Change." *Policy Sciences*, vol. 45, 2012, pp. 123–52.
- Maxwell, Barrie. "Arctic Climate: Potential for Change under Global Warming." *Arctic Ecosystems in a Changing Climate: An Ecophysiological Perspective*, edited by F. Stuart Chapin III, et al., Academic Press, 1992, pp. 11–34.
- Mazdon, Lucy. *Encore Hollywood: Remaking French Cinema*. British Film Institute, 2000.
- Miller, J. Hillis. *Fiction and Repetition: Seven English Novels*. Harvard UP, 1982.
- Morton, Timothy. *Hyperobjects: Philosophy and Ecology After the End of the World*. U of Minnesota P, 2013.
- Moser, Susanne C. "Communicating Climate Change: History, Challenges, Process and Future Directions." *WIREs Climate Change*, vol. 1, no. 1, 2010, pp. 31–53.
- Murray, Robin L., and Joseph K. Heumann. *Ecology and Popular Film: Cinema on the Edge*. SUNY P, 2009.
- Newitz, Annalee. *Scatter, Adapt, and Remember: How Humans Will Survive a Mass Extinction*. Anchor Books, 2013.
- Pearce, Fred. "Methane Locked in Permafrost May Hold Key to Global Warming." *New Scientist*, 4 March 1989, p. 28.
- Piñedo, Isabel. "Recreational Terror: Postmodern Elements of the Contemporary Horror Film." *Journal of Film and Video*, vol. 48, no. 1/2, 1996, pp. 17–31.
- Spooner, Catherine. *Contemporary Gothic*. Reaktion Books, 2006.
- Steffen, Will, Paul J. Crutzen, and John R. McNeill. "The Anthropocene: Are Humans Now Overwhelming the Great Forces of Nature?" *Ambio*, vol. 36, no. 8, pp. 614–21.

Taylor, Drew. "Review: Low Budget Austrian Horror Movie *Blood Glacier* is Campy and Limp." *IndieWire*, 1 May 2014, www.indiewire.com/2014/05/review-low-budget-austrian-horror-movie-blood-glacier-is-campy-and-limp-86462/. Accessed 15 May 2018.

The Thing. Directed by John Carpenter, performances by Kurt Russell, T. K. Carter, Keith David, David Clennon, and A. Wilford Brimley, Universal Pictures, 1982.

Tomlinson, John. *Globalization and Culture*. U of Chicago P, 1999.

Trexler, Adam. *Anthropocene Fictions: The Novel in a Time of Climate Change*. U of Virginia P, 2015.

Tuan, Yi-Fu. "Desert and Ice: Ambivalent Aesthetics." *Landscape, Natural Beauty and the Arts*, edited by Salim Kemal and Ivan Gaskell, Cambridge UP, 1993, pp. 139–57.

Ulstein, Gry. "Brave New Weird: Anthropocene Monsters in Jeff VanderMeer's *The Southern Reach*." *Concentric: Literary and Cultural Studies*, vol. 43, no. 1, 2017, pp. 71–96.

Vishnevetsky, Ignatiy. "*Blood Glacier* is a Solid B-Monster Movie, Nothing More or Less." *AV Club*, 2 May 2014, <https://film.avclub.com/blood-glacier-is-a-solid-b-monster-movie-nothing-more-1798180318>. Accessed 15 May 2018.

Wilson, Eric G. *The Spiritual History of Ice: Romanticism, Science, and the Imagination*. Palgrave Macmillan, 2003.

Wilson, Edward O. Foreword. *Common Wealth: Economics for a Crowded Planet*, by Jeffrey D. Sachs, Penguin Press, 2008, pp. xi–xvi.