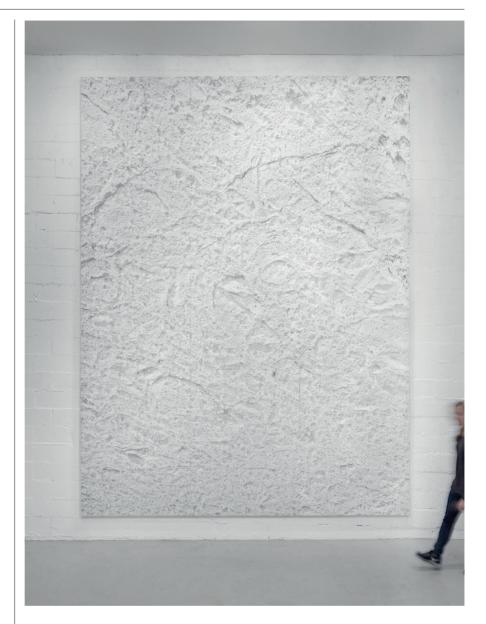
Facing Gaia: Justin Brice Guariglia's landscape photography in an ecological perspective Peter Seeland

In 2015, artist Justin Brice Guariglia participated in NASA's Operation Ice Bridge, flying over Greenland and photographing the Galloping Glacier near Jacobshavn. This glacier is among the fastest melting in the world, and few places illustrate the effects of climate change as starkly.¹ Guariglia observed the melting ice and heard the cracks splitting the archipelago. Later, he spent months working with gesso, acrylic and plastics on these photographs, creating tactile surface textures like Jacobshavn I (Fig. 1, 2).²

A year later and about 800 kilometres northwest of Jacobshavn, French philosopher and sociologist Bruno Latour flew over Baffin Island to Canada, where he spoke on perceptions of nature in the era of climate change. From the airplane, he looked down on Earth. Baffin Island, the largest island in the Canadian Arctic Archipelago, has been covered with ice for millennia. Yet, instead of a frozen white desert, Latour saw barren tundra for hours. In recent decades, the island's ice sheets have retreated by more than half due to global warming, and during the 2016 heatwave the island

¹ The retreat of the ice is impressively illustrated in this NASA graphic: 'Ice Loss from Jakobshavn Glacier', NASA, 2015, accessed 25 February, 2024, https://earthobservatory.nasa.gov/images/86436/ice-loss-from-jakobshavn-glacier.

² Alina Cohen, 'Justin Brice Guariglia's Powerful Photos of Melting Glaciers: In the studio with the first artist to join a NASA mission', Galerie Magazine, 2017, https://galeriemagazine.com/justin-brice-guariglia-creates-powerfulphotographs-of-melting-glaciers/. Guariglia's website shows works from the same series and works depicting agricultural areas and mining. He always uses a similar technique and pictorial formula: 'Justin Brice - Artwork', accessed 25 February 2024, https://www.justinbrice.com/artwork.



was almost ice-free.³ Latour was deeply affected by the sight of the cracked, sparse ice. Bitterly, he compared the ravaged landscape to the tortured face and surface of Munch's *The Scream*. He said, 'It was as though the ice was sending me a message'.⁴

Greenland and the Arctic are considered 'ground-zero zones'⁵ of climate change, and it's telling that both Guariglia and Latour are so moved by these landscapes. The artificial transformation of nature becomes a visual experience for both, and it seems

Rebecca Anderson et al., 'A millennial perspective on Arctic warming from 14C in quartz and plants emerging from beneath ice caps', Geophysical Research Letters 35, no. 1 (2008), https://doi.org/10.1029/2007GL032057.

⁴ Ava Kofman, 'Bruno Latour, the Post-Truth Philosopher, Mounts a Defense of Science', *New York Times* (New York) 2018, https://www.nytimes.com/2018/10/25/magazine/bruno-latour-post-truth-philosopher-science.html. Accessed 28.10.2024.

[&]quot;USC Fisher Museum of Art: Earth Works: Mapping the Anthropocene", USC Fisher Museum of Art, https://fisher.usc.edu/2018/06/07/earth-works/, last accessed 22.05.2024.

Fig. 1 Justin Brice Guariglia: JACOBSHAVN I, 2015/2016, Acrylic, Polystyrene Panel, 325.12 x 243.84 x 4.44 cm, Private Collection. (reproduced with artist's permission)

to be a new experience and a new relation to nature that is emerging through this direct confrontation. Latour describes the experience as an emotional dialogue, and Guariglia processes it through art. So, to what extent is Jacobshavn I a new image of nature and of a changing relationship between us and nature? How can comparing Latour's theories and Guariglia's art help us think through the climate crisis? This essay compares Guariglia's artistic treatment of the Anthropocene with Latour's theoretical approach, contextualising both in the broader discourse on the Anthropocene. This comparison demonstrates how art can reflect the relationship between humans and nature. Additionally, it illustrates how art can foster the creation of new, less destructive representations of nature, which are attuned to the challenges of the Anthropocene. Art could thus shift consciousness, providing a novel approach to the challenges of the Anthropocene.

Art and ecology

Researching contemporary art from an ecological perspective involves integrating environmental crises, their impacts on our conceptions of ourselves as humans, how we understand nature, and how we deal with them. It also entails investigating the relationship between humans and nature. These discussions are often labelled with the term Anthropocene, omnipresent in popular and academic discourses. Sometimes appearing in unreliable articles, sometimes taken as a given in serious discussions, or heavily criticised by researchers, the term is plagued by confusion.⁶ The literature counts many essays on the Anthropocene and its impact on humans, culture and society, often under the umbrella of ecocriticism in philosophy, sociology, history and literary criticism, including aesthetics and art.⁷ Bruno Latour, a luminary in the Anthropocene discourse, has engaged intensely with ecology, art and the humanities. 8 As Phillipe Pignarre notes, 'Latour is really the thinker of the Anthropocene'.9

⁶ The concept of the *Anthropocene* should be used advisedly. Despite its many definitions and the attendant vagueness, the term is strategically useful. I understand *Anthropocene* to refer to the conceptual synthesis of all the symptoms of global, crisis-ridden and man-made environmental transformations. Humans are emerging as a new global geological force that is profound shaping the planet, and these transformations represent a break with the environmental and living conditions of the last 12,000 years. Symptoms are not only scientifically measurable, social and political changes, but also the effects on our understanding of ourselves and nature. The Anthropocene is not meant as a concrete scientific geological-stratigraphic epoch – a controversial claim beyond the scope of this essay. For more on the term and its history, see Eva Horn and Hannes Bergthaller, *Anthropozän. Zur Einführung* (Hamburg: Junius Verlag, 2019), 8-25.

⁷ Félix Guatarri combined aesthetics and ecology long before the term Anthropocene emerged. See Félix Guattari, Les trois écologies (Paris: Editions Galilée, 1985). For an overview of the discourse on aesthetics and the Anthropocene, see: Horn and Bergthaller, Anthropozän. Zur Einführung, 120-43.

⁸ Ludolf Kuchenbuch, 'Bruno Latours Anthropozän und die Historie: Feststellungen, Anknüpfungen, Fragen', *Historische Anthropologie* 26, no. 3 (2018): 381, https://doi.org/10.7788/hian.2018.26.3.379.

⁹ Kofman, 'Bruno Latour, the Post-Truth Philosopher'.

Jacobshavn I and the Anthropocene discourse

Jacobshavn I is intertwined with aspects of Latour's thought and the Anthropocene discourse in general. Knowing that Guariglia engages deeply with the discourse of Anthropocene, several pivotal aspects of the discourse and how viewers perceive Jacobshavn I.

Disorientation

The object depicted in the work remains utterly vague. Various visual elements intensify the disorientation, including the perspective, the size and the materiality of the representation. The image implies no particular vantage point, leaving the viewer's position unclear and compelling them back into their own subjective standpoint.

Such disorientation characterises the Anthropocene. Bruno Latour diagnoses a new climate regime in the Anthropocene, as nature becomes a decisive actor. A nature previously passive and objectified suddenly becomes an active, potent actor. This leaves humans in aporia, completely alienated from such nature. Further, nature as the setting of human existence and experience threatens to dissolve. The destructive element of changing the natural environment induces ontological upheaval of the world's structure, according to Latour. Nature is no longer a constant. Humans have no fixed point to position themselves in the world's structure. Jacobshavn I mirrors this disorientation. The lack of Euclidean perspective reflects the subject's aporia in understanding nature through the Anthropocene.

Unreadability

The representation is also unreadable, which recalls and surpasses disorientation. Every visual detail eludes reference; it remains entirely unclear what material is depicted where. The representation resists any cultural and subjective assimilation by the viewer, defying intuitive understanding.

Unreadability is also present in the Anthropocene discourse. The Anthropocene is characterised by a 'clash of scales'. Scales that

¹⁰ Bruno Latour, *Anthropocene Lecture: Bruno Latour* (Berlin: Max Planck Institute for the History of Science, 2018). https://www.mpiwg-berlin.mpg.de/video/anthropocene-lecture-bruno-latour.

¹¹ Horn and Bergthaller, Anthropozän. Zur Einführung, 124-25.

¹² Timothy Morton, *Hyperobjects: Philosophy and Ecology after the End of the World* (Minneapolis: University of Minnesota Press, 2013), 101.

¹³ Bruno Latour and Peter Weibel, 'Disconnected', in *Critical Zones: The Science and Politics of Landing on Earth*, ed. Bruno Latour and Peter Weibel (Cambridge: MIT Press, 2020), 75.

¹⁴ Horn and Bergthaller, Anthropozän. Zur Einführung, 128.



elude human perception are juxtaposed. The spatial scales of global crises, the temporality of millennia into the future and past and the quantitative dimensions of pollutants and destruction are hardly imaginable, let alone perceptible. The point of no return, when Earth's equilibrium catastrophically tips, exceeds human imagination. Thus, unreadability is inherent to the Anthropocene.¹⁵

Guariglia evokes unreadability through form. The monumental white in *Jacobshavn I* also evokes unreadability by swallowing details and dazzling the viewer. The dominance of white recalls the ubiquity and therefore the ungraspable nature of the Anthropocene.¹⁶

Latour also notes that previous concepts of nature and Earth deviate from reality, as symbolised by globes and maps.¹⁷ Latour sees this deviation as a hallmark of modernity and defines it as the state in which every connection between our imagination

Fig. 2

Detail: Justin Brice Guariglia:

JACOBSHAVN I, 2015/2016, Acrylic,
Polystyrene Panel, 325,12 x 4,44 cm,
Private Collection. (reproduced with
artist's permission)

¹⁵ Horn and Bergthaller, *Anthropozän. Zur Einführung*, 128-31; Timothy Clark, *Ecocriticism on the Edge. The Anthropocene as a Threshold Concept* (London: Taylor & Francis, 2015), 7.

¹⁶ Moritz Baßler and Heinz Krügh, *Gegenwartsästhetik* (Constance: Wallstein, 2021), 5.

Latour deconstructs the idea of the globe in detail. See chapters one and two of Bruno Latour, *Kampf um Gaia*. Acht Vorträge über das neue Klimaregime (Berlin: Suhrkamp, 2020).

of the world and its reality independent of us is severed. In this state, humans have lost the ability to perceive true nature. It has become unfathomable, just like *Jacobshavn I*.

Interconnectedness

Paradoxically, the disorientation and unreadability connect the viewer to the work. The unfinished cognitive and perceptual processes demand resolution. The work appears simultaneously near and distant, familiar and strange. This dis:connectivity is also present in the Anthropocene discourse.

Recognising the catastrophic consequences of dichotomising nature in the 20th century, James Lovelock and Lynn Margulis developed the Gaia hypothesis in the 1970s. 19 This introduces a holistic understanding of nature, radically departing from modern dualism.²⁰ With Gaia, the Greek deity and personification of Earth, they symbolically refer to nature as a network of all organisms, including humans and animals in addition to rivers, mountains, and the micro- and macrocosmos. Nature is therefore a planetary collaborative-processual network that integrates humans as one part among others. Humans are not outside nature but an integral part of it. We are deeply connected and existentially bound to the network, and the network's existence depends on our prudent interaction with the environment.²¹ Hence, a posthumanist image of humanity and nature emerges. Nature is no longer the other, the observed and the foreign; humans are part of it. The separation of subject and object collapses, forming the conceptual basis of the Anthropocene.²²

Bruno Latour, building on the Gaia hypothesis, refers to this understanding of nature as *the Terrestrial*. He implies reciprocity

¹⁸ Latour and Weibel, 'Disconnected', 75.

¹⁹ The term first appeared in James Lovelock and Lynn Margulis, 'Atmospheric homeostasis by and for the biosphere: the gaia hypothesis', *Tellus* 26, no. 1-2 (1973)

²⁰ Modernity and the present are characterised by dichotomous natural-aesthetic ideas. These are largely rooted in ancient philosophy, from which the separation of spiritual-inner subject and material-outer object is derived. These tendencies resonate with modern subject-object dualism. On the one hand, the subject interacts with nature. The subject, therefore, intends, reflects and acts largely according to reason. At the same time, the subject is affective and can act irrationally. As an active entity, it confronts material, object-like nature and defines it as the passive outside itself. Nature is thus understood as intentionless, unconscious, continuous, calculable and technically manipulable. This dualism is general in application and Western in origin. Eva Horn, 'Challenges for an Aesthetics of the Anthropocener', in The Anthropocentric Turn: The Interplay between Disciplinary and Interdisciplinary Responses to a New Age, ed. Gabriele Dürbeck and Philip Hüpkes (New York: Routledge, 2020).

²¹ Latour and Weibel, 'Gaia', 166. Peggy Karpouzou and Nikoleta Zampaki, 'Introduction: Towards a Symbiosis of Posthumanism and Environmental Humanities or Paving Narratives for the Symbiocene', in Symbiotic Posthumanist Ecologies in Western Literature, Philosophy and Art: Towards Theory and Practice, ed. Peggy Karpouzou and Nikoleta Zampaki (Berlin: Peter Lang, 2023).

²² Horn and Bergthaller, Anthropozän. Zur Einführung, 28.

between humans and the world, positioning humans as actors among many equivalent actors in the network. Humans are not the counterpart of the world but immanent within it. The goal of Latour's anthropology of modernity is to dissolve the separation of humans from nature, revealing it as an ideological construction.²³ Interconnectedness is thus an essential component of both the Anthropocene discourse and Guariglia's work. The complex and seemingly insoluble entanglement of viewer and artwork reflects the dis:connective human-nature relationship advocated by Latour.

Uncanniness

Disorienting, unreadable, disconnected and yet connected, *Jacobshavn I* evokes discomfort and uncanniness. It is not the familiar and comfortable image of nature emphasising beauty; it is uncanny and strange. As Beatrice Galilee, curator at the Metropolitan Museum, describes Guariglia's works, they are 'beautiful but terrifying'.²⁴

This uncanniness is also present in the Anthropocene discourse. Thomas Friedman refers to this relationship with an incomprehensible world we are destroying 'global weirding'. The writer Amitav Ghosh says nature now reciprocates the human gaze, becoming alive in an uncanny yet familiar way.²⁶ Thus, in the Anthropocene, humans share their consciousness uncannily with other beings, perhaps even with the planet itself. Humans are inseparably connected to nature, so we can no longer retreat into our subjectivity or reduce nature to objectivity. Horn, invoking Kant, calls this the 'Sublime in the Anthropocene'. 27 It is a disturbing intimacy with a world that can no longer be grasped solely as the human lifeworld.²⁸ Moreover, the sheer complexity and the real possibility of global environmental collapse are in themselves frightening and uncanny. Bruno Latour also perceives the uncanny in the Anthropocene, as evidenced in his account of flying over Baffin Island. He writes, 'In the age of the Anthropocene, all the dreams of die-hard environmentalists, of experiencing how humans, by now paying more attention to nature, would be healed of their political disputes, have burst. We are all irrevocably entering a simultaneously post-natural, post-human, and postepistemological epoch!'.29

²³ Kuchenbuch, 'Bruno Latours Anthropozän', 380.

²⁴ Ted Loos, 'A Man on an Eco-Mission in Mixed Media', New York Times (New York), 10 October 2017.

²⁵ Thomas Friedman, 'Global Weirding Is Here', *New York Times* (New York), 17 February 2010.

²⁶ Amitav Ghosh, *The Great Derangement: Climate Change and the Unthinkable* (Chicago: University of Chicago Press, 2016), 91.

²⁷ Horn and Bergthaller, Anthropozän. Zur Einführung, 131.

²⁸ Horn and Bergthaller, Anthropozän. Zur Einführung, 129-132.

²⁹ Latour, Kampf um Gaia, 248. Author's translation.

Materiality and spatiality

Guariglia also realises a concrete understanding of spatiality. Initially, he depicts space downward from the sky to the Earth's surface, before creating a second, new spatiality. Printing with heavy acrylic paint and meticulous work with gesso, acrylic and polystyrene, a unique material spatiality emerges on the surface. Thus, Guariglia first appropriates landscape photographically and then bases a new space on it. The materials he uses are highly anthropogenic. Plastic and acrylic hardly decompose; they are products of the Anthropocene. The work embodies a material dialectic, where industrial materials depict natural glaciers. Guariglia assumes the role of natural forces with his art, creating and shaping landscapes. This act recalls humanity's role in the Anthropocene.³⁰

Latour also considers traditional concepts of nature as constructs and instead proposes a new concept that, while just as constructed, more accurately represents the character of nature: the critical zone. Like Guariglia, he introduces a new planetary spatiality. Latour defines the critical zone as the space from the lower atmosphere to the ground with its vegetation.³¹ The globe model, most popularly captured in the Blue Marble (Fig. 3), is thus the counter-model to the critical zone. Nature as a globe is merely an insufficient dataset that that lacks an experiential perspective.³² It is a mere 'geometrization of the immeasurable'.³³ In contrast, the critical zone is where life occurs, which Latour describes as 'everything we care for, everything we have encountered'.34 The critical zone frees the imagination from the Blue-Marble conception of nature and returns the actual human lifeworld back to experiential surfaces. It is a new understanding of the planet as 'skin of the living earth',35 recalling Guariglia's model of nature. While the critical zone is heterogeneous and dynamic, it does not totalise nature. Similarly, the cracks and surfaces of Jacobshavn I are heterogeneous, dynamic and resist totalisation. Moreover, the critical zone, given environmental destruction, is uncanny and disturbing.36

Photography also plays a crucial role. Guariglia's starting point, NASA's aerial photograph of a landscape, epitomises the scientific-objectifying gaze on nature. This is transformed by reworking the surface with plastic, acrylic and gesso into a new space and an indefinitely durable object. Simultaneously,

³⁰ Baßler and Krügh, Gegenwartsästhetik, 214.

³¹ Kofman, 'Bruno Latour, the Post-Truth Philosopher'.

³² Latour and Weibel, 'Seven Objections against Landing on Earth', 14.

³³ Peter Sloterdijk, *Sphären II: Globen* (Frankfurt: Suhrkamp, 1999), 47. Author's translation.

³⁴ Kofman, 'Bruno Latour, the Post-Truth Philosopher'.

³⁵ Latour and Weibel, 'Disconnected', 13.

³⁶ Bruno Latour, Kampf um Gaia. Acht Vorträge über das Neue Klimaregime (Berlin: Suhrkamp, 2020), 334.

89

the work induces the opposite effect of a scientific photograph: it disorients, defies legibility, is uncanny. Guariglia reveals the fallacy and consequences of attempting to subsume nature under a scientific, binary perspective, while simultaneously proposing a counter-design. Guariglia demonstrates that nature in the Anthropocene has become unreadable, and the unreadability prompts reflection on what is seen. He gazes on the critical zone, confronting the viewer with the living skin of Gaia. Moreover, landscape emerges, according to W.J.T. Mitchell, as an identity-forming, dynamic process.³⁷ A semiotic and hermeneutic reading reveals it to be a construct, a dialectic between the viewer and nature.

Conclusion

Guariglia's work reconceives nature and humanity. Initially, it conveys the status quo in the Anthropocene. It reflects the state of nature and its impact on our understanding of nature and humanity. Thus, the work rejects dichotomous understandings of nature and conveys a counter-image: interconnected, fragile yet sublime. The work visualises Gaia in the sense of the critical zone, evoking new experiences and awareness.

For Bruno Latour, art is a crucial mediator of his ideas. According to Latour, the dogma of modernity has deprived us of the concepts necessary to transcend old thought patterns and to experience nature as a critical zone. Thus, art and science make the critical zone more tangible in the Anthropocene. Both pursuits complement each other: while the arts aid comprehension, science predicts and elucidates. Beyond Latour, art plays a pivotal role in the Anthropocene discourse. If the crisis-driven transformation of the environment in the Anthropocene is rooted our understanding of and relationship to nature, as conveyed through art, then our worldview can only shift through new representations of nature.

Art alone cannot avert climate catastrophes, but it can critically reflect on the Anthropocene. Art can disrupt structures and imagine alternatives through aesthetics. Treating the Anthropocene artistically does not mean resolving aporias but making them visible. Curator Tim Wride describes Guariglia's works as follows: 'The work is not didactic. [...] The statement is completely enmeshed in the materiality of it. The work creates opportunities for dialogue. Scientists want to explain, while artists want to ask questions'. Art has the potential to mediate a new understanding and relation between human and nature, maybe one more holistic and connected.

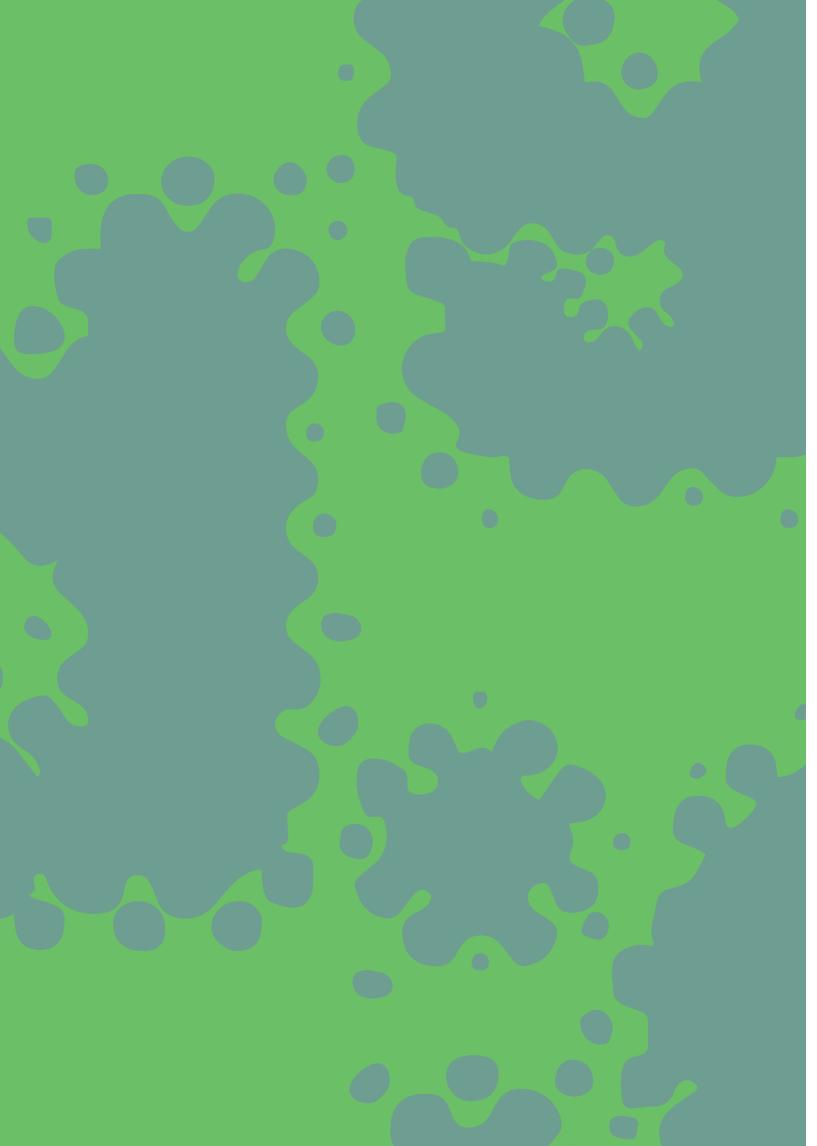
Fig. 3

Blue Marble (A\$17-148-22727),

1972, recorded by Apollo 17 (https://de.wikipedia.org/wiki/Blue_Marble#/media/Datei:The_Earth_seen_from_Apollo_17.jpg)

³⁷ W.J.T. Mitchell, 'Introduction', in *Landscape and Power*, ed. W.J.T. Mitchell (Chicago: University of Chicago Press, 2002), 1-5.

³⁸ Loos, 'A Man on an Eco-Mission'.



Bibliography

- Anderson, Rebecca, Gifford Miller, Jason Briner, Nathaniel Lifton and Stephen DeVogel. 'A millennial perspective on Arctic warming from 14C in quartz and plants emerging from beneath ice caps'. Geophysical Research Letters 35, no. 1 (2008). https://doi.org/10.1029/2007GL032057.
- Baßler, Moritz and Heinz Krügh. Gegenwartsästhetik. Constance: Wallstein, 2021.
- 'Justin Brice Artwork'. accessed 25 February 2024, https://www.justinbrice.com/artwork.
- Clark, Timothy. Ecocriticism on the Edge. The Anthropocene as a Threshold Concept. London: Taylor & Francis, 2015.
- Cohen, Alina. 'Justin Brice Guariglia's Powerful Photos of Melting Glaciers: In the studio with the first artist to join a NASA mission'. *Galerie Magazine*, 2017. https://galeriemagazine.com/justin-brice-guariglia-creates-powerful-photographs-of-melting-alaciers/.
- Friedman, Thomas. 'Global Weirding Is Here'. New York Times (New York), 17 February 2010.
- Ghosh, Amitav. *The Great Derangement: Climate Change and the Unthinkable*. Chicago: University of Chicago Press, 2016.
- Guattari, Félix. Les trois écologies. Paris: Editions Galilée, 1985.
- Horn, Eva. 'Challenges for an Aesthetics of the Anthropocene'. In *The Anthropocentric Turn: The Interplay between Disciplinary and Interdisciplinary Responses to a New Age*, edited by Gabriele Dürbeck and Philip Hüpkes, New York: Routledge, 2020.
- Horn, Eva and Hannes Bergthaller. *Anthropozän. Zur Einführung*. Hamburg: Junius Verlag, 2019.
- Karpouzou, Peggy and Nikoleta Zampaki. 'Introduction: Towards a Symbiosis of Posthumanism and Environmental Humanities or Paving Narratives for the Symbiocene'. In *Symbiotic Posthumanist Ecologies in Western Literature, Philosophy and Art: Towards Theory and Practice*, edited by Peggy Karpouzou and Nikoleta Zampaki, Berlin: Peter Lang, 2023.
- Kofman, Ava. 'Bruno Latour, the Post-Truth Philosopher, Mounts a Defense of Science'. New York Times (New York), 2018. https://www.nytimes.com/2018/10/25/magazine/bruno-latour-post-truth-philosopher-science.html.
- Kuchenbuch, Ludolf. 'Bruno Latours Anthropozän und die Historie: Feststellungen, Anknüpfungen, Fragen'. *Historische Anthropologie* 26, no. 3 (2018): 379-401. https://doi.org/10.7788/hian.2018.26.3.379.
- Latour, Bruno. Anthropocene Lecture: Bruno Latour. Berlin: Max Planck Institute for the History of Science, 2018.
- ---. Kampf um Gaia. Acht Vorträge über das neue Klimaregime. Berlin: Suhrkamp, 2020.
- Latour, Bruno and Peter Weibel. 'Disconnected'. In *Critical Zones: The Science* and Politics of Landing on Earth, edited by Bruno Latour and Peter Weibel, Cambridge: MIT Press, 2020.
- ---. 'Gaia'. In *Critical Zones: The Science and Politics of Landing on Earth*, edited by Bruno Latour and Peter Weibel, Cambridge: MIT Press, 2020.
- ---. 'Seven Objections against Landing on Earth'. In *Critical Zones: The Science* and *Politics of Landing on Earth*, edited by Bruno Latour and Peter Weibel, Cambridge: MIT Press, 2020.
- Loos, Ted. 'A Man on an Eco-Mission in Mixed Media'. *New York Times* (New York), 10 October 2017.
- Lovelock, James and Lynn Margulis. 'Atmospheric homeostasis by and for the biosphere: the gaia hypothesis'. *Tellus* 26, no. 1-2 (1973): 2-10.
- Mitchell, W.J.T. 'Introduction'. In *Landscape and Power*, edited by W.J.T. Mitchell, Chicago: University of Chicago Press, 2002.
- Morton, Timothy. *Hyperobjects: Philosophy and Ecology after the End of the World.*Minneapolis: University of Minnesota Press, 2013.
- 'Ice Loss from Jakobshavn Glacier'. NASA, 2015, accessed 25 February 2024, https://earthobservatory.nasa.gov/images/86436/ice-loss-from-jakobshavn-glacier.
- Sloterdijk, Peter. Sphären II: Globen. Frankfurt: Suhrkamp, 1999.