

Tobias Boes and Kate Marshall

Writing the Anthropocene

An Introduction

Sometime around 2016, the International Commission on Stratigraphy, guided by the Subcommission on Quaternary Stratigraphy's Working Group on the "Anthropocene," may recommend that the "Anthropocene" be denuded of its scare quotes and enter into the official scientific record as the name of the geologic epoch we currently inhabit. The debate about the epoch's name, unlike the rates of geologic change that have in part led to its suggestion as a separate epoch from the Holocene, has been moving slowly. The ability of the Anthropocene to lodge itself firmly within various cultural forms—from popular media to film, fiction, and television—has far outpaced its scientific accounting. One risk of such a disconnect, however, is that what the Anthropocene *means* culturally can fragment or wane at precisely the moment in geohistory when an acknowledgment of human geologic agency may be most urgent. Movement within the concept of the Anthropocene has already emerged in refinements of its definition by those who first coined it: Paul Crutzen and Eugene F. Stoermer originally defined the Anthropocene through the "central role of mankind in geology and ecology" lasting over long periods (2000, 18). More recently, however, Crutzen and his collaborators (Steffen et al. 2011) strengthened this definition, stressing that the activity of our species "now rivals some of the great forces of nature in its impact on the functioning of the Earth system" and concluding that "humankind has become a geological force in its own right" (843).

Cultural theorists, historians, and artists have proved sensitive to the changes registered in the shift, for example, from geology to "Earth system" or in the reframing of a species' ecological role as geologic force. The art and theory of the Anthropocene, we will argue, registers (and has registered) what is properly at stake in the self-naming by a species of an epoch of geologic time, often in a language unavailable to other forms of scientific discourse. The task for scholars of the humanities, then, is a crucial one, given the reflexive access to species self-definition that any humanist scholar holds as a burden and privilege.

minnesota review 83 (2014)

DOI 10.1215/00265667-2782243 © 2014 Virginia Tech

The Anthropocene and the Humanities

To date, the best description of the challenge that the Anthropocene presents to the humanities is that by the historian Dipesh Chakrabarty, who, in a much-quoted article, articulated the need for a new set of conceptual tools that might allow us to describe human agency as a geophysical force. Invoking the nineteenth-century philosopher Wilhelm Dilthey, Chakrabarty defines humanistic approaches to historical experience as “mode[s] of self-knowledge” and argues that our new epoch, in which large-scale changes to the planet are wrought by our collective activity as a species, renders such self-knowledge increasingly difficult: “Even if we were to emotionally identify with a word like *mankind*, we would not know what being a species is, for in species history, humans are only an instance of the concept species as indeed would be any other life form. But one never experiences being a concept” (220). Anthropogenic climate change on a truly global level, for instance, can never be experienced—only local changes in weather patterns can. Such climate change can instead only be explained (rather than known) through the statistical methods of the natural sciences, even though it has patently become a consequence of human activity.

A second problem raised by the Anthropocene that also results from our inability to comprehend what the young Marx (2007, 76) called our “species being” moves into focus once we recognize that human beings in the new epoch can no longer simply be defined (as they have been in most, though by no means all, strains of humanistic discourse during the late Holocene) as *acting upon* the natural world. Instead, they must also be described as *being acted upon* by that same world on an ontological, rather than merely existential, level. For at least the past ten thousand years, humankind has stood alone as a species that could alter and even eradicate the fundamental being of other species through, for instance, forest clearings and other systemic alterations to the environment. Nature has of course always acted in turn upon human societies, often in catastrophic fashion and often in ways that were directly triggered by prior human interventions. But only in recent times have we had to confront the possibility that nature might also fundamentally alter our existence as a species and that, what is more, it might do so as the ultimate outcome of processes that we ourselves set in motion. Thus rising temperatures and increasing ocean acidification may soon lead to a so-called sixth extinction that could also eradicate humanity or, at the very least, throw us back upon the state of hunter-gatherer societies.

This dual realization that human agency in the Anthropocene must, on the one hand, be decoupled from individual subjectivity and is, on the other, radically open to nonhuman influences recalls certain strains of what are often called antihumanist traditions from the late Holocene, such as Lacanian psychoanalysis, Derridean deconstruction, or the rhizomatic investigations of Gilles Deleuze and Félix Guattari. Unlike these earlier movements, however, all theories of the Anthropocene are premised on the historicist notion of an absolute break with the past: a hypothetical point in time when the human condition irrevocably changed. They can thus more properly be described as post- rather than antihumanist, and it is a matter of more than incidental significance that so much discussion over the past decade has been devoted to the question of when the Anthropocene (and thus also our putative posthuman condition) actually began. Was it when global warming first made headline news around the world? When we detonated the first nuclear bomb and scattered radioactive isotopes all over the atmosphere? When James Watt invented the steam engine? Or perhaps when our Neolithic ancestors took axes to trees to create forest clearings?

In this context, it is worthwhile to reflect on the etymological origins of the term *Anthropocene*. As many observers have pointed out, the term seems tainted by a certain disingenuousness: it asserts the dominance of man (*anthropos*) at a time when we have actually become more aware than ever of our fungibility as a species. Viewed from a different perspective, however, the term seems perfectly appropriate. For the names of the preceding three geologic epochs—the Pliocene, Pleistocene, and Holocene—translate respectively as “newer time,” “newest time,” and “entirely new time” and thus give these seemingly neutral period designators an inexorable orientation toward the present. By contrast, the term *Anthropocene* derives from the imaginary etonym *anthropos kainos*, which we might translate somewhat awkwardly as the “time of the new man.” The seeming humanism of the term thus actually reveals its underlying posthumanism.

Writing the Anthropocene

The foregoing reflections have also informed our choice of title for this special focus section of *the minnesota review*, “Writing the Anthropocene.” The act of writing, of inscribing messages for posterity, has always served as one of the defining activities of the human, as the centrality of philology to the humanist project demonstrates. But as Jacques Derrida (1988) pointed out long ago, there is a paradox in this

definition, for in writing something down, we also detach it from ourselves and hand it over to the free play of signification to which all semiotic systems are ultimately condemned.¹ When we moderns look at the cave paintings of Lascaux, for instance, we do so with the ostensible goal of communing with our earliest recognizable ancestors, and yet we ultimately project only ourselves onto these mysterious signifiers. Lascaux is, to invoke the title of Werner Herzog's (2010) poignant documentary, a "cave of forgotten dreams" whose modern interlocutors (Herzog included) all approach it with dream baggage of their own to replace the visions and aspirations that have been lost to the ages.

The Anthropocene makes Lascaux painters out of all of us, for we all collectively inscribe messages upon our planet that our distant descendants (provided they exist) will one day approach with wonderment and incomprehension. In her recent book *The Sixth Extinction*, for instance, the science journalist Elizabeth Kolbert (2014) describes how future geologists studying our epoch will discover evidence of unprecedented species loss, of chemical alterations to our soil and atmosphere, and of rising temperatures all embedded in a paper-thin layer of soil that serves as the collective writing pad of Anthropocenic humankind. A much more literal conception of the term *writing* also stands at the heart of the obscure academic subfield of nuclear semiotics, which deals with the question of how advanced civilizations might effectively and permanently mark nuclear waste disposal sites that are likely to remain dangerous even longer than the caves of Lascaux have existed. Any lingering doubts that the Anthropocene marks the epoch of our becoming posthuman will easily be dispelled by even a casual glance at the technical reports of the US Department of Energy's "Human Interference Taskforce" (DOE 1984) or at the articles contained in a 1984 special issue of the German *Zeitschrift für Semiotik* edited by Roland Posner (1984). Recognizing that no written messages or iconographic signifiers will remain comprehensible after several millennia of cultural and linguistic evolution, otherwise level-headed scientists propose Lovecraftian earthworks, the formation of "nuclear priesthoods," and even the creation of genetically engineered cats whose fur would change color in the presence of radioactivity (on the theory that cats were described as harbingers of evil in ancient mythological sources and would presumably retain this association into the distant future).

The phrase "writing the Anthropocene," with its initial gerund and its lack of a preposition, thus expresses truths that a more active and idiomatic construction, such as "how to write about the Anthro-

pocene,” cannot. Although the Anthropocene is the subject of an ever-expanding body of literature both in the sciences and in the humanities, it is not simply something that is written *about*; it is also something that is actively shaped and created through acts of human inscription: through topographical alterations, changes in the geologic and climatological records of our planet, and so on. But unlike other signatures, which ultimately bear a merely figurative relationship to the human essence that they putatively capture, the traces of ourselves that we inscribe upon the planet compel in us direct and literal changes. Put slightly differently, we might say that our contemporary species-being expresses itself not in denotative speech acts but rather in performative interventions in which humankind functions as both subject and object. Hence our choice of the gerund “writing,” which does not require a specific grammatical subject and in which process and product become one.

Approaches in the environmental humanities that hope to do justice to the Anthropocene will have to respect this novel notion of writing. In his 2007 study *Ecology without Nature*, for instance, the literary critic Timothy Morton coined the term “ecomimesis” to describe the pervasive tendency in traditional nature writing to break out of the frame that demarcates the autonomous work of art and evoke the environment that lies beyond it (31–32). As its name implies, however, ecomimesis is imitative and descriptive, premised on the notion that “nature” requires the intervention of a poet in order to be heard. The challenge for Anthropocenic art will clearly be to move beyond this restriction and into a new realm of “ecodiegesis” that gives a voice to the planet itself.

Mediation in the Anthropocene

Any critical discussion of the Anthropocene, of either inscribing the earth or using the geologic strata of humanity and its detritus as a recording medium, also provides an opportunity to explore in detail how media operate conceptually in geologic time. Writing the Anthropocene, then, becomes a question of *mediation*. While media theorists working in the field of “media archaeology” (Zielinski 2008, 34) deploy deep or geologic time as a metaphor, their analyses often stop short of redescribing media and instead content themselves with providing richer historical and cultural contexts. Taking the metaphors of media archaeology as seriously as possible, so that the geologic layers of the earth themselves become media, raises important questions

for literary and cultural theorists. These include, for example, queries about the degree to which the media of the Anthropocene change our definitions and methodologies for understanding media more generally and how the concept of an Anthropocene epoch impacts the long history of mediation. Perhaps the most crucial question of all, however, is: what does it mean to call the earth itself a medium?

According to Jussi Parikka, any media theory that doesn't take geology into account misses an important cause and consequence of the development of media technologies. As he points out in a recent piece in *The Atlantic*, "Geology does not appear in normal conversations about media and culture, but there would be no media without geology" (Parikka 2013). The reasons for this are quite simple. Media technologies are made from geologic materials, especially in our post-silicon age. Moreover, Parikka says, "The long-lasting legacy of Silicon Valley will not amount to corporations or branding or creativity or individualism, but its soil: the heavy concentration of toxins that will last much longer than the businesses and remind of the geological afterglow of the digital hype, the residue of the tech companies' use of chemicals in manufacturing our devices." The residue to which Parikka refers is yet another aspect of Anthropogenic terraforming: the extraction of geo-material from below that results in a relayering of that material as multiple forms of medial waste, created either in the process of manufacturing media technologies or in the accumulation of devices, interfaces, and objects on our primary interface with the planet.

These accumulating media are, additionally, the tools that facilitate the imaging and imagination of the planet. As Peter Sloterdijk argues, "Beginning with the Behaim Globe from Nuremberg, made in 1492—the oldest surviving example of its kind—and continuing up until NASA's photograms of the earth and pictures taken from the space station Mir, the cosmological process of modernity is characterized by the changes of shape and refinements in the earth's image in its diverse technical media" (2013, 21). This is what mediation in the reflexively produced Anthropocene looks like: the production of media technologies that facilitate the viewing of their own participation in geologic change. What emerges from this reflexive bind is a sense that writing the Anthropocene is also a form of writing on the earth or, indeed, writing the earth. As Parikka suggests, "By realizing the geological importance of the Earth for media culture, we might also acknowledge that the Earth is a communicative object itself."

Toward Alternative Narratives of the Anthropocene

The field of media archaeology thus acquires renewed significance in the humanities as they are reconfigured by the Anthropocene. Siegfried Zielinski's *Deep Time of the Media* (2008), from which the field draws its name, acknowledges media as "special cases within the history of civilization" (2) precisely because of their capacity to accumulate on the surface of the globe and in the atmosphere in the form of orbiting satellites and other debris. In one of his most evocative examples, Zielinski situates this debris within a media ecology that includes the planet:

While the USSR was falling apart, the cameraman of Tarkovsky's legendary *Solaris*, Vadim Yusov, was teaching astronauts from the MIR space station to take pictures of Earth for Andrei Ujica's *Out of the Present* (1995). The 35mm camera they used is probably still orbiting up there over our heads. After the rolls of film had been shot and stunning pictures of the blue planet were in the can, the camera was simply thrown out the escape hatch. Taking it back to Earth would have been too expensive, and it was not considered worthwhile to develop a special program just to destroy a few kilograms of media technology. (2)

As space debris, the technical media responsible for producing the image of the globe become its utmost atmosphere, suggesting that we can never write about the Anthropocene without writing into the geologic production of its conditions. These conditions are self-producing, a quality that extends to their very legibility within our systems of discourse. Regardless of when the Anthropocene is agreed to have begun, what is different now is that it is being recognized or named as such. *Knowing* and *articulating* species-being within a reflexively produced era of geologic time requires, we are suggesting, novel modes of articulation that are appropriate to these complex forms of mediation.

One such mode of articulation is literary, as many of the essays included in this special issue will show. The literary stands out as a domain in which the possibility for imagining geologic agency has always been one step ahead of our technological capacities to provide its images (Sloterdijk 2013, 24). The self-narration that is so characteristic of the Anthropocene finds new poetic forms within the reflexive operations of the literary field. For Bruno Latour, more-

over, the geologic self-naming of “humanity as a force of the same amplitude as volcanoes or even of plate tectonics” (2013, 9) becomes an occasion for examining “meaning” and creates an urgent demand for “an alternate narrative” (22). Not only are literary inquiries into questions of geologic agency, time strata, ecological violence, and the experience of Anthropocenic self-understanding often available far earlier than corresponding critical or conceptual vocabularies, but they help to define the questions in the first place. They become a uniquely positioned instance of what Nicola Masciandaro (2010) calls “geophilosophy,” or a way of thinking that thrives on its attachment to the Earth. “On this model,” he says, “the geophilosopher is one who philosophically experiences rather than flees the earth, who passes through by remaining with it. Geophilosophical experience entails facing, more and more deeply, the fact of the earth as a place for philosophy, and more profoundly, experiencing earth as facticity itself, the site of thought’s passage into the absolute” (28).

Examples of geophilosophy self-consciously attuned to the reflexive movements of the Anthropocene include Eugene Thacker’s *In the Dust of This Planet: Horror of Philosophy* (2011), which, tellingly, draws much of its evidence from fictional mediations, whether they be the weird tales populating early twentieth-century pulps or the science fiction works of J. G. Ballard, in which Thacker locates the paradoxically unknowable interior of objects and planets that anticipates many of contemporary speculative philosophy’s most urgent questions. Thacker puts the question of “who is the witness of extinction” (123) and in doing so recognizes both a world in which modernity and its humans are constituted in the observation cycles of witnessing and the necessity of speculative (and literary) forms of mediation in which to house such witnesses.

About the Present Special Issue

It is at precisely this nexus, where literary mediation meets speculative philosophy, that many of the questions guiding the essays included in this issue lie. Tracing the consequences for any form of writing in our present—a present being constantly reconstructed by the image of its ecological future and an increasing awareness of how the large-scale actions of a species’ past initiated processes only now becoming legible—is the ultimate aim of this project to describe, narrate, and imagine this moment in geologic time. These consequences can be aesthetic, political, or ecological or some combination thereof, but they often involve a reorganization and rearticulation of otherwise

familiar concepts whose linguistic and cultural environment has changed along with their physical counterpart.

Perhaps the most important such concept is that of the “archive,” the term that we generally use to indicate the sum total of textual and medial sources that document a historical development. In the first contribution to this focus section, Jesse Oak Taylor investigates whether the ice core samples that are being collected by geologists worldwide constitute a coherent archive in the humanist-historicist sense of the term and asks what it would mean to treat the atmosphere itself as a historical datum. Taylor points out that ice cores are essentially material accretions of fleeting atmospheric processes, a circumstance that he already finds anticipated in the concept of the “aura” put forth by the German media theorist Walter Benjamin as well as, somewhat more surprisingly, in the writings of the French historian Jules Michelet.

James Pulizzi, in his contribution, approaches the hermeneutical challenge posed by the Anthropocene from a rather different perspective. While Taylor seeks to draw parallels between the work done by modern climatologists and that of humanist historians (even going so far as to compare the ice core samples housed at the Climate Change Institute at the University of Maine to the National Library in Paris), Pulizzi insists that the Anthropocene can never be narrated or empathetically experienced, only modeled and statistically simulated. Strongly disagreeing with both Chakrabarty’s (2009) attempts to resuscitate a hermeneutic method for the age of our geophysical agency and Rob Nixon’s endeavor to narrate environmental degradation across multiple timescales (Nixon 2011), Pulizzi instead argues that we have entered into the age of the technical image and that cybernetics, not narratology or hermeneutics, will allow us to make sense of our future. In a move that we find productively replicated across many other contributions to this thematic cluster, Pulizzi ultimately turns not to contemporary technology but rather to a science-fiction novel, Greg Egan’s *Permutation City*, to illustrate the sense-making efforts that he has in mind.

In his contribution, Tobias Menely grapples directly with the question of why our current conceptual tools leave us so ill equipped to understand the Anthropocene, although he focuses not on mathematical modeling but rather on the doctrine of historical materialism with which Marxist theorists have sought to produce a “scientific” account of the past. As Menely shows in close readings of Marx, Theodor Adorno, and Benjamin (here drawing on and fur-

ther explicating some of the same passages invoked by Taylor), historical materialism has a long-running problem accounting for the “immaterial” nature of the atmosphere in which we now trace the portents of our destiny.

Margaret Ronda, in her contribution, moves us from the question of how we come to understand the Anthropocene to the question of how we come to write about it. Emphasizing what Ronda calls the “face-to-face” relationship that exists between the human and nonhuman worlds in the Anthropocene, she identifies prosopopoeia (the rhetorical device by which a speaker gives voice to an object or to an absent person) as the master-trope of the new epoch. Prosopopoeia is what allows us to give a face to nature but ironically also to take that face away, because we end up speaking *for* nature. Here we find an important difference between the poetics of the Anthropocene and a more traditional approach to ecopoetics, in which humanity’s presumption to speak for the nonhuman world would generally be approached with great misgivings.

Prosopopoeia and defacement, as literary strategies, play an important role also in Gabriele Dürbeck’s essay, which seeks to bring an empirical rather than poetological approach to the question of how we might write about the Anthropocene. Examining two German-language novels by Max Frisch and Iliya Trojanow, Dürbeck investigates what some of the common characteristics of fictional stories written about the new epoch might be. In Frisch’s *Man in the Holocene*, the protagonist is an old man who sees the familiar markers of his Alpine home washed away by a landslide even as he himself succumbs to progressive dementia; Trojanow’s *Melting Ice* includes a scene in which the passengers of a cruise ship form a human chain on a glacier in order to inscribe an SOS message on the landscape.

The psychoanalytic category that most closely responds to the poetological concept of defacement is melancholia, a condition that historically (for example, in the engravings by Dürer) was identified with the soul’s despair over an essentially meaningless world. Nicole Merola, in her analysis of Jeanette Winterson’s novel *The Stone Gods*, consequently challenges us to turn away from our obsession with such terms as *sustainability* or *habitability* and instead cast a melancholic gaze onto our surroundings. What would it mean to relate to the earth as simply a planetary body, with no concern for the transient life that inhabits it? Of crucial significance to such an investigation, of course, is the question of scale, since biological life emerges as transient only if we train ourselves to think across truly geologic expanses of time.

Derek Woods, in his contribution, sets out to provide us with a new set of “scale-critical” tools by which to do just that. As he shows through a close reading of the instructional film *Powers of Ten* by Ray Eames and Charles Eames, any sophisticated form of scale critique must account for the concept of “scale variance”—that is, the notion that changes in scale introduce qualitative rather than merely quantitative transformations (which is why spiders can walk on walls, for instance, while humans cannot). Scale variance provides us with one more example of why any project to write the Anthropocene must invariably be a posthuman one. Extrapolated across geologic time-scales, human influence morphs into something unrecognizable.

The notion of scale variance, or rather the human ability to recognize it, also informs Noah Heringman’s investigation of the contemporary fads for “second-skin” running shoes, “paleo” diets, and best-selling popular science books like *Sex at Dawn*. Why, in other words, are human beings at the start of the twenty-first century so fascinated by their Paleolithic ancestors, the last hominins to live in a time indisputably prior to the Anthropocene in even its most expansive definition? Heringman connects this mania to earlier attempts to think across “deep time” in the eighteenth century and thereby provides a useful historical perspective on many of the questions at stake in the present contributions.

The “evolutionary nostalgia” that Heringman detects in so many of today’s consumer formations finds an entirely speculative equivalent in fantasies of genetic manipulation, which propose to redeem us from our present imperfections not by returning us to our hominin roots but rather by “improving” us into something unrecognizable. Over the course of the past decade, Margaret Atwood has been engaging such fantasies in her *MaddAddam* trilogy of novels. As Calina Ciobanu points out in the penultimate contribution to our focus section, however, Atwood has little interest in the hackneyed scenario in which a postmodern Prometheus inevitably morphs into a postmodern Frankenstein. Her genetically engineered Crakers instead inhabit a postapocalyptic world already done in by environmental degradation. Her novels thus challenge us to again think across discrepant scales: to imagine what our species-being might look like *after* the end of the Anthropocene.

We conclude with Joshua Schuster’s thought-provoking meditation, “How to Write the Disaster.” Although ostensibly a gloss on Maurice Blanchot’s 1980 study *The Writing of the Disaster* (*L’écriture du désastre*), Schuster’s essay in fact directly engages many of the

themes that we have summarized over the course of this introduction. What does it mean to write “the disaster”? Who does the writing, and can the disaster even be named? Blanchot’s study invokes a noun that, in English translation, looks indistinguishable from the gerund in the title that we have given our thematic cluster. The logic in either case is the same: “writing,” whether of Blanchot’s unnamed disaster or of the Anthropocene, is more than a mere semiotic marking; it is rather a process that remakes (or perhaps we should say “remediates”) the world. Cynical voices might claim that to talk about writing in a time of rising temperatures and falling oceanic pH levels is nothing more than sophistry. We believe, however, that the stakes for such a discussion have never been higher.

Note

1. We are thinking here especially of Derrida’s quarrel with John Searle about the nature of human signatures (Derrida 1988).

Works Cited

- Chakrabarty, Dipesh. 2009. “The Climate of History: Four Theses.” *Critical Inquiry* 35 (2): 197–222.
- Crutzen, Paul, and Eugene F. Stoermer. 2000. “The Anthropocene.” *IGBP Newsletter* 41: 17–18.
- Derrida, Jacques. 1988. *Limited Inc.* Edited by Gerald Graff. Translated by Jeffrey Mehlman and Samuel Weber. Evanston, IL: Northwestern University Press.
- DOE (Department of Energy). 1984. “Reducing the Likelihood of Future Human Activities That Could Affect Geologic High-Level Waste Repositories.” May 1. www.osti.gov/scitech/biblio/6799619.
- Herzog, Werner, dir. 2010. *Cave of Forgotten Dreams*. Orland Park, IL: MPI Home Video. DVD.
- Kolbert, Elizabeth. 2014. *The Sixth Extinction: An Unnatural History*. New York: Holt.
- Latour, Bruno. 2013. *An Inquiry into Modes of Existence: An Anthropology of the Moderns*. Translated by Catherine Porter. Cambridge, MA: Harvard University Press.
- Marx, Karl. 2007. *Economic and Philosophic Manuscripts of 1844*. Mineola, NY: Dover.
- Masciandaro, Nicola. 2010. “Becoming-Spice: Commentary as Geophilosophy.” *Collapse* 6: 22–55.
- Morton, Timothy. 2007. *Ecology without Nature: Rethinking Environmental Aesthetics*. Cambridge, MA: Harvard University Press.
- Nixon, Rob. 2011. *Slow Violence and the Environmentalism of the Poor*. Cambridge, MA: Harvard University Press.
- Parikka, Jussi. 2013. “The Geology of Media.” *Atlantic*, October 11. www.theatlantic.com/technology/archive/2013/10/the-geology-of-media/280523/.

- Posner, Roland, ed. 1984. "Und in alle Ewigkeit. . . . Kommunikation über 10000 Jahre" ("And unto All Eternity. . . . Communication across 10,000 Years"). Special issue of *Zeitschrift für Semiotik* 6 (3).
- Sloterdijk, Peter. 2013. *In the World Interior of Capital: Towards a Philosophical Theory of Globalization*. Translated by Wieland Hoban. Cambridge: Polity.
- Steffen, Will, et al. 2011. "The Anthropocene: Conceptual and Historical Perspectives." *Philosophical Transactions of the Royal Society A* 369 (1938): 842–67.
- Thacker, Eugene. 2011. *In the Dust of This Planet: Horror of Philosophy*. Vol. 1. Alresford: Zero.
- Zielinski, Siegfried. 2008. *Deep Time of the Media: Toward an Archaeology of Hearing and Seeing by Technical Means*. Translated by Gloria Custance. Cambridge, MA: MIT Press.