



Appraising Asymmetries: Considerations on the Changing Relation between Human Existence and Planetary Nature—Guest Editors' Introduction

Jochem Zwier¹ · Vincent Blok² · Pieter Lemmens³

Accepted: 27 December 2018
© The Author(s) 2019

Naturam expellas furca, tamen usque recurret – Horace

Introduction

Human society is quickly approaching a planetary threshold, as evidenced by many environmental threats. Agriculture is one of the major forces behind such threats, as it engenders biodiversity loss, degradation of land and freshwater, as well as large-scale greenhouse gas emissions. Extrapolations on developments in the globalised industrial food system show how humanity will need three Earths by 2050. Such threats and alarming extrapolations increasingly incite awareness of the significance of the Earth system on which humanity depends. This calls for human stewardship of nature in order to ensure the sustainability of Earth as our life support system.

Over the years, many versions of such stewardship emerged in agricultural and environmental ethics, ranging from recognizing that both the Earth's ecosystems and human agents are 'stakeholders' of planet Earth (Waddock 2002), to fundamental reflections on a non-anthropocentric concept of human agency (cf. Plumwood 2002). Since the acknowledgement of the agency of things, it is no longer necessary that 'stakes' of nature are represented and served by human agency or agencies like Non-Governmental Organisations (NGO's), Civil Society Organisations (CSO's) or environmental organizations. Instead, the idea emerged that natural eco-systems and their inhabitants can represent themselves in a "parliament of things" (Latour 1993).

Special issue on: "Nature Strikes Back! Thinking the Asymmetry of the Human Relationship to Planet Earth".

✉ Jochem Zwier
Jochem.zwier@ru.nl

¹ Department of Philosophy and Science Studies, Institute for Science in Society, Faculty of Science, Radboud University, P.O. Box 9010, 6500 GL Nijmegen, The Netherlands

² Wageningen University and Research, Wageningen, The Netherlands

³ Radboud University, Nijmegen, The Netherlands

Against this general backdrop, the idea for the present special issue on the theme “Nature strikes back! Thinking the Asymmetry of the Human Relationship to Planet Earth” arose. For ourselves, it followed rather naturally from our collective efforts to engage in a philosophical questioning of technology in light of the Anthropocene. In the course of organising several conference-sessions and publishing a special issue on this topic in the journal *Techné: Research in Philosophy of Technology* (see Lemmens et al. 2017), we increasingly felt that a more elaborate engagement between philosophy of technology, environmental philosophy, and environmental ethics was in order. Of course, the concept of the Anthropocene evidently involves a conjunction of technology and nature, given how it is generally understood as the earthly epoch in which, as Jan Zalasiewicz and his colleagues put it, “natural and human forces [are] intertwined, so that the fate of the one determines the fate of the other” (Zalasiewicz et al. 2010: 2231). Although the meaning and implications of this intertwining were (and remain) central, we hitherto predominantly addressed them from the perspective of philosophy of technology. As such, despite not truly attempting, in the words of Horace, to “drive nature out with a pitchfork”, she kept coming back nonetheless.

This recurrence of nature accordingly prompted the dissemination of a call for papers on the theme of “nature strikes back”, which we consider to be one of the core experiences that informs contemporary environmental thought. Think of global warming, reduced biodiversity, the sixth mass extinction, increasingly frequent extreme weather events, draughts, floods, crop failure, declining permafrost, rapidly changing precipitation-patterns, etcetera *ad nauseam*—and it becomes clear how these are increasingly experienced as symptoms of some kind of natural retaliation, a sentiment that we also find expressed in James Lovelock’s “revenge of Gaia” (2006), Amitav Ghosh’s “The Great Derangement” (2016) or Isabelle Stengers’ “intrusion of Gaia” (2015: 137).

Importantly, the Anthropocene renders it impossible to interpret such ‘striking back’ in all too modernist terms of two radically opposing factions, as if human subjects and their technological accoutrements are now ‘struck back’ by a nature that is essentially different from them. Rather, in light of the osmosis between technology and nature witnessed in the Anthropocene (cf. Cera 2017), coming to terms with nature striking back cannot get around the Anthropocenic adagio that “nature is us” (Crutzen and Schwägerl 2011).

It was for this reason that the call for contributions included the task of “thinking the asymmetry of the human relationship to planet earth”. On the one hand, as the phrase “nature is us” concisely captures, this relationship has evidently become symmetric. This is to say that since what Earth System Scientists refer to as “The Great Acceleration”, industrialized humanity has become a force to be reckoned with on a planetary scale, a geo-force exerting a domineering influence on the dynamics of the Earth system in which it partakes. Defined as “the suite of interacting physical, chemical and biological global-scale cycles (...) that provide the life-support system for life at the surface of the planet”, the Earth System thereby expressly “includes humans, our societies, and our activities; thus, humans are not an outside force perturbing an otherwise natural system but rather an integral and interacting part of the Earth System itself” (Steffen et al. 2007: 615).

On the other hand however, the Earth sciences and aforementioned list of environmental symptoms unequivocally demonstrate that the symmetric relation between humanity and the natural world is anything but a harmonious convivality. Rather, the Earth System is deeply volatile and capricious, and while the relatively stable epoch of the Holocene allowed us to mostly ignore these harrowing characteristics, they become increasingly manifest as we accelerate down the road of the Anthropocene and see the Holocene disappear in the rear-view mirror. As Nigel Clark puts it, “our planet is capable of taking us by surprise. With or without the destabilizing surcharge of human activities, the conditions most of us take for granted could be taken away, quite suddenly, and with very little warning” (2011: xi). Pair this with recent philosophical developments inspired by deep geological time, the associated acknowledgement of the Earth as occupying a space far beyond human agency (cf. Brassier 2007; Meillassoux 2008; Morton 2013), and it becomes clear that while the relationship between humanity and the natural world may be characterized as symmetric, it also involves a fundamental and significant asymmetry. In fact, planet earth can be seen as the unstable condition for the emergence of human agency (Blok 2016), which some commentators even take to imply that the Earth itself is the condition for the emergence of the current environmental crisis (Blok 2015).

In short, although the relation between technological humanity and the natural world can be characterized by symmetry inasmuch as human geo-forces and other natural forces are intertwined, an appropriate characterization must also acknowledge the asymmetry at the heart of this relation. Because of this, the theme of asymmetry became central to this special issue. From the outset, we had the premonition that reflecting on this theme would lay bare its significant philosophical and ethical ramifications, specifically in terms of the challenges it poses to current conceptualizations of human stewardship, the ethics associated with agricultural and environmental practices, as well as environmental philosophy in general.

We are glad to report that this premonition proved to be on point, since we received multiple contributions that, each in their own distinctive and thought-provoking way, deal with differing philosophical aspects of the asymmetric relation between human existence and the natural world on a planetary scale. Accordingly, the range of topics is appropriately broad, with some authors discussing asymmetry with respect to specific philosophical oeuvres and concepts, while others investigate its normative and political dimensions in terms of both interpersonal relations and relations with the natural environment. The associated philosophical methods and approaches thereby include phenomenology, philosophy of technology, deep ecology, environmental ethics, the capability approach, as well as politico-juridical philosophy. This goes to show that the theme on which this special issue converges is multifaceted and touches on a grand variety of philosophical and ethical issues. It also implies that the fact that we here highlight the recurring theme of asymmetry should not be taken to mean that the papers that make up this issue can be limited to this theme—their sheer breadth quite clearly exceeds such limits. Be that as it may, in briefly introducing the contributions to this special issue, we think it worthwhile to show how the theme of asymmetry serves as a common denominator.

The Contributions

In the first contribution entitled *A Phenomenological Theory of Ecological Responsibility and Its Implications for Moral Agency in Climate Change*, Robert Scott (2018) sets out to develop what he calls an asymmetrical and phenomenological theory of ethical responsibility. The aim of this theory is to contribute to clarifying how moral agents share responsibility for both the causes and solutions for climate change. In focussing on how the concept of asymmetry appears in ethical theory, Scott discusses its meaning in Leopold's "land ethic" and Plato's idea of the good. By subsequently navigating the phenomenology of Husserl and Levinas while interpreting them towards an environmental ethic, he arrives at the argument that the "human condition is characterized by being subject to an asymmetrical demand for unlimited, diachronic ecological responsibility". In developing this argument, Scott shows how Levinas's neo-Cartesian distinction between human and nonhuman entities obstructs an engagement between his conceptualization of asymmetry qua infinite responsibility on the one hand, and environmental concerns like climate change on the other. To alleviate this tension in Levinas's work, Scott combines it with Husserl's genetic phenomenology, specifically by bringing the Husserlian notion of "horizons of indeterminacy" to bear on Levinas's thought. Scott thus works his way towards what he takes to be "a more complete phenomenological description" of the demand of unlimited, i.e. *asymmetrical*, collective responsibility, which is *ecological* inasmuch as it concerns both humans and nonhuman others. Scott's account of ecological responsibility not only helps to make sense of our shared responsibility for the historical, anthropogenic causes of global warming, but also sheds light on the asymmetric, infinite responsibility we have for mitigation and adaptation to climate change.

In the next paper entitled *Home, Ecological Self and Self-Realization: Understanding Asymmetrical Relationships through Arne Næss's Ecosophy*, Luca Varela (2018) confronts the philosophical and ecological anthropology of Arne Næss with the notion of asymmetry. He starts from Næss's elevation of relational existence over individual subjectivity, and traces this to Heidegger's concepts of "being-in-the-world", "home", "dwelling", and "building". In so doing, Varela elucidates Næss's prioritization of "environmental ontology and realism over environmental ethics (as expressed in Næss's 2005 "Self-realization: An ecological approach to being in the world"). He then goes on to show how Næss's idea of "ecological self" follows from this primacy of ontology, whilst also accentuating its Aristotelean orientation. This orientation is particularly important when considering how the ecological self is understood as the actualization of a human potential, which reaches much further than the "narrow ego" according to which we usually understand our own nature. Having clarified (and partly criticized) the notion of ecological self, Varela confronts it with the issue of asymmetry. By criticizing (amongst others) Warwick Fox's account of Næss, Varela refutes the idea that Næss would call for "the annihilation of ego-boundaries, in favour of a fluidization and mythic loss of the individual being", which is to say a complete symmetrisation. Varela thus maintains that Næss's ecological self can neither be

understood as a pre-given individual atomistic self, nor in terms of dissolving the self. The main argument for this is that Næss's ontology and anthropology concern individuals reaching their potential. And rather than a total loss of identity or fusing of all identities, self-realisation of this potential involves the affirmation of oneself in relation to others. As Varela puts it: "identification is a process of 'widening' of the self, rooted in relationality, requiring the recognition of one's own individuality". He concludes that in light of Næss's relational ontology on the one hand, and of resisting the interpretation of ecological self as self-loss on the other, "it becomes possible to develop an environmental ethics based on environmental ontology". Such an ontology, we might add, remains imbued with a fundamental asymmetry between self and others.

Jessica Imanaka's paper entitled *Laudato Si', Technologies of Power and Environmental Injustice: Toward an Eco-Politics Guided by Contemplation* (2018) mainly interprets the notion of asymmetry in terms of power. She underscores the relevance of Pope Francis' encyclical "Laudato Si'" for thinking the ecological crisis and the Anthropocene, specifically with regards to environmental injustice. First, Imanaka clarifies how Francis identifies the "technocratic paradigm" and associated anthropocentrism as root causes for our current ecological malaise. In developing the question what this critique can bring to environmental ethics, Imanaka shows how "Laudato Si' calls for a reversal in asymmetries of power in all dimensions of what Francis calls integral ecology". She thereby makes clear how technology does not itself adhere to a single, collective measure (literally sym-metry), but has both a light and shadow side. For Francis, the problem roots in the hegemony of the shadow side of technology, which is the side of power. Whether understood as power of human beings over others, or as power over nature, on both counts it involves the ruthless exploitation and associated injustice. The task is accordingly found in reversing technology to the light side of creativity, which is associated with contemplation inasmuch as "it brings forth new forms of beauty, which inspires contemplation". It is noteworthy how the theme of asymmetry here takes on a dual meaning, namely that of political inequality on the one hand, and of a multi-sided understanding of technology on the other. Imanaka subsequently takes *Laudato Si'* in two directions. On the one hand, she analyses how Francis' assessment of technology originates in the work of Romano Guardini (while also surpassing it in certain ways), and situates both Francis and Guardini in the broader context of critiques of technology (Heidegger, Ellul, Horkheimer and Adorno, etc.). On the other hand, she contrasts and compares the encyclical with contemporary philosophers like Stiegler, Sloterdijk, and Agamben. Imanaka draws a number of parallels between *Laudato Si'* and Stiegler's work on pharmacology. She shows how Stiegler's understanding of technics as a *pharmakon*, which is to say as both poison and cure, deeply resonates with Francis' thought. Further, she offers an interesting comparison between Francis' emphasis on contemplation and Sloterdijk's (developing) thought on contemplation, "autoplastic practices" and "autogenic training". Her core message is that Francis' suggestions, particularly when read alongside other contemporary thinkers, allow for imagining the construction of a new eco-politics and associated eco-technologies. Instead of advancing further asymmetrical

power relationships between people and the planet, such politics and technologies would engender contemplation to “stimulate greater care for others and the Earth”.

In *The Great Decoupling: Why Minimizing Humanity’s Dependence on the Environment May Not Be Cause for Celebration*, Kenneth Shockley (2018) argues that the Anthropocene not only calls upon us to manage our adaptation to a changing world, but also calls for management and consideration of our narratives, since these are essential to human flourishing. Although Shockley does not address the theme of asymmetry directly, it is clear that what he calls “The Great Decoupling” attests to a closely related if not similar experience. Shockley points out that the great challenge of the Anthropocene consists in “the decoupling of humanity from the ecological systems with which we are familiar”, due to the upheaval and large scale disruption of the global environment, which becomes concretely palpable in, for instance, novel weather patterns. In centralizing human flourishing, Shockley departs from the capability approach to show how flourishing always requires our ability to make connections, “both in terms of resources and opportunity, across the transition between our historical relationship to the environment and our uncertain future”. Accordingly, the challenge of the global environmental crisis not only pertains to uncertainty regarding material and institutional resources, but equally involves the decrease in familiarity with our environment, our “loss of mooring”. Shockley goes on to show how narratives as modes of self-understanding play a central role here, as they “blend our reliance on resources, our sense of place, and our familiar understanding”. To this end, he describes the case of Chief Plenty Coups (as documented by Jonathan Lear), whose people lost the background against which they could understand themselves and the world they inhabited with the destruction of the Buffalo: “after this nothing happened”. It may be clear how a similar “loss of mooring” is looming when ‘nature strikes back’. Shockley’s argument is that if flourishing is understood to require capabilities, this in turn requires both cognitive and material access, which in turn requires familiarity. Given how the Anthropocene and the asymmetric relation between human existence and the Earth place such familiarity in the balance, our efforts to flourish should all the more focus on maintaining continuity with our past and connectivity with either familiar environments or environments with which we strive to become familiar.

Whereas most of the contributions to this special issue are mainly conceptual and abstract, Stefan Knauß’s paper “Conceptualizing Human Stewardship in the Anthropocene: The Rights of Nature in Ecuador, New Zealand and India” (2018) has a more practical orientation. Knauß investigates three case studies that orbit around an approach to human stewardship called the “Rights to Nature”. Although he is supportive of the idea, purported by various philosophers, that our current asymmetrical relation with the Earth and associated ecological predicament call for a new global and ecological *ethos*, Knauß points out that such an *ethos* requires a collectively shared lifeworld, which is at odds with the fragmentation of the world we are currently living in. He therefore argues that the concept and language of “rights”, specifically “rights of nature” help overcome such fragmentation, given how they formulate a universal concept of planetary stewardship. Knauß analyses three cases in which such rights of nature take centre stage, namely Ecuador’s acceptance of a

new constitution that embraces the Rights of Nature, the Whanganui river in New Zealand which was recognized as a living being and granted full human rights, as well as the Gangotri and Yamunotri glaciers, which were declared living entities with rights. On the basis of this analysis, he argues that these cases offer a way to transcend European modernity in two ways that are relevant to a reconsideration and justification of stewardship for the Earth. On the one hand, the rights of nature approach justifies obligations towards nature beyond human interests (where the natural world solely appears as exploitable resource). On the other hand, it appeals to indigenous knowledge as an alternative sphere of argumentation, while also giving such knowledge a more universal appeal. The reason for this is that the language of rights creates what Knauß calls a “normative surplus”. This surplus means that rights attain their own normative sphere: although the acceptance of such rights involves many local, contextual specificities, e.g. indigenous knowledge and what Knauß calls “border thinking” in which legal and religious thought intermingle, once they are accepted, they come to exceed the specific local contexts to become universally, transculturally applicable. For Knauß, the relation between rights of nature and the Anthropocene or global environmental crisis is twofold. First, in scientifically presenting the planet as an integral “Earth System”, the Anthropocene offered a widely accepted non-religious understanding of the connection between man and nature, which made it possible to translate from science into law by referring to the concept of subjective rights, i.e. rights of nature. Second, the other way around, rights of nature are able “to make implicit normative claims of the Anthropocene explicit” as well operational, given how rights express our conviction that an entity needs to be protected. With respect to human stewardship, Knauß concludes that such stewardship “is both required and justified by the Rights of Nature, since the very grammar of stewardship implies an entity that we should take care of”. In terms of the recurring theme of asymmetry, it is worth stressing that Knauß’s reflections, although not directly engaging with the philosophical and conceptual issues of asymmetry, point out how our experience of ‘nature striking back’ can be confronted on a practical level. This may serve as an important countermovement to the philosophical reflex of finding solace in conceptual work. Without disavowing this reflex, it is worthwhile to remember that, in Knauß’s words: “the theories of planetary boundaries and environmental thresholds have to be translated into the normative sphere of law and morality in order to formulate guiding principles for political action”.

Appraising Asymmetry: A Research Agenda

One rather obvious conclusion to be drawn from the contributions that make up this special issue is that the theme of asymmetry lies at the heart of many issues pertaining to the Anthropocene, be they ontological, ethical, or politico-judicial. It is clear that much conceptual work remains to be done here. It is equally clear, however, that as we are drawing closer the verge of disaster, such conceptual work will need to be supplemented with a pragmatic translation. Without being in the least exhaustive,

we recognize several domains which offer opportunities for such conceptual as well as more practical efforts.

First, on a conceptual and philosophical level, it is worth noting how contemporary philosophers like Jean-Luc Nancy acknowledge the fundamental role of asymmetry—which he calls a ‘void’ or ‘nothing’—as possibility for the creation of the world (Nancy 2007). Similarly Frédéric Neyrat’s ‘ecology of separation’ is based on the recognition of an ‘unconstructable Earth’ that is asymmetrical vis-à-vis human power and agency in that it will ultimately resist human attempts to mastery and (re)construction (Neyrat 2018). Given how a number of contributions to this special issue either implicitly or explicitly invoked the necessity of recreating the world in one way or another, it may well be worth considering how Nancy’s perspective on the necessity of asymmetry urges to reconsider and reinvent the human relationship to nature in a way that does not simply wish to ‘fix the broken climate’ and do away with the experience of asymmetry, but rather seek to acknowledge the multiplicity of *different* worlds. More work is therefore needed to answer the question whether and how concepts like Nancy’s ‘multiplicity of worlds’, Federici’s ‘moral economies of commons’, Sloterdijk’s ‘differential cosmo-poiesis of localities’ and Hui’s ‘multiple cosmotechnics’ (Hui 2016, 2017) may help to conceptualize an asymmetric human relationship to planet earth, for instance as being-in-common with the different other. To what extent are these conceptualizations of difference and multiplicity able to do justice to the un-correlated materiality of the Earth as ontic-ontological condition of human’s being-in-the-world (Blok 2019)? In short, with regards to the conceptualization of the materiality of the Earth in relation to the multiplicity of worlds, much work remains to be done.

Secondly, we think there are important questions to be asked about the relation between ecology and economy. Such questions can be conceptual, for instance regarding the dominance of reciprocity-based economic exchanges in the current economic-ecological system, and the possibility of non-reciprocal economy-ecology (cf. Bataille 1991; Derrida 1991, 1992; Scott 2018). For example, does the experience of an asymmetric human relationship to planet earth enable a critique of the dominance of reciprocity-based ‘capitalist’ practices, where we can think of the double internality as double movement of how capitalism works through nature and how nature works through capitalism (Moore 2015)? At the same time, these questions have a more empirical component, particularly when viewed against the backdrop of ongoing economic responses to ‘nature striking back’ in the development of circular economies, bio-based economies etc. (cf. Zwier et al. 2015). In general terms, it seems to us that the question of economy and ecology stands in further need of scrutiny.

Finally, in the Anthropocene, classical dichotomies between nature and technology increasingly make way for a new type of beings: hybrids. The transitive status of hybrids as a ‘third’ ontological category constitutes a significant problem for both philosophy of technology and environmental philosophy, given how these traditionally focus on either ‘nature’ (natural entities) or ‘artefacts’ (technological entities) (Holy-Luczaj and Blok 2018). More work is needed to conceptualize hybrids and their moral significance in the Anthropocene, where attention can be specifically given to the opportunities they provide for establishing both the symmetry and the

asymmetry of techno-natural design, for instance with an eye to bio-mimetic ‘living machines’ (Blok and Gremmen 2016; Blok 2017).

Acknowledgements First of all, we would like to extend our gratitude to the *Journal of Agricultural and Environmental Ethics* and specifically to editor-in-chief Prof. Dr. Jeffrey Burckhardt for making this special issue possible. Secondly, we thank all the authors for their willingness and sustained effort in contributing to the realization of this issue. We are glad to have received such interesting and thought-provoking manuscripts, and consider it a privilege to be able to publish them here. Thirdly, we would like to thank Guido Ruivenkamp for helping shape the initial ideas that led to this special issue. Finally, we thank the many reviewers who have offered their time and efforts to critically evaluate the manuscripts and provide constructive feedback.

OpenAccess This article is distributed under the terms of the Creative Commons Attribution 4.0 International License (<http://creativecommons.org/licenses/by/4.0/>), which permits unrestricted use, distribution, and reproduction in any medium, provided you give appropriate credit to the original author(s) and the source, provide a link to the Creative Commons license, and indicate if changes were made.

References

- Bataille, G. (1991). *The accursed share* (R. Hurley, Trans.) (I ed.). New York: Zone Books.
- Blok, V. (2015). The human Glanze, the experience of environmental distress and the ‘Affordance’ of nature: Toward a phenomenology of the ecological crisis. *Journal of Agricultural and Environmental Ethics*, 28(5), 925–938. <https://doi.org/10.1007/s10806-015-9565-8>.
- Blok, V. (2016). Thinking the Earth after Heidegger: Critical Reflections on Meillassoux’s and Heidegger’s concept of the Earth. *Environmental Ethics*, 38(4), 441–462.
- Blok, V. (2017). Earthing technology: Towards an eco-centric concept of biomimetic technologies in the Anthropocene. *Techné: Research in Philosophy and Technology*, 21(2–3), 127–149. <https://doi.org/10.5840/techné201752363>.
- Blok, V. (2019). Nothing else matters: Towards an ontological concept of the materiality of the Earth in the Age of Global Warming. *Research in Phenomenology* (Forthcoming).
- Blok, V., & Gremmen, B. (2016). Ecological innovation: Biomimicry as a new way of thinking and acting ecologically. *Journal of Agricultural and Environmental Ethics*, 29(2), 203–2018.
- Brassier, R. (2007). *Nihil unbound: Enlightenment and extinction*. Basingstoke: Palgrave Macmillan.
- Cera, A. (2017). The technocene or technology as (Neo)environment. *Techné: Research in Philosophy and Technology*, 21(2–3), 243–281. <https://doi.org/10.5840/techné201710472>.
- Clark, N. (2011). *Inhuman nature: Sociable life on a dynamic planet*. Los Angeles: Sage.
- Crutzen, P., & Schwägerl, C. (2011). Living in the anthropocene: Toward a new global ethos. *Yale Environment 360*. Retrieved December 10, 2000, from http://e360.yale.edu/feature/living_in_the_Anthropocene_toward_a_new_global_ethos/2363/.
- Derrida, J. (1991). *The gift of death*. Chicago: University of Chicago Press.
- Derrida, J. (1992). *Given time: I. Counterfeit money*. Chicago: University of Chicago Press.
- Ghosh, A. (2016). *The great derangement*. Chicago: University of Chicago Press.
- Holy-Luczaj, M., & Blok, V. (2018). How to deal with hybrids in the Anthropocene? Towards a philosophy of technology and environmental philosophy 2.0. *Environmental Values*. <http://www.whpre ss.co.uk/EV/papers/1710-Holy-Luczaj.pdf>.
- Hui, Y. (2016). *The question concerning technology in China: An essay in cosmotechnics*. Fallmouth: Urbanomic Press.
- Hui, Y. (2017). On cosmotechnics: For a renewed relation between technology and nature in the anthropocene. *Techné: Research in Philosophy and Technology*, 21(2–3), 314–319. <https://doi.org/10.5840/techné201711876>.
- Imanaka, J. L. (2018). Laudato Si’, Technologies of power and environmental injustice: Toward an ecopolitics guided by contemplation. *Journal of Agricultural and Environmental Ethics*. <https://doi.org/10.1007/s10806-018-9732-9>.

- Knauß, S. (2018). Conceptualizing human stewardship in the anthropocene: The rights of nature in Ecuador, New Zealand and India. *Journal of Agricultural and Environmental Ethics*. <https://doi.org/10.1007/s10806-018-9731-x>.
- Latour, B. (1993). *We have never been modern*. Cambridge: Harvard UP.
- Lemmens, P., Blok, V., & Zwier, J. (2017). Toward a terrestrial turn in philosophy of technology: Guest editor's introduction. *Techné: Research in Philosophy and Technology*, 21(2–3), 114–126. <https://doi.org/10.5840/techné2017212/363>.
- Lovelock, J. (2006). *The revenge of Gaia: Earth's climate crisis and the fate of humanity*. New York: Basic Books.
- Meillassoux, Q. (2008). *After finitude: An essay on the necessity of contingency* (R. Brassier, Trans.). New York: Continuum.
- Moore, J. (2015). *Capitalism in the web of life*. London: Verso.
- Morton, T. (2013). *Hyperobjects: Philosophy and ecology after the end of the World*. Minneapolis and London: University of Minnesota Press.
- Nancy, J. L. (2007). *The creation of the world, or globalization*. New York: Suny Press.
- Neyrat, F. (2018). *The unconstructable earth: An ecology of separation* (D. S. Burk, Trans.). New York: Fordham University Press.
- Plumwood, V. (2002). *Environmental Culture: The ecological crisis of reason*. New York: Routledge.
- Scott, R. H. (2018). A phenomenological theory of ecological responsibility and its implications for moral agency in climate change. *Journal of Agricultural and Environmental Ethics*. <https://doi.org/10.1007/s10806-018-9713-z>.
- Shockley, K. (2018). The great decoupling: Why minimizing humanity's dependence on the environment may not be cause for celebration. *Journal of Agricultural and Environmental Ethics*. [https://doi.org/10.1007/s10806-018-9736-5\(0123456789\(\),-volV\)\(0123456789\(\),-volV](https://doi.org/10.1007/s10806-018-9736-5(0123456789(),-volV)(0123456789(),-volV).
- Steffen, W., Crutzen, P. J., & McNeill, J. R. (2007). The Anthropocene: Are humans now overwhelming the great forces of nature? *Ambio*, 36(8), 614–621.
- Stengers, I. (2015). Accepting the reality of Gaia: A fundamental shift? In C. Hamilton, C. Bonneuil, & F. Gemenne (Eds.), *The anthropocene and the global environmental crisis* (pp. 134–145). London: Routledge.
- Varela, L. (2018). Home, ecological self and self-realization: Understanding asymmetrical relationships through Arne Næss's Ecosophy. *Journal of Agricultural and Environmental Ethics*. <https://doi.org/10.1007/s10806-018-9715-x>.
- Waddock, S. (2002). We are all stakeholders of Gaia: A normative perspective on stakeholder thinking. *Organization and Environment*, 24(2), 192–212.
- Zalasiewicz, J., Williams, M., Steffen, W., & Crutzen, P. (2010). The new world of the Anthropocene. *Environmental Science and Technology*, 44, 2228–2231.
- Zwier, J., Blok, V., Lemmens, P., & Geerts, R. J. (2015). The ideal of a zero-waste humanity: philosophical reflections on the demand for a bio-based economy. *Journal of Agricultural and Environmental Ethics*, 28(2), 353–374.

Publisher's Note Springer Nature remains neutral with regard to jurisdictional claims in published maps and institutional affiliations.