City Research Online

City St George's, University of London

Citation: Banerjee, S. B. & Arjaliès, D-L. (2021). Celebrating the End of Enlightenment: Organization Theory in the Age of the Anthropocene and Gaia (and why Neither is the Solution to Our Ecological Crisis). Organization Theory, 2(4), 26317877211036714. doi: 10.1177/26317877211036714

This is the published version of the paper.

This version of the publication may differ from the final published version. To cite this item please consult the publisher's version.

Permanent repository link: https://openaccess.city.ac.uk/id/eprint/26559/

Link to published version: https://doi.org/10.1177/26317877211036714

Copyright and Reuse: Copyright and Moral Rights remain with the author(s) and/or copyright holders. Copies of full items can be used for personal research or study, educational, or not-for-profit purposes without prior permission or charge, unless otherwise indicated, provided that the authors, title and full bibliographic details are credited, a hyperlink and/or URL is given for the original metadata page and the content is not changed in any way. For full details of reuse please refer to City Research Online policy.

City Research Online: http://openaccess.city.ac.uk/ publications@citystgeorges.ac.uk

Check for updates

Theory Article

Organization Theory
Volume 2: 1–24
© The Author(s) 2021
Article reuse guidelines:
sagepub.com/journals-permissions
DOI: 10.1177/26317877211036714
journals.sagepub.com/home/ott
SAGE

Celebrating the End of Enlightenment: Organization Theory in the Age of the Anthropocene and Gaia (and why neither is the solution to our ecological crisis)

Subhabrata Bobby Banerjee[1] and Diane-Laure Arjaliès[2]

Abstract

This article aims to change the terms of the conversation about the ecological crisis. We argue that the human–nature dualism, a product of Enlightenment thought and primarily responsible for the ecological crisis, cannot be the basis for any meaningful solutions. We show how more recent Western imaginaries like the Anthropocene and Gaia proposed to overcome the separation of nature from culture are also based on exclusions that reflect Enlightenment rationality and legacies of colonialism. In sharp contrast, we show that Indigenous philosophies that preceded the Enlightenment by thousands of years have developed systems of knowledge based on a relational ontology that reflects profound connections between humans and nature. We demonstrate that such forms of knowledge have been systematically subjugated by Western scholarship based on arguments inspired by Enlightenment ideals of rationality and empiricism. A decolonial imagination will be able to generate new insights into understanding and addressing the ecological crisis. We therefore call for organization and management scholars to challenge the anthropomorphic biases and the economism that dominates our field through a respectful engagement with Indigenous worldviews.

Keywords

Anthropocene, decolonizing, ecological crisis, Enlightenment, Gaia, Indigenous, nature, organization theory, management theory

[1]Bayes Business School, City, University of London, London, UK
[2]Ivey Business School, Western University, London, ON, Canada

Corresponding author:
Diane-Laure Arjaliès, Ivey Business School, Western University, 1255 Western Road, London, ON N6A 3K7, Canada.
Emails: darjalies@ivey.ca, Bobby.Banerjee@city.ac.uk

Creative Commons Non Commercial CC BY-NC: This article is distributed under the terms of the Creative Commons Attribution-NonCommercial 4.0 License (https://creativecommons.org/licenses/by-nc/4.0/) which permits non-commercial use, reproduction and distribution of the work without further permission provided the original work is attributed as specified on the SAGE and Open Access pages (https://us.sagepub.com/en-us/nam/open-access-at-sage).

> Enlightenment is man's release from his self-incurred tutelage. Tutelage is man's inability to make use of his understanding without direction from another. Self-incurred is this tutelage when its cause lies not in lack of reason but in lack of resolution and courage to use it without direction from another. Sapere aude! 'Have courage to use your own reason!' – that is the motto of enlightenment.
>
> Immanuel Kant (1798)

> Protection and enhancing the world's forests is one of the most cost-effective forms of climate action: forests act as carbon sinks, absorbing roughly 2 billion tonnes of carbon dioxide each year. Sustainable forest management can build resilience and help mitigate and adapt to climate change. Forest-based climate change mitigation and adaptation actions, if fully implemented, could reduce greenhouse gas emissions by around 15 gigatonnes of CO_2 a year by 2050, which could potentially be enough to limit warming to well below 2°C (the target set by the international community in 2015).
>
> United Nations (2019)

> English is so hierarchical. In Cree, we don't have animate-inanimate comparisons between things. Animals have souls that are equal to ours. Rocks have souls, trees have souls. Trees are 'who', not 'what'.
>
> Tomson Highway (2005)

Introduction

Organization theorists, at least of the European variety, appear to be enchanted with the Enlightenment and worry that its lessons might be forgotten. In a post-truth era of alternative facts democracy is under assault, and a reengagement with the treatises of thinkers like Descartes, Kant, Smith, Spinoza, Voltaire and Hume could help restore faith in institutions and organizations by recovering Enlightenment ideals of liberalism, rational debate and the pursuit of knowledge. But is there another narrative, one that is somewhat murkier and less celebratory? If, for Kant, the Enlightenment represents a moment where reason is used to serve humanity without subjecting itself to any authority, a critique of the tyranny of reason is necessary to define the boundary conditions that determine the legitimate use of reason – the Enlightenment thus is not just the age of reason but also the age of critique (Foucault, 1984). While the Enlightenment has enabled emancipation, human rights, democracy and freedom through its much-celebrated exercise of reason, it has also led to colonialism, imperialism, slavery and crimes against humanity, ironically through the same 'reasoning' (Dhawan, 2014). Enlightenment rationality is deeply embedded in the idea of Empire, whose mission involved political subjugation of those it sought to empower and civilize. There appears to be little awareness among Enlightenment thinkers that their much-celebrated use of reason created new forms of domination, even more insidious than coercive power because these forms of domination have been vindicated by reason itself (Adorno & Horkheimer, 1997). While European historical narratives celebrate the Enlightenment as a liberating and progressive force, histories of Indigenous peoples that have borne the brunt of the Enlightenment project tell different stories: of genocides, colonial domination, environmental destruction, disease, cultural devastation,and spiritual impoverishment (Dhawan, 2014; Goldberg, 1993).

Some ecologists have argued that Enlightenment ideals of progress and development, contingent on a political economy that privileges endless growth, have also led to the degradation of the natural environment (Merchant, 1980; Ophuls, 1997). The climate emergency facing humanity is a direct outcome of economic and political arrangements that view the natural world as a resource to be exploited only for economic gain while marginalizing alternate worldviews that regard humans as custodians of the planet (Büscher, Sullivan, Neves, Igoe, & Brockington, 2012). In this article, we argue that a fundamental shift is needed in the way humans relate to the planet if our species wants to survive what Earth scientists

call the *Anthropocene*, a new geological epoch where human activity is changing the functioning of the earth system (Crutzen, 2006; Steffen, Crutzen, & McNeill, 2007). These shifts involve questioning the epistemological and ontological assumptions of our dominant economic paradigm: for example, *rationalism* – the use of reason to gain knowledge; and *empiricism* – the idea that knowledge can only be generated by particular methodical ways of experiencing and observing the world. We argue that the universalization of a specific kind of rationality that defined human–nature relationships since the Enlightenment has had disastrous ecological consequences. In this article, we focus on a crucial absence in Enlightenment rationality that also dominates organization theories – our failure to recognize Earth as a living system, which we argue arises from the imposition of a false and debilitating dichotomy between humans and nature.

Our article attempts to address this lacuna – not as environmental problems like deforestation, carbon emissions, global heating, or melting glaciers, but as the fundamental nature of our relationships with the planet that sustains us and the way we theorize these relations in organization and management theory. In particular, we critically analyse the concept of the Anthropocene (Crutzen, 2006; Steffen et al., 2007) and the Gaia hypothesis, first developed by scientists James Lovelock and Lynn Margulis (Lovelock, 1972; Lovelock & Margulis, 1974). In Greek mythology, Gaia is Mother Earth, the ancestral mother of all life. The Gaia hypothesis proposes that Earth should be viewed as a living organism because it is a self-regulating complex system. While this might seem a radical and novel concept in Western philosophy, it is essential to realize that the notion of Earth as a living being, inseparable from human and non-human life, is central to Indigenous[1] philosophies and cosmologies that pre-date Greek mythology by many thousands of years (Te Ahukaramu, 2005). Indigenous meanings and ways of relating to Earth are in direct contrast to Enlightenment-influenced utilitarian assumptions about the natural world where nature is a resource to be exploited only for the benefit of humanity (Colchester, 2004; Mistry & Berardi, 2016).

This article discusses these profoundly different worldviews and knowledge systems and explores the possibilities of developing a more Earth-centric perspective in organization and management studies. Our goal is not to portray a romanticized account of Indigenous communities or question the progress resulting from the Enlightenment and its aftermath. We do not claim to speak on behalf of Indigenous communities, nor do we suggest that we borrow their knowledge. As some climate and conservation scientists have argued, engagement with Indigenous worldviews should be pursued respectfully and not by selective and instrumental use of their knowledge (Colchester, 2004; Ford et al., 2016; Mistry & Berardi, 2016). While some researchers in fields like earth science, anthropology, geography, sociology, among others, have engaged with Indigenous worldviews, organization and management scholars, for the most part, remain unconvinced about the importance or relevance of such alternate perspectives (Hamann, et al., 2020; Pio & Waddock, 2020; Seremani & Clegg, 2016). Our objective is to examine the implications of this absence, its consequences, and the modalities through which Indigenous views could be understood without being appropriated or exoticized. When four out of nine planetary boundaries have already been exceeded[2] (Steffen et al., 2015), such questioning is essential for the future of our discipline and the survival of the planet and its inhabitants.

We argue that responding to the climate emergency does not require more evidence or data – what is needed is urgent collective action based on a different imaginary. The current ecological crisis offers an opportunity to rethink relationships between humans and the Earth to make such relationships less extractive and more regenerative. The same applies to the theories we use to understand organizations and the natural environment. We believe organization and management scholars must question the assumptions on which our theories and

practices are based and confront the colonial legacies that have dominated relationships between humans and nature.

The article is organized as follows. We first provide a historical account of human–nature relationships by introducing and critically analysing the concept of the Anthropocene, an era in which human beings and Earth systems have become forces of the same geological magnitude. The Anthropocene has become the dominant framework for understanding relationships between humans and the Earth. We elaborate on the connections between capitalism and the ecological crisis and show how particular notions about human–nature relationships have dominated modern forms of organizing economies and societies. We argue that by excluding nature and nonhumans and conceptualizing the planet as simply a resource to be exploited rather than relating to it as a living being that demands respect and care, theories of organization have contributed to the current environmental catastrophe. We then present a decolonial critique of the Anthropocene and argue that, like the Enlightenment, its narratives are Eurocentric and obscure colonial histories. Next, we introduce the Gaia hypothesis and discuss how its central assumption of Earth as a living system could help address the limitations of the Anthropocene. We argue, however, that, like the Anthropocene, the Gaia hypothesis suffers from a similar colonial rationality that limits its ability to address the ecological crisis. Elaborating on the limitations of both the Anthropocene and the Gaia hypothesis, we discuss alternate views of the human–nature relationship, particularly Indigenous philosophies that are not predicated on a separation of humans from nature and examine how these worldviews conflict with the dominant economic paradigm. We conclude by discussing the implications of our critique for organization studies and develop an agenda for future research.

Enter the Anthropocene

Earth scientists have proposed that in geological terms the planet has entered a new epoch called the Anthropocene. Humans have displaced nature to become a dominant geological force on Earth (Crutzen, 2016; Ruddiman, Ellis, Kaplan, & Fuller, 2015; Steffen, Grinevald, Crutzen, & McNeill, 2011). A term from the natural sciences, first popularized by the atmospheric chemist Paul Crutzen, the Anthropocene rapidly gained currency across the humanities and social sciences, including sociology, human geography, anthropology, philosophy, literary studies, economics, political science, psychology, history, linguistics, legal studies and cultural studies.

The Anthropocene follows the Holocene, an epoch that began 11,700 years ago during the last glacial retreat and which was characterized by a relatively stable and warm climate, providing ideal conditions for the invention of agriculture. However, there is some disagreement among scientists about when the Anthropocene began. The Early Anthropocene hypothesis dates the period to about 8,000 years ago, when farming and agriculture became widespread (Ruddiman, 2003). Others claim that the year 1800, when the Industrial Revolution was at its peak, marks the beginning of the Anthropocene (Steffen et al., 2011). Another proposed starting date, based on the growing concentrations of carbon dioxide and methane found in air trapped in polar ice, is the latter part of the 18th century, in particular 1784, coinciding with James Watt's steam engine design (Crutzen, 2016). The year 1950 is also proposed as a starting point as that was the beginning of the Great Acceleration post-World War II when fossil fuel-driven economic expansion caused dramatic changes in Earth systems marking the transition from the Earth's natural geological period to a human–dominated era (Steffen et al., 2007). And the Anthropocene Working Group[3] identified yet another date – 1945 – as the beginning of the Anthropocene as this was the year in which the consequences of human activity permanently left its mark on the geological strata through radiation arising from nuclear fallout, a phenomenon never witnessed in previous epochs.

Why this scientific quibbling over the actual starting date of the Anthropocene? And why so

much intellectual effort to manufacture consensus about the end of the 18th century as the beginning of the Anthropocene? While the Anthropocene epoch represents a fundamental change in human–nature relationships, dating its origin is not politically neutral. If we accept the Early Anthropocene hypothesis, global environmental change becomes normalized, whereas attributing the beginning of the epoch to the Industrial Revolution implies some level of historical responsibility for carbon emissions to industrialized countries (Chakrabarty, 2018; Lewis & Maslin, 2015a). Perhaps it is no coincidence that the history of the Anthropocene mirrors the history of modernity, both written from the perspective of the Enlightenment. As Mikhail (2016) points out, the geological time scale that periodizes the Earth's geological history was also an Enlightenment invention. The transformation from pre-modern to modern, very much an Enlightenment narrative, is also the Anthropocene story – so much so that to the catalogue of Enlightenment notions of progress, capitalism, democracy, freedom and human rights we can add species extinction, greenhouse gas emissions, climate change, pollution, soil erosion and melting ice caps (Mikhail, 2016). Some scholars have proposed terms like 'Capitalocene' (Parenti & Moore, 2016), 'Ecocene' (Norgaard, 2013), 'Technocene' (Hornborg, 2015) or 'Plutocene' (Glikson, 2017) as substitutes to better reflect the political economy of the Anthropocene.

One of the many challenges in understanding the Anthropocene is to reconcile two immensely different scales of time (Bansal, Kim, & Wood, 2018) – the time of Earth history, which spreads over hundreds of millions of years and the 500 years or so of the history of capitalism, which requires both 'human-centered thinking and planet-centered thinking' (Chakrabarty, 2018, p. 6). The Anthropocene can accordingly be understood as two separate but connected phenomena – a 'biophysical Anthropocene' that reflects changes in the Earth's physical properties and a 'socio-economic Anthropocene' (Angus, 2016) that is the outcome of centuries of a capitalist political economy.[4] Thus, it is essential to realize that the Anthropocene emerges within capitalism: if, as Marx demonstrated, alienation of labour from the means of production was a hallmark of modernity, then alienation of nature from humanity marks the Anthropocene. The mastery of nature, a critical Enlightenment narrative, fulfils its destiny in the Anthropocene, where humans are now the most potent force that shapes nature. But *homo economicus*, who is primarily responsible for the environmental devastation of the planet, is also *homo politicus*, a political actor seeking to collectively organize in order to promote particular interests. The Anthropocene is the outcome of a political process which sustains a political economy that privileges wealth creation over ecological welfare (Ergene, Banerjee, & Hoffman, 2020). Like the Enlightenment, the Anthropocene is a political project and should be understood as a global political phenomenon (Biermann, 2014).

But what constitutes global politics in the Anthropocene? The Anthropocene narrative constructs a singular universal collective humanity that elides deep inequalities in society and deflects attention from understanding how such inequalities are generated and intensified (Bauer & Bhan, 2018). The wealthiest 10% of the world's population is responsible for 52% of cumulative carbon emissions, while the poorest 50% contribute to just 7% of global emissions (Oxfam, 2020). An uncritical acceptance of humanity's 'natural' phenomenon as a geophysical force may preclude possibilities of transforming the conditions of our existence through a more critical engagement and analysis of culture, power and inequalities (Malm & Hornborg, 2014). The Anthropocene narrative has been unable to address the inequalities of climate change. Perhaps in this context it would be more productive if we fundamentally understood the social and political economy that constitutes the Anthropocene and explore possibilities of reversing its self-destructive path.

A starting point would be to examine the paradox at play in the very idea of the Anthropocene. Earth systems scientists have recognized that

human activities drive changes in Earth systems. Consequently, the dichotomy between humans and nature, which is the epistemological and ontological basis of Western science, is no longer tenable (Oldfield et al., 2014). Yet virtually all knowledge produced in Western scientific canons about human–nature relationships is based on a dualism between humans and nature, which raises questions about the appropriateness of the concept of the Anthropocene in addressing the range of environmental problems facing the planet. And despite the recognition by some Earth systems scientists of the breakdown of the human–nature dichotomy, there is hardly any engagement with what this means for understanding place-based human and nonhuman relationships and its implications for a more radical and progressive politics (Bauer & Bhan, 2018; Mikhail, 2016). Critiques of the human–nature dichotomy tend to relapse into the same dualism in describing ecological systems – Chakrabarty's (2018) distinction between human-centred thinking and planet-centred thinking is a case in point – and the reification of nature/culture and human/nature has yet to be dismantled in our scientific canons (Sayre, 2012).

The Western scientific method – or systematic observation and experimentation, use of inductive and deductive reasoning, and the formation and testing of hypotheses and theories – a crucial means of knowledge production for the Enlightenment project, struggles to understand human–nature relations in the Anthropocene era (Hoffman & Jennings, 2021). Enlightenment rationalism and empiricism also created 'scientific racism' consolidated by a power and knowledge system used to justify colonialism and subjugate other knowledges (Goldberg, 1993). In the Enlightenment, humans (and by humans, most Enlightenment thinkers of the 18th and 19th centuries meant white male Europeans[5]) were the centre of history. In the Enlightenment Anthropocene, humans are the centre of geological and atmospheric forces as well but without an appreciation of the inequalities in the use of the atmosphere and natural resources by different groups of humans or the racial basis of these inequalities.

Whether in the natural sciences, social sciences, or organization studies, the dominant narratives of the history of the Anthropocene reflect Eurocentric histories that make invisible alternate histories, thus mirroring the same omissions of Enlightenment thinking. In announcing the Anthropocene as a universal project, triumphal accounts of the mastery of nature and wealth creation through resource extraction or cautionary tales of ecological degradation ignore histories of colonialism that made the Industrial Revolution and other markers of the Anthropocene possible. Histories of slavery, geographies of race and racism, genocide and subjugation of Indigenous knowledge, are all erased in constructing a universal humanity that must now confront the problem of planetary destruction mainly created by the population in countries of the global North. The Anthropocene is ironically portrayed as postracial and postcolonial in mainstream scientific accounts, even those that acknowledge resource access and consumption inequalities. But what if we mark the colonial era as an alternate date for the beginning of the Anthropocene? What role have colonial histories played in the creation of the Anthropocene? The Anthropocene has also emerged from the political, economic, cultural, ecological, social and racialized effects of colonial domination, as we argue in the next section.

Decolonizing the Anthropocene

Somewhat surprisingly, the claim that colonialism brought about the Anthropocene era was made by natural scientists. Lewis and Maslin (2015b) argue that 1610 marked the beginning of the Anthropocene based on a significant dip in atmospheric CO_2 levels during that time. The implication is that colonialism and the rise of global trade after the European invasion of the Americas resulted in human activity that changed the functioning of the Earth system. The decline in CO_2 levels resulted from the genocide of more

than 50 million Indigenous people in the Americas, leading to a dramatic drop in agriculture and the consequent regeneration of forests and grasslands. According to Lewis and Maslin (2015b, p. 174), European colonization of the Americas – the 'collision of Old and New Worlds'– is a marker of the Anthropocene epoch and a prelude to the Industrial Revolution. However, this assertion has been strongly refuted by some scholars who claim that the dip in CO_2 levels can be explained by 'natural variability' and that attributing the beginning of the Anthropocene era and industrialization to the colonization of South America was 'mere fancy' because other events like enclosure legislation, technology and the 'rise of the British merchant class' made industrialization possible (Hamilton, 2015, p. 104). But in these rebuttals there is, of course, no acknowledgement of how the transatlantic slave trade and colonial looting contributed to the 'rise of the British merchant class'.

While there is disagreement about the periodization of the Anthropocene, there appears to be some consensus among both natural and social scientists that the concept is a 'major shift in the way that we see the world' and that a more 'fluid and broader use' of the Anthropocene concept is needed rather than being fixated on its origins (Maslin & Lewis, 2015, p. 111). This, of course, begs the question of who the 'we' is in this paradigm shift: many non-European societies, particularly Indigenous peoples, had understood and embraced the concept of Earth as a living system where humans and nonhumans are inextricably linked thousands of years ago before the 'major shift' of the Anthropocene era (Beckford, Jacobs, Williams, & Nahdee, 2010; McGregor, 2004). Yet this knowledge has been systematically delegitimized by the colonial project that justified land appropriation as part of the civilizing mission designed to eliminate Indigenous societies through assimilation, legal domination and even genocide (Bell, 2016). If knowledge and power are indeed one, and 'populations are subjugated to the production of truth through power' (Foucault, 1980, p. 93), then Indigenous knowledge is subjugated knowledge: at best, these knowledge systems remain invisible and, at worst, systematically delegitimized by colonial forms of power (Mignolo & Walsh, 2018). Western ways of knowing as 'truth' delegitimized other epistemic practices, thus normalizing colonialism as a form of social relations (Mbembe, 2016). Therefore, the 'we' of the Anthropocene makes invisible the populations it subjugates while legitimizing racial inequalities in its claim to universalism (Yusoff, 2018). This is precisely why the Anthropocene concept needs to be decolonized by explicitly linking its emergence with the colonial project and problematizing its notions of 'human nature' – if the Anthropocene and its associated problems have their origins in colonialism then the prescribed solutions may also produce the disempowering social, economic and ecological consequences of colonialism (Davis & Todd, 2017).

The debates that are being played out in scientific journals reflect yet another universalizing discourse of the Anthropocene that makes invisible its Western basis. Although colonialism is acknowledged, the focus quickly moves on to debates over 'geological time', 'stratigraphic evidence' and 'transoceanic movement of species' erasing once again histories of colonialism. The genocide among the Aztec, Mayan and Inca societies where more than 65 million people were exterminated in less than 50 years (Quijano, 2007) is referred to as 'depopulation in the Americas following European colonization' (Anthropocene Working Group, 2015, p. 119), or 'arrival of Europeans in the Americas', or 'social concerns' that highlight 'unequal power relationships between different groups of people' (Lewis & Maslin, 2015b, p. 177). As Simpson (2020) argues, the philosophical and intellectual traditions that preceded the Anthropocene were rooted in colonial thought that measured human progress and development through a series of stages, beginning from primitive hunter-gatherer societies to advanced modernity. The Western developmental path toward modernity and progress became a universal imperative to be managed by the colonial project, which in itself was very much a product of the Enlightenment.

The Anthropocene follows a similar temporal narrative of progressive stages beginning from technological developments in Europe that spread to the rest of the world. This 'advancing humanity' narrative created a new geological stage where the capability of human activity to modify the Earth system becomes increasingly pronounced (Simpson, 2020, p. 64). Once this aspect of human progress is acknowledged, (Western) scientific knowledge would once again come to the rescue by developing new technologies that would continue humanity's mastery of 'nature' but in a more 'sustainable' way. This reaffirmation of universality in the Anthropocene reflects an implicit alignment with the colonial era ideology of capitalism based on extraction and accumulation through dispossession (Davis & Todd, 2017). Geological time of the Anthropocene is not politically or racially neutral – narratives of the Colonial Man to Anthropocene Man represent a privileged subjective space where 'coloniality and anti-Blackness are materially inscribed into the Anthropocene' (Yusoff, 2018, p. 41). Alternative social imaginaries are therefore needed to re-envision human–nature relationships that 'simultaneously allows us to remain critical of what is (the present) and imaginative about what might be (the future)' (Johnsen, Nelund, Olaison, & Meier Sørensen, 2017, p. 2). The philosophy of Gaia that conceptualizes Earth as a self-regulating living organism where everything is connected to everything else may offer an enabling structure for the organization of society that can address the challenges of the Anthropocene, as we discuss in the next section.

Exit the Anthropocene, Enter Gaia

If the Anthropocene has captured the popular imagination in recent years, Gaia has a much longer history with a significantly larger following among environmentalists. A Google search with the keyword 'Gaia' resulted in more than 164 million hits (the keyword 'Anthropocene', in contrast, had a paltry 5.7 million hits)[6]. Gaia has become a quasi-religion for many environmentalists, 'a deity even atheists can believe in' (Humphries, 2020). First formulated in the 1970s and subsequently developed over the next few decades, the Gaia hypothesis proposed that all organisms on Earth are interconnected and part of a single and self-regulating complex system that sustains the conditions for life on the planet (Lovelock, 1972; Lovelock & Margulis, 1974). Gaia theory explained how interactions between the biosphere and its life forms contributed to the stability of global surface temperature, ocean salinity and oxygen in the atmosphere to maintain a relatively stable state that was conducive to a habitable planet despite external changes in the environment that could be harmful to the optimal conditions for life. Stabilization was achieved through feedback loops involving all living organisms.

The theory was met with hostility among the scientific community, and Gaia was dismissed as a new-age hippie philosophy without scientific merit. Critics argued that the theory was a false teleological explanation for natural phenomena (Doolitle, 1981); that regulatory feedback loops could not occur in evolutionary mechanisms through natural selection[7] (Dawkins, 1982); and that Gaia was a 'metaphor, not a mechanism'[8] because it did not explain the actual means by which self-regulating stability was achieved (Gould, 1988). Lovelock defended his position by arguing that the Gaia theory of planetary self-regulation did not involve foresight or planning by living organisms, and that it was impossible to prove cause-and-effect relationships in complex, non-linear systems. However, Lovelock and other advocates of Gaia continued to search for scientific evidence that demonstrated self-regulation processes, notably through the lens of systems theory that conceptualizes the Earth as an interconnected web of natural and human systems (Rodrigue & Romi, 2021).

Despite these criticisms, Latour (2017a) claims that Lovelock's Gaia hypothesis is as revolutionary as Galileo's discovery of a heliocentric solar system. While Galileo demonstrated that the Earth was part of a planetary system that

included other planets orbiting around a star, the Gaia hypothesis states that, unlike other planets in the solar system, the Earth is not a dead planet – it is 'animated' and, 'to complete Galileo's Earth, which '*moves*', it was necessary to add Lovelock's Earth, which is '*moved*' (Latour, 2017a, p. 78). What does it mean to say the Earth is 'moved' and alive? Research on the critical zone – Earth's 'living skin' – shows that Earth is not just a giver of life but *is* living in a biological sense, sustained by complex physiological processes and the outcome of relationships between individual yet interdependent living and non-living beings on and under the ground. For instance, scientific studies of the symbiotic relationships between the soil, fungi and plants show that trees and plants communicate through their roots and vast underground networks of mycelium, not dissimilar to the functioning of the Internet (Gorzelak, Asay, Pickles, & Simard, 2015; Simard & Durall, 2004). 'Mother trees' use these networks by exchanging nutrients with both their 'baby trees' born from their seeds as well as with other neighbouring plants and trees that are in distress. This does not imply a unified, agentic and goal-driven system but simply that everything is connected to and interacts with everything else, or what Latour (2017b) calls 'a politics of living things'. Humans are, of course, part of the politics of living things as another actor in the network. Still, in Latour's formulation, where there is no difference in the ability of human or nonhuman actors to act and react, there is an ontological flattening that ignores hierarchies of power and disparities in agency.

According to Latour, the Gaia discovery should force humans to go back *Down to Earth* (Latour, 2018), the place of action being 'below and right now' (Latour, 2017a, p. 80). Criticisms of Lovelock's hypothesis, Latour argues, are based on a fundamental misunderstanding by scientists due to their assumption of a separation between nature and culture and their inability to overcome this division (Latour, 2017b). A scientific assessment of the merits and weaknesses of Gaia's theory is beyond the scope of this article. However, the trenchant dismissal of Gaia as being 'unscientific' reveals the hegemony of the Western approach to natural sciences[9] as being the only form of knowledge with a 'true ontology'. This dominant ontology disallows and delegitimizes opposing more relational ontologies, including Indigenous ones.

The scientific discovery that Earth is alive is hardly a novel insight for Indigenous communities whose beliefs and practices have always reflected such an awareness (Beckford et al., 2010; Reed, Brunet, Longboat, & Natcher, 2020). This observation brings us to a glaring omission in Latour's formulation of Gaia: the erasure of non-Western knowledge systems. This silencing is puzzling, especially given Latour's exchanges with Philippe Descola, whose body of work is based on anthropological research on Indigenous communities (Descola, 2013). While the collapse of the nature/human dualism marks a breakthrough for Western social science and forms the basis of a critique of the scientific method, there is no acknowledgement that such a dualism never existed in many Indigenous cultures, where humans were always seen as belonging to a more extensive network of living and non-living beings (Beckford et al., 2010). We discuss the implications of this exclusion in the next section.

Subjugated Knowledge: Decolonizing Gaia

The coloniality of power that erased Indigenous knowledge in Anthropocene discourses is also evident in Eurocentric constructions of Gaia. The Gaian dissolution of the false dichotomy between nature and humans may represent a revolution of Galilean proportions (Latour, 2017a) just as Descola's (2013) 'discovery' of multiple ontologies from his ethnographies of Amazonian tribes marks a significant ontological turn in anthropology. However, Indigenous knowledge is still either not recognized, or marginalized in these significant achievements of Western social science. Decolonial scholars have always been suspicious of cultural anthropology's essentialized concepts like 'connection to land' and 'harmony

with nature' because these beliefs and practices, while being distinctively different, are 'still represented and mobilized within colonial structures of knowledge production' (Cameron, De Leeuw, & Desbiens, 2014, p. 19).

Moving beyond such knowledge production, the terrain of Indigenous knowledge is politically contentious. As non-Indigenous scholars, we need to carefully traverse a path between respectfully honouring Indigenous traditions and cultures that are the basis of their expertise and being wary of the potential for appropriation and misrepresentation. We will elaborate on the complexities of conducting research *with* Indigenous communities – not *on* Indigenous communities – in the implications section. During the era of direct colonialism, Indigenous forms of knowledge were systematically delegitimized and denigrated by Enlightenment ideals that portrayed such knowledge as 'simple', 'primitive' or 'naïve' and belonging to an inferior 'stage of human progress' (Knudtson & Suzuki, 2006, p. 6). In sharp contrast, Western science was described as 'open, systematic, objective, rational and intelligent' (Beckford et al., 2010, p. 240).

The tensions between Indigenous and Western knowledge systems become apparent when modern science is used to understand traditional ecological knowledge. The anthropologist Wade Davis during his research on the ingredients of *ayahuasca*, a potent psychoactive brew used by Amazonian shamans in spiritual ceremonies that go back thousands of years, found that its particular hallucinogenic property arose from the combination of two botanically unrelated plants from a flora of over 80,000 species spread over the Amazon forests. Chemical analysis of the traditional brew showed how a particular combination of enzymes and alkaloids from different plants created its psychotropic properties. The Ingano tribe recognized seven different varieties of *ayahuasca*, all of which were classified as the same plant species in botanical science. When asked how they could establish the taxonomy of thousands of unrelated plant species and then know which plants to combine, the shamans responded by saying 'the plant teaches us' (Davis, 2014). On further questioning, the shamans explained that they took the plants in the night of a full moon, and each plant sang to them in a different key, which was the basis of their taxonomy.

It would be difficult for this knowledge of musical botany to pass muster in a doctoral programme in botanical sciences at Harvard or Oxford, despite its 'originality' (Castleden, Sylvestre, Martin, & McNally, 2015). The point is not whether the plants sing in a different key but that there is another sphere of knowledge with a deeper and more intimate way of knowing that is different from the knowledge produced in a laboratory. A laboratory analysis can identify the psychotropic properties of the plant, and magnetic resonance imaging can follow the dynamic pathways of neurotransmitters in the brain to highlight its hallucinogenic effects. Still, the canons of science can never accept that the plants 'taught' Indigenous people this knowledge. Or that such knowledge is 'valid' because it was transmitted across generations through stories, dances, songs and ceremonies. At best, the botanical knowledge of Indigenous communities is described as 'ethnobotany' deriving from 'local cultures' while Western science somehow escapes this ethnic categorization. A crucial step in decolonizing Gaia is understanding that knowledge is a system of different but coexisting belief systems. Engaging with Indigenous knowledge requires a shift in disciplinary ontologies and epistemologies (Hunt, 2014). If knowledge about the Amazonian forest is knowable only through European categories, then certain hierarchies are created through this process of knowing. Colonialism was in effect constituted by asymmetrical power/knowledge relations that established and sustained a position of positional superiority that privileged Western scholarship (Said, 1993). This fixing of difference operates from a privileged position creating dichotomies of advanced/backward, developed/undeveloped, modern/primitive, where authority and knowledge always remain with the advanced, the developed, and the modern.

Decolonizing Gaia thus requires acknowledging the erasures and silences of Indigenous knowledge. This epistemological closure is in fact an act of ontological violence that marginalizes Indigenous worldviews and the lived realities of colonial legacies (Sundberg, 2014). Colonial relations are a lived reality for Indigenous peoples worldwide, and attempts to fix their knowledge as 'ethnoknowledge' or 'traditional', frozen in some colonial encounters of the past, are practices of epistemic violence that they continue to resist (Banerjee, 2003). So while Latour's Gaia emerges from a critique of Western modernity and calls for an embrace of the nonmodern through the breakdown of the nature/human binary, there is hardly any acknowledgement of Indigenous thought either during the thousands of years before colonialism where such a dichotomy never existed or in more contemporary decolonial thinking that traces the links between colonialism and modernity (Mignolo & Walsh, 2018). Not only does Latour's treatment of Gaia silence similar Indigenous concepts – such as *Sila*, meaning lifeforce or environment or climate as 'a common organizing force' and which has been an organizing principle for Inuit peoples for thousands of years (Todd, 2016, p. 8) – it discards insights from contemporary Indigenous communities whose livelihoods reflect decolonial relations with nature and instead advances an agenda of re-Westernizing the discourse (Luisetti, 2017). To count as 'real' knowledge, the legitimacy of Indigenous expertise must be established using Western scientific modes of inquiry which delegitimizes Indigenous epistemologies and devalues Indigenous practices (Mistry & Berardi, 2016). If a different social imaginary is required to address the ecological crisis, then in our view non-Western epistemologies cannot be assessed based on Western canons but should be evaluated based on Indigenous epistemologies. Indigenization is not merely the replacement of a Western way of thinking with an Indigenous way but rather the coexistence and perhaps integration of the two knowledge systems in a way that allows mutual understanding and appreciation of both ways of life. In the following sections, we will discuss the challenges and opportunities of bridging the distinctive epistemological differences between Indigenous and Western knowledge systems in organization and management theories.

Implications for Organization and Management Theory

What are the implications of our analysis of the Anthropocene and Gaia for organization theory? Can our existing theories of organization and management help address the ecological crisis? The answer to the second question is more straightforward: a resounding no. As Ghoshal (2005, p. 76) argued, 'the pretense of knowledge' enables bad management theories to destroy good management practice. The implications of such a pretense of knowledge for planetary sustainability are dire: flawed organization and management theories make poor management practices even worse. It might sound harsh to dismiss the entirety of more than 30 years of organization and management research on sustainability as being inadequate to the task of addressing the ecological crisis, but that is precisely what we are asserting – because as long as our research remains constrained by making a business case for sustainability, the worse our ecological crisis gets (Ergene et al., 2020). A managerial and functional approach to sustainability, which is the fundamental basis of most research in organization and management studies, merely reinforces the economic and ecological limits of the political economy of global capitalism in the era of the Anthropocene. What is required is a shift in the logic of the dominant political economic system – not just to improve living conditions in the current system (Mignolo, 2007, p. 467). We discuss four avenues that may enable such a transformation: uncovering colonial biases in our theories, embracing a relational ontology, including and evaluating Indigenous knowledge according to Indigenous worldviews, and conceptualizing a different purpose of the firm.

Uncovering colonial biases

The Anthropocene concept is relatively new in the field of organization and management studies where scholars have explored the implications of the Anthropocene for institutional theory (Hoffman & Jennings, 2021), new modes of organizing (Kalonaityte, 2018), climate change (Gosling & Case, 2013) and accounting (Bebbington et al., 2020). A special issue of the journal *Organization* titled 'Organizing in the Anthropocene' edited by Wright, Nyberg, Rickards and Freund (2018) included articles on how the Anthropocene can challenge 'business as usual' solutions to sustainability and its potential to develop alternate ways of organizing society. But it is unclear how institutionalizing the Anthropocene (or Gaia for that matter) addresses the ecological crisis, apart from framing environmental and societal collapse in the vocabulary of institutional theory. There is also the danger that filling 'institutional voids' of the Anthropocene and Gaia can erase local social and economic arrangements that do not conform to Western liberal institutional logics and ontological assumptions and replace them with market-oriented institutions that exclude the very people from participating in decisions on which their survival is based (Bothello, Nason, & Schnyder, 2019).

Anthropocene and Gaia theories will not help solve the ecological crisis unless we uncover and address the colonial basis of knowledge production. The self-affirmation of Indigenous sovereignty is contingent on how Indigenous knowledge is 'included' and transmitted through dominant colonial structures of state and non-state institutions – including academia. Knowledge production of the non-Western 'Other' is often claimed to be authentic and original without recognizing that this knowledge is produced through the political economy of colonialism. The 'elsewhere' of the West is not just about geographical distance but is also assigned a temporality – a non-West that is 'not yet' modern, 'not yet civilized' and 'consigned to an imaginary waiting room of history' (Chakrabarty, 2008, p. 8). Cultural categories are ontologically created by classifying and selecting particular elements through a supposedly neutral method, but this 'taxonomic innocence' uncritically transposes subjective understanding into objective categories and concepts that pass for empirical reality (for example, the colonial assumptions that underlie the notion of 'institutional voids' where a lack of Western institutions means an absence of local social and economic structures). However, we caution against essentializing and exoticizing Indigenous knowledge. While an appreciation of context is crucial, there is a danger of essentializing context (Hamann et al., 2020). Recognition that the universalization of knowledge from the global North often involves a subjugation or undervaluation of Indigenous knowledge must be accompanied by a critical awareness of the dangers of romanticizing other forms of knowledge or rejecting any benefits of science-based knowledge based on a misplaced critique of colonialism. It is one thing to say that plants teach us; it is quite another to deny treatment of HIV/AIDS to your citizens because of colonial histories, as was the case with South Africa's former President Thabo Mbeki (Hamann et al., 2020).

Decolonizing our theories through the lens of Indigenous knowledge also carries the risk of recolonizing through an appropriation by market and state actors. Indigenous knowledge is local and place-based. It is also profoundly empirical, born out of thousands of years of observation. It is ethical because knowledge is not a commodity or a right: the privilege of receiving knowledge comes with a responsibility to preserve and share it across generations. There is a certain ethics of collaboration required when Indigenous knowledge is used to address the problems of the Anthropocene (Smith, 1999). Non-Indigenous scholars need to do their homework before learning from Indigenous knowledge, including unlearning the privilege of what Spivak (1999) calls 'sanctioned ignorance' that silences the very voices that one seeks to hear. If Gaia involves learning Indigenous ways of relating to the land and the

nonhuman, then decolonizing requires 'multi-epistemic literacy' (Kuokkanen, 2011) to enable respectful learning and a non-hierarchical dialogue between different epistemological traditions.

Embracing Indigenous relational ontologies: From exploitative to kinship relationships with the Earth

Earth science and organization and management theories are outcomes of modernity that reproduce the liberal humanism that has separated nature from social and cultural practices (Kalonaityte, 2018). The transformation of nature into the 'environment' has enabled the former to be managed and controlled by discourses of the latter. By being conceived as a separate entity, nature has thus been made more 'real' and instrumental to produce measurable outcomes for 'development' (Banerjee, 2003; Macnaghten & Urry, 1998). The mastery of nature and the consolidation of imperial power that were the bases of the Enlightenment's scientific developments also enabled the large-scale devastation of the environment resulting in the climate emergency we are currently facing. Human/nature relationships based on exploitative economic benefits, a core tenet of the colonial project, are inadequate to address humanity's ecological crisis.

Several organization and management scholars have attempted to explain the interactions between organizations and the natural world using the lens of stakeholder theory (see Driscoll & Starik, 2004; Haigh & Griffiths, 2009; Norton, 2007; Orts & Strudler, 2002; Phillips & Reichart, 2000; Starik, 1995; Waddock, 2011). Their arguments, both positive and normative, can be summarized as follows: (1) nature can be a stakeholder; (2) nature cannot be a stakeholder; (3) nature should be a stakeholder; (4) nature should not be a stakeholder; (5) nature should be *the* stakeholder. For some proponents, stakeholder theory cannot consider the natural environment as a stakeholder because nature is not human and thus cannot have a 'stake' in organizations. This, however, does not mean that organizations should ignore environmental issues but rather should consider them on other moral grounds because nature is vital for other human stakeholders (Phillips & Reichart, 2000). Those arguing for nature to be included as a stakeholder (even as a 'primordial' stakeholder) claim that such integration would be of value to both organizations and the natural environment because it would enable a more 'strategic' and 'holistic' approach to stakeholder management (Driscoll & Starik, 2004; Starik, 1995). The ontological status of nature or Earth has not received much attention in these debates. However, Waddock (2011) makes an interesting argument that specifically invokes nature through Gaia as a living entity who is not a stakeholder but as the 'ultimate focal entity' with everyone else – humans, nonhumans, future generations, ecosystems, organizations – as its stakeholders.

In integrating nature into stakeholder theory there appears to be little critical awareness of the theory's pitfalls, particularly how the hierarchical structures imposed by stakeholder theory to determine stakeholder salience cannot recognize the inseparability of humans and nature. Consequently, any strategy that emerges from stakeholder theory to 'manage' nature will always be deeply flawed. In a firm-centric stakeholder approach that includes nature as a stakeholder, managers have the authority to determine which stakeholders are important and deal with them accordingly, regardless of how vulnerable or marginalized those stakeholders may be (Banerjee, 2000). If Gaia is the focal entity, it logically follows that she must decide which of her stakeholders should be made extinct and which ones nourished, based presumably on the harm they cause to the planet. That decision does not bode well for the human species.

Collapsing the nature–culture dichotomy implies a relational ontology that reflects different realities and meanings of progress, development, or prosperity, such as the ones offered by

Indigenous worldviews. After nearly 140 years of negotiation, a Māori tribe obtained a court ruling in 2017 that bestowed legal rights to the Whanganui river, which meant it must be treated as a living entity. The Māori always considered the river to be their ancestor and were forced to go to court to claim 'ownership' of the river because of the New Zealand government's plan to privatize the water for power generating companies, thus transforming an 'ancestor' into private property (Van Meijl, 2015, p. 219). In the language of economic development, the river would become a resource which the logic of capital would 'develop' by building dams, constructing reservoirs, centralizing and controlling the water to be sold to hotels and their golf courses. The relational ontology of communities whose livelihoods depend on the river is profoundly different. Instead of seeing the river as a resource or object, they would say, 'I am the river, and the river is me,' which is a very different form of development. For the Māori the Whanganui river is not a stakeholder but an inseparable part of their being. Similarly, Canadian Indigenous communities are now engaging with investment managers for them to apply the Indigenous law of 'fiduciary duty', instead of Western legal requirements, to include obligations to the land, water, plants and living creatures, as well as to community members, all of whom are seen as beneficiaries (Borrows & Praud, 2020, p. 3).

There are profound differences, perhaps even deep incommensurability, in worldviews about human–nature relationships between Indigenous and Western scientific rationalities based on a nature–human dichotomy. While the Western production of knowledge about the Earth has been inextricably linked to its potential for creating wealth, Indigenous societies have always had profoundly intimate relationships with nature based on kinship rather than resource exploitation and extraction (Beckford et al., 2010). It is perhaps no coincidence that after more than 300 years of rampant exploitation of nature, Indigenous communities, who represent only 5% of the global population, are the stewards of 80% of the biodiversity of the planet.[10] So the question is, why is so much biodiversity concentrated on Indigenous lands? Biodiversity has not been protected through 'rational' decision-making, market systems, or organizational hierarchies, but instead through spiritual engagement, collective and reciprocal connections with animals, trees, rivers, the living and the non-living, as well as by an ethos of custodianship for unborn generations.

Indigenous connections between humans and nonhumans involve the ability to relate to and respect the natural world as a living being through a form of 'relational accounting' (Arjaliès, forthcoming). For instance, research shows that the ability of Indigenous communities to name plants in their language is directly linked to the survival of those plants (Darnell & Stephens, 2007). To 'value' nature is to have an intimate relationship with the natural environment, not as a resource to be exploited but as a member of the family of humankind. Perhaps, the plants do sing to those who want to listen, maybe the 'mycorrhizal networks' discovered by botanical science that spread nutrients through an underground system is the song that 'mother trees' sing to their 'baby trees' that are in distress, provided human beings want to embrace those forms of accountability relationships (Rodrigue & Romi, 2021).

Indigenous worldviews reflect a relational ontology, according to which human and nonhuman beings co-constitute the world (Ergene et al., 2020). This form of relational ontology, anchored in the past but kept alive through the elders' teachings, is also about securing a sustainable future. Earth is not perceived as inherited from our parents but instead preserved for our children (Beckford et al., 2010). For example, decision-making processes in some Indigenous communities require considering the impacts of decisions made in the present on the next seven generations (Jojola, 2013). Thus, human–nature relationships remain timeless and non-hierarchical and reflect natural ecological rhythms and cycles (Settee, 2011). Relational ontologies that underlie Indigenous philosophies of human–nature relationships are also sources of critique against extractive

projects where nature is framed as only a resource to be exploited (Reddekop, 2014). Indigenous relational ontologies differ significantly from relational economic sociology (Zelizer, 2012) that focuses on social relationships at the expense of nonhumans as well as previous and future generations (Arjaliès, forthcoming). They also differ from relational accounts described in sociomateriality or actor-network-theory approaches (Latour, 2005; Leonardi, 2013). Indigenous relational ontologies are fundamentally animated and spiritual, immersed in a life force that transcends time, humans and nonhumans. We believe such an engagement, where relations take precedence over 'things', can broaden our understanding of human–nonhuman relations that can create new possibilities of being in the world.

Including and evaluating Indigenous knowledge according to Indigenous worldviews

Over the last few decades, cultural anthropologists, geographers, architects and environmental scientists, among others, have shown increasing interest in understanding Indigenous forms of knowledge – commonly described as 'traditional ecological knowledge' (TEK) (Berkes, Colding, & Folke, 2000). Much of this interest is driven by the potential for Indigenous knowledge to address global problems of climate change, land management, conservation and habitat loss (Mistry & Berardi, 2016). Despite recent efforts by the scientific community to accommodate Indigenous worldviews, Indigenous forms of knowledge continue to be misunderstood, marginalized, or misappropriated and stolen (Cochran et al., 2008; Makondo & Thomas, 2018; Mistry & Berardi, 2016). Representations of Indigenous people as 'noble savages' living in harmony with nature or as repositories of ecological wisdom are both parts of the same colonial discourse that has always benefited the colonizers (Hamann et al., 2020). For example, patents and intellectual property rights on genetic resources such as seeds are newer forms of colonial domination. The knowledge of Indigenous communities is appropriated by pharmaceutical corporations, often without payment or compensation. Indigenous knowledge about the medicinal properties of plants is deemed to be 'traditional' and in the public domain and can be appropriated by pharmaceutical corporations and used to develop drugs that are protected by patents and trademarks (Banerjee, 2003). Intellectual property rights regimes are ill-equipped to serve Indigenous interests because knowledge is not 'owned' by individuals; instead, Indigenous communities see themselves as custodians of collective knowledge transmitted across generations in the form of stories, dances, songs, rituals and ceremonies. Indigenous knowledge is tied to a specific place that embodies a unique set of relationships. Relational values 'are not present in things but derivative of relationships and responsibilities to them' (Chan et al., 2016, p. 1462; Tadaki, Sinner, & Chan, 2017; cited in Berkes, 2017, p. 296).

The assumptions of ownership and property and their associated individualism are still today a fundamental pillar of many of our organization and management theories, especially functionalist ones (e.g. agency theory, transaction cost theory, the business case for sustainability, or resource-based view of the firm, among many others). Intellectual property rights on lifeforms continue colonial policies of land and natural resource appropriation based on European notions of property rights. The legal basis of 'owning' land as property is incommensurable with Indigenous notions based on relationships and interconnections between humans and nonhumans and the land. Since the Earth is alive, she cannot be owned by anyone (Potts, 1992). Indigenous laws are thus based on a particular vision of the ecological order that stands in direct contrast to Western legal systems. By establishing a false political authority through colonial violence, concepts such as property rights enabled the appropriation of land by colonial powers (Neu, 1999). Indigenous knowledge extracted

from communities that do not benefit from this knowledge or are even further marginalized by it is a form of colonial domination. How does Western social science serve Amazonian tribes that are facing ethnocide and dispossession because of neoliberal state policies that promote resource extraction on their lands? Indigenous knowledge and ways of relating to the land cannot be separated from Indigenous peoples' demands for autonomy and self-determination.

Embracing relational ontologies also implies that organization and management scholars broaden their perspective and shift their emphasis from theories to stories. Indigenous epistemologies offer possibilities to transcend the ontological limits of Western scholarship through stories, art, songs and dances that are 'culturally nuanced ways of knowing, produced within networks of relational meaning-making' (Hunt, 2014, p. 27). Storytelling and art as theory building can provide a richer picture of climate change by constructing deeper meanings of forests, rivers, rocks, mountains, fungi, plants and animals that also constitute and are constituted by the 'climate'. Insights from storytelling with its 'antenarrative' of sensemaking that merges past narratives with living stories can help rediscover the wisdom of place and reconfigure our relations with nature in more sustainable ways (Boje, 2011). However, it is crucial to understand that Indigenous ways of producing and sharing knowledge are not just rhetorical but metaphysical. Indigenous knowledge derives from a particular way of being in the world that is not distinct from experience (Te Ahukaramu, 2005). Just as decolonization is not a metaphor (Tuck & Yang, 2012), Indigenous worldviews should not be interpreted as merely a maieutic machine or a discursive practice (Baba, Sasaki, Vaara, 2020; Busco & Quattrone, 2018) but as ways of being arising from their own distinctive epistemologies and ontologies and should be embraced as such by organization and management scholars.

Conceptualizing the purpose of the firm differently

In a recent editorial for the *Academy of Management Review*, Alvarez, Zander, Barney and Afuah (2020) called for developing a theory of the firm for the 21st century, pointing to the many limitations of current economic theories of the firm that dominate the business disciplines. The dogma of economic theories requires firms to maximize shareholder value while 'managing' other stakeholders (presumably to ensure they do no harm to the firm or are harmed by the firm). According to Alvarez et al. (2020, p. 712) a complete integration of stakeholder interests requires a new managerial theory of the firm where a firm may exist because it is necessary to pursue an 'explicit societal good under the constraint of making a profit'. It is not clear how this managerial approach can enable firms to deliver societal good, especially if they are 'constrained' by the additional requirement of making a profit. Managerial practices of accommodating stakeholder interests are also governed by organizational and institutional discourses in the political economy and thus in any emerging managerial theory of the firm, making profits, far from being a constraint, still remains the norm. The implication is that a firm with a truly social purpose cannot have any profit constraint if it is to pursue an explicit societal good – thus, in Waddock's (2011) articulation of 'Gaia-centric economic thinking' there is no mention of either 'profit' or 'shareholders'.

Developing a managerial theory of the firm that is not constrained by profits is only possible if we conceptualize the firm's purpose differently. Emerging research on post-growth organizations and organizing in the Anthropocene has examined alternate organizations like cooperatives, urban gardens and social enterprises that prioritize ecological sustainability and wellbeing rather than economic growth or profitability (Banerjee, Jermier, Peredo, Perey, & Reichel, 2021; Wright et al., 2018). However, it is hard to imagine how a Shell or BP Chevron can embrace

'Gaia-centric economic thinking' without abandoning their fundamental profit-generating activity of extracting oil from the Earth. A decolonized Anthropocene and Gaia would also problematize the renewable energy revolution by questioning the impacts of the increased demand for minerals for renewable energy: the twelve-year-old child from the Democratic Republic of Congo who digs up cobalt for a living so we can drive our electric cars in our green growth world is more vulnerable to climate change and will probably die from it before we do. If anything, the Covid-19 crisis has demonstrated the global and local interdependencies between the natural and human systems and the need to recognize the limits of our development model focused on growth, short-termism and speed (Bansal, Grewatch, & Sharma, 2021). In short, a Gaia theory of the firm cannot be imagined in a political economy of extraction based on competition and private property rights. It may help envision another 'imagined future' (Beckert, 2021), but Gaian capitalism can never be another variety of capitalism if environmental justice and social justice are prioritized over profits. It is time for organizational scholars to demonstrate the care, the courage and the curiosity that is required to collectively imagine a more sustainable and inclusive alternative future (Gümüsay & Reinecke, 2021; Howard-Grenville, 2021). Acknowledging the continuing impact of colonialism on our theories and practices and opening the academic space to Indigenous worldviews are undoubtedly necessary steps towards this endeavour. We hope that this article will help more scholars to embark on this challenging yet necessary decolonizing journey.

Conclusion

Our attempt in this article was to engage in critical and reflexive theorizing to generate new insights into understanding the ecological crisis. We want to conclude our article by addressing the aspirations of reflexive theorizing posed by Cutcher, Hardy, Riach and Thomas (2020): 'What is the point of the paper? What do authors want to achieve? Who is the conversation for, and to what end?' Our response to these crucial questions focuses on two themes: resistance and alternatives – what we have to say no to and what we have to build. We do not need more research on making a business case for sustainability. Instead, we should collectively encourage more research on creating an ecological case for business (Ergene et al., 2020) – and that includes journal editors and reviewers who have a critical role in fostering such a shift. A relational ontology of the firm is only possible if we can imagine an alternative political economy where planetary capacities and human wellbeing, not economic growth, determine economic and social relations. These relations are based on imaginaries of distribution, regeneration, restoration and cooperation, not accumulation, extraction or competition (Banerjee et al., 2021). And while Indigenous worldviews may offer some insights, they must not be treated simply as a 'research context' to which Western theories can be applied (Hamann et al., 2020). Nor should we give such worldviews a Western veneer or subject them to a Western point of view. As such, describing the 'progressive legitimacy dynamics' (Baba et al., 2020) of Indigenous struggles, the 'ecological embeddedness' of an 'Indigenous manager' (Whiteman & Cooper, 2000), or the white masculinities inherent in 'sensemaking on the Amazon' (de Rond, Holeman, & Howard-Grenville, 2019, p. 1964), without an explicit analysis of ongoing colonial relations that underlie individual subjectivities or the silences that erase Indigenous sensemaking of place are not examples of decolonizing research practices.

Our aim here was not just to change the conversation about the ecological crisis, but to change the very terms of the conversation; to show that both the Anthropocene and Gaia are narratives based on exclusions that were created by Enlightenment rationality and colonial relations, in other words, to *politicize* the Anthropocene and Gaia. We also add an important caveat: while ongoing decolonizing efforts to displace Eurocentric discourses are to be welcomed, it is vital to be vigilant that decolonizing does not descend into

a recolonizing process where Indigenous knowledge is appropriated selectively or exoticized. Our analysis also points to the need for reforming the rational foundation of organization and management scholarship by challenging the anthropomorphic biases and the economism that dominates our field (Gasparin et al., 2020). The Anthropocene and Gaia call for different forms of reasoning and ways of making sense of the world to overcome the nature–culture dichotomy and reveal the complex interdependencies between human and Earth systems. In ecological terms the Enlightenment project has primarily failed our planet. Perhaps it is indeed time to celebrate the end of the Enlightenment and reveal the unsustainability of our organization and management theories. The moment has arrived when we should explore possibilities where we – not only as scholars and educators, but also as citizens, activists, community leaders, elders, parents, mentors, allies – can collectively imagine ourselves on different terms based on the radical interdependence of all living and non-living beings, to experience other place-based knowledge which can allow us to imagine and embrace a pluriverse of values and realities that can create more just and sustainable worlds. We believe that participating in creating such a pluriverse is ultimately more challenging and rewarding than being managers of its destruction.

Acknowledgements

We are grateful to Joep Cornelissen and Markus Hollerer for their guidance throughout the review process. We also thank Tima Bansal and Eero Vaara for their helpful comments and suggestions.

Declaration of Conflicting Interests

The author(s) declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

Funding

The author(s) received no financial support for the research, authorship, and/or publication of this article.

ORCID iD

Diane-Laure Arjaliès https://orcid.org/0000-0002-4070-9191

Notes

1. Given the diversity of Indigenous peoples, the United Nations has not adopted a definition of the term ‘Indigenous’. Instead, a more fruitful approach would be to identify rather than define Indigenous peoples, who practise ‘unique traditions’ while retaining ‘social, cultural, economic and political characteristics that are distinct from those of the dominant societies in which they live’. Indigenous is understood based on a number of aspects including ‘self-identification as Indigenous peoples at the individual level and accepted by the community as their member; historical continuity with pre-colonial and/or pre-settler societies; strong link to territories and surrounding natural resources; distinct social, economic or political systems; distinct language, culture and beliefs; form non-dominant groups of society; and resolve to maintain and reproduce their ancestral environments and systems as distinctive peoples and communities’ (www.un.org/esa/socdev/unpfii/documents/5session_factsheet1.pdf).
2. The planetary boundaries that have been exceeded are (1) atmospheric carbon dioxide concentration; (2) increase in radiative forcing since the start of Industrial Revolution; (3) extinction rate; (4) anthropogenic nitrogen removed from the atmosphere. The other boundaries are (5) anthropogenic phosphorus in the oceans; (6) saturation state of calcium carbonate in surface seawater; (7) land surface converted to cropland; (8) global human consumption of water; and (9) stratospheric ozone concentration.
3. The Anthropocene Working Group is an interdisciplinary research group dedicated to the study of the Anthropocene as a geological time unit. It was established in 2009 as part of the Subcommission on Quaternary Stratigraphy, a constituent body of the International Commission on Stratigraphy.
4. ‘Capitolocene’, however, may be an inaccurate descriptor of an epoch according to Angus (2016, p. 232) because the Anthropocene epoch will ‘continue long after capitalism is a distant memory’.

5. Racial hierarchies pervade Enlightenment philosophy. In his early work, Kant asserted that 'Native Americans are the lowest of the four races as they are completely inert, impassive and incapable of being educated.' He placed the 'Negroes' above them as 'they are capable of being trained to be slaves but are incapable of any other form of education'. For Kant, 'the white race possesses all motivating forces and talents in itself' and 'Native Americans and Negroes cannot govern themselves, (they) serve only as slaves' Kant (1775/1950; 1776/1978).
6. As of 25 June 2021.
7. Evolutionary biologists like Richard Dawkins are some of Gaia's harshest critics. Their argument can be stated as follows: 'Things cannot happen for the good of the group simply because they were for the good of the group. Plants do not produce carbon dioxide for the sake of the Earth. Either it was a by-product of their functions, or it must be of immediate benefit to the plants themselves. Any other interpretation is contrary to a Darwinian view of life' (Ruse, 2013).
8. Mechanism, of course, is itself a metaphor. As Abram (1991) argues, mechanical metaphors construct representations of living systems as machines without consideration of the agency of living beings.
9. Western science is only now gradually 'discovering' that the Earth is indeed alive and that Indigenous forms of knowledge are empirically accurate – see research on the Earth's critical zone (National Research Council, 2001).
10. www.unenvironment.org/zh-hans/node/477 (accessed 6 December 2020).

References

Abram, D. (1991). The mechanical and the organic: On the impact of metaphor in science. In S. Schneider & P. Boston (Eds.), *Scientists on Gaia*. Cambridge, MA: MIT Press.

Adorno, T. W., & Horkheimer, M. (1997). *Dialectic of enlightenment* (Vol. 15). London: Verso.

Alvarez, S. A., Zander, U., Barney, J. B., & Afuah, A. (2020). Developing a theory of the firm for the 21st century. *Academy of Management Review*, *45*, 711–716.

Angus, I. (2016). *Facing the Anthropocene: Fossil capitalism and the crisis of the earth system*. New York: NYU Press.

Anthropocene Working Group. (2015). Colonization of the Americas, 'Little Ice Age' climate, and bomb-produced carbon: Their role in defining the Anthropocene. *Anthropocene Review*, *2*(2), 117–127.

Arjaliès, D.-L. (forthcoming). What trees taught me about Covid-19: On relational accounting and other form of magic. *Accounting, Auditing & Accountability Journal*.

Baba, S., Sasaki, I., & Vaara, E. (2020). Increasing dispositional legitimacy: Progressive legitimation dynamics in a trajectory of settlements. *Academy of Management Journal*. https://doi.org/10.5465/amj.2017.0330

Banerjee, S. B. (2000). Whose land is it anyway? National interest, indigenous stakeholders, and colonial discourses: The case of the Jabiluka uranium mine. *Organization & Environment*, *13*(1), 3–38.

Banerjee, S. B. (2003). Who sustains whose development? Sustainable development and the reinvention of nature. *Organization Studies*, *24*, 143–180.

Banerjee, S. B., Jermier, J. M., Peredo, A. M., Perey, R., & Reichel, A. (2021). Theoretical perspectives on organizations and organizing in a post-growth era. *Organization*, *28*, 337–357.

Bansal, P., Grewatsch, S., & Sharma, G. (2021). How Covid-19 informs business sustainability research: It's time for a systems perspective. *Journal of Management Studies*, *58*(2), 602–606.

Bansal, P., Kim, A., & Wood, M. O. (2018). Hidden in plain sight: The importance of scale in organizations' attention to issues. *Academy of Management Review*, *43*, 217–241.

Bauer, A. M., & Bhan, M. (2018). *Climate without nature: A critical anthropology of the Anthropocene*. Cambridge: Cambridge University Press.

Bebbington, J., Österblom, H., Crona, B., Jouffray, J.-B., Larrinaga, C., Russell, S., & Scholtens, B. (2020). Accounting and accountability in the Anthropocene. *Accounting, Auditing & Accountability Journal*, *33*, 152–177.

Beckert, J. (2021). The Firm as an engine of imagination: Organizational prospection and the making of economic futures. *Organization Theory*, *2*(2), 26317877211005772.

Beckford, C. L., Jacobs, C., Williams, N., & Nahdee, R. (2010). Aboriginal environmental wisdom, stewardship, and sustainability: Lessons from

the Walpole Island First Nations, Ontario, Canada. *Journal of Environmental Education*, *41*(4), 239–248.

Bell, D. (2016). *Reordering the world: Essays on liberalism and empire*. Princeton, NJ: Princeton University Press.

Berkes, F. (2017). *Sacred ecology*. London: Routledge.

Berkes, F., Colding, J., & Folke, C. (2000). Rediscovery of traditional ecological knowledge as adaptive management. *Ecological Applications*, *10*, 1251–1262.

Biermann, F. (2014). The Anthropocene: A governance perspective. *Anthropocene Review*, *1*(1), 57–61.

Boje, D. M. (2011). *Storytelling and the future of organizations: An antenarrative handbook* (Vol. 11). London: Routledge.

Borrows, J., & Praud, S. (2020). *Teachings of sustainability, stewardship, & responsibility—Indigenous perspectives on obligation, wealth, trusts, & fiduciary duty*. Reconciliation & Responsible Investment Initiative.

Bothello, J., Nason, R. S., & Schnyder, G. (2019). Institutional voids and organization studies: Towards an epistemological rupture. *Organization Studies*, *40*, 1499–1512.

Büscher, B., Sullivan, S., Neves, K., Igoe, J., & Brockington, D. (2012). Towards a synthesized critique of neoliberal biodiversity conservation. *Capitalism Nature Socialism*, *23*(2), 4–30.

Busco, C., & Quattrone, P. (2018). In search of the 'perfect one': How accounting as a maieutic machine sustains inventions through generative 'in-tensions'. *Management Accounting Research*, *39*, 1–16.

Cameron, E., De Leeuw, S., & Desbiens, C. (2014). *Indigeneity and Ontology*, *21*(1), 19–26.

Castleden, H., Sylvestre, P., Martin, D., & McNally, M. (2015). 'I don't think that any peer review committee. . . would ever get what i currently do': How institutional metrics for success and merit risk perpetuating the (re) production of colonial relationships in community-based participatory research involving indigenous peoples in Canada. *International Indigenous Policy Journal*, *6*(4).

Chakrabarty, D. (2008). *Provincializing Europe: Postcolonial thought and historical difference*. Princeton, NJ: Princeton University Press.

Chakrabarty, D. (2018). Anthropocene time. *History and Theory*, *57*(1), 5–32.

Chan, K. M., Balvanera, P., Benessaiah, K., Chapman, M., Díaz, S., Gómez-Baggethun, E., Gould, R., Hannahs, N., Jax, K., & Klain, S. (2016). Opinion: Why protect nature? Rethinking values and the environment. *Proceedings of the National Academy of Sciences*, *113*, 1462–1465.

Cochran, P. A., Marshall, C. A., Garcia-Downing, C., Kendall, E., Cook, D., McCubbin, L., & Gover, R. M. S. (2008). Indigenous ways of knowing: Implications for participatory research and community. *American Journal of Public Health*, *98*, 22–27.

Colchester, M. (2004). Conservation policy and indigenous peoples. *Environmental Science & Policy*, *7*(3), 145–153.

Crutzen, P. J. (2006). The 'Anthropocene'. In T. Ehlers & T. Krafft (Eds.), *Earth system science in the Anthropocene* (pp. 13–18). New York: Springer.

Crutzen, P. J. (2016). Geology of mankind. In *Paul J. Crutzen: A pioneer on atmospheric chemistry and climate change in the Anthropocene* (pp. 211–215). New York: Springer.

Cutcher, L., Hardy, C., Riach, K., & Thomas, R. (2020). Reflections on reflexive theorizing: The need for a little more conversation. *Organization Theory*, *1*(3), 1–28.

Darnell, R., & Stephens, C. (2007). Species at risk, language at risk: Reflections on translation from the Walpole Island First Nation. *Algonquian Papers-Archive, 38*.

Davis, H., & Todd, Z. (2017). On the importance of a date, or, decolonizing the Anthropocene. *ACME: An International Journal for Critical Geographies*, *16*, 761–780.

Davis, W. (2014). *One river: Explorations and discoveries in the Amazon rain forest*. New York: Random House.

Dawkins, R. (1982). *The extended phenotype* (Vol. 8). Oxford: Oxford University Press.

de Rond, M., Holeman, I., & Howard-Grenville, J. (2019). Sensemaking from the body: An enactive ethnography of rowing the Amazon. *Academy of Management Journal*, *62*, 1961–1988.

Descola, P. (2013). *Beyond nature and culture*. Chicago: University of Chicago Press.

Dhawan, N. (2014). *Decolonizing enlightenment: Transnational justice, human rights and democracy in a postcolonial world*. Verlag Barbara Budrich.

Doolitle, W. F. (1981). Is nature really motherly? *Coevolution Quaterly*, *29*, 58–63.

Driscoll, C., & Starik, M. (2004). The primordial stakeholder: Advancing the conceptual consideration of stakeholder status for the natural environment. *Journal of Business Ethics*, *49*(1), 55–73.

Ergene, S., Banerjee, S. B., & Hoffman, A. (2020). (Un) Sustainability and organization studies: Towards a radical engagement. *Organization Studies*, https://doi-org.proxy1.lib.uwo.ca/10.1177/0170840620937892.

Ford, J. D., Cameron, L., Rubis, J., Maillet, M., Nakashima, D., Willox, A. C., & Pearce, T. (2016). Including indigenous knowledge and experience in IPCC assessment reports. *Nature Climate Change*, *6*, 349–353.

Foucault, M. (1980). *Power/knowledge: Selected interviews and other writings, 1972–1977*. New York: Pantheon.

Foucault, M. (1984). What is enlightenment? In Rabinow, P. (Ed.) *The Foucault reader* (pp. 32–50). New York: Penguin.

Gasparin, M., Brown, S. D., Green, W., Hugill, A., Lilley, S., Quinn, M., Schinckus, C., Williams, M., & Zalasiewicz, J. (2020). The business school in the Anthropocene: Parasite logic and pataphysical reasoning for a working earth. *Academy of Management Learning & Education*, *19*, 385–405.

Ghoshal, S. (2005). Bad management theories are destroying good management practices. *Academy of Management Learning & Education*, *4*(1), 75–91.

Glikson, A. Y. (2017). *The Plutocene: Blueprints for a post-anthropocene greenhouse earth* (Vol. 13). New York: Springer.

Goldberg, D. T. (1993). *Racist culture: Philosophy and the politics of meaning*. Chichester, UK: John Wiley.

Gorzelak, M. A., Asay, A. K., Pickles, B. J., & Simard, S. W. (2015). Inter-plant communication through mycorrhizal networks mediates complex adaptive behaviour in plant communities. *AoB Plants, 7*.

Gosling, J., & Case, P. (2013). Social dreaming and ecocentric ethics: Sources of non-rational insight in the face of climate change catastrophe. *Organization*, *20*, 705–721.

Gould, S. J. (1988). Kropotkin was no crackpot. *Natural History*, *97*(7), 12–21.

Gümüsay, A. A., & Reinecke, J. (2021). Researching for desirable futures: From real utopias to imagining alternatives. *Journal of Management Studies*. https://doi.org/10.1111/joms.12709

Haigh, N., & Griffiths, A. (2009). The natural environment as a primary stakeholder: The case of climate change. *Business Strategy and the Environment*, *18*(6), 347–359.

Hamann, R., Luiz, J., Ramaboa, K., Khan, F., Dhlamini, X., & Nilsson, W. (2020). Neither colony nor enclave: Calling for dialogical contextualism in management and organization studies. *Organization Theory*, *1*(1), 2631787719879705.

Hamilton, C. (2015). Getting the Anthropocene so wrong. *Anthropocene Review*, *2*(2), 102–107.

Highway, T. (2005). Why Cree is the funniest language. In D. H. Taylor (Ed.), *Me funny*. Vancouver: Douglas McIntyre.

Hoffman, A. J., & Jennings, P. D. (2021). Institutional-political scenarios for Anthropocene society. *Business & Society*, *60*(1), 57–94. First published online 12 December 2018.

Hornborg, A. (2015). The political ecology of the Technocene. In C. Hamilton, C. Bonneuil, & F. Gemenne (Eds.), *The Anthropocene and the global environmental crisis: Rethinking modernity in a new epoch* (pp. 177–183). London: Routledge.

Howard-Grenville, J. (2021). Caring, courage and curiosity: Reflections on our roles as scholars in organizing for a sustainable future. *Organization Theory*, *2*(1), 2631787721991143.

Humphries, J. (2020). God, male way for Gaia: A deity even atheists can believe in. *The Irish Times*. https://www.irishtimes.com/culture/god-make-way-for-gaia-a-deity-even-atheists-can-believe-in-1.4265949.

Hunt, S. (2014). Ontologies of indigeneity: The politics of embodying a concept. *Cultural Geographies*, *21*(1), 27–32.

Johnsen, C. G., Nelund, M., Olaison, L., & Meier Sørensen, B. (2017). Organizing for the post-growth economy. *Ephemera: Theory and Politics in Organization*, *17*(1), 1–21.

Jojola, T. (2013). Indigenous planning: Towards a seven generations model. *Reclaiming Indigenous Planning*, *70*, 457.

Kalonaityte, V. (2018). When rivers go to court: The Anthropocene in organization studies through the lens of Jacques Rancière. *Organization*, *25*, 517–532.

Kant, I. (1775/1950). On the different races of man. In E.W. Count (Ed.) *This is race*. New York: Henry Schuman.

Kant, I. (1776/1978). *Anthropology from a pragmatic point of view*. Translated by V.L. Dowdell. Carbondale, IL: Southern Illinois University Press.

Kant, I. (1798). *Essays and treatises on moral, political, and various philosophical subjects*. London: Gale Ecco.

Knudtson, P., & Suzuki, D. (2006). *Wisdom of the elders: Native and scientific ways of knowing about nature* (Rev. Ed). Vancouver, BC: Greystone Books.

Kuokkanen, R. (2011). *Reshaping the university: Responsibility, Indigenous epistemes, and the logic of the gift*. Vancouver: UBC Press.

Latour, B. (2005). *Reassembling the social: An introduction to actor-network-theory*. Oxford University Press.

Latour, B. (2017a). *Facing Gaia: Eight lectures on the new climatic regime*. Chichester, UK: John Wiley & Sons.

Latour, B. (2017b). Why Gaia is not a god of totality. *Theory, Culture & Society*, *34*(2–3), 61–81.

Latour, B. (2018). *Down to Earth: Politics in the new climatic regime*. Chichester, UK: John Wiley & Sons.

Leonardi, P. M. (2013). Theoretical foundations for the study of sociomateriality. *Information and Organization*, *23*(2), 59–76.

Lewis, S. L., & Maslin, M. A. (2015a). A transparent framework for defining the Anthropocene Epoch. *Anthropocene Review*, *2*(2), 128–146.

Lewis, S. L., & Maslin, M. A. (2015b). Defining the Anthropocene. *Nature*, *519*(7542), 171–180.

Lovelock, J. E. (1972). Gaia as seen through the atmosphere. *Atmospheric Environment*, *6*(8), 579–580.

Lovelock, J. E., & Margulis, L. (1974). Atmospheric homeostasis by and for the biosphere: The Gaia hypothesis. *Tellus*, *26*(1–2), 2–10.

Luisetti, F. (2017). Decolonizing Gaia. Or, why the savages shall fear Bruno Latour's political animism. *Azimuth*, *9*.

Macnaghten, P., & Urry, J. (1998). *Contested natures*. London: SAGE Publcations.

Makondo, C. C., & Thomas, D. S. (2018). Climate change adaptation: Linking indigenous knowledge with western science for effective adaptation. *Environmental Science & Policy*, *88*, 83–91.

Malm, A., & Hornborg, A. (2014). The geology of mankind? A critique of the Anthropocene narrative. *Anthropocene Review*, *1*(1), 62–69.

Maslin, M. A., & Lewis, S. L. (2015). Anthropocene: Earth system, geological, philosophical and political paradigm shifts. *Anthropocene Review*, *2*(2), 108–116.

Mbembe, A. (2016). Decolonizing the university: New directions. *Arts and Humanities in Higher Education*, *15*(1), 29–45.

McGregor, D. (2004). Coming full circle: Indigenous knowledge, environment, and our future. *American Indian Quarterly*, *28*, 385–410.

Merchant, C. (1980). *The death of nature: Women, ecology and the scientific revolution*. San Francisco, CA: Harper & Row.

Mignolo, W. D. (2007). Delinking: The rhetoric of modernity, the logic of coloniality and the grammar of de-coloniality. *Cultural Studies*, *21*, 449–514.

Mignolo, W. D., & Walsh, C. E. (2018). *On decoloniality: Concepts, analytics, praxis*. Durham, NC: Duke University Press.

Mikhail, A. (2016). Enlightenment Anthropocene. *Eighteenth-Century Studies*, *49*, 211–231.

Mistry, J., & Berardi, A. (2016). Bridging indigenous and scientific knowledge. *Science*, *352*(6291), 1274–1275.

National Research Council (2001). *Basic research opportunities in earth science*. Washington, DC: National Academies Press.

Neu, D. (1999). 'Discovering' indigenous peoples: Accounting and the machinery of empire. *Accounting Historians Journal*, *26*(1), 53–82.

Norgaard, R. B. (2013). Escaping economism, escaping the econocene. *Economy of sufficiency* (pp. 44–52). Wuppertal: Wuppertal Institute for Climate, Environment and Energy.

Norton, S. D. (2007). The natural environment as a salient stakeholder: Non-anthropocentrism, ecosystem stability and the financial markets. *Business Ethics: A European Review*, *16*, 387–402.

Oldfield, F., Barnosky, A. D., Dearing, J., Fischer-Kowalski, M., McNeill, J., Steffen, W., & Zalasiewicz, J. (2014). The Anthropocene Review: Its significance, implications and the rationale for a new transdisciplinary journal. *Anthropocene Review*, *1*(1), 3–7.

Ophuls, W. (1997). *Requiem for modern politics: The tragedy of the Enlightenment and the challenge of the new millennium*. Boulder, CO: Westview.

Orts, E. W., & Strudler, A. (2002). The ethical and environmental limits of stakeholder theory. *Business Ethics Quarterly*, *12*, 215–233.

Oxfam (2020). *Confronting carbon inequality*. https://oxfamilibrary.openrepository.com/bitstream/handle/10546/621052/mb- confronting-carbon-inequality-210920-en.pdf. Accessed June 25, 2021.

Parenti, C., & Moore, J. W. (2016). *Anthropocene or capitalocene? Nature, history, and the crisis of capitalism*. Oakland, CA: PM Press.

Phillips, R. A., & Reichart, J. (2000). The environment as a stakeholder? A fairness-based approach. *Journal of Business Ethics*, *23*, 185–197.

Pio, E., & Waddock, S. (2020). Invoking indigenous wisdom for management learning. *Management Learning*, 1350507620963956.

Potts, G. (1992). The land is the boss: How stewardship can bring us together. *Nation to Nation: Aboriginal Sovereignty and the Future of Canada*, 35–38.

Quijano, A. (2007). Coloniality and modernity/rationality. *Cultural Studies*, *21*, 168–178.

Reddekop, J. (2014). *Thinking across worlds: Indigenous thought, relational ontology, and the politics of nature; or, If only Nietzsche could meet a Yachaj*. DPhil Thesis. University of Western Ontario.

Reed, G., Brunet, N. D., Longboat, S., & Natcher, D. C. (2020). Indigenous guardians as an emerging approach to indigenous environmental governance. *Conservation Biology*.

Rodrigue, M., & Romi, A. M. (2021). Environmental escalations to social inequities: Some reflections on the tumultuous state of Gaia. *Critical Perspectives on Accounting*, 102321.

Ruddiman, W. F. (2003). The anthropogenic greenhouse era began thousands of years ago. *Climatic Change*, *61*, 261–293.

Ruddiman, W. F., Ellis, E. C., Kaplan, J. O., & Fuller, D. Q. (2015). Defining the epoch we live in. *Science*, *348*(6230), 38–39.

Ruse, M. (2013). *Earth's holy fool?* https://aeon.co/essays/gaia-why-some-scientists-think- its-a-nonsensical-fantas.

Said, E. W. (1993). *Culture and imperialism*. London: Vintage.

Sayre, N. F. (2012). The politics of the anthropogenic. *Annual Review of Anthropology*, *41*, 57–70.

Seremani, T. W., & Clegg, S. (2016). Postcolonialism, organization, and management theory: The role of 'epistemological third spaces.' *Journal of Management Inquiry*, *25*, 171–183.

Settee, P. (2011). Indigenous knowledge: Multiple approaches. *Counterpoints*, *379*, 434–450.

Simard, S. W., & Durall, D. M. (2004). Mycorrhizal networks: A review of their extent, function, and importance. *Canadian Journal of Botany*, *82*, 1140–1165.

Simpson, M. (2020). The Anthropocene as colonial discourse. *Environment and Planning D: Society and Space*, *38*, 53–71.

Smith, L. T. (1999). *Issues in indigenous research: Decolonizing methodologies research and indigenous people*. London: Zed Books.

Spivak, G. C. (1999). *A critique of postcolonial reason: Toward a history of the vanishing present*. Boston, MA: Harvard University Press.

Starik, M. (1995). Should trees have managerial standing? Toward stakeholder status for non-human nature. *Journal of Business Ethics*, *14*, 207–217.

Steffen, W., Crutzen, P. J., & McNeill, J. R. (2007). The Anthropocene: Are humans now overwhelming the great forces of nature? *AMBIO: A Journal of the Human Environment*, *36*(8), 614–621.

Steffen, W., Grinevald, J., Crutzen, P., & McNeill, J. (2011). The Anthropocene: Conceptual and historical perspectives. *Philosophical Transactions of the Royal Society A: Mathematical, Physical and Engineering Sciences*, *369*(1938), 842–867.

Steffen, W., Richardson, K., Rockström, J., Cornell, S. E., Fetzer, I., Bennett, E. M., Biggs, R., Carpenter, S. R., De Vries, W., & De Wit, C. A. (2015). Planetary boundaries: Guiding human development on a changing planet. *Science*, *347*(6223), 1259855.

Sundberg, J. (2014). Decolonizing posthumanist geographies. *Cultural Geographies*, *21*(1), 33–47.

Tadaki, M., Sinner, J., & Chan, K. M. (2017). Making sense of environmental values: A typology of concepts. *Ecology and Society*, *22*(1), 7.

Te Ahukaramu, C. R. (2005). *Exploring Indigenous knowledge*. www.Charles-Royal.Nz/Papers-Reports (accessed 8 June 2020).

Todd, Z. (2016). An indigenous feminist's take on the ontological turn: 'Ontology' is just another word for colonialism. *Journal of Historical Sociology*, *29*(1), 4–22.

Tuck, E., & Yang, K. W. (2012). Decolonization is not a metaphor. *Decolonization: Indigeneity, Education & Society*, *1*(1).

United Nations (2019). UN News: Climate and Environment. https://news.un.org/en/story/2019/05/1038291 (accessed 25 June 2021).

Van Meijl, T. (2015). The Waikato River: Changing properties of a living Māori ancestor. *Oceania*, *85*, 219–237.

Waddock, S. (2011). We are all stakeholders of Gaia: A normative perspective on stakeholder thinking. *Organization & Environment*, *24*, 192–212.

Whiteman, G., & Cooper, W. H. (2000). Ecological embeddedness. *Academy of Management Journal*, *43*, 1265–1282.

Wright, C., Nyberg, D., Rickards, L., & Freund, J. (2018). Organizing in the Anthropocene. *Organization*, *25*, 455–471.

Yusoff, K. (2018). *A billion black Anthropocenes or none*. Minneapolis, MN: University of Minnesota Press.

Zelizer, V. A. (2012). How I became a relational economic sociologist and what does that mean? *Politics & Society*, *40*, 145–174.

Author biographies

Bobby Banerjee is Professor of Management and Associate Dean of Research and Enterprise at Bayes Business School, City University of London. He researches and teaches on corporate social irresponsibility, unsustainability, climate change and resistance movements.

Diane-Laure Arjaliès is an Associate Professor at the Ivey Business School, Western University (Canada). She aims to push the boundaries of knowledge and practice by investigating how the fashioning of new devices and collective actions can help transform financial markets towards sustainability. She is currently working on a conservation impact bond that includes both Indigenous and Western forms of knowledge.