



Conceptualising Sustainability as the Pursuit of Life

Frederik Dahlmann¹

Received: 19 May 2022 / Accepted: 8 January 2024
© The Author(s) 2024

Abstract

Complex and urgent challenges including climate change and the significant decline in biodiversity provide a broad agenda for interdisciplinary scholars interested in the implications facing businesses, humanity, and other species. Within this context of sustainability, persistent conflicts between key paradigms create substantial barriers against—but also opportunities for—developing new conceptual approaches and theoretical models to understand and respond to these critical issues. Here, I revisit paradigmatic tensions to assess their impact on research and debate on sustainability, ethics, and business. Drawing on relational ontology and values of nature that recognise humanity's tight embeddedness within the planetary ecosystem, I examine how conceptualising sustainability as the *pursuit of life* might generate new insights for research and practice into the wider transformation needed to sustain and restore socioecological systems. The aim here, however, is not to reconcile these paradigmatic tensions but instead use them as a fruitful lens for examining the implications for sustainability, while acknowledging the inherent ethical dilemmas for individuals, organisations, and society.

Keywords Biodiversity · Ecology · Ethics · Ontology · Paradigm · Relational values · Sustainability

Growing awareness of the significant degradation of the natural environment has in recent years led to a variety of interdisciplinary approaches including Earth (Systems) Sciences that examine the complex multi-scale and multi-nodal nature, plus cause and effect, of the Earth's interconnected socio-ecological systems (Richardson et al., 2023; Rockström et al., 2009; Steffen et al., 2020). These wide-ranging insights are beginning to shape research on business and sustainability generally (Edwards et al., 2021; Ehrnström-Fuentes & Böhm, 2022; Folke et al., 2021; Waddock, 2020; Whiteman et al., 2013; Williams et al., 2021) but have also been covered in the context of business ethics more specifically (Beacham, 2018; Böhm et al., 2022; DesJardins, 2016; Heikkurinen & Mäkinen, 2018; Morrell & Dahlmann, 2022; Sadler-Smith & Akstinaite, 2022; White et al., 2022).

Especially worldviews and their underlying values and ethics have long been viewed as key themes in need of deeper inquiry to respond to the challenges of sustainability (Blok et al., 2016; Burch et al., 2019; Ezzamel & Willmott, 2014; Frederick, 1992; Johnsen, 2021; Shrivastava, 1994).

In 1995, the journal *Academy of Management Reviews* published seven wide-ranging seminal articles seeking to mainstream the concept of sustainability in management research. Critically, several scholars criticised the predominantly anthropocentric philosophies and forms of theorising at the time as a fundamental barrier towards generating new insights and practices (Gladwin et al., 1995; Purser et al., 1995; Shrivastava, 1995; Starik & Rands, 1995). Others sought to integrate ecological concepts and principles into theories of organisational behaviour and responses to environmental concerns (Hart, 1995; Jennings & Zandbergen, 1995; King, 1995). While not everyone agreed that ecocentric perspectives will necessarily lead to better human behaviours and environmental outcomes (Hanna, 1995; Newton, 2002), it is clear that given the continuing and growing disconnect between organisational-level (in)action and planetary level sustainability indicators, there is a significant need for more balanced reflection on and integration of insights from different paradigms in order to better understand and respond to these critical issues (Banerjee & Arjaliès, 2021; Heikkurinen and Mäkinen, 2018; Shoshitaishvili, 2021).

More specifically, in the context of exploring the causes and issues responsible for socio-ecological systems decline, important questions arise regarding the role of humans as drivers of many of the observed geological and biophysical

✉ Frederik Dahlmann
frederik.dahlmann@wbs.ac.uk

¹ Warwick Business School, University of Warwick, Scarman Road, Coventry CV4 7AL, UK

changes on Earth (Banerjee & Arjaliès, 2021; Biermann et al., 2016; Braidotti, 2019; Palsson et al., 2013), the impact of the socio-economic model of capitalism and its overriding focus on endless growth (Adler, 2022; Benatar et al., 2018; Edwards, 2021; Feola et al., 2021; Hoffman & Jennings, 2018; Kallis et al., 2018; Reichel & Perey, 2018), as well as the nature of management as a profession responsible for much of private sector organising (Aguilera et al., 2022; Ergene et al., 2021; George et al., 2021; Wright et al., 2018).

In terms of business ethics, responses to these questions depend on key assumptions about how one perceives the world and especially the complex relationships between humans, organisations, and nature (Ehrnström-Fuentes & Böhm, 2022; Ergene et al., 2018; Johnsen, 2021). Scholars continue critiquing anthropocentric conceptualisations (Heikkurinen et al., 2016, 2021) and specifically highlight the prevailing perception of a human–nature dualism as retarding progress towards addressing sustainability issues (Böhm et al., 2022; Ives et al., 2017; Labatut, 2023). While some question the desirability of a hypernorm of sustainability (Donges et al., 2017; Scholz et al., 2019), others argue for more critical engagement with the different existing strands of ethics (Schmidt et al., 2016). There are warnings against human hubris when identifying solutions (Sadler-Smith & Akstinaite, 2022), as well as calls for greater humility when addressing so-called grand challenges (Böhm et al., 2022). Essentially, scholars argue that approaching the ethics and implications of sustainability requires greater explicit recognition of and reflection on the broader connections between our different ways of being, knowing, and acting (Walsh et al., 2021) that are commonly expressed through various assumptions inherent in different worldviews (Borland et al., 2016; Burrell and Morgan, 1979; Gladwin et al., 1995; Valente, 2012).

In this conceptual paper, first I revisit these persisting tensions between the two major paradigms shaping research and debate on sustainability, ethics, and business as expressed in the 1995 AMR special issue and subsequent scholarship with the purpose of examining what has changed and what we have learned, if anything.¹ Specifically, I highlight the difficulties of reconciling the dominant paradigms shaping research and action on sustainability. Next, drawing on relational ontology and relational values of nature that recognise humanity's tight embeddedness within the planetary ecosystem, I explore whether conceptualising sustainability as the *pursuit of life* allows us to develop new insights for research and practice into the wider transformation needed to sustain and restore socioecological systems. By perceiving of reality as a living mesh of human-nature interactions this paper seeks to stimulate fruitful reflections on the implications for sustainability that are grounded in different

ways of knowing and that embrace an inclusive definition of life as a shared concern. The aim here is not to reconcile these paradigmatic tensions but instead to acknowledge the inherent ethical dilemmas for individuals, organisations, and society as key to advancing debate and action.

Paradigmatic Tensions in Sustainability Research

Concerns about humanity's role generally, and businesses' impact specifically, on the natural environment have been central to academic scholarship and action from the early stages of different environmental movements (Carson, 1962; Norton, 1991). While typically covered (often implicitly) in concepts and literature on corporate social responsibility and corporate sustainability (Bansal & Song, 2017; Joyner & Payne, 2002), research on both business and environmental ethics has grown strongly and sought to address diverse ecological challenges including pollution, climate change, and loss of biodiversity (DesJardins, 2016; Schmidt et al., 2016; Schuler et al., 2017). These environmental concerns have been captured in the planetary boundaries framework which sets out critical parameters of a safe operating space for humanity (and life in general) to exist on Earth. As such, planetary boundaries highlight the fundamental need for a functioning Earth support system upon which we all depend (Griggs et al., 2014; Richardson et al., 2023; Rockström et al., 2009; Whiteman et al., 2013).

Despite growth in empirical assessments that highlight the relentless levels of environmental degradation, persistent tensions remain at the theoretical level of sustainability. Debates arise from the core argument that knowledge and understanding of sustainability is shaped by critical ontological, epistemological, and ethical assumptions underpinning different perspectives about our world (Walsh et al., 2021). In fact, ever since philosophers sought separation within finite substances, the resulting nature-society dualism has led to an enduring schism in sustainability research which is argued to undermine efforts to advance understanding, theorising, and identification of solutions and alternative approaches (Banerjee & Arjaliès, 2021; Borland et al., 2016; Heikkurinen et al., 2016; Ives et al., 2017; Palsson et al., 2013). For example, there are questions over how to allocate responsibility for reducing environmental risks and remediation of losses and damage, given that a variety of actors across the world have often directly and/or indirectly contributed to their occurrence, while others are being disproportionately negatively affected (Burch et al., 2019; Schmidt et al., 2016).

Such questions are important because they emphasise that knowledge creation is often shaped by specific assumptions and worldviews which may not be universally shared (Böhme et al., 2022; Ezzamel & Willmott, 2014). Central to

¹ I am grateful to one of the reviewers who suggested revisiting these seminal contributions.

this debate is therefore the call for recognition and integration of other—often underrepresented and undervalued—traditions, knowledge systems, and perspectives on the relationships between humans and nature. These include those held by individuals from diverse socio-economic backgrounds and especially different indigenous populations around the world (Banerjee & Arjaliès, 2021; Salmon et al., 2022; Whiteman & Cooper, 2000) as well as those of women (Braidotti, 2019; Ergene et al., 2018; Sjøfjell et al., 2022; Tallberg et al., 2022), children (Jeurissen & Keijzers, 2004; Walker, 2017), and, critically, also animals, plants and the physical natural environment, sometimes also defined as nonhuman and more-than-human entities (Beacham, 2018; Ergene & Calás, 2023; Kalonaityte, 2018; Kortetmäki et al., 2022; Lliso et al., 2022; Soga & Gaston, 2021).

Consequently, scholars challenge the assumptions common to many existing ethical philosophies that view humans as the primary focus and subject of ethical evaluation when such a conceptualisation obscures or ignores significant variation in experiences, perceptions, and impacts that are integral to developing a sustainable future (Ehrnström-Fuentes & Böhm, 2022; Heikkurinen et al., 2016). Examples include many of the major Western normative traditions which are primarily framed in terms of virtues of, consequences, and duties on individuals within human society (Morrell & Dahlmann, 2022; White et al., 2022). While such focus provides clarity, it ignores a broader conundrum: is it possible to develop new ethical insights and approaches which acknowledge that humanity engenders a multitude of diverse existences and is tightly embedded within the planetary ecosystem (Banerjee & Arjaliès, 2021; Biermann et al., 2016; Lewis & Maslin, 2015; Purser et al., 1995; Shrivastava, 1995; Starik & Rands, 1995)? Addressing these wider tensions and dilemmas exposed in extant research and discourses on sustainability is therefore important for developing novel theoretical and practical contributions. Drawing on Burrell and Morgan's (1979) lens of paradigms, and particularly key arguments presented in the published 1995 AMR articles as well as others since, next I summarise some of the most prevalent tensions in sustainability, ethics, and business research that help to lay the foundations for the conceptual development in this paper (Table 1).

Ontology

Fundamentally, there is a significant disagreement in sustainability research about the nature of reality and the extent to which different worldviews shape our understanding of what exists, the conditions for existence, and to what extent actors and entities can exist independently from each other (Walsh et al., 2021). Such questions challenge our fundamental assumptions about whether reality exists objectively independent of human experience, or whether it

is subjectively created through human experience (Burrell and Morgan, 1979). Applied to sustainability, the central question is whether we treat *nature-as-object* or *nature-as-self* in our research and actions (Purser et al., 1995)?

For many, our understanding of *what is* lies at the heart of key sustainability debates that are best captured by different (and constantly evolving) perceptions of nature (Borland et al., 2016). These can best be summarised under different paradigms or worldviews which “denote an implicit or explicit view of reality (Morgan, 1980: p. 606) and which represent the “constellation of beliefs, values, assumptions, and concepts that organize language, thoughts, perceptions, and actions to give shape and meaning to the world a person experiences and acts within” (Norton, 1991: p. 75).

On the one hand, a widely held technocratic paradigm favours the depiction of “nature as a machine composed of matter and energy that (i) can be known and addressed by reducing it to its parts; in which (ii) humans are separate from and above nature; and where (iii) humans are able to control nature” (Böhme et al., 2022, p. 2065). According to this anthropocentric worldview, humanity provides the focal point for reflection, research and practice, and sustainability is defined by a concern for assessing the emerging socio-ecological impacts on economies, society, policy, business, and other (typically privileged) decision-makers, for example, through the pursuit of sustainable development and green growth. This is further exemplified by the growing adoption of concepts such as the “Great Acceleration” and the “Anthropocene” which seek to summarise and highlight the extraordinary, complex, and wide-ranging impacts of human activity on the planet's geophysical systems in the most recent geological epoch that exceed natural processes (Crutzen, 2002; Rockström et al., 2009; Steffen et al., 2011, 2018; Williams et al., 2015). To many, therefore, this potentially new geological epoch represents a substantial inflection point or rupture with the past that is characterised by a general mood of crisis and warning for humanity (Shoshitaishvili, 2021).

However, this generalised focus on and understanding of humans as a central actor responsible for widespread ecological system change is being challenged by those who perceive these outcomes as resulting from a more differentiated, socio-cultural struggle that has privileged a small, homogenous, and powerful elite through exploitative and colonial forms of capitalism (Banerjee & Arjaliès, 2021; Biermann et al., 2016; Braidotti, 2019; Heikkurinen et al., 2016; Lewis & Maslin, 2015; Malm and Hornburg, 2014; Palsson et al., 2013; Reichel & Perey, 2018; Sjøfjell et al., 2022; Wirth, 2022; Wright et al., 2018). Accordingly, sustainability requires a perspective that recognises these differences in perceptions and instead refocuses our attention on a broader understanding of the world that does not place generalised humanity at its core.

Table 1 Key sources of paradigmatic tensions and questions in the context of sustainability

	Dominant dualisms	Key questions
Ontology	<p>Nature of reality</p> <ul style="list-style-type: none"> • Objective/subjective • External/internal • Substantivism/relational <p>Metaphors of reality</p> <ul style="list-style-type: none"> • Machine/organism <p>Focus of worldview</p> <ul style="list-style-type: none"> • Anthropocentrism/ecocentrism <p>Alternative paradigms</p> <ul style="list-style-type: none"> • Sustaincentrism • Biocentrism • Earthcentrism <p>Human nature</p> <ul style="list-style-type: none"> • Determinism/voluntarism <p>Agency</p> <ul style="list-style-type: none"> • Independent/relational 	<ul style="list-style-type: none"> • Do we treat nature-as-object or nature-as-self (Purser et al., 1995)? • Is (social) reality distinct from or constructed through human experience (Burrell & Morgan, 1979)? • Which takes primacy—entities or their relations between them (Heikkurinen et al., 2016, 2021)? • What metaphors are being used to describe nature and social realities including humans and human collectives (e.g., economies, societies, and organisations) (Norton, 1991; Shrivastava, 1995)? • How do they influence our understanding of what is and should be (Walsh et al., 2021)? • What is life (Böhm et al., 2022; Lenton et al., 2020)? • Is our planet inert or alive (Banerjee & Arjaliès, 2021)? • What are organisations (Morgan, 1980)? • Who or what should be privileged—humans or nature (Purser et al., 1995)? • Who or what is in control—humans or nature? What is control (Böhme et al., 2022)? • How do we overcome nature-human and other dualisms (Gladwin et al., 1995; Phillips, 2019; Shoshitaishvili, 2021)? • What role do human intellect and ingenuity play within nature generally and in terms of addressing sustainability issues specifically (Hanna, 1995)? • Can alternative (more integrative) paradigms offer more practical insights into achieving sustainable development (Valente, 2012)? • How do they address the tensions between anthropocentric and ecocentric paradigms (Gladwin et al., 1995)? • Should a more naturalistic perspective focus on sentient animals only or adopt a more biocentric lens that includes all things alive or integral to an ecosystem (Hoffman, 1991)? • Who or what is being developed and protected? And to whose benefit (Banerjee, 2003)? • How do we avoid totalitarian tendencies and religious interpretations of different paradigms (Hanna, 1995)? • Do we need new ontologies demanding radical change to address sustainability (Burrell & Morgan, 1979)? • How do we recognise and integrate more relational worldviews to reflect inherent interconnectedness between all entities, especially nature and humanity (Eyster et al., 2023; Newton, 2002)? • Who or what (if anything) determines human behaviour (Burrell & Morgan, 1979)? • What if any choice(s) and impacts do individual humans have on nature and others (Schmidt et al., 2016)? • Are human agency and power restricted to individual, atomistic entities, or do they only materialise through interactions with others (Labatut, 2023; Latour, 1990, 2017)? • Should we focus on independent actors or networks of actors (including nonhumans) in addressing environmental degradation and sustainability transitions (Heikkurinen et al., 2021; Newton, 2002)?

Table 1 (continued)

	Dominant dualisms	Key questions
Epistemology	<p>Nature of knowledge</p> <ul style="list-style-type: none"> • Tangible/intangible • Rationalism • Empiricism • Inter(subjectivism) • Innate • Indigenous <p>Methodology</p> <ul style="list-style-type: none"> • Nomoethic/ideographic • Reductionism/systems thinking • Relational thinking 	<ul style="list-style-type: none"> • Is knowledge tangible and transferable, or subjective, spiritual, transcendental, and personal (Banerjee & Arjaliès, 2021)? • How do we know about ourselves and nature? • Is it possible to determine true and false (Burrell & Morgan, 1979)? • How do we recognise indigenous worldviews that precede Western forms of knowledge and are based on connections between humans and nature (Banerjee & Arjaliès, 2021; Purser et al., 1995)? • How do we accept and integrate other forms of knowing including subjective experience, empathy, and reflective inquiry into values and emotions (Arjaliès, 2022; Johnsen, 2021; Purser et al., 1995; Spence, 2022)? • How do we avoid instrumentalization of alternative forms of knowing (Arjaliès, 2022; Pickering et al., 2022; Salmon et al., 2022; Shoshitaishvili, 2021; Soriano, 2022)? • How do we overcome “technological knowing” as the privileged form of human knowledge (Purser et al., 1995)? <ul style="list-style-type: none"> • Should research focus on developing concepts, measurement, rules, and universal laws or on understanding (“verstehen”) the way in which individual humans create, modify, and interpret their world (Burrell & Morgan, 1979)? • Should we focus on understanding causal relationships between different parts or on making sense of higher-level phenomena of emergence and evolution (Starik & Rands, 1995)? • How do we better recognise the interrelated nature of different entities, especially of humans and organisations within the flows and systems of the natural environment (Purser et al., 1995)? • How can relational thinking offer new insights for sustainability sciences (Eyster et al., 2023; Fazey et al., 2020; Sayles et al., 2019)? • How can experiential learning and reflection complement empirical reductionism (Waddock and Kuenkel, 2020)? • What are the benefits and drawbacks of applying other methods such as deep engagement (Williams & Whiteman, 2021), interpretivist approaches (Gould et al., 2019), and ethnographies (Whiteman & Cooper, 2000) to understanding sustainability?
Ethics	<p>Ethical approaches</p> <ul style="list-style-type: none"> • Normative ethics and legal principles/ecological ethics and principles 	<ul style="list-style-type: none"> • Upon which foundations should our ethical approaches be based (Morrell & Dahlmann, 2022; Schmidt et al., 2016; Schuler et al., 2017)? • What if any duties and obligations do humans have towards future generations, non-human species, and ecosystems? (i.e., not just species with comparable human attributes) (DesJardins, 1998; Purser et al., 1995) • How can we shape the formation of ethical character rather than universal, abstract ethical rules to reflect complex ecosystems dynamics (Purser et al., 1995)? • How do we avoid privileging utilitarian ethics and provide greater recognition for ethics of care? (Beacham, 2018; Phillips, 2019)?

Table 1 (continued)

Dominant dualisms	Key questions
<p>Values of nature</p> <ul style="list-style-type: none"> • Instrumental • Intrinsic • Relational 	<ul style="list-style-type: none"> • What are the different ways in which humans value nature (Chan et al., 2016)? • How do we avoid privileging instrumental over intrinsic values of nature (DesJardins, 1998)? • Can/should instrumental and intrinsic values of nature be reconciled (Chan et al., 2018)? • Does all nature have value (role of disvalues) (Lliso et al., 2022; Schuler et al., 2017)? • What is more valuable—humans or nature? How realistic is species equality (bioequality) (Newton, 2002)? • How do we avoid atomistic perspectives towards other humans, nonhuman species, and ecosystems in favour of more relational values (Phillips, 2019)?
<p>Justice</p> <ul style="list-style-type: none"> • Human rights • Indigenous rights • Women's rights • Animal rights • Planetary justice • Earth jurisprudence • Earth systems law 	<ul style="list-style-type: none"> • What are the connections between social and ecological justice (Gupta et al., 2021, 2023)? • How should the legal system recognise the rights of nature, i.e. both non-human species and ecosystems (e.g., ecocide) (Biermann & Kalfagianni, 2020; Gupta et al., 2021; Kotzé et al., 2022; Petersmann, 2021)? • How should the legal system recognise the human rights of indigenous communities and future generations (Böhm et al., 2022; Gonzalez-Ricoy & Rey, 2019; Jeurissen & Keijzers, 2004)?
<p>Teleology</p> <ul style="list-style-type: none"> • Ecological sustainability/ sustainable development • Nature conservation and regeneration/human development 	<ul style="list-style-type: none"> • How do we balance the 3E of ecology, economy, and ethics (Gladwin et al., 1995)? • Should we focus on ecological sustainability alone or can/should this be achieved in conjunction with human development (Rockström et al., 2021)? • What are the roles of imperialism and colonialism in shaping framings and discourse on sustainability and sustainable development (Banerjee, 2003)? • How do we preserve not just ecological systems but also spirituality and cultural values, particularly of indigenous and other communities (Valente, 2012)? • How do we create healthy ecosystems (Purser et al., 1995)? • How do we achieve ecological (and social) restoration and resilience (Folke et al., 2016; Wieland, 2021; Williams et al., 2021)?
<p>Economics, demographics, wealth</p> <ul style="list-style-type: none"> • Green growth/degrowth • Sufficiency • (Over)consumption • Population growth 	<ul style="list-style-type: none"> • What role should economic growth play in addressing sustainability (Edwards, 2021; Kallis et al., 2018)? • What are the roles of consumption and population growth as part of achieving sustainability (Starik & Rands, 1995)? • What are the relationships between wellbeing, progress, and a good quality of life (O'Neill et al., 2018)?
<p>Governance</p> <ul style="list-style-type: none"> • Markets and voluntary efforts/mandatory legislation and regulation 	<ul style="list-style-type: none"> • Can sustainability be left to voluntary private sector efforts, or does this require enforcement through institutional frameworks and sanctions (Heikkurinen and Mäkinen (2018)? • How do we strengthen compliance with laws and regulations that reflect the planetary boundaries (Nilsen, 2023)? • What is the effectiveness of different types of formal and informal governance approaches (Burch et al., 2019)?

Table 1 (continued)

Dominant dualisms	Key questions
Business & sustainability <ul style="list-style-type: none"> ● Corporate social responsibility ● Corporate sustainability ● New environmental paradigm (NEP) ● Sustainable business models 	<ul style="list-style-type: none"> ● What is or should be the role of business in addressing sustainability (Hanna, 1995; Newton, 2002; Shrivastava, 1995; Starik & Rands, 1995)? ● (How) can we organise sustainably (Ergene et al., 2018, 2021)? ● How do we overcome the egocentric profit-orientation of traditional business models (Purser et al., 1995)? ● What is the proper rationale for responsible business action toward the environment (Hoffman, 1991)? ● How do we create new organisational theories that do not treat the natural environment in a purely transactional or mechanistic manner (Purser et al., 1995)?

Specifically, scholars have long called for a shift in our assumptions about the world at large away from an exclusively human-centric view, particularly of the generalised and biased kind arguably reflected in much of anthropocentric research and thinking, and towards an ecocentric view in which nature sits at the heart of theorising (Banerjee, 2003; Ergene & Calás, 2023; Ergene et al., 2021; Heikkurinen et al., 2016). In this understanding, nature is argued to be endowed with properties that exist independent of social construction by humans (Purser et al., 1995). Either based on organismic metaphors and/or described in systemic terms, nature consists of a diversity of overlapping and interconnected forms of entities and ecosystems that exchange resources and information (Shrivastava, 1995). For example, Starik and Rands defined ecological sustainability as “the ability of one or more entities, either individually or collectively, to exist and flourish (either unchanged or in evolved forms) for lengthy time frames, in such a manner that the existence and flourishing of other collectivities of entities is permitted at related levels and in related systems” (1995: p. 909). Since humans are part of nature, non-interference in ecosystems should take priority over human concerns (Gladwin et al., 1995).

Epistemology

Discussions about how to perceive of nature are also directly related to a variety of epistemological considerations of thinking, sense making, and responding. More importantly, they challenge potentially preconceived ideas about what is knowledge and how does one effectively know? For many, the anthropocentric paradigm was shaped by the period of the Enlightenment with its focus on rationality and empiricism that led to significant technological developments and rapid growth in scientific reasoning and understanding of the world and the universe (Walsh et al., 2021). It did, however, also foster an adherence to the principle of reductionism

that privileges causality and relationships between ever more fine-grained parts through linear thinking and abstraction in order to understand and predict typically natural and physical entities, but later also socio-political and economic behaviours. This “technological knowing”, which assumes an independent, external observer who is able to deduce tangible and transferable “true” knowledge, became the privileged form of knowing about humans and nature (Purser et al., 1995).

Yet such positivistic approaches stand in contrast to many other forms of often indigenous knowing that have long existed before the Age of Enlightenment and that are based on connections between humans and nature through more subjective, spiritual, and transcendental approaches (Banerjee & Arjaliès, 2021). While other forms of knowing raise questions over our ability to determine true and false (Burrell and Morgan, 1979), particularly in the context of sustainability many argue there is a need to accept and integrate other epistemologies based on subjective experience, empathy, and reflective and collective inquiry into values and emotions as essential for making progress without instrumentalising them (Arjaliès, 2022; Johnsen, 2021; Purser et al., 1995; Spence, 2022).

For example, rather than dividing the world into distinct units of analysis, there is an emphasis on identifying patterns at higher levels of emergence, enabling a sense making process of the whole as constituted by all its interconnected parts. As such, alternative epistemologies acknowledge adaptation, experiential learning, and reflection as important determinants of knowing which may complement empirical reductionism (Waddock and Kuenkel, 2020). More specifically, researchers call for a wider transformation of socio-cognitive and cultural values, knowledge, and their interactions (Hölscher et al., 2018), of economic models (Feola et al., 2021; Smith et al., 2021; Waddock, 2020), politics (Hausknot & Hammond, 2020), society (Hoffman & Jennings, 2021; Palsson

et al., 2013), and lifestyles (Böhme et al., 2022), as well as respectful integration of different ways of knowing more generally (Arjaliès, 2022; Pickering et al., 2022; Salmon et al., 2022; Shoshitaishvili, 2021; Soriano, 2022).

Different epistemologies inherently also demand greater openness for alternative research methodologies such that a focus on concepts, measurement, rules, and universal laws is complemented by greater efforts to capture subjective forms of understanding (“*verstehen*”) of the way in which an individual creates, modifies, and interprets their world (Burrell and Morgan, 1979). Key examples include transdisciplinary forms of deep engagement (Williams & Whiteman, 2021), interpretivist approaches (Gould et al., 2019), and ethnographies (Whiteman & Cooper, 2000). Moreover, to better recognise the interrelated nature of parts and wholes, especially of humans and organisations within the flows and systems of the natural environment, calls for increased use of systems (King, 1995; Starik & Rands, 1995) and relational thinking including social-ecological network analysis have led to growing adoption in sustainability sciences (Eyster et al., 2023; Fazey et al., 2020; Sayles et al., 2019), but remain far from mainstream in business and management research (Bansal et al., 2021; Edwards et al., 2021; Ergene & Calás, 2023; Williams et al., 2021).

Ethics

Building on these ontological and epistemological differences, sustainability scholars confront a myriad of implications when approaching actions and behaviours, not least where they relate to business and management (Ezzamel & Willmott, 2014; Schmidt et al., 2016; Schuler et al., 2017). Consistent with an anthropocentric world view, a significant body of scholarship and research takes a normative stance on human activity, typically by approaching ethics through the major strands of Western thought (Morrell & Dahlmann, 2022; White et al., 2022). This research acknowledges and addresses impacts on the natural environment and other species with a central question of what should humans do (or perhaps rather not do)? As such, this body of literature adopts a humanistic lens that does not, at least on the surface, differentiate between humans’ lived experiences and realities.

By contrast, ecocentric approaches seek to expand the considerations for nature broadly, and all non-human species and ecosystems more specifically (i.e. not just species with comparable human attributes) (DesJardins, 1998; Purser et al., 1995) by asking what would nature want us (i.e. humans) to do to reduce the significant harm and destruction, and ensure its continued existence and flourishing? Unlike the anthropocentric literature, however, this strand places less emphasis on normative

statements and instead seeks to derive insights from ecological ethics and principles that focus on caring for and understanding of nonhumans or more-than-human entities (Beacham, 2018; Hodges, 2003; Kalonaityte, 2018; Kortetmäki et al., 2022; Næss, 1973; Phillips, 2019). In fact, Purser et al. (1995) argued scholars should be less concerned with devising universal, abstract ethical rules and instead focus on the formation of ethical character to reflect complex ecosystems dynamics.

Recognising that impacts on and implications for humanity are not shared equally, within ecocentric perspectives there is also much greater concern for marginalised sections of humanity, as researchers draw attention to those least responsible and most affected by the destruction of our planet (Böhm et al., 2022; Braidotti, 2019; Ehrnström-Fuentes & Böhm, 2022; Ergene et al., 2018). Accordingly, emerging debates around ethics and sustainability seek to integrate a variety of concepts of justice, with more established terms of human rights, women’s rights and animal rights increasingly being expanded to domains such as indigenous rights (Böhm et al., 2022), and those of future generations (Gonzalez-Ricoy & Rey, 2019; Jeurissen & Keijzers, 2004).

Assessing Progress on Business and Sustainability Research

It is thus this broad divide between the anthropocentric and ecocentric paradigms that forms the backdrop to much of research on sustainability, highlighting that people’s worldviews and their respective underlying assumptions inherently lead to different conclusions about the overall purpose of engagement with the concept: Should we address ecological sustainability as the primary concern so that the human species and all other species are fully supported for the future, or should human development be the primary concern ahead of ecological health and well-being (DesJardins, 1998)? Who or what determines what is (ecologically) sustainable and on what basis?

As Gladwin et al. already noted in 1995: “Complete reconciliation between the two opposing paradigms remains elusive” (p. 890). Though there are clearly nuances in approach and interpretation, overcoming paradigmatic tensions remains the most persistent challenge for developing new theories and ethics as they reveal crucial questions, assumptions, and values: who or what should ultimately be privileged in our research and actions? Which of the two hold greater intrinsic value: humans or nature (Purser et al., 1995)? Specifically, what is the role of humans (generally) within nature? And how do we account for human intellect, culture, and ingenuity that have arguably led us to the situation we find ourselves in, while at the same time providing us with the knowledge and acknowledgement

of the same (Hanna, 1995; Newton, 2002; Shoshitaishvili, 2021, 2022)?

While terms such as ontology and paradigms are often used interchangeably, it is important to recognise the fundamental differences between entire paradigms that are themselves based on clear differences in assumptions about reality. Frequently, this is reflected in the metaphors and concepts used to characterise phenomena such as nature and organisations and which then influence methodologies and theory development without explicitly acknowledging such ontological assumptions and inherent values (Morgan, 1980). While the special issue in AMR in 1995 may have called for greater recognition of such paradigmatic tensions, with notable exceptions of research focusing on different ontologies in the context of sustainability, it is probably fair to say that most publications on the role of business and sustainability (especially those based on quantitative empirical research) do not explicitly state their position in this regard.

Coming full circle then, large parts of the articles in the AMR 1995 special issue forum were dedicated to practical questions and concerns about what is or should be the role of business in addressing sustainability (Hanna, 1995; Shrivastava, 1995). Perhaps the greatest progress since then has been the exponential proliferation in published academic research on concepts such as corporate social responsibility, corporate sustainability, and sustainable business models (Bansal & Song, 2017; Ketola, 2008; Painter et al., 2019). And yet, despite such undoubtedly growing awareness and increased mainstreaming of sustainability research, scholars are still left asking very similar questions of whether it is possible to organise sustainably (Ergene et al., 2018, 2021), and how to ensure the by now significant uptake of sustainability concepts and practices by businesses and managers are not simply symbolic greenwashing (Marquis et al., 2016)? What are the consequences of sustainability for business ethics (DesJardins, 1998; Ketola, 2008)? Is it time to jump off the sustainability bandwagon when businesses adopt the term primarily to sustain their own existence (DesJardins, 2016)?

Overcoming Dualisms Through Relational Perspectives

Relational Ontologies

Cognisant of the paradigmatic tensions arising from the human-nature dualism, variously scholars have attempted to outline alternative, at times more integrative worldviews. They include, for example, sustaincentrism (Gladwin et al., 1995; Phillips, 2019) whereby “human behavior is guided by constraints imposed by the ecological environment and

a moral compass meant to preserve spirituality and cultural values within and across generations” (Valente, 2012: p. 565). The impetus here is to encourage moral pluralism and offer more practical insights into important questions such as who or what is being developed and protected? And to whose benefit (Banerjee, 2003)? Thus, while some are calling for greater differentiation regarding lived human realities, equally, others argue that not all of nature is equal with distinctions being drawn between perspectives that value sentient animals only, and a more biocentric focus on all things alive or that are integral to an ecosystem (Hoffman, 1991). In other words, there are degrees of ecocentrism that are typically reflected in and expressed as deep vs. shallow ecology (Næss, 1973).

Yet, as some have pointed out, true paradigm shifts are very rare, and perhaps universal paradigms are effectively utopian. While some ontologies are more open to interpretations, others may be viewed to legitimise totalitarian tendencies (Newton, 2002). Importantly, paradigms based on a notion of “centrism” inherently ignore the broader relations between various human and nonhuman actors and in which perceptions of “centredness” mask realities of “relatedness” between different entities.

To encourage greater pluralism in worldviews, a growing stream of research therefore examines the merits of relational ontologies that stress the unity of different entities and their interconnections, especially between humans and nature (Eyster et al., 2023). For instance, some have refocused their efforts on identifying links between mind, matter, and life generally either as a monolithic one (holism), or as distinct but dynamically related concepts (Heikkurinen et al., 2021; Labatut, 2023; Shoshitaishvili, 2021; Walsh et al., 2021). Relational ontologies thus stand in contrast to mechanistic, materialistic, and individualistic worldviews by stressing holistic and interconnected views of reality according to which many dualisms including those of nature-humanity are simply artificial (Böhme et al., 2022; Shoshitaishvili, 2022). Such ontologies, based on the idea of “one living system”, also tend to be more widely shared in many diverse non-Western forms of thought (Banerjee & Arjaliès, 2021) and thus promise to offer a more inclusive approach towards theorising sustainability.

Relational Values of Nature

In the same spirit, values of and in relation to nature are equally seen as core to making sense of and determining potential responses and behaviours. Here again a prominent tension relates to perspectives that primarily adopt an anthropocentric *instrumental* value of nature framing, in essence attempting to estimate the economic value or utility of nonhuman species and ecosystems for the benefit of human activity and development (Daily et al., 2000;

Dasgupta, 2021; Himes & Muraca, 2018). By contrast, work in the ecocentric domain emphasises the *inherent* value of nature that is “independent of human judgement, such as non-human species’ inherent rights to exist” (Díaz et al., 2015, p. 11). Scholars note, however, that whenever instrumental and inherent values of nature collide, typically instrumental values dominate (DesJardins, 1998). Others wonder whether ecocentric perspectives based on inherent values of nature result in misanthropic depictions of humanity with the latter potentially being seen as less worthy of attention. Does all nature have value (Lliso et al., 2022; Schuler et al., 2017) and how realistic is it to assume that all species including humans and nonhumans have equal value (bioequality) (Newton, 2002)?.

Additionally, scholars have also started to develop *relational* values as a third form of valuing nature (Chan et al., 2018; Díaz et al., 2015). Whereas anthropocentric instrumental values characterise nature as a set of economic, aesthetic, spiritual or other benefits necessary (or at least important) for living a good life (from a human perspective), “relational values, on the other hand, are embedded in desirable (sought after) relationships, including those between people and nature” (Díaz et al., 2015, p. 11; authors’ emphasis). They are “deeper and more complex than merely instrumental” values (Himes & Muraca, 2018, p. 2), less atomistic (Phillips, 2019), and reflected in expressions such as living in harmony with nature (IPBES, 2019) or Wilson’s (1984) concept of biophilia. Examples include one’s personal sense of connectedness to a specific place; feeling a sense of kinship or even identification with a particular species; feeling a sense of personal responsibility or care for a place, species, or nature broadly; and deriving a sense of identity from a place or through stewardship of nature (Chan et al., 2016, 2018).

As such, relational values of nature again recognise and draw on the diversity of human perspectives and worldviews on the planet that already internalise the general interconnections between human beings, other living species, entire ecosystems, and other abiotic factors (Chan et al., 2016; Schröter et al., 2020). Examples include a wide range of indigenous perspectives (e.g., Hawaiian, see Gould et al., 2019); the concept of *Buen Vivir* in Latin America (Calisto Friant and Langmore, 2015); the African concept of *Ubuntu* (Metz, 2019; Sambala et al., 2020); various Eastern philosophies (e.g., Confucian, Buddhist, Daoist, e.g., see Harrison, 2018); as well as the Indian Economy of Permanence (Kumarappa, 1946). Important for relational values is the relationship with nature, meaning that, in contrast to instrumental values, nature is not just viewed as means to an end, but the relationship with nature itself is an end (Chan et al., 2018; Himes & Muraca, 2018). This can imply trade-offs when pursuing relationships with nature, but in other contexts instrumental and relational values of nature

can co-exist and overlap, and both can be oriented towards present and future (e.g., preserving the inherent beauty of nature for future generations; preserving the instrumental value of nature by safeguarding potential benefits from future drugs development) (Díaz et al., 2015).

By distinguishing between instrumental, inherent, and relational values of nature, scholars seek to acknowledge that decisions and policies regarding the impacts on and benefits of nature need to address and encompass a variety of cultural values and institutional frameworks already in existence among different communities (Chan et al., 2018; Díaz et al., 2015; Jax et al., 2018; Knauß, 2018; Knippenberg et al., 2018). The concept of relational values thus highlights that apart from both inherent and instrumental values of nature, people can also view nature not just as a means to increasing their utility, but where instead a relationship (e.g., with a particular plant, species, landscape, or nature more generally) is valued in its own right because it is non-substitutable (Chan et al., 2016, 2018; Himes & Muraca, 2018).² These connections often depend on specific language, particularly found among indigenous cultures, to express deeply held and diverse human–nature relationships (Banerjee & Arjaliès, 2021; Böhme et al., 2022; Gould et al., 2019; Whiteman & Cooper, 2000). While many of these existing relational values remain anthropocentric in that they identify relationships with nature as essential to achieving a good quality of human life and rely on notions such as harmony, compassion, respect, spirituality, empathy, and emotion towards nature as guidance for and moral evaluation of actions and behaviour, they also express a level of understanding of and care for the natural environment that seeks to avoid exploitation and degradation through balanced and thoughtful approaches and lifestyles (Chan et al., 2016; Phillips, 2019). Whereas instrumental values are primarily used to define nature as means to delivering a variety of benefits exclusively for humans, inherent values recognise that nature and wildlife/other species (including domesticated species) have value in their own right (and have rights) without the need for them to be exploited and/or abused by humans. Meanwhile, relational values represent an effort to recognise and bridge the divide between anthropocentric and ecocentric perspectives by stressing fundamental values based on relations of responsibility and care, such as expressed by “living in nature” (Himes & Muraca, 2018: p. 3).

The question is whether such alternative relational ontologies and values of nature can be extended to inspire novel conceptualisations which more clearly recognise the

² Note, for example, the widespread dismay and horror to the illegal felling of a single old-growth tree (Sycamore Gap tree) in Northeast England that had widely captured people’s feelings for and relationship with a specific place (<https://www.bbc.co.uk/news/uk-england-tyne-66994729>).

interconnectedness between humans and nature, and especially the urgent need for widespread shifts in values and behaviours. For this it is essential to incorporate assessments and insights into the state and fundamental nature of the planetary ecosystem.

Biodiversity and the Web-of-Life

While climate change undoubtedly remains one of the most urgent and complex challenges for our planet (Steffen et al., 2018), another equally critical (and ultimately interconnected) issue relates to the decline in species diversity on Earth (Pörtner et al., 2023; Williams et al., 2015). Biodiversity, a term coined in the 1980s, refers to the variety and abundance of living organisms in the ecological systems of which they are part, and includes plant and animal species as well as microorganisms. Diversity needs to exist within species, between species and amongst different ecosystems in order to create and maintain ecological resilience (IPBES, 2019). It has also been included within the framework on nine planetary boundaries that some scientists argue should not be transgressed to avoid Earth risking large scale abrupt or irreversible environmental perturbation and damage (Lenton & Williams, 2013; Rockström et al., 2009; Whiteman et al., 2013). Despite debates over appropriate metrics and measurement (Richardson et al., 2023; Rounsevell et al., 2020), there is widespread agreement that, beyond the inherent value of biodiversity, a planetary ecosystem rich in different species and in the population sizes within each contributes to humanity's safe-operating space in multiple direct and indirect ways (Donges et al., 2017; Folke et al., 2016; IPBES, 2019). Yet the most recent assessments of the rates of biodiversity decline paint a severely troubling picture: "The global rate of species extinction is already at least tens to hundreds of times higher than the average rate over the past 10 million years and is accelerating" (IPBES, 2019, p. 12). At current rates, the planet is witnessing the equivalent of the sixth great mass extinction (Ceballos et al., 2017).

Consequently, the wider practical, scientific, and ethical implications from an awareness of these trends and thus the role of individuals and the private sector in addressing the decline in biodiversity and other sustainability challenges require urgent further investigation (Frederick, 1992; Heikkurinen et al., 2016, 2021; Panwar et al., 2022; Schmidt et al., 2016; Waddock, 2020). Specifically, while existing values of nature may support the mitigation of impacts on nature and perhaps end the rate of its decline, even achieving this would at best result in an equilibrium state characterised by serious and significant depletion and degradation (Rocha, 2022); the expression *damage limitation* comes to mind. For as long as humans are still present on Earth, not only is

there a need for acknowledging and preserving the intrinsic value of nature from an ecocentric perspective, but also the necessity for an anthropocentric spin that demands not just ecological justice and protection but crucially also widespread restoration. There is broad agreement among scientists that humanity (and recognising the important differences outlined above) needs to move far beyond mitigation and instead engage in significant ecological restoration efforts to conserve biodiversity and stabilize the climate of the Earth, for its own benefit and that of nature more generally (Bullock et al., 2021; Rockström et al., 2021; Strassburg et al., 2020).³

Importantly, ecologists and others agree that the planet's rich biodiversity has enabled the seemingly unique (at least as far as we know today), moderate, and stable climatic conditions that provide an atmosphere within which life is able not just to survive, but also, to thrive in all its variations (Bertrand & Legendre, 2021; Steffen et al., 2018; Williams et al., 2015). Historically, this development was not accidental but is increasingly explained through the complex process of the "web-of-life" whereby the coupling of climatic and environmental conditions with species diversification are mutually reinforcing each other, thus increasing ecosystem resilience (Bascompte, 2009). Consequently, humans have been key beneficiaries of this process particularly during the preceding geological epoch of the Holocene (Williams et al., 2015).

James Lovelock summarised this with the by now broadly, though not universally, recognised Gaia hypothesis (Lovelock & Margulis, 1974; Lovelock, 2003a). Put simply, Gaia theory describes an emergent phenomenon where organisms interact with their inorganic environment to form a single synergetic and self-regulating system that has the effect, over time, of stabilising global temperature, salinity of seawater and other environmental variables, thus creating planetary homeostasis (i.e. stable conditions for all current life forms) (Lovelock, 2003a). Specifically, it suggests that the biosphere both changes its material environment *and* automatically adapts to it (however, it does not anticipate such changes) (Lovelock & Margulis, 1974). Consequently, the processes of local improvements and selection scale up globally and thus provide an explanation for how species on Earth have vastly proliferated, increased in their complexity and in doing so regulate Earth's climate and chemistry that keep the planet habitable for all organisms (Lenton et al., 2020; Lovelock & Margulis, 1974; Lovelock, 2003b).

As a result, Gaia theory has given rise to the *metaphor* of a living Earth whereby the biosphere creates conditions

³ The Kunming-Montreal Global Biodiversity Framework (GBF) agreed in December 2022 is at least beginning to lay an international institutional foundation in this regard (CBD, 2022).

conducive to life through everything it does, besides just meeting its own needs (Benyus, 2002); put differently, life on Earth *seemingly* operates as if it followed an intrinsic purpose of supporting life more generally by increasing the life chances of other species through the creation of niches and circular resource streams (Waddock, 2020; Waddock and Kuenkel, 2020). The emphases on “metaphor” and “seemingly” are important because there is much debate over whether this complex arrangement between the biosphere and its environment is in any way functional in that it would imply a specific biological teleology (Lenton et al., 2020).

Others, including Lovelock, have described Earth as a form of biological super-organism, though the use of this terminology is problematic given its superficial sociopolitical adoption by totalitarian and eugenics movements in the past; instead, the more qualified use of “superorganismic features” is favoured with reference to such phenomena (Shoshitaishvili, 2021, 2022). Another central critique by biologists of the Gaia hypothesis is whether it is possible for Earth to be alive in a way that is consistent with evolutionary theory given a population of one entity alone (Shoshitaishvili, 2022). Importantly, however, Gaia hypothesis recognises that the boundaries between organisms of the biosphere (including humans) and their environment are significantly blurred by their interactions (Lenton et al., 2020) which raises epistemological questions about whether they can be studied and understood in isolation and what if any implications this has for both theory and ethics.

In fact, scholars in the deep ecology tradition have long reflected on the interconnections between humans and ecology (e.g., Moore, 2015; Næss, 1973; Whiteman & Cooper, 2000), but some believe there is a tendency to draw conclusions for social structures and human obligations that they challenge as being utopian and unworkable (Newton, 2002; Schuler et al., 2017). More importantly, there is also criticism that a growing recognition of Gaia theory serves as another example of how Western-derived epistemologies and ontologies overshadow and marginalise the existence of many indigenous knowledge and belief systems in which the intricate relationship between nature and life (including humans) has been well known and understood for thousands of years (Banerjee & Arjaliès, 2021). In other words, Gaia theory is nothing new to those who never adopted world-views based on an “enlightened” perspective of a nature-human dualism. While the language and methods may differ, the fundamental recognition of the complex interconnections between different species and the planet are similar if not the same.

The question is, therefore, whether it is possible (or even desirable) to derive new conceptualisations of sustainability that recognise the urgent need for ecological restoration? Clearly, if such perspectives are to avoid anthropocentrism of

the generic kind, they must recognise the existing diversity of human circumstances and lived experiences. Yet, can there really be ecocentric approaches that place nonhuman or more-than-human experiences and perspectives at their heart? Is ethical thinking (including the categorisation of different values of nature) not automatically anthropical if not anthropocentric by default? And if existing indigenous and emerging scientific perspectives all somehow identify the web-of-life and the importance of self-regulation and self-sustaining as intrinsically critical to overall flourishing at higher systems levels, one might ask why does humanity (in general terms) no longer embrace this idea and spirit? Should this not be “second nature” to us all (rather than just to parts of humanity)? What, if any, role could, or should, relational ontologies and values of nature play in guiding us?

Towards the Pursuit of Life

To help shape tentative answers to these questions, here I propose to conceptualise sustainability based on the notion of the *pursuit of life*. Grounded in the growing recognition of an interconnected planetary ecosystem, I argue that, increasingly, approaches to sustainability should be defined by and based on norms, character, and responsibilities emerging not just as an obligation towards other humans in the here and now but should also be enlarged to capture impacts on humanity more generally, especially those that have been marginalised and worst affected, as well as, crucially, on all other species and ecosystems. Decisions, actions, and behaviours should thus be motivated and guided by a desire to strengthen and enhance the planetary web-of-life, specifically through the *creation and maintenance of conditions that are conducive to life by safeguarding biodiversity and justice*.

In this conceptualisation the reference to life is particularly important because it signals an understanding of the significant ontological debates about how to define and characterise the same. By employing the concept of biodiversity, the intention is to embrace both life (with a small l) as “the class designating the properties common to all living beings” (Lenton et al., 2020: p. 250) as well as Life (with a capital L) that characterises different ontologies of an emergent planetary phenomenon regardless of whether captured by scientific expressions of Gaia (Lovelock & Margulis, 1974), indigenous perspectives including, for example, Pachamama (mother earth) (Calisto Friant & Langmore, 2015), or various other descriptions of nonhuman or more-than-human entities that eschew nature-humanity dualisms (Ehrnström-Fuentes & Böhm, 2022; Gould et al., 2019). It recognises that concepts such as “life” or “aliveness” are emergent characteristics and outcomes of a planet rich in biodiversity and of the manifold

interconnections between humans (mostly as beneficiaries rather than essential parts), nonhumans (i.e. other species including flora, fauna, and fungi (IUCN, 2021), ecosystems including abiotic factors, and different forms of more-than-humans at planetary level. In other words, biodiversity here is used as an inclusive term to embrace different ontologies and epistemologies of life that are all relevant for this context.

Moreover, the various socio-economic challenges of the present including inequalities, exclusion, and injustice require significant efforts to ensure lives and livelihoods are equally being protected, nourished, and given equitable opportunities to thrive (Banerjee & Arjaliès, 2021; Biermann & Kalfagianni, 2020; Gupta et al., 2021). Marginalising significant sections of its own species and imposing persistent inequalities contradict the spirit of a pursuit of life because they effectively diminish the overall level of (bio)diversity within humanity. Not only does this suppress the inherent value of those humans affected, but also significantly limits the potential of all segments of society to flourish in a way that would be consistent with creating and expanding the conditions conducive to life more broadly. As such, the need for achieving justice for all “collectivities of (human) entities” (Starik & Rands, 1995: p. 909) forms an integral part of the pursuit of life. Addressing the multitude of socio-ecological ills and injustices in a fair and effective manner is therefore essential for finding solutions to the broader ecological crisis (Banerjee, 2003; Griggs et al., 2014), especially in the face of changing demographics, increasing environmental catastrophes as well as a range of geopolitical, technological, social, and other interconnected megatrends. Biodiversity here therefore encapsulates not just the entire biosphere in all its present manifestations but also to all (currently eight billion) humans as well as the future of life generally.

In essence, conceptualising sustainability as the pursuit of life calls for both intrinsically and intentionally goal-driven behaviours and efforts that create and maintain conditions conducive to life through both self-regulating and self-sustaining behaviours and actions based on prevention and restoration. These should thus be guided not only by a regard for their impacts on life in the present but also with respect to future generations to ensure they anticipate long-term implications (Jeurissen & Keijzers, 2004). This requires explicit acknowledgement of and support for life in all its interconnected forms, recognising that life in the past and present create the foundations for life in the future to exist and thrive. While this might perhaps reflect a lowest common denominator for sustainability across different paradigms, it should at least also signal a broader shift in our perception of the relationship between human actions on the one hand and life in all its present (and future) forms on the other.

Implications

The interdisciplinary grounding of this sustainability conceptualisation certainly raises a myriad of new questions and challenges. Next, I therefore draw on the same categories of paradigmatic tensions identified above and use them as a framework to outline several first interpretations. The purpose here is not to suggest that each of these tensions can or should be reconciled. Instead, by seeking to characterise the pursuit of life through these different dualisms, the aim is to illustrate that new approaches to sustainability need to address all these questions and challenges collectively and coherently, recognising the interconnections between ontological, epistemological, and ethical assumptions (Table 2). Importantly, the attributes provided here are meant to be indicative rather than definitive in the hope they inspire further theoretical and practical elaboration.

Specifically, conceptualising sustainability as the pursuit of life reflects an ontology that recognises the coupled or interconnected processes between humans and nature (Eyster et al., 2023) whereby human intellect is seen as capable of constructing both objective/external (cognitive) and subjective/internal (mindful) representations of different phenomena. This view of reality draws on a contextual and dynamic interpretation of nature which acknowledges that humans are essentially nature immersed in a constantly changing stream of systemic influences, not least thanks to being open systems themselves. Moreover, humans are enabled and constrained by nature depending on context. Consequently, agency is moderated in that it is amplified and muted by relationships between human networks and the wider biosphere; examples include humans’ direct dependence on natural ecosystems services such as provision of clean air and water as well as food.

More concretely, the pursuit of life adopts a worldview based on a *living mesh* of a wider web-of-life, a view that also embraces similar metaphors of circle-of-life and living Earth as derived from different epistemologies. As such, a pursuit of life would seek to avoid being framed through paradigms of centredness, regardless of whether on humans or nature, which ontologically assume these entities are distinct from one another. Instead, it favours a relational ontology whereby life and (bio)diversity do not exist in isolation but represent intrinsically relational constructs. The pursuit of life, therefore, concerns itself with enhancing the diversity of and interconnections between different forms of life (rather than specific species or individual lives). The stream of life springing from the past is weaving the planetary web-of-life that has enabled and strengthened habitable conditions for life in the future. It is this living mesh connecting different species and ecosystems across different spatial scales and timeframes, and which

includes human-nature nodes, that enables the seemingly unique phenomenon of life on Earth to flourish. Yet by inducing significant species decline and degrading different ecosystems through its activities, humanity (in general terms) is effectively cutting loose the ties and couplings of this living mesh, thus not only decimating other lifeforms in the process, but in doing so essentially also destroying the very foundations upon which human life will still depend in the foreseeable future.

There is of course strong overlap here with the existing biocentric paradigm given the proposed focus on life (bios) (Hoffman, 1991). One might therefore argue that a “biocentric” paradigm should be open to other (relational) ontologies and epistemologies of life, for example, if they were conceptualised as “bio-relational” or similar. This is an open debate and readers are invited to reflect on such potential definitions. At the very least, a more pluralistic acknowledgement of different ontologies based on similar worldviews of humans within nature, that is those including Gaia, Pachamama or others, might enable the development of more fruitful common ground for examining the meaning and implications of sustainability.

Such ontological broad-mindedness also requires appreciation and inclusion of all forms of knowledge that recognise and internalise the pursuit of life as being fundamental to sustainability. How these epistemologies arrive at this knowledge is secondary to developing such shared understanding in the first place. In that sense, there are many ways of knowing about life, humans, and nature (equifinality), and in the context of sustainability they all have equal merit. Different research methods would be viewed as complementary provided they generate knowledge about life in all its manifestations, specifically where life is not just defined by technological knowledge but increasingly also through indigenous and other forms of knowing about a life in a broader sense. In this context, at least, knowledge itself is assumed to exist in different forms as well and includes both tangible and intangible ways of creating insight, understanding, and compassion.

From an ethical perspective, the pursuit of life could therefore be interpreted as a novel form of relational values of nature focused on (i) a broad, all-encompassing natural *object* (biodiversity in all its forms, present and future) (Chan et al., 2018) as well as on (ii) a *relationship* characterised by an active process (creating and maintaining conducive conditions) (Chan et al., 2018; Knippenberg et al., 2018). This conceptualisation would not supersede or negate other extant forms of relational values, especially those identified in non-Western schools of thought, but include and complement them in a way that encourages urgent, comprehensive, and proactive engagement and efforts. In doing so, it acknowledges that ecocentric theorising is essential in so far as, beyond a growing appreciation of an

instrumental value of nature, there is also an urgent need for respecting and internalising the inherent value of nature when trying to advance sustainability (Heikkurinen et al., 2016; Palsson et al., 2013; Purser et al., 1995).

Since any conceptualisation is bound to revert to some form of anthropocentrism eventually,⁴ characterising the pursuit of life as a novel form of relational values is intended to draw on different paradigms and serve as a bridge to connect human actions and behaviours with the need for preserving and enhancing the diversity of life (Heikkurinen et al., 2019). Given that both the biosphere with all its lifeforms and many human communities have been significantly (and mostly negatively) affected without consultation or representation, it is important that conceptualisations such as the one proposed here are aimed at recognising and addressing this wider injustice. They also need to help us reappraise the interconnectedness of humans and the biosphere and thus allow us to develop new approaches that could guide decision-making at individual, organisational and societal levels.

By focusing the attention on biodiversity, it is the phenomenon of life generally that primarily has value, rather than individual species or entities. Unlike existing paradigms that are centred on either humans or nature within an implied hierarchy between different species, a relational perspective in theory embraces and values all forms of life equally and especially their interconnections. Accordingly, there is no hierarchy between different forms of life and instead a need for creating a deeper, more meaningful appreciation of the way in which humans engage with and benefit from the biosphere in all its forms. This relational engagement needs to be recognised in addition to instrumental perspectives as all three forms of valuing nature are vital for supporting its preservation and regeneration.

Such values therefore have important consequences for addressing wider interconnected social and ecological injustices through restorative and intergenerational approaches. Specifically, it follows that ethical and legal principles would need to interpret the pursuit of life as an inherent planetary characteristic where *nomos* (i.e. man-made laws) are ultimately contingent on *physis* (natural laws) (Morrell & Dahlmann, 2022). Given that knowledge of the latter is constantly evolving, this requires pragmatism rather than idealism in order to account flexibly for shifts in understanding and values over time. Next, I discuss several ensuing challenges to expand on the conceptualisation and to lay the foundations for future research.

⁴ See, for example, DesJardins, 2016; Kopnina et al., 2018 for debates on the application of different types of anthropocentrism in this context.

Table 2 Conceptualising sustainability as the pursuit of life

Key elements	Attributes	Potential examples and interpretations
Ontology		
Nature of reality	Relational Dynamic	<ul style="list-style-type: none"> • Humans and nature as distinct but tightly coupled entities • Human intellect capable of constructing both objective/external (cognitive) and subjective/internal (mindful) representations of nature • Non-static but constantly changing stream of relations
Metaphors of reality	Interconnected Evolutionary	<ul style="list-style-type: none"> • (Social) reality defined by human-nature nodes • Living mesh; Web-of-life; Living Earth; Circle-of-life
Focus of worldview	Pluralistic Polycentric	<ul style="list-style-type: none"> • General avoidance of “centred” paradigms • Focus on human-nature nodes and relationships • Bio-relational paradigm?
Human nature	Embedded Contextual	<ul style="list-style-type: none"> • Humans part of nature, no duality • Free will enabled and constrained by nature depending on context
Agency	Moderated	<ul style="list-style-type: none"> • Power and control amplified/muted by interconnections between human networks and the wider biosphere
Epistemology		
Nature of knowledge	Unrestricted Equifinality	<ul style="list-style-type: none"> • Open to all forms of knowledge that recognise/internalise the pursuit of life as fundamental to sustainability
Methodology	Complementary	<ul style="list-style-type: none"> • Methods chosen to examine life in all its manifestations • Combining human centred and human decentred perspectives
Ethics		
Values of nature	Inclusive Intergenerational	<ul style="list-style-type: none"> • Instrumental, inherent, relational • Embracing all forms of life (e.g., humans; non-humans; ecosystems; more-than-humans) where <i>life</i> in general has value, rather than individual species or entities • Concern for future of life in all its forms
Ethical approaches	Contingent Adaptive	<ul style="list-style-type: none"> • Ethics and laws grounded in inherently natural processes • Nomos contingent on physis • Pragmatic rather than idealistic • Flexible to account for shifts in values and understanding
Teleology	Biodiversity Justice	<ul style="list-style-type: none"> • Self-regulation and self-sustaining critical to overall flourishing at related systems levels • Creating and maintaining conditions conducive to life • Safeguarding Earth system stability and resilience within planetary boundaries (habitability) • Addressing wider social and ecological injustices through restoration • Prospective prevention of future harm and damage

Ethical Dilemmas in the Pursuit of Life

The preceding reflections on how to advance and interpret the pursuit of life theoretically highlight that the paradigmatic tensions in the context of sustainability outlined at the beginning of this paper present a formidable barrier preventing reconciliation. While I have attempted to sketch out potential responses to these ontological and epistemological debates, it is clear researchers need to embrace the paradigmatic tensions coherently as a single lens, rather than as individual sticking points. Readers will judge whether the conceptualisation outlined above is indeed coherent, and whether such coherence is generally desirable and/or possible.

Moreover, adopting the pursuit of life inherently creates numerous (new) ethical dilemmas for action and behaviours. The list of examples provided below, however, is by no means complete but may serve as a springboard for future

inquiry. Regarding different values of nature, for instance, what if an actor is clearly engaged in actions that intentionally benefit a diversity of species but where they also enjoy financial benefits from doing so, in other words where such practices also rely on the instrumental value of nature? Does deriving financial benefits from ecological conservation automatically negate the relational value of pursuing these practices for the sake of their enjoyment (perhaps by playing a subordinate role)? As the literature makes clear, relational values need to be seen as complimentary to other instrumental values of nature where the simultaneous presence of the latter does not deny the existence of the former. Given the many significant global challenges, it seems short-sighted to discriminate based on motivations alone. Yet relational values have been identified to ensure that beyond rewarding the instrumentalization of nature to further ecological ends (Daily et al., 2000), there is also acknowledgement of the very deep and intrinsically valuable relationships that many

humans already have with nature. These thus do not require further incentives, but should instead be acknowledged and adopted more widely and, if necessary and appropriate, used to challenge instrumental values on an equal footing.

Another important question is whether conceptualising sustainability as the pursuit of life should be interpreted normatively to define human behaviours, or would this contradict calls for less anthropocentric perspectives? If yes, how should adherence to or alignment with the pursuit of life generally be determined? Should this be viewed in binary terms or is a broader scale more suitable? If it is difficult to ascertain whether someone creates or maintains conditions conducive to biodiversity, one possibility might be to set a threshold value such that any individual behaviour or collective action that actively reduces or even destroys life chances would be judged as evidence of non-conformity—a very harsh and complex boundary. Perhaps, though, it would reflect the urgency and criticality regarding the socio-ecological state of the planet and highlight that only few human actions and behaviours are currently in alignment with this pursuit of life. However, would such an assessment encourage and incentivise action to address this general shortcoming, or is it more likely to cause despondency and continued inertia? Alternatively, could an actor be deemed to partially adhere to this principle? How useful would such an assessment be? Much like other ethical approaches the purpose is perhaps to set a high bar and provide general guidance for behaviour, while simultaneously recognising that life rarely presents itself in simplistic terms. In that sense, ethical concepts and values are similar to aspirational stretch goals that constantly require review and qualification to ensure they fit the context and are effective in terms of driving behavioural change (Sitkin et al., 2011).

Central to the imperative for creating and maintaining conditions conducive to life is the call, demand even, on actors of all types to engage in proactive, deliberative, and directive processes. Consistent with the notion of relational values, however, such actions need to be perceived not just as means to an end, but these efforts must have intrinsic meaning and relevance to its actors that goes beyond the direct benefits derived. In other words, actors must characterise the process of *creating and maintaining* as a relational activity with nature where this process itself is valued and as such also inspires others to engage with and develop new approaches towards human-nature interactions (Soga & Gaston, 2021; Xie et al., 2022). Doing so would also require greater recognition of the extent to which agency is moderated by such interconnections. When the engagement with nature is therefore valued as preference and virtue because it defines “who we are as humans” (Himes & Muraca, 2018, p. 2), actions could be deemed to align with the pursuit of life.

As is becoming ever more evident, though, wider socio-ecological systems are in significant distress, imbalance, and nearing potentially dangerous tipping points (Folke et al., 2021; Lenton & Williams, 2013). Simply halting degradation and decline will not address the complex and evolving interconnections between these different issues. Actions to improve socio-ecological conditions need to focus on comprehensive renewal, replenishment, and restoration to enable all life to flourish (Strassburg et al., 2020). More aspirational approaches therefore need to actively foster a more proactive attitude towards changing individual lives and organisational purpose generally (Aguilera et al., 2022; Dahlmann & Stubbs, 2023; George et al., 2021). Put differently, the pursuit of life asks individuals (managers and organisations by extension) not just to avoid damage, loss, and harm, but instead identify behaviours and practices based on new habits and norms that place socio-ecological preservation and restoration of the web-of-life at the centre of decision-making. Yet even voluntary commitments that draw on relatively sharp distinctions between right and wrong are faced with the conundrum of how to differentiate between individual or organisational behaviours and wider planetary outcomes. While an individual actor may be broadly deemed to “pursue life”, both private and public sector activities are still significantly contributing to environmental degradation overall.

Moreover, how can consumption patterns and choices be transformed, especially where and when there are no alternatives? How do we ensure that concepts such as natural carrying capacity, bio demand and biocapacity are adequately reflected in our costs, prices, and production systems such that demand for energy, food, clothing, and other basic necessities not only respect planetary boundaries but also the need for replenishing the wider web-of-life? More generally, how do we shift the dependency of our economic system away from demand growth towards lifestyles and consumption patterns that align with the pursuit of life? On the production side, is the growing adoption of the concept of “nature positive” sufficiently robust to handle the many issues and tensions raised in this paper and elsewhere⁵? How should different organisational functions including, critically, marketing and accounting, internalise a pursuit of life? What is the role, if any, of the financial sector in allocating capital consistent with a reality based on a living mesh? What types of institutions, organisations and sectors are best placed to fulfil and govern socio-ecological needs such as preserving and enhancing biodiversity (Panwar et al., 2022; Sjøfjell et al., 2022)?

Given concerns about the overly extractive and exploitative nature of the capitalistic economic system (Heikkurinen

⁵ See, for example, <https://www.naturepositive.org/> and <https://getnaturepositive.com/>

et al., 2019; Moore, 2015), the pursuit of life would also require a shift in mindsets, policies, and strategies by contributing towards multiple, potentially interconnected qualitative outcomes and impacts, rather than an excessive reliance on a single dominant quantitative performance measure and target such as economic growth and organisational profitability. Examples might include a broader nexus-driven conceptualisation of “planetary health and wellbeing” (Purser et al., 1995; Whitmee et al., 2015), creating targets for a “safe and just corridor for people and the planet” (Rockström et al., 2021), or the notion of “socio-ecological resilience” based on developing adaptive capacity and ability to persist in the face of significant changes in environmental conditions (Folke et al., 2016; Wieland, 2021; Williams et al., 2021).

Beyond evaluating actions and behaviours generally regarding their alignment with the pursuit of life, how should actors handle the differential impacts on the diversity of species, ecosystems and conflicts between humans and other species, particularly when they increase life-chances for one species but reduce them for another (Kortetmäki et al., 2022)? It is important to acknowledge that while there is a natural background rate of species decline this is significantly dwarfed by human-induced species decline which is vastly higher (Ceballos et al., 2017; Richardson et al., 2023). Yet there is also an impossibility, and in some locations or circumstances an undesirability—at least from a human perspective—to completely restore nature to previous states. Nevertheless, proactive efforts to enhance biodiversity and reverse species decline will have multiple co-benefits, some of which may lead to renewal or even the emergence of completely new ecological developments (Jepson & Blythe, 2020; Perino et al., 2019). Such efforts thus need to be designed with the aim of enhancing ecosystem complexity and with coherence across multiple scales, different ecosystems, and landscapes (Bullock et al., 2021). Yet how would one account for the potential “disvalue of nature” (Lliso et al., 2022) and assess trade-offs (Schuler et al., 2017), especially when they generate benefits that support human life but deny them for other species? Is this a case of maximising the life chances for the greatest number of species, regardless of their prevalence, needs and impacts on others, or are new frameworks for prioritisation, allocation, and governance required (Bull et al., 2020)?

The current default position appears to be that human development tends to trump concerns about other life-forms (Hodges, 2003). To what extent can or should economic growth-oriented business models and policies that are often claimed to enhance life chances for humans in the present, but which may also limit those of other species and future generations, be reconciled with the pursuit of life (Edwards, 2021)? Similarly, how should actions and behaviours be evaluated when their impacts may be delayed or spatially

distributed? How should spatial and temporal interconnections of causes and effects be addressed? What is the appropriate stance to take regarding impacts on the life chances of future generations (Jeurissen & Keijzers, 2004)?

Similarly, commitments not to create loss and damage clearly set expectations on avoiding or managing negative impacts. From a psychological perspective, however, this focus tends to create risk-based approaches which may be insufficient given the wider scale of existing sustainability challenges. Imperatives such as doing no harm based on the *precautionary principle* may support behaviours and actions that avoid the worst transgressions but may also lack inspiration for significant and necessary practical action (DesJardins, 1998; Hoffman, 1991). The question therefore remains whether ethical ideas alone are indeed sufficient to guide managerial and organisational practices in the absence of widespread legal enforcement and potentially other incentives (Nilsen, 2023)? Calls for the pursuit of life are unlikely going to change behaviours without a wider cultural and socio-economic transformation, but they may begin to influence legal practice and be taken up more widely and voluntarily if their logic seems attractive, valuable, and effective more broadly. For instance, legal scholars and practitioners are beginning to define and extend definitions of Earth jurisprudence, planetary justice, and Earth systems law (Biermann & Kalfagianni, 2020; Gupta et al., 2021, 2023; Kotzé et al., 2022; Petersmann, 2021) by drawing connections between social and ecological issues and concerns, as well as recognising nature more generally (e.g., granting rights to non-human species and ecosystems including rivers) (Kalonaityte, 2018; Knauß, 2018; Kortetmäki et al., 2022). In doing so, they begin to challenge the assumption that the notion of legal personhood must be confined to humans in the present.

Many of these dilemmas are of course common to other ethical contexts and thus simply reaffirm that moral judgement rarely provides clear black-and-white answers (Aguilera et al., 2022). Instead, the benefits of new ethical perspectives such as the ones outlined here are designed to provide stimulus for novel thought processes and critical assessment, rather than definitive guides. Perhaps scientific inquiry is needed to examine how such trade-offs are handled in nature and elsewhere. Equally, the concept of the *double effect* from the field of bioethics may provide some guidance to recognise that actions, intentions, consequences, and benefits can be connected in complex ways that require careful evaluation (Beauchamp & Childress, 2013). Others also call for greater research forecasting and anticipating wider sustainability trends and scenarios as well as imagining more normative goals and futures (Burch et al., 2019; Gümüşay & Reinecke, 2022; van Vuuren et al., 2022).

Finally, a broader question pertains to whether scholars and practitioners would agree to a framing of

behaviours and practices consistent with the pursuit of life? Many argue that business and ethics are difficult to reconcile as they are already broad and complex (Johnsen, 2021; Spence, 2022). Yet it is also apparent that rapid advancements in technology and scientific engineering already challenge many of our self-created boundaries. When viewed against the backdrop of many other radical innovations (Palsson et al., 2013; Reynolds, 2021), disciplinary boundaries provide increasingly limited protection against incursion from other domains. Even relatively benign and fast-growing innovations such as digitalisation, but also many new green technologies, have darker sides that affect the human condition and other life forms and thus pose complex ethical concerns and considerations.

As such, they all raise new and productive questions resulting from the novel interpretation of pursuit of life: Are these new technologies and practices genuinely and generally creating or maintaining conditions conducive to life? For which life forms, on what spatial and temporal scales? More importantly, what really is life (Lenton et al., 2020)? Do we need to anticipate a changing meaning for what life is at all in the future (Frederick, 2000)? Does it have to be carbon based or are we including potentially futuristic hybrids and other silicone-based entities that display life-like behaviours (Böhm et al., 2022)? What are the implications for the pursuit of life from the rapidly progressing digital technologies including novel forms of artificial intelligence? Should humans really be creating conducive conditions for invasive species, parasites, viruses, and other unwanted diseases as forms of life as well (DesJardins, 2016; Lliso et al., 2022)? Are the increasingly private sector-led efforts of space exploration and colonisation (!) still consistent with the pursuit of life? And is this conceptualisation compatible with the potential for life (in whichever form) to exist on other planets or parts of the universe?

In terms of proactive efforts and behaviours, is it even possible to define desirable impacts from ecological restoration? What about any unintended consequences from any such actions and innovations that could render any initial gains void or even create more harm than anticipated (Melanidis & Hagerman, 2022; Möller & Griebhammer, 2022)? The rapid growth of new human and organisational efforts to push scientific and engineering boundaries makes a wider ethical conceptualisation that overcomes the nature-human duality even more pressing and timely (Böhm et al., 2022; Burch et al., 2019). Reviewing such issues and trends from the perspective of the pursuit of life as proposed here may therefore provide a useful starting point for such a development in research and in practice.

Conclusion

In this paper, I examined how conceptualizing sustainability in the pursuit of life might allow us to develop new insights for research and practice into the wider transformation needed to sustain and restore socioecological systems. I proposed that new insights emerge from examining the fundamental questions arising from paradigmatic tensions about how our views, understanding, study of, and approaches to the nature of reality, and particularly the ethical implications of significant socio-ecological systems degradation, shape our engagement with the concept of sustainability. Consistent with a desire to overcome the persistent human-nature duality in much of extant theory and practice, scholars have long been calling for ontological shifts to challenge prevailing paradigms and worldviews and to initiate a wider sustainability transformation (Böhm et al., 2022; Ergene & Calás, 2023; Ergene et al., 2021; Labatut, 2023; Shrivastava, 1994).

Here, I have argued that concepts such as life and biodiversity may provide equally fruitful avenues for ontological reflection whereby linguistic adjustments, new metaphors, and emphases, could become potential starting points for advancing new theories and practices designed to transform our broader worldviews, paradigms and ultimately actions, decisions, and behaviours. By interpreting life and biodiversity in more relational and pluralistic terms, the hope is they encourage wider engagement with and perhaps convergence (if not reconciliation) of different paradigms in ways that facilitate new perspectives on humanity within the wider biosphere. Quite literally, perceiving of sustainability as a *pursuit* of life also implies a more ecocentric call to “*follow*” life, that is, to emulate nature in ways expressed by Gaia theory and other ontologies as a form of biomimicry (Benyus, 2002). Other expressions such as “living well”, “living with others” (Ergene et al., 2018) and “living in harmony with nature” (Díaz et al., 2020) exemplify the growing need for internalising the essentially relational and systemic nature of our world and reposition our priorities and focal points for attention to better acknowledge the ultimate dependency of humanity (and business) on a functioning ecosystem where there are no definitive boundaries between the two. By emphasising an inclusive focus on life in all its different definitions, manifestations, metaphors, and meanings, I hope this paper provides new stimulus for reflection on the wider interconnectedness of all these entities within this living mesh and thus lays the foundations for future research on sustainability that values and engages with them accordingly.

Acknowledgements The author would like to acknowledge constructive feedback received on earlier drafts of this paper by the anonymous reviewers and attendees of the GRONEN conference 2020 and the

Academy of Management conference 2022. The author is also grateful for the comprehensive and detailed guidance provided by the section editor, Professor Steffen Böhm, as well as by three anonymous reviewers.

Funding No funding was received for conducting this study.

Data availability Data availability does not apply to this type of theoretical paper.

Declarations

Conflict of interest The author declares that he has no conflict of interest.

Open Access This article is licensed under a Creative Commons Attribution 4.0 International License, which permits use, sharing, adaptation, distribution and reproduction in any medium or format, as long as you give appropriate credit to the original author(s) and the source, provide a link to the Creative Commons licence, and indicate if changes were made. The images or other third party material in this article are included in the article's Creative Commons licence, unless indicated otherwise in a credit line to the material. If material is not included in the article's Creative Commons licence and your intended use is not permitted by statutory regulation or exceeds the permitted use, you will need to obtain permission directly from the copyright holder. To view a copy of this licence, visit <http://creativecommons.org/licenses/by/4.0/>.

References

- Adler, P. S. (2022). Capitalism, socialism, and the climate crisis. *Organization Theory*. <https://doi.org/10.1177/26317877221084713>
- Aguilera, R., Aragon-Correa, J. A., & Marano, V. (2022). Rethinking corporate power to tackle grand societal challenges: Lessons from political philosophy. *Academy of Management Review*, *Forthcoming*. <https://doi.org/10.5465/amr.2019.0456>
- Arjaliès, D. L. (2022). What trees taught me about Covid-19: On relational accounting and other magic. *Accounting, Auditing & Accountability Journal*, *35*(2), 569–575. <https://doi.org/10.1108/AAAJ-02-2022-138>
- Banerjee, S. B. (2003). Who sustains whose development? Sustainable development and the reinvention of nature. *Organization Studies*, *24*(1), 143–180.
- Banerjee, S. B., & Arjaliès, D. L. (2021). Celebrating the ensssd 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), 1–24.
- 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., & Song, H. C. (2017). Similar but not the same: Differentiating corporate sustainability from corporate responsibility. *Academy of Management Annals*, *11*(1), 105–149.
- Bascompte, J. (2009). Disentangling the web of life. *Science*, *325*(5939), 416–419.
- Beacham, J. (2018). Organising food differently: Towards a more-than-human ethics of care for the anthropocene. *Organization*, *25*(4), 533–549.
- Beauchamp, T., & Childress, J. (2013). *Principles of Biomedical Ethics* (7th ed., p. 2013). Oxford University Press.
- Benatar, S., Upshur, R., & Gill, S. (2018). Understanding the relationship between ethics, neoliberalism and power as a step towards improving the health of people and our planet. *The Anthropocene Review*, *5*(2), 155–176.
- Benyus, J. M. (2002). *Biomimicry: Innovation inspired by nature*. HarperCollins.
- Bertrand, P., & Legendre, L. (2021). *Earth, Our Living Planet: The Earth System and Its Co-evolution with Organisms*. Springer.
- Biermann, F., Bai, X., Bondre, N., Broadgate, W., Chen, C. T. A., Dube, O. P., Erisman, J. W., Glaser, M., Van der Hel, S., Lemos, M. C., & Seitzinger, S. (2016). Down to earth: Contextualizing the Anthropocene. *Global Environmental Change*, *39*, 341–350.
- Biermann, F., & Kalfagianni, A. (2020). Planetary justice: A research framework. *Earth System Governance*. <https://doi.org/10.1016/j.esg.2020.100049>
- Blok, V. (2016). Biomimicry and the materiality of ecological technology and innovation: Toward a natural model of nature. *Environmental Philosophy*, *13*(2), 195–214. <https://doi.org/10.5840/envirophil201692035>
- Böhm, S., Carrington, M., Cornelius, N., de Bruin, B., Greenwood, M., Hassan, L., Jain, T., Karam, C., Kourula, A., Romani, L., & Riaz, S. (2022). Ethics at the centre of global and local challenges: Thoughts on the future of business ethics. *Journal of Business Ethics*, *180*(3), 835–861.
- Böhme, J., Walsh, Z., & Wamsler, C. (2022). Sustainable lifestyles: towards a relational approach. *Sustainability Science*, *17*(5), 2063–2076.
- Borland, H., Ambrosini, V., Lindgreen, A., & Vanhamme, J. (2016). Building theory at the intersection of ecological sustainability and strategic management. *Journal of Business Ethics*, *135*(2), 293–307.
- Braidotti, R. (2019). A theoretical framework for the critical posthumanities. *Theory, Culture & Society*, *36*(6), 31–61.
- Bull, J. W., Milner-Gulland, E. J., Addison, P. F., Arlidge, W. N., Baker, J., Brooks, T. M., Burgass, M. J., Hinsley, A., Maron, M., Robinson, J. G., & Sekhran, N. (2020). Net positive outcomes for nature. *Nature Ecology & Evolution*, *4*(1), 4–7.
- Bullock, J. M., Fuentes-Montemayor, E., McCarthy, B., Park, K., Hails, R. S., Woodcock, B. A., Watts, K., Corstanje, R., & Harris, J. (2021). Future restoration should enhance ecological complexity and emergent properties at multiple scales. *Ecography*. <https://doi.org/10.1111/ecog.05780>
- Burch, S., Gupta, A., Inoue, C. Y., Kalfagianni, A., Persson, Å., Gerlak, A. K., Ishii, A., Patterson, J., Pickering, J., Scobie, M., & Van der Heijden, J. (2019). New directions in earth system governance research. *Earth System Governance*. <https://doi.org/10.1016/j.esg.2019.100006>
- Burrell, G., & Morgan, G. (1979). *Sociological paradigms and organizational analysis: Elements of the sociology of corporate life*. Routledge.
- Calisto Friant, M., & Langmore, J. (2015). The buen vivir: A policy to survive the Anthropocene? *Global Policy*, *6*(1), 64–71.
- Carson, R. (1962). *Silent spring*. Houghton Mifflin Harcourt.
- CBD, 2022. *Kunming-Montreal Global Biodiversity Framework COP15*. Convention on Biological Diversity. Retrieved April 25, 2023 from, <https://www.cbd.int/gbf/>
- Ceballos, G., Ehrlich, P. R., & Dirzo, R. (2017). Biological annihilation via the ongoing sixth mass extinction signaled by vertebrate population losses and declines. *Proceedings of the National Academy of Sciences*, *114*(30), E6089–E6096.
- Chan, K. M., Balvanera, P., Benessaiah, K., Chapman, M., Díaz, S., Gómez-Baggethun, E., Gould, R., Hannahs, N., Jax, K., Klain, S., & Luck, G. W. (2016). Opinion: Why protect nature? Rethinking values and the environment. *Proceedings of the National Academy of Sciences*, *113*(6), 1462–1465.

- Chan, K. M., Gould, R. K., & Pascual, U. (2018). Editorial overview: Relational values: What are they, and what's the fuss about? *Current Opinion in Environmental Sustainability*, 35, A1–A7.
- Crutzen, P. J. (2002). Geology of mankind. *Nature*, 415, 23.
- Dahlmann, F., & Stubbs, W. (2023). Purpose framing as an informal governance approach to sustainability transformations in the private sector. *Earth System Governance*. <https://doi.org/10.1016/j.esg.2023.100165>
- Daily, G. C., Söderqvist, T., Aniyar, S., Arrow, K., Dasgupta, P., Ehrlich, P. R., Folke, C., Jansson, A., Jansson, B. O., Kautsky, N., & Levin, S. (2000). The value of nature and the nature of value. *Science*, 289(5478), 395–396.
- Dasgupta, P., 2021. *The economics of biodiversity: the Dasgupta review*. HM Treasury. Retrieved April 01, 2022 from, <https://www.gov.uk/government/publications/final-report-the-economics-of-biodiversity-the-dasgupta-review>
- DesJardins, J. (1998). Corporate environmental responsibility. *Journal of Business Ethics*, 17(8), 825–838.
- DesJardins, J. (2016). Is it time to jump off the sustainability bandwagon? *Business Ethics Quarterly*, 26(1), 117–135.
- Díaz, S., Demissew, S., Carabias, J., Joly, C., Lonsdale, M., Ash, N., Larigauderie, A., Adhikari, J. R., Arico, S., Báldi, A., & Bartuska, A. (2015). The IPBES conceptual framework—connecting nature and people. *Current Opinion in Environmental Sustainability*, 14, 1–16.
- Díaz, S., Zafra-Calvo, N., Purvis, A., Verburg, P. H., Obura, D., Leadley, P., Chaplin-Kramer, R., De Meester, L., Dulloo, E., Martín-López, B., & Shaw, M. R. (2020). Set ambitious goals for biodiversity and sustainability. *Science*, 370(6515), 411–413.
- Donges, J. F., Winkelmann, R., Lucht, W., Cornell, S. E., Dyke, J. G., Rockström, J., Heitzig, J., & Schellnhuber, H. J. (2017). Closing the loop: Reconnecting human dynamics to Earth System science. *The Anthropocene Review*, 4(2), 151–157.
- Edwards, M. G. (2021). The growth paradox, sustainable development, and business strategy. *Business Strategy and the Environment*. <https://doi.org/10.1002/bse.2790>
- Edwards, M. G., Alcaraz, J. M., & Cornell, S. E. (2021). Management education and earth system science: Transformation as if planetary boundaries mattered. *Business & Society*, 60(1), 26–56.
- Ehrnström-Fuentes, M., & Böhm, S. (2022). The political ontology of corporate social responsibility: Obscuring the pluriverse in place. *Journal of Business Ethics*. <https://doi.org/10.1007/s10551-022-05175-1>
- Ergene, S., Banerjee, S. B., & Hoffman, A. J. (2021). (Un) sustainability and organization studies: Towards a radical engagement. *Organization Studies*, 42(8), 1319–1335.
- Ergene, S., & Calás, M. B. (2023). Becoming Naturecultural: Rethinking Sustainability for a More-than-human World. *Organization Studies*. <https://doi.org/10.1177/01708406231175293>
- Ergene, S., Calás, M. B., & Smircich, L. (2018). Ecologies of sustainable concerns: Organization theorizing for the Anthropocene. *Gender, Work & Organization*, 25(3), 222–245.
- Eyster, H. N., Satterfield, T., & Chan, K. M. (2023). Empirical examples demonstrate how relational thinking might enrich science and practice. *People and Nature*, 5(2), 455–469.
- Ezzamel, M., & Willmott, H. (2014). Registering 'the ethical' in organization theory formation: Towards the disclosure of an 'invisible force.' *Organization Studies*, 35(7), 1013–1039.
- Fazey, I., Schöpke, N., Caniglia, G., Hodgson, A., Kendrick, I., Lyon, C., Page, G., Patterson, J., Riedy, C., Strasser, T., & Verveen, S. (2020). Transforming knowledge systems for life on Earth: Visions of future systems and how to get there. *Energy Research & Social Science*, 70, 101724.
- Feola, G., Koretskaya, O., & Moore, D. (2021). (Un) making in sustainability transformation beyond capitalism. *Global Environmental Change*. <https://doi.org/10.1016/j.gloenvcha.2021.102290>
- Folke, C., Biggs, R., Norström, A. V., Reyers, B., & Rockström, J. (2016). Social-ecological resilience and biosphere-based sustainability science. *Ecology and Society*, 21(3), 41.
- Folke, C., Polasky, S., Rockström, J., Galaz, V., Westley, F., Lamont, M., Scheffer, M., Österblom, H., Carpenter, S. R., Chapin, F. S., & Seto, K. C. (2021). Our future in the anthropocene biosphere. *Ambio*, 50(4), 834–869.
- Frederick, W. C. (1992). Anchoring values in nature: Toward a theory of business values. *Business Ethics Quarterly*, 2(3), 283–303.
- Frederick, W. C. (2000). Notes for a third millennial manifesto: Renewal and redefinition in business ethics. *Business Ethics Quarterly*, 10(1), 159–167.
- George, G., Haas, M. R., McGahan, A. M., Schillebeeckx, S. J., & Tracey, P. (2021). Purpose in the for-profit firm: A review and framework for management research. *Journal of Management*, 49(6), 1841–1869.
- Gladwin, T. N., Kennelly, J. J., & Krause, T. S. (1995). Shifting paradigms for sustainable development: Implications for management theory and research. *Academy of Management Review*, 20(4), 874–907.
- Gonzalez-Ricoy, I., & Rey, F. (2019). Enfranchising the future: Climate justice and the representation of future generations. *Wiley Interdisciplinary Reviews: Climate Change*, 10(5), e598.
- Gould, R. K., Pai, M., Muraca, B., & Chan, K. (2019). He 'ike 'ana ia i ka pono (it is a recognizing of the right thing): How one indigenous worldview informs relational values and social values. *Sustainability Science*, 14(5), 1213–1232.
- Griggs, D., Smith, M. S., Rockström, J., Öhman, M. C., Gaffney, O., Glaser, G., Kanie, N., Noble, I., Steffen, W., & Shyamsundar, P. (2014). An integrated framework for sustainable development goals. *Ecology and Society*, 19(4), 49.
- Gümüşay, A. A., & Reinecke, J. (2022). Researching for desirable futures: From real utopias to imagining alternatives. *Journal of Management Studies*, 59(1), 236–242.
- Gupta, J., Liverman, D., Bai, X., Gordon, C., Hurlbert, M., Inoue, C. Y. A., Jacobson, L., Kanie, N., Lenton, T. M., Obura, D., & Otto, I. M. (2021). Reconciling safe planetary targets and planetary justice: Why should social scientists engage with planetary targets? *Earth System Governance*. <https://doi.org/10.1016/j.esg.2021.100122>
- Gupta, J., Liverman, D., Prodani, K., Aldunce, P., Bai, X., Broadgate, W., Ciobanu, D., Gifford, L., Gordon, C., Hurlbert, M., & Inoue, C. Y. (2023). Earth system justice needed to identify and live within Earth system boundaries. *Nature Sustainability*. <https://doi.org/10.1038/s41893-023-01064-1>
- Hanna, M. D. (1995). Environmentally responsible managerial behavior: Is ecocentrism a prerequisite? *Academy of Management Review*, 20(4), 796–799.
- Harrison, V. S. (2018). *Eastern philosophy: The basics*. Routledge.
- Hart, S. L. (1995). A natural-resource-based view of the firm. *Academy of Management Review*, 20(4), 986–1014.
- Hausknost, D., & Hammond, M. (2020). Beyond the environmental state? The political prospects of a sustainability transformation. *Environmental Politics*, 29(1), 1–16.
- Heikkurinen, P., Clegg, S., Pinnington, A. H., Nicolopoulou, K., & Alcaraz, J. M. (2021). Managing the anthropocene: Relational agency and power to respect planetary boundaries. *Organization & Environment*, 34(2), 267–286.
- Heikkurinen, P., & Mäkinen, J. (2018). Synthesising corporate responsibility on organisational and societal levels of analysis: An integrative perspective. *Journal of Business Ethics*, 149(3), 589–607.
- Heikkurinen, P., Rinkinen, J., Järvensivu, T., Wilén, K., & Ruuska, T. (2016). Organising in the anthropocene: An ontological outline for ecocentric theorising. *Journal of Cleaner Production*, 113, 705–714.

- Heikkurinen, P., Rуска, T., Wilén, K., & Ulvila, M. (2019). The anthropocene exit: Reconciling discursive tensions on the new geological epoch. *Ecological Economics*. <https://doi.org/10.1016/j.ecolecon.2019.106369>
- Himes, A., & Muraca, B. (2018). Relational values: The key to pluralistic valuation of ecosystem services. *Current Opinion in Environmental Sustainability*, 35, 1–7.
- Hodges, J. (2003). Livestock, ethics, and quality of life. *Journal of Animal Science*, 81(11), 2887–2894.
- Hoffman, W. M. (1991). Business and environmental ethics. *Business Ethics Quarterly*, 1(2), 169–184.
- Hoffman, A. J., & Jennings, P. D. (2018). *Re-engaging with Sustainability in the Anthropocene Era: An Institutional Approach*. Cambridge University Press.
- Hoffman, A. J., & Jennings, P. D. (2021). Institutional-political scenarios for anthropocene society. *Business & Society*, 60(1), 57–94.
- Hölscher, K., Wittmayer, J. M., & Loorbach, D. (2018). Transition versus transformation: What's the difference? *Environmental Innovation and Societal Transitions*, 27, 1–3.
- IPBES. (2019). *Summary for policymakers of the global assessment report on biodiversity and ecosystem services of the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services* (IPBES), 2019. <https://ipbes.net/global-assessment-report-biodiversity-ecosystem-services>.
- IUCN. (2021). *IUCN SSC acceptance of Fauna Flora Funga*. Available at: <https://www.iucn.org/commissions/species-survival-commission/about/ssc-committees/fungalconservation-committee>
- Ives, C. D., Giusti, M., Fischer, J., Abson, D. J., Klaniecki, K., Dorninger, C., Laudan, J., Barthel, S., Abernethy, P., Martín-López, B., & Raymond, C. M. (2017). Human–nature connection: A multidisciplinary review. *Current Opinion in Environmental Sustainability*, 26, 106–113.
- Jax, K., Calestani, M., Chan, K. M., Eser, U., Keune, H., Muraca, B., O'Brien, L., Potthast, T., Voget-Kleschin, L., & Wittmer, H. (2018). Caring for nature matters: A relational approach for understanding nature's contributions to human well-being. *Current Opinion in Environmental Sustainability*, 35, 22–29.
- Jennings, P. D., & Zandbergen, P. A. (1995). Ecologically sustainable organizations: An institutional approach. *Academy of Management Review*, 20(4), 1015–1052.
- Jepson, P., & Blythe, C. (2020). *Rewilding: The Radical New Science of Ecological Recovery* (Vol. 14). Icon Books.
- Jeurissen, R., & Keijzers, G. (2004). Future generations and business ethics. *Business Ethics Quarterly*, 14(1), 47–69.
- Johnsen, C. G. (2021). Sustainability beyond instrumentality: Towards an immanent ethics of organizational environmentalism. *Journal of Business Ethics*, 172(1), 1–14.
- Joyner, B. E., & Payne, D. (2002). Evolution and implementation: A study of values, business ethics and corporate social responsibility. *Journal of Business Ethics*, 41(4), 297–311.
- Kallis, G., Kostakis, V., Lange, S., Muraca, B., Paulson, S., & Schmelzer, M. (2018). Research on degrowth. *Annual Review of Environment and Resources*, 43, 291–316.
- Kalonaityte, V. (2018). When rivers go to court: The Anthropocene in organization studies through the lens of Jacques Rancière. *Organization*, 25(4), 517–532.
- Ketola, T. (2008). A holistic corporate responsibility model: Integrating values, discourses and actions. *Journal of Business Ethics*, 80, 419–435.
- King, A. (1995). Avoiding ecological surprise: Lessons from long-standing communities. *Academy of Management Review*, 20(4), 961–985.
- Knauf, S. (2018). Conceptualizing human stewardship in the anthropocene: The rights of nature in Ecuador, New Zealand and India. *Journal of Agricultural and Environmental Ethics*, 31(6), 703–722.
- Knippenberg, L., De Groot, W. T., Van Den Born, R. J., Knights, P., & Muraca, B. (2018). Relational value, partnership, eudaimonia: A review. *Current Opinion in Environmental Sustainability*, 35, 39–45.
- Kopnina, H., Washington, H., Taylor, B., Piccolo, J., & J. (2018). Anthropocentrism: More than just a misunderstood problem. *Journal of Agricultural and Environmental Ethics*, 31(1), 109–127.
- Kortetmäki, T., Heikkinen, A., & Jokinen, A. (2022). Particularizing nonhuman nature in stakeholder theory: The recognition approach. *Journal of Business Ethics*. <https://doi.org/10.1007/s10551-022-05174-2>
- Kotzé, L. J., Kim, R. E., Blanchard, C., Gellers, J. C., Holley, C., Petersmann, M., van Asselt, H., Biermann, F., & Hurlbert, M. (2022). Earth system law: Exploring new frontiers in legal science. *Earth System Governance*. <https://doi.org/10.1016/j.esg.2021.100126>
- Kumarappa, J.C. (1946). *The economy of permanence*. CP, All India Village Industries Association. Sarva Seva Sangh Prakashan: Rajghat, Varanasi.
- Labatut, J. (2023). Towards a biosocial turn in management and organization research? Proposals for a Paradigm Shift. *Organization*, 30(6), 1230–1237.
- Latour, B. (1990). Technology is society made durable. *The Sociological Review*, 38(1), 103–131.
- Latour, B. (2017). Anthropology at the time of the Anthropocene: a personal view of what is to be studied. *The anthropology of sustainability* (pp. 35–49). Palgrave Macmillan.
- Lenton, T. M., Dutreuil, S., & Latour, B. (2020). Life on Earth is hard to spot. *The Anthropocene Review*, 7(3), 248–272.
- Lenton, T. M., & Williams, H. T. (2013). On the origin of planetary-scale tipping points. *Trends in Ecology & Evolution*, 28(7), 380–382.
- Lewis, S. L., & Maslin, M. A. (2015). Defining the anthropocene. *Nature*, 519(7542), 171.
- Lliso, B., Lenzi, D., Muraca, B., Chan, K. M., & Pascual, U. (2022). Nature's disvalues: What are they and why do they matter? *Current Opinion in Environmental Sustainability*, 56, 101173.
- Lovelock, J. (2003a). Gaia: The living Earth. *Nature*, 426(6968), 769.
- Lovelock, J. E. (2003b). Gaia and emergence. *Climatic Change*, 57(1), 1–3.
- Lovelock, J. E., & Margulis, L. (1974). Atmospheric homeostasis by and for the biosphere: The Gaia hypothesis. *Tellus*, 26(1–2), 2–10.
- Malm, A., & Hornborg, A. (2014). The geology of mankind? A critique of the anthropocene narrative. *The Anthropocene Review*, 1(1), 62–69.
- Marquis, C., Toffel, M. W., & Zhou, Y. (2016). Scrutiny, norms, and selective disclosure: A global study of greenwashing. *Organization Science*, 27(2), 483–504.
- Melanidis, M. S., & Hagerman, S. (2022). Competing narratives of nature-based solutions: Leveraging the power of nature or dangerous distraction? *Environmental Science & Policy*, 132, 273–281.
- Metz, T. (2019). An African theory of moral status: A relational alternative to individualism and holism. *African Environmental Ethics* (pp. 9–27). Springer.
- Möller, M., & Griebhammer, R. (2022). Prospective technology assessment in the Anthropocene: A transition toward a culture of sustainability. *The Anthropocene Review*, 9(2), 257–275. <https://doi.org/10.1177/20530196221095700>
- Moore, J. (2015). *Capitalism in the Web of Life: Ecology and the Accumulation of Capital*. Verso Books.
- Morgan, G. (1980). Paradigms, metaphors, and puzzle solving in organization theory. *Administrative Science Quarterly*, 25(4), 605–622.

- Morrell, K., & Dahlmann, F. (2022). Aristotle in the Anthropocene: The comparative benefits of Aristotelian virtue ethics over Utilitarianism and deontology. *The Anthropocene Review*. <https://doi.org/10.1177/20530196221105093>
- Næss, A. (1973). The shallow and the deep, long-range ecology movement A Summary. *Inquiry*, 16(1–4), 95–100.
- Newton, T. J. (2002). Creating the new ecological order? Elias and actor-network theory. *Academy of Management Review*, 27(4), 523–540.
- Nilsen, H. R. (2023). Code red for humanity: The role of business ethics as we transgress planetary thresholds. *Journal of Business Ethics*, 189(1), 1–7. <https://doi.org/10.1007/s10551-023-05402-3>
- Norton, B. G. (1991). *Toward unity among environmentalists*. Oxford University Press.
- O'Neill, D.W., Fanning, A.L., Lamb, W.F., & Steinberger, J.K. (2018). A good life for all within planetary boundaries. *Nature Sustainability*, 1(2), 88–95.
- Painter, M., Hibbert, S., & Cooper, T. (2019). The development of responsible and sustainable business practice: Value, mind-sets, business-models. *Journal of Business Ethics*, 157, 885–891.
- Palsson, G., Szerszynski, B., Sörlin, S., Marks, J., Avril, B., Crumley, C., Hackmann, H., Holm, P., Ingram, J., Kirman, A., & Buendía, M. P. (2013). Reconceptualizing the 'Anthropos' in the Anthropocene: Integrating the social sciences and humanities in global environmental change research. *Environmental Science & Policy*, 28, 3–13.
- Panwar, R., Ober, H., & Pinkse, J. (2022). The uncomfortable relationship between business and biodiversity: Advancing research on business strategies for biodiversity protection. *Business Strategy and the Environment*. <https://doi.org/10.1002/bse.3139>
- Perino, A., Pereira, H. M., Navarro, L. M., Fernández, N., Bullock, J. M., Ceausu, S., Cortés-Avizanda, A., van Klink, R., Kuemmerle, T., Lomba, A., & Pe'er, G. (2019). Rewilding complex ecosystems. *Science*, 364(6438), 5570. <https://doi.org/10.1126/science.aav5570>
- Petersmann, M. C. (2021). Sympoietic thinking and earth system law: the earth, its subjects and the law. *Earth System Governance*. <https://doi.org/10.1016/j.esg.2021.100114>
- Phillips, M. (2019). "Daring to care": Challenging corporate environmentalism. *Journal of Business Ethics*, 156, 1151–1164.
- Pickering, J., Patterson, J., Biermann, F., Burch, S., Elliott, L., Gupta, A., Inoue, C. Y. A., Ishii, A., Kalfagianni, A., Meadowcroft, J., & Okereke, C. (2022). Pluralizing debates on the anthropocene requires engaging with the diversity of existing scholarship. *Annals of the American Association of Geographers*, 113(2), 1–6. <https://doi.org/10.1080/24694452.2022.2105296>
- Pörtner, H. O., Scholes, R. J., Arneeth, A., Barnes, D. K. A., Burrows, M. T., Diamond, S. E., Duarte, C. M., Kiessling, W., Leadley, P., Managi, S., & McElwee, P. (2023). Overcoming the coupled climate and biodiversity crises and their societal impacts. *Science*. <https://doi.org/10.1126/science.abl4881>
- Purser, R. E., Park, C., & Montuori, A. (1995). Limits to anthropocentrism: Toward an ecocentric organization paradigm? *Academy of Management Review*, 20(4), 1053–1089.
- Reichel, A., & Perey, R. (2018). Moving beyond growth in the anthropocene. *The Anthropocene Review*, 5(3), 242–249.
- Reynolds, J. L. (2021). Earth system interventions as technologies of the anthropocene. *Environmental Innovation and Societal Transitions*, 40, 132–146.
- Richardson, K., Steffen, W., Lucht, W., Bendtsen, J., Cornell, S. E., Donges, J. F., Drüke, M., Fetzer, I., Bala, G., von Bloh, W., & Feulner, G. (2023). Earth beyond six of nine planetary boundaries. *Science Advances*. <https://doi.org/10.1126/sciadv.adh2458>
- Rocha, J. C. (2022). Ecosystems are showing symptoms of resilience loss. *Environmental Research Letters*, 17(6), 065013. <https://doi.org/10.1088/1748-9326/ac73a8>
- Rockström, J., Gupta, J., Lenton, T. M., Qin, D., Lade, S. J., Abrams, J. F., Jacobson, L., Rocha, J. C., Zimm, C., Bai, X., & Bala, G. (2021). Identifying a safe and just corridor for people and the planet. *Earth's Future*. <https://doi.org/10.1029/2020EF001866>
- Rockström, J., Steffen, W., Noone, K., Persson, Å., Chapin, F. S., III., Lambin, E. F., Lenton, T. M., Scheffer, M., Folke, C., Schellnhuber, H. J., & Nykvist, B. (2009). A safe operating space for humanity. *Nature*, 461(7263), 472.
- Rounsevell, M. D., Harfoot, M., Harrison, P. A., Newbold, T., Gregory, R. D., & Mace, G. M. (2020). A biodiversity target based on species extinctions. *Science*, 368(6496), 1193–1195.
- Sadler-Smith, E., & Akstinaite, V. (2022). Human hubris, anthropogenic climate change, and an environmental ethic of humility. *Organization & Environment*, 35(3), 446–467.
- Salmon, E., Chavez, J. F., & Murphy, M. (2022). New perspectives and critical insights from indigenous peoples' research: A systematic review of indigenous management and organization literature. *Academy of Management Annals*. <https://doi.org/10.5465/annals.2021.0132>
- Sambala, E. Z., Cooper, S., & Manderson, L. (2020). Ubuntu as a framework for ethical decision making in Africa: Responding to epidemics. *Ethics & Behavior*, 30(1), 1–13.
- Sayles, J. S., Mancilla Garcia, M., Hamilton, M., Alexander, S. M., Baggio, J. A., Fischer, A. P., Ingold, K., Meredith, G. R., & Pittman, J. (2019). Social-ecological network analysis for sustainability sciences: A systematic review and innovative research agenda for the future. *Environmental Research Letters*, 14(9), 093003.
- Schmidt, J. J., Brown, P. G., & Orr, C. J. (2016). Ethics in the anthropocene: A research agenda. *The Anthropocene Review*, 3(3), 188–200.
- Scholz, M., de los Reyes, G., & Craig Smith, N. (2019). The enduring potential of justified hypernorms. *Business Ethics Quarterly*, 29(3), 317–342.
- Schröter, M., Başak, E., Christie, M., Church, A., Keune, H., Osipova, E., Oteros-Rozas, E., Sievers-Glotzbach, S., van Oudenhoven, A. P., Balvanera, P., & González, D. (2020). Indicators for relational values of nature's contributions to good quality of life: The IPBES approach for Europe and Central Asia. *Ecosystems and People*, 16(1), 50–69.
- Schuler, D., Rasche, A., Etzion, D., & Newton, L. (2017). Guest editors' introduction: Corporate sustainability management and environmental ethics. *Business Ethics Quarterly*, 27(2), 213–237.
- Shoshitaishvili, B. (2021). From anthropocene to noosphere: The great acceleration. *Earth's Future*. <https://doi.org/10.1029/2020EF001917>
- Shoshitaishvili, B. (2022). Is our planet doubly alive? Gaia, globalization, and the anthropocene's planetary superorganisms. *The Anthropocene Review*. <https://doi.org/10.1177/20530196221087789>
- Shrivastava, P. (1994). Castrated environment: Greening organizational studies. *Organization Studies*, 15(5), 705–726.
- Shrivastava, P. (1995). The role of corporations in achieving ecological sustainability. *Academy of Management Review*, 20(4), 936–960.
- Sitkin, S. B., See, K. E., Miller, C. C., Lawless, M. W., & Carton, A. M. (2011). The paradox of stretch goals: Organizations in pursuit of the seemingly impossible. *Academy of Management Review*, 36(3), 544–566.
- Sjåfjell, B., Liao, C., & Argyrou, A. (2022). *Innovating Business for Sustainability: Regulatory Approaches in the Anthropocene*. Edward Elgar Publishing.
- Smith, T. S., Baranowski, M., & Schmid, B. (2021). Intentional degrowth and its unintended consequences: Uneven journeys

- towards post-growth transformations. *Ecological Economics*, 190, 107215.
- Soga, M., & Gaston, K. J. (2021). Towards a unified understanding of human–nature interactions. *Nature Sustainability*, *Forthcoming*. <https://doi.org/10.1038/s41893-021-00818-z>
- Soriano, C. (2022). Epistemological limitations of Earth system science to confront the Anthropocene crisis. *The Anthropocene Review*, 9(1), 111–125.
- Spence, L. J. (2022). Radical, relevant, reflective and brilliant: Towards the future of business ethics. *Journal of Business Ethics*, 180, 829–834. <https://doi.org/10.1007/s10551-022-05238-3>
- Starik, M., & Rands, G. P. (1995). Weaving an integrated web: Multilevel and multisystem perspectives of ecologically sustainable organizations. *Academy of Management Review*, 20(4), 908–935.
- Steffen, W., Persson, Å., Deutsch, L., Zalasiewicz, J., Williams, M., Richardson, K., Crumley, C., Crutzen, P., Folke, C., Gordon, L., & Molina, M. (2011). The anthropocene: From global change to planetary stewardship. *Ambio*, 40(7), 739.
- Steffen, W., Richardson, K., Rockström, J., Schellnhuber, H. J., Dube, O. P., Dutreuil, S., Lenton, T. M., & Lubchenco, J. (2020). The emergence and evolution of earth system science. *Nature Reviews Earth & Environment*, 1(1), 54–63.
- Steffen, W., Rockström, J., Richardson, K., Lenton, T. M., Folke, C., Liverman, D., Summerhayes, C. P., Barnosky, A. D., Cornell, S. E., Crucifix, M., & Donges, J. F. (2018). Trajectories of the earth system in the anthropocene. *Proceedings of the National Academy of Sciences*, 115(33), 8252–8259.
- Strassburg, B. B., Iribarrem, A., Beyer, H. L., Cordeiro, C. L., Crouzeilles, R., Jakovac, C. C., Junqueira, A. B., Lacerda, E., Latawiec, A. E., Balmford, A., & Brooks, T. M. (2020). Global priority areas for ecosystem restoration. *Nature*, 586(7831), 724–729.
- Tallberg, L., García-Rosell, J. C., & Haanpää, M. (2022). Human–animal relations in business and society: Advancing the feminist interpretation of stakeholder theory. *Journal of Business Ethics*, 180(1), 1–16.
- Valente, M. (2012). Theorizing firm adoption of sustaincentrism. *Organization Studies*, 33(4), 563–591.
- van Vuuren, D. P., Zimm, C., Busch, S., Kriegl, E., Leininger, J., Messner, D., Nakicenovic, N., Rockstrom, J., Riahi, K., Sperling, F., & Bosetti, V. (2022). Defining a sustainable development target space for 2030 and 2050. *One Earth*. <https://doi.org/10.1016/j.oneear.2022.01.003>
- Waddock, S. (2020). Achieving sustainability requires systemic business transformation. *Global Sustainability*, 3(e12), 1–12. <https://doi.org/10.1017/sus.2020.9>
- Waddock, S., & Kuenkel, P. (2020). What gives life to large system change? *Organization & Environment*, 33(3), 342–358.
- Walker, C. (2017). Tomorrow’s leaders and today’s agents of change? Children, sustainability education and environmental governance. *Children & Society*, 31(1), 72–83.
- Walsh, Z., Böhme, J., & Wamsler, C. (2021). Towards a relational paradigm in sustainability research, practice, and education. *Ambio*, 50(1), 74–84.
- White, G. R., Samuel, A., & Thomas, R. J. (2022). Exploring and expanding supererogatory acts: Beyond duty for a sustainable future. *Journal of Business Ethics*. <https://doi.org/10.1007/s10551-022-05144-8>
- Whiteman, G., & Cooper, W. H. (2000). Ecological embeddedness. *Academy of Management Journal*, 43(6), 1265–1282.
- Whiteman, G., Walker, B., & Perego, P. (2013). Planetary boundaries: Ecological foundations for corporate sustainability. *Journal of Management Studies*, 50(2), 307–336.
- Whitmee, S., Haines, A., Beyrer, C., et al. (2015). Safeguarding human health in the anthropocene epoch: Report of The rockefeller foundation-lancet commission on planetary health. *Lancet*, 386, 1973–2028.
- Wieland, A. (2021). Dancing the supply chain: Toward transformative supply chain management. *Journal of Supply Chain Management*, 57(1), 58–73.
- Williams, A., & Whiteman, G. (2021). A call for deep engagement for impact: Addressing the planetary emergency. *Strategic Organization*, 19(3), 526–537.
- Williams, A., Whiteman, G., & Kennedy, S. (2021). Cross-scale systemic resilience: Implications for organization studies. *Business & Society*, 60(1), 95–124.
- Williams, M., Zalasiewicz, J., Haff, P. K., Schwägerl, C., Barnosky, A. D., & Ellis, E. C. (2015). The anthropocene biosphere. *The Anthropocene Review*, 2(3), 196–219.
- Wilson, E. (1984). 1984. Harvard University Press.
- Wirth, J. M. (2022). Who is the anthropos in the anthropocene? *The Anthropocene Review*, 9(2), 175–184.
- Wright, C., Nyberg, D., Rickards, L., & Freund, J. (2018). Organizing in the anthropocene. *Organization*, 25(4), 455–471.
- Xie, L., Bulkeley, H., & Tozer, L. (2022). Mainstreaming sustainable innovation: Unlocking the potential of nature-based solutions for climate change and biodiversity. *Environmental Science & Policy*, 132, 119–130.

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