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Viewpoint

Navigating alternative framings of human-environment interactions: Variations on the theme of 'Finding Nemo'

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ABSTRACT

Wide agreement exists that the "Anthropocene" demands new forms of engagement and responses to achieve sustainability, but different fields suggest quite different approaches. In this communication, we set out four perspectives that we argue have fundamentally different framings of the "problem" of the Anthropocene, and consequently point to very different responses to achieving sustainability. These four fields include: the eco-modernist perspective, the planetary stewardship paradigm, the pathways to sustainability approach, and the critical post-humanist paradigm. We suggest that a deeper underlying framing which can help integrate aspects of these four perspectives is an understanding of the "Anthropocene as responsibility". We argue that from this perspective it becomes possible to engage with an ethics of responsibility that comes with being human and acting on the planet, in the face of an uncertain and unknowable future.

1. Introduction

A recent spate of articles has appeared in social media and through other popular channels about the diversely understood concept of the "Anthropocene" (Chin et al., 2016). Proposed by Paul Crutzen as a new "human-dominated, geological epoch" (Crutzen, 2002), the Earth System Science community increasingly accepts the notion of the "Anthropocene", and Maslin and Lewis (2015: 111) argue "the evidence for humans being a major geological power has been accepted and the paradigm shift has occurred". However, as the concept has become established (Ruddiman et al., 2015; Steffen et al., 2007; Zalasiewicz et al., 2010), there has been an enriching debate within other fields as to the usefulness of this term (Brondizio et al., 2016; Lövbrand et al., 2015). Much of the debate specifically centers on what the concept of the Anthropocene implies in terms of actions needed to reshape human interactions with the Earth System in order to achieve environmental and social sustainability, and – more controversially – whether it could be possible to conceptualize of a "good" Anthropocene (Bennett et al., 2016).

A set of interesting blogs initiated by the STEPS Centre[1] has furthered this rich debate. Started by Stirling's (2015) provoking blog on "rei(g)ning back" the Anthropocene, a set of assumptions on how the Anthropocene is understood by different academic fields came to light through other contributors' additions. In this short piece, we respond to Arora and Stirling's (2015) call to take on the responsibility that those of us in our "burgeoning academic anthropsalons" bear as "mediators of concepts that hold concrete material, social and ecological implications".

In an attempt to help make sense of the different perspectives, we suggest a categorization based on four broad underpinning ontological imageries that characterize current academic discourses about the Anthropocene. We argue that they differ from each other in terms of how the role of human agency is understood and this in turn influences what actions are advocated for addressing the sustainability challenges posed by the Anthropocene, and ultimately, what can be defined as "good" or desirable in terms of insuring sustainable human-environment interactions. Despite the diverse and even conflicting interpretations of what achieving sustainability and a potential "good Anthropocene" should entail, there is agreement that the Anthropocene calls for deeper engagement and responsibility in governing human and environmental futures. We conclude with a discussion of this deeper underlying notion of the "Anthropocene as responsibility" – a call for humans to act with more responsibility towards each other and the planet.

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[1] ESRC STEPS (Social, Technological and Environmental Pathways to Sustainability) Centre carries out interdisciplinary global research uniting development studies with science and technology studies to reduce poverty and bring about social justice. https://steps-centre.org/.

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2. Current approaches framing the "good" Anthropocene

Dory: Have you seen a clown fish swim by? It looks just like him.

Crab: Yeah, I saw him, Bluey, but I'm not telling you where he went, and there's no way you're gonna make me.

*(*From the film *Finding Nemo, 2003)*

In the animated children's film released by Walt Disney Pictures called *Finding Nemo* (Stanton, 2003), a clown fish named Nemo is abducted by a boat in the Great Barrier Reef and netted up and sent to a dentist's office in Sydney. Marlin (Nemo's father) and Dory (a blue tang fish he met along the way) embark on a mission to find Nemo without the help of a map or any clue as to where he might have gone. The companions have no device with which they can track Nemo or measure their progress in terms of retrieving him. As a result, the task of finding Nemo is actually an impossible one and the only option that Dory and Marlin have is to "just keep swimming", and to navigate unknown territories by learning the language of the signs and sea creatures that mark the new currents and pathways that they encounter. The story of this film serves as an analogy for how navigating the challenges of the Anthropocene also amounts to making decisions and interventions in unchartered territory marked by uncertainty and unforeseeable outcomes.

There is growing agreement amongst scholars that the emergence and use of the term Anthropocene has inspired new avenues of research, sparked critical debates and destabilized conventional scientific dichotomies between humans and nature (Folke and Gunderson, 2010; Folke et al., 2011; Holling, 2001; Lorimer, 2012), between fact and value (Costanza et al., 2014; de Groot et al., 2012; Latour, 2015), and between objective science and science-with-politics (Barry and Born, 2015). Moreover, the concept of the Anthropocene challenges the notion of a homogenous understanding of collective human agency (Chakrabarty, 2012) by exposing the fact that the consequences of human activity can no longer be explained in terms of purely social theories of difference or political economy alone. As Moore (2016) argues, the idea of the Anthropocene suggests that humanity is now undeniably entangled in the natural world through the collective effects of the species as a geological force and that this shift affects the underlying assumptions that scientists make about the nature of reality. Even the notion of time is challenged by the Anthropocene in that traditional perspectives on the future as flowing from the present are undermined and suggests an understanding of the future as being part of and influencing the present (Latour, 2015; Poli, 2010).

A closer conceptual reading of the term "Anthropocene" reveals that although there is agreement that a new engagement with the challenges that characterize this new era is needed (Brondizio et al., 2016; Lövbrand et al., 2015), different fields suggest different ways in which such engagement should occur. We argue that these various responses are based on diverse conceptualizations of the relationship and agency that exists between humans and nature. Through a critical reading of literature, we have identified four prominent conceptual framings of the Anthropocene. We have categorized these framings in terms of the different worldviews that shape conceptualisations of agency, how the notion of human-nature relations are constructed, and how these constellations inform the proposed responses to sustainability challenges and the values related to what could be seen as signifying a "good" Anthropocene (cf. Table 1).

2.1. Eco-modernism/post-environmentalism

Building on the Enlightenment ideals of progress and instrumental rationality (Bauman, 2003; Toulmin, 1992) the eco-modernist position argues that achieving sustainability is possible only on condition that we embrace human development, modernization, and technological innovation (Ellis, 2011). Through a concerted effort of enhanced human

Table 1
Summary of four different prominent framings of human-environment responses to the Anthropocene.

Perspective	Underlying worldview and problem framing	Primary Response to Anthropocene challenges	Strategies for achieving sustainability and a 'Good Anthropocene'	Examples	References
Eco-modernism/post-environmentalism	Enlightenment ideals of progress and instrumental rationality.	Technological innovation needs to address and account for environmental sustainability.	Humans should use their growing social, economic, and technological powers to manage the Earth System, including the climate.	Agricultural intensification, Desalinisation, Nuclear power, Decoupling strategies	Shellenberger and Nordhaus (2015), Asafu-Adjaye et al. (2015), Ellis (2011)
Biosphere stewardship	Humans are intertwined with and dependent on the functioning of the Earth System.	Biosphere stewardship & reconnecting people to nature.	Maintaining resilient social-ecological systems to sustain human wellbeing.	Earth system governance, Sustainable Development Goals, Ecosystem Goods and Services, Natural Capital Accounting	Folke et al. (2011), Folke et al. (2016), Biermann et al. (2009), Brondizio et al. (2016), Galaz et al. (2012), Rockström et al. (2009), Steffen et al. (2015)
Sustainability pathways	The current world reinforces unequal access to natural resources and marginalises the poorest.	Opening up spaces for multiple perspectives to be engaged.	Reducing inequality and domination of powerful perspectives. Allowing space for diverse realizations of human wellbeing.	Participatory deliberation and contestation, Political Ecology, Social Movements	Leach et al. (2012), Stirling (2015)
Critical post-humanism	Nature, culture, subjects, and objects do not exist independently but arise through their relationships with other entities. Agency emerges through webs of relations in which human exceptionalism is denied.	Agency is not just located in human activity but comes about through multiple collective alliances or collaborative socio-material assemblages.	Enable generative capacities constituted through processes of interconnectedness that cut across the agency of all species, other entities, space and time.	Actor-Network theory, Non-human agency, Relational ethics	Braidotti (2006), Harraway (2016), Latour (2014), Lorimer (2012)

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