



**PERHAPS THE DODO SHOULD HAVE ACCOUNTED FOR  
HUMAN BEINGS? Accounts of humanity and (its) extinction**

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### ABSTRACT

**Purpose:** We intend to offer a counter-narrative to those accounts of specific species extinction. Our intention is to offer a counter narrative that places humanity's ways of organising at the core and recognises that only fundamental re-appraisal of (western) humanity's current taken-for-granted narratives offers any hope for biodiversity and sustainability. Thus we seek to offer a narrative that might challenge producers of accounts of all sorts to reconsider the context and level of resolution of their accounts. We do this by first arguing that humankind is the root cause of most (if not all) current species extinctions. We then argue that such extinctions represent one reason why humanity might itself be threatened with extinction... or indeed, why human extinction might be a good thing. We need new accounts and utopian possibilities with which to imagine other, better, futures.

**Design/methodological/approach:** The piece is an essay which assembles a wide range of literature in order to support its contentions.

**Findings:** There are many individual accounts of species which explore the (albeit very serious) symptoms of a problem without, we maintain, examining the systematic source of the problem. The source problem is western mankind's organisation and somewhat taciturn conception of humanity. There is a lack of accounts offering new possibilities.

**Research Limitations/Implications:** The piece is an essay and, consequently limited to the quality of the argument presented. The essay suggests that the principal implications relate to (i) how producers of counter-accounts frame their construction of accounts and (ii) how accounts of species extinction need to be more cognizant of underlying causes.

**Practical Implications:** Without substantial change, planetary ecology, including humanity, is very seriously threatened. Imagining a plausible future is a most practical act of faith.

**Social Implications:** The essay suggests that as accountants we might think to approach our counter-accounts with a lower level of resolution: one that is directed towards a more challenging notion of what it is to be human.

**Originality/value:** Whilst building upon the growing sophistication in our understanding of (new) accounts and responding to the emerging literatures on biodiversity, species extinction and utopian vision we offer what we believe to be a unique suggestion in the accounting literature about the extinction of mankind.

**Key Words:** Humanity; Extinction; Narratives; Accounts; Biodiversity; Utopian Method

**Paper Type:** Research Essay

Should dodos account for humanity?

## PERHAPS THE DODO<sup>1</sup> SHOULD HAVE ACCOUNTED FOR HUMANITY? Accounts of humanity and (its) extinction

*A human being is a part of the whole, called by us "Universe," a part limited in time and space. He experiences himself, his thoughts and feelings as something separated from the rest – a kind of optical delusion of his consciousness.*<sup>2</sup> Albert Einstein 1950.

*Yet for all this, our world is still shaped by stories. Through television, film, novels and video games, we may be more thoroughly bombarded with narrative material than any people that ever lived. What is peculiar, however, is the carelessness with which these stories are channelled at us – as entertainment, a distraction from daily life, something to hold our attention to the other side of the ad break. There is little sense that these things make up the equipment by which we navigate reality. On the other hand, there are the serious stories told by economists, politicians, geneticists and corporate leaders. These are not presented as stories at all, but as direct accounts of how the world is. Choose between competing versions, then fight with those who chose differently.* UNCIVILISATION: THE DARK MOUNTAIN MANIFESTO <http://dark-mountain.net/about/manifesto/>

### 1. Introduction

We already have accounts of species and their well-being, or more usually, their endangerment. Whilst more detailed accounts of the specific conditions of endangerment of specific species (bees is an unusually good example, Atkins and Atkins, 2016) are clearly valuable from the point of view of that species and its management – or (perhaps more accurately) humanity's management of itself with respect to that species - there is a danger that as Rickards (2015) argues, we are privileging our narratives of *humans as steward* over other, more complex narratives of *humans as systems dynamic* and/or over *humans as geological force*. (See also, Latour, 1998).<sup>3</sup> Although management and activity in the face of species extinction appeals to our humanity at some level, such a response must, we argue, be cognisant of its essential modernity and reductionism. We wish to argue that the causes of species extinction are systemic and human; and that such extinctions are only one – albeit critical - manifestation of un-sustainability.

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<sup>3</sup> The Dodo as the *cause célèbre* for human-caused extinction (Cheke & Hume, 2010; Hume 2006) seems to have been an accident of history (Turvey & Cheke, 2008), especially since other extinct species were equally subject to human barbarism (e.g., the Great Auk). As Turvey & Cheke (2008, p159) note, the human-centredness, sense of superiority and even stupidity knew few bounds and they identify (in Strickland and Melville, 1848) an apparent inability to take any agency in the specie's extinction, rather noting: 'the duty of the naturalist to preserve to the stores of Science the knowledge of these extinct or expiring organisms... so that our acquaintance with the marvels of Animal and Vegetable existence may suffer no detriment by the losses which the organic creation seems destined to sustain.'

<sup>2</sup> This quotation is part of a letter Einstein sent to Robert S. Marcus on the death of his son from polio. The original ended with the sentiment... "The striving to free oneself from this delusion is the one issue of true religion. Not to nourish the delusion but to try to overcome it is the way to reach the attainable measure of peace of mind."

<sup>3</sup> And see also Vinnari (2013) for a further and accessible insight into Latour's possibilities in this regard.

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2 Whilst nothing we would want to say should be taken as arguing against the development of  
3 *good* (as opposed to partial and self-serving) reliable accounts of organisational engagement  
4 with habitat and species, we want to argue for the simultaneous maintenance of meta-  
5 narratives - meta-accounts if you will - through which such organisational - and species-level  
6 accounts should be viewed, understood and critiqued. In this sense, we are drawing  
7 simultaneously from Brown and Dillard's project arguing for multiple and conditional  
8 accounts, (Brown and Dillard, 2013) and Boland and Schultze's call for accounting to be  
9 located within a sense-making narrative that recognises both narrative and calculative  
10 accounts as parts of the complex narratives within relationships, (Boland and Schultze,  
11 1996).

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13 Furthermore, as Lohman (2015) argues, accounts of nature imply that we (those seeking  
14 and/or constructing the accounts) are clearly distinguished from nature (the "object" for  
15 which we wish to account). Such immanent thinking is an inevitable consequence of  
16 modernity with all that this entails (Leiss, 1972/1994; Latour 1998; Dresner, 2002) but it need  
17 not, we believe, be immutable, (see especially, Vinnari and Dillard, p26). That is accounts of  
18 "nature", if approached appropriately, might be just as likely to engage us and generate  
19 senses of *closeness* (Gray, Brennan and Malpas, 2014) as they are to create difference,  
20 distance, and separation (Jones and Solomon, 2013; and see also Stone, 1974).<sup>4</sup>  
21 Essentially, any accounts/narratives that we discuss here must be as much about ourselves  
22 and our sense of ourselves as they are accounts of the species. It may not be possible to  
23 escape from our cage of immanence but perhaps through better conception(s) of nature we  
24 might better reflect conceptions of ourselves.

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26 It is in this sense that we gain much needed support from Levitas (1990, 2013) and her  
27 discussion of utopia, (see also Atkins et al, 2015). The concept of utopia, she argues, allows  
28 us to step slightly away from the present in order to assess what we now do but in the light  
29 of what we could or should do (2013; p. xvii; see also Roberto Unger).<sup>5</sup> Humanity finds itself  
30 alienated from, what Marx called, "species being" and this distorts our humanity.<sup>6</sup> But we  
31 retain, it is claimed, a longing for a fulfilled settlement of this alienation that brings us back to

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48 <sup>4</sup> The term "closeness" is developed in Gray et al., (2014) to relate to the idea that the closer individuals and  
49 groups are physically, intellectually, professionally and in terms of their values the less formal need be the  
50 mechanisms of accountability and the more informal will be the accounts. The discharge of accountabilities  
51 can arise casually or even non-verbally between peoples. Appropriate accounts may well engender closeness  
52 as opposed to traditional financial accounting which engenders distance and formality – or non-closeness  
53 perhaps.

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55 <sup>5</sup> <http://www.socialsciencespace.com/2014/01/roberto-mangabeira-unger-what-is-wrong-with-the-social-sciences-today/>

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58 <sup>6</sup> For a detailed explanation of Marx's concept of species being, see for example, Ollman (1976, pp. 150-153).

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(what Levitas and others call) a “state of grace”, (2013, p12). These utopian yearnings need not embrace visions of perfection – such as Garden of Eden fantasies for example - because in secular reasoning such states would probably be impossible. However, utopia allows us to embrace accounts of the potential, the possible and the imagination that, crucially, overcome the realistic fear that “*All forms of radical alterity are rendered illegitimate unless they can be contained within or coopted to the existing system*” (2013, p10; see also Atkins et al, 2015). For Levitas, as for many writers (see especially Caldwell, 1999; but see also Lohman, 2015; Ceballos et al, 2015; Kolbert, 2014; Monbiot, 2014) it is that separation of humanity from nature and humanity from humanity plus the ensuing difference in relationships that sits at the heart of this alienation and of this yearning (see also Tredigda, 2013). At this point in Earth’s history, it remains an open question whether we want the future of Earth to turn entirely on humans – we may have entered the Anthropocene, but as Rolston III (2010) argues, we ought to have a choice whether or not we enter an Anthropocentric era.

The principal purpose of this short essay is to offer a cautionary tale with which to counter the weight of immanent accounts of humanity’s interaction with specific species.<sup>7</sup> The essence of this intention is to argue that a focus upon the fate of specific species can so easily miss the point: namely that humanity’s ways of organising are the root cause of such fates. Our specific, somewhat limited, goal would be to encourage (social) accountants concerned with accounts of species endangerment to look wider – to lower the level of resolution - and to see the fate of bees, tigers, dolphins or wildcats as a function of a fundamental human failure. Accounts which avoid such examination of the root causes, are, arguably, very partial and misleading accounts.

But we also take this opportunity to draw our canvas rather wider. That is we suggest that any consideration of a specific species’ endangerment must also seek to simultaneously recognise that any species extinction may hasten humanity’s own extinction as a species - as well as arguably diminishing the ‘humanity’ of humankind as a species. Thus our arguments seek to interweave themes of humanity, extinction, nature and loss in order to encourage reconsideration of the context of accounts of species. Inevitably that set of concerns plays out as a challenge to all (social and environmental) accountants to step outside their current immanence: to suggest that we cease to fold the “accounts” we currently produce into some realm of the acceptable when the essence of the problem may well be the implicit and self-disciplining constraints within which the account is couched. All accounts might then become explicitly self-aware accounts of humanity and what it means to be human: as opposed to most current accounts which, we would argue, implicitly

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<sup>7</sup> In this regard we are anticipating that the predominance of papers in this special section will be focused on the experiences with particular habitats and particular species. It is in this context that we make this comment.

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demonstrate unconscious (false) assumptions about our own species. We wish to commend the adoption of different meta accounts that might help us see more clearly that our activities as (social) accountants are principally the production of accounts by humanity *for* humanity and to suggest we need more (although not necessarily new) meta narratives of humanity. Such meta-narratives would not necessarily have mankind as the heroic central figure, would not flatter humanity and would not necessarily distinguish us from “nature”. Indeed we need more substantive narratives which do not have happy endings and which, in all probability, result in the demise of humanity – at least as we conceive of that notion in western modernity (Rees, 2003; Bryner, 1999; Boland and Schultze, 1996). At the very least, such narratives would seek to provide an appropriate humility and abrupt correction to our place in the cosmos. As Foreman (2010, p.100) reminds us:

*The time of Man is but an eyeblink in the great span of Earth's being, yet humans of all kinds find it hard to think of an Earth-time when we were not here or of an Earth-time to come when we will not be here. So we think Earth is ours.*<sup>8</sup>

In this short piece we do not try to fully examine and/or escape our inherent – if qualified – anthropomorphism. We do *not* argue that, for example, economic humanity needs the economic value that environment provides. We find this, offensive, self-serving and actually rather ridiculous. Rather we prefer to argue that humanity distinct from/devoid of “nature” really makes no sense at all: not just that we would find such a condition aesthetically, ethically and spiritually devastating but it would suggest to us an account<sup>9</sup> of humanity that we would not recognise as human. (For accounts expressing similar sentiments, see for example, Rolston III, 2010; Tinker, 2010; Watt-Cloutier, 2010). Whilst humanity needs “nature” to continue; it seems exceptionally unlikely that any of “nature” needs humanity for anything at all. As the essay develops we find an irony emerging: that the simplest way in which we might aid planetary sustainability would be hasten humanity's extinction; whilst modernity, too, seems intent upon achieving this very aim through a destruction of ecology in the name of self-congratulatory accounts of human progress.

This short essay is structured as follows. Section 2 briefly rehearses our global (and largely western and modernist) accounts of nature, (non-human) species and their extinctions.

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<sup>8</sup> “Our” time on Earth, of course, is a variable notion. Of the 4.5 billion years Earth is believed to have existed, as a species *Homo sapiens* (modern man) has been here perhaps 200,000 years; ‘agricultural man’ is but 10,000 years old, ‘metal working man’ 5000 years old, and ‘industrial man’ but a few hundred years old (<https://www.newscientist.com/article/dn9989-timeline-human-evolution/>).

<sup>9</sup> Whether such “accounts” are accounts as an accountant might typically understand them it is clearly a moot point. However, we choose to locate this work in the context of: the breadth of accounts that concern social and environmental accounting; the narratives of sustainability debates (see, for example, Gray, 2010); and the accounts concerned with species extinction with which this special section is concerned. Accordingly we do not directly address this wider complex matter here.

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Section 3 argues that the root cause of such extinctions is humanity and its current ways of organising. Section 4 explores some of the prospects of human extinction and ponders the question of how such extinction might be understood and narrated. Section 5 revisits utopias and dystopias in order to engage imaginative possibilities for future and different narratives. Section 6 offers a few conclusions.

## 2. Accounts of Non-Human Extinctions and their Cause(s)

Humanity in the 20<sup>th</sup> and 21<sup>st</sup> centuries has been well-provided with accounts of species extinctions<sup>10</sup> from Carson's (1962) *Silent Spring* through such seminal works as *Blueprint for Survival* (Goldsmith et al., 1972) to the now widely accessible narratives provided by the United Nations (see, for example, United Nations Millennium Ecosystem Assessment, 2005; UNEP, 2012) and WWF. WWF in particular have tracked and reported the detail of, what Kolbert (2014) amongst others have called, the "6<sup>th</sup> extinction crisis".<sup>11</sup> The 2014 *Living Planet Index* WWF (2014) for example reports that the number of mammals, birds, reptiles, amphibians and fish across the globe has, broadly, declined by 50% in the last 40 years. And the 2016 *Living Planet Report* (WWF, 2016) predicts a 67% demise in vertebrate populations by 2020. This is placed in a context which argues that species loss today is between 1000 and 10,000 times higher than the natural 'background' extinction rate<sup>12</sup> (Barnosky et al., 2011; Ceballos et al, 2015; see also, Jones 2014). The *Living Planet Index (LPI)* argues that between 1970 and 2010 terrestrial species have declined by 39%; freshwater species by 76% and marine species by 39%. 82% of this decline they attribute to a combination of exploitation and habitat pressure or loss. As Spash (2015a) pointedly reminds us, however, and a point we return to in the penultimate section, constructions of species loss may distract us from underlying causes and potential contradictions.

*...statistical decline of species on Earth is another reminder of how humanity watches, observes and statistically enumerates the ongoing destruction...the LPI is not a measure of life but rather the death toll relating to human appropriation of resources for human ends.*

<sup>10</sup> Mitchell (2015) is careful to problematize the notion of extinction to avoid some notion of its inevitability and to re-establish some notion of human relationship and responsibility for the ethical content that clusters around such events.

<sup>11</sup> Barnosky et al. (2011) raise the question as to whether we are already in a period of the sixth mass extinction. They state that palaeontologists characterise "mass extinctions" as events when Earth loses more than three quarters of its species in a geologically short time interval. This is believed to have happened only five times in the past 540 million years.

<sup>12</sup> [http://wwf.panda.org/about\\_our\\_earth/biodiversity/biodiversity/](http://wwf.panda.org/about_our_earth/biodiversity/biodiversity/) is careful to emphasise that measurement and accuracy are extremely difficult in this area but that, regardless, the rates of loss are well in excess of any conceivable measurement error.

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3 *Presenting death as life seems to fit well with the optimistic messages in the rest of the WWF*  
4 *report...Meanwhile they treat Nature as capital that is valued for supporting production to*  
5 *provide new greener consumption possibilities and financial rewards. This is the economic*  
6 *discourse now common amongst the environmental non-governmental organisations. The*  
7 *contradictions of supporting extractivist capital accumulation and consumerism while*  
8 *wanting to conserve Nature are reconciled as easily as calling death life.*(Spash, 2015a; p1)  
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10 Of course the statistical decline of species is disturbing and undesirable from almost any  
11 point of view one might enlist, but surely too is the fact that such accounts might aid our  
12 collective cognitive dissonance rather than shake us from our destructive ways (see also,  
13 Milne, 2007).  
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17 Biodiversity loss is only one component of planetary un-sustainability as we generally  
18 account for it and whilst climate change currently dominates sustainability discourse that  
19 should not be allowed to distract us from recognising that un-sustainability has many  
20 components – even from a purely anthropocentric point of view (Rockström et al. 2009;  
21 Speth, 2010). These include, alongside climate change and species extinction, such matters  
22 as reduced resources (for all species); pollution; inequality and oppression even within our  
23 species. Ceballos et al (2015, p. 3) however argue, albeit anthropocentrically again, that:  
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28 *“..... the most serious aspect of the environmental crisis is the loss of biodiversity—the*  
29 *other living things with which we share Earth. This affects human well-being by interfering*  
30 *with crucial ecosystem services such as crop pollination and water purification and by*  
31 *destroying humanity’s beautiful, fascinating, and culturally important living companions”*  
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34 Whilst it is arguably the case that for most of humanity, and indeed for most western  
35 narratives, the causes of this increasingly fragile state remain unconsidered, amongst  
36 informed commentators there is a perhaps surprising level of agreement about what is  
37 driving this level of extinctions. Kolbert (2104), for example, says *“There are very few, if any,*  
38 *extinctions that we know about in the last 100 years that would have taken place without*  
39 *human activity.”* (in Drake, 2015), and WWF state *“Unlike the mass extinction events of*  
40 *geological history, the current extinction challenge is one for which a single species - ours -*  
41 *appears to be almost wholly responsible.”*<sup>13</sup> And whilst McKibben (2012) is somewhat  
42 singularly focused upon climate change, his case for the complicity of humanity and its  
43 blatant inability to change is compelling.  
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50 Figure 1 offers a particularly graphic illustration (and an implied causality) of the general  
51 point we’ve been making (albeit one whose straightforward linear suggestion we may have  
52 to recognise as too simplistic). While human population has risen perhaps 7 fold in the last  
53 200 years, species extinction has risen perhaps 50 fold.  
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58 <sup>13</sup> [http://wwf.panda.org/about\\_our\\_earth/biodiversity/biodiversity/](http://wwf.panda.org/about_our_earth/biodiversity/biodiversity/)  
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Figure 1 about here

Source: Scott, J. M. (2008) Threats to Biological Diversity: Global, Continental, Local. Shifting Baselines and New Meridians: Water, Resources, Landscapes, and the Transformation of the American West (Summer Conference, June 4-6). <http://scholar.law.colorado.edu/water-resources-and-transformation-of-American-West/15>

The interdependencies of species, habitats and, more obviously, eco-systems, has been well established (Goldsmith, 1972). Pressure on any one species or upon any one habitat consequently engenders pressure on other species such that, in all probability, we should perhaps talk of, if not simultaneous, then co-endangerments or co-extinctions. Species and habitat are not isolated or independent (see Allendorf, 2010; Quinn, 2010; Rose, 2010).<sup>14</sup> So to talk of the extinction of individual species is, in a sense, misleading: we should, rather, speak of the systematic threats to all species arising from humanity's failure to manage its own actions in such a manner that all species on the planet have an equal chance of survival.<sup>15</sup> The root problem is humanity's continual growth, its ever-expanding footprints, its movement of invasive species, its destruction of habitat, its change of the chemistry of the seas, its failure to deal with waste, its destruction of forests, its attachment to mono-culture agriculture and over-fishing... and despite all of this, we still seem intent on increasing inequality and exploiting our fellow humans (see especially, Kolbert, 2014; WWF, 2016).

None of this should be a surprise to any semi-informed individual with access to data and information. We rehearse these points here primarily to encourage a more holistic interpretation of the (relatively) familiar data and to shift our purview from symptom to causes.

### 3. Accounts of Humanity?

If we have plentiful, if disjointed and frequently ignored, accounts of species endangerment and if, as we contend, humanity's core complicity in this endangerment is vividly self-evident, then how do our narratives about ourselves, our species, reflect this? Hardly at all, seems to be the case.

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<sup>14</sup> As John Muir famously put it "When we try to pick out anything by itself we find that it is bound fast by a thousand invisible cords that cannot be broken, to everything in the universe. "

<sup>15</sup> We stress the point here about species having a *chance*. As Foreman (2010, p101) notes, Aldo Leopold crafted his "land ethic" – A thing is right when it tends to preserve the integrity, stability, and beauty of the biotic community. It is wrong when it tends otherwise - from a Darwinian worldview. The implication is clear: humans could no longer be the conquerors and lords of the land community but must become citizens in it. And this, of course, is a worldview not simply attributable to Leopold. It resonates in indigenous cultures (see, for example, Tinker, 2010) and Buddhist philosophy (Allendorf, 2010).

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2 It is clearly beyond our competence to fundamentally examine here humanity's  
3 understanding and representation of itself, but we arguably know a significant amount about  
4 how accounting, economics, modernity and capitalism, *inter alia*, mediate and change  
5 humanity's relations with itself/nature. Accounting's complicity in the creation and  
6 maintenance of the *calculable person*<sup>16</sup> (Boland and Schultze, 1996, Miller and O'Leary,  
7 1987) is almost a commonplace in which simplified narratives have limited and constrained  
8 the actuality and possibilities of human/nature relationships. Essentially, humanity must first  
9 conceive of itself as different from "nature" and, from there erect the edifice of artificiality  
10 through which calculation and dominance over "nature" become (hyper)normal, (Vinnari and  
11 Dillard, 2016). It is no longer contentious to suggest that the economic project has been  
12 designed to render everything as either priced or worthless, visible or invisible (Thielemann,  
13 2000). And such sentiments have been widely recognised in our field in works which expose  
14 the omissions of conventional accounts (see, for example, Hines 1991; Gray 1992; Milne  
15 1996; Broadbent 1998; Shearer, 2002; Hopwood, 2009). Modernity has been a triumph of  
16 mankind over nature. And Daly (1998) synthesises all of this as he remarks upon mankind's  
17 obsession with investment in those matters which destroy humanity/nature; rather than  
18 directly in humanity or nature (p276).

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29 But, somehow, our narratives of self fail to connect these insights (Hamilton, 2010). Perhaps  
30 the most widely adopted attempt to do so is that provided by Paul Ehrlich quite some time  
31 ago (Ehrlich and Holden 1971; 1972; Ehrlich and Ehrlich, 1978). Ehrlich produced his  
32 famous heuristic that posited that Environmental Impact (I) was a direct function of Human  
33 Population (P), Affluence (A) and Technology (T). The heuristic has, if nothing else, stood  
34 the test of time and remains as good an indicator of the source of environmental  
35 endangerment as anything else of which we are aware (but see also, Demeny, 1998, p280,  
36 for example). If we follow Ehrlich's reasoning therefore, the impact on the planet, including  
37 species endangerment, is almost certainly a function of the number of human beings who  
38 collectively (stress "collectively") consume too much and who are in thrall to a technology  
39 and innovation process that generates as least as many *bads* as *goods*. That is – and this  
40 point cannot be stated often enough - species extinction, as with other examples of  
41 environmental degradation, is a *systematic* consequence of humanity and its current ways of  
42 organising.<sup>17</sup>

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53 <sup>16</sup> The notion of the calculable person derives from the observation that our individuality is no longer either  
54 beyond knowing or unique but rather it can be known: that is mapped, calibrated, evaluated, quantified,  
55 predicted and managed. Accounting is a major component in the construction of this knowing.

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57 <sup>17</sup> The role(s) of accounting in these ways of organising, as in the ways of organisations, needs no further  
58 development here, (Miller and O'Leary, 1987; Gray, 2013).

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2 It is a great deal more complex than this, of course. Population forecasts are exceptionally  
3 difficult (Billari, 2015) and, crucially, different populations have different impacts as a function  
4 of culture (Coleman and Basten, 2015) as well as a function of age and education (Lutz and  
5 Striessing, 2015). Indeed, as Lutz and Striessing show, the composition of P has a direct  
6 impact on future levels and composition of P as well as on I, A and T. Further, as one  
7 commentator remarked, the lazy assumptions of homogeneity in “population” fails to  
8 recognise that for many indigenous people, their worlds ended a long time ago and perhaps  
9 western modernity needs to learn how it turned its back on nature by learning from those  
10 who never, wittingly, did so.<sup>18</sup> And there is also a sense in which A and T are tautological in  
11 that they assume forms of affluence and technology which are modern, economic and  
12 western: there are many forms of technology and affluence which are no such thing (see for  
13 example Khor, 1957; 1978; Schumacher, 1973; Sale, 1980; 1985 and other proponents of  
14 intermediate technology and bioregionalism). What does seem clear, however, is that whilst  
15 our understandings of P gain much needed subtlety (Teitelbaum, 2015; Kreager, 2015; Lutz  
16 et al, 2001), human stress upon the planet and other species urgently needs addressing.  
17 One persuasive articulation of this problem is that of “*Earthfullness*” (see especially Toth and  
18 Szigeti, 2015) in which the planetary capacity for photosynthesis is contrasted with  
19 humanity’s increasing appropriation of this essential element of life: leaving less and less for  
20 other life-forms. As estimated by Vitousek et al. (1986, p372), “...*organic material equivalent*  
21 *to about 40% of the present net primary production in terrestrial ecosystems is being*  
22 *coopted by human beings each year... and the vast majority of other species must subsist on*  
23 *the remainder.*” Given current levels of A and T, Earth is dangerously overfull of humans it  
24 seems (see also Daly, 1998). Humanity’s exploitation of species for its own various purposes  
25 together with mankind’s voracious appropriation and destruction of habitat and consumption  
26 of biomass/biocapacity sit at the core of any examination of species endangerment (Haberl  
27 et al. 2004; Quinn, 2010; Jones, 2014; WWF 2016). Wilson (2010, p22) puts it plainly  
28 “...*civilisation was purchased by the betrayal of Nature.*”

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If we reflect for one brief moment, we realise (at least a part of) humanity doesn’t simply  
appropriate increasing amounts of existing biomass to subsist, and thus deny other species  
in a contest of life and death, we do so for lifestyle. Not only do humans fund those lifestyles  
on present levels of biomass, but also that from geological time. And, as we switch away  
from fossil fuels to renewables like solar, we will increasingly intercept the fundamental  
source of energy for other species, for the vast majority of life in fact. Indeed, Jacobson &  
Delucchi (2011) estimate the world’s current human energy demands at about 12.5 trillion  
watts and that by 2030 humans will demand 17 trillion watts. They further estimate that total

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<sup>18</sup> Aaron Vansintjan at <http://entitleblog.org/2016/03/01/going-beyond-the-ecological-turn-in-the-humanities/>

Should dodos account for humanity?

1  
2 available solar power over land (between latitudes 50S and 50N) is 1300 trillion watts and, of  
3 that, 340 trillion watts is feasibly developable. This all sounds positive in a world of  
4 anthropogenic global warming, with a need to rid ourselves of fossil fuels, and reduce or  
5 avert the dire consequences of climate change on ourselves and other species. And, you  
6 might argue that appropriating 5% of easily developable terrestrial solar energy by 2050 for  
7 humanity is no great burden on the rest of Earth's species. Yet given annual compound  
8 growth rates of 2% for energy demand (the implied rate of growth from 12.5tW to 17tW by  
9 2030) the limits of the easily available solar energy (i.e. 340tW) would be reached in 170  
10 years. On such a trajectory, the limits of all available terrestrial solar energy would be  
11 reached in less than 250 years. Switching fuels does not necessarily change our  
12 fundamental values, activities or beliefs: it simply changes the means employed to power  
13 them.  
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21 Accepting this inevitably over-simple analysis, we can nevertheless recognise that to speak  
22 of species extinction without *inter alia*, exploring profound changes/reductions in human  
23 population, substantial re-evaluation of production and consumption and a profound re-  
24 examination of our technology, its development, deployment, ownership exploitation is, in all  
25 probability, to rather miss the point. Indeed, to speak of accounting at all without speaking of  
26 species extinction is arguably to only speak most partially. Human reproduction, capitalism  
27 and business are, at a minimum, due for a fundamental reassessment. As Rolston III (2010,  
28 p71) puts it, will Earth's managers produce a sustainable development or a sustainable  
29 biosphere? It is only in the latter that we and a great many other species will survive.  
30 Humankind's apparent inability and/or apparent reluctance to consciously address such  
31 issues – and, indeed, in doing so to render such consideration illegitimate – leaves us  
32 unable to break out of a potentially fatal immanence (Levitas , 2013, p10).<sup>19</sup>  
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41 Within the context of accounting, finance, economics and business – our presumed stock-in-  
42 trade - it seems perfectly plausible therefore that all that we do, teach, research and think  
43 are at the very heart of why species are going extinct. Certainly, it is patently obvious that  
44 the organisational accounts on which we tend to focus offer nothing substantive at all in  
45 terms of modernity's central complicity in un-sustainability, (Samkin et al, 2014). At the  
46 extreme, if we wish to prevent species being further assaulted, perhaps we should stop  
47 doing what we do.  
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54 <sup>19</sup> The point being made here is that the *possibility* (to our mind, actually, *probability*) that the achievement of  
55 any substantive notion of sustainability can only be conceived of by stepping outside the normal assumptions  
56 of capitalism, growth, population etc. is too frequently excluded from discussion. From, what Jones (2014) calls  
57 the "Overton window". Accounting's significant implication in this conservative take on the challenges of  
58 sustainability are relatively self-evident (Bebbington and Larrinaga, 2014; Byrch et al, 2015; Milne et al, 2009).  
59  
60

Should dodos account for humanity?

#### 4. Accounts of Human Extinction

... However forward-looking we may pretend to be, humanity is far more interested in its past than it is in its future (Leslie, 1996, pvii)

In the majority of accounts of non-human species extinction, as far as we are able to assess, there are two striking omissions. The first omission we have referred to above: the failure to recognise that global human organisation is, in most cases, the root cause of accelerated species extinction. The second striking omission is that the concern with species extinction is not extended to the extinction of humanity. To extend our thinking to embrace human extinction would seem a very sensible mental exercise, if for no other reason than in recognition that with the extinction of humanity the rest of the planet's species could go about their normal business.

Human extinction should not be unthinkable.<sup>20</sup> All species, as far as we are aware, eventually face extinction (Ceballos et al, 2015) and although humanity is a relatively young species (see footnote 10; Leslie, 1996) its vulnerability to potential extinction level events seems considerable. In addition to the "natural" events such as volcanoes, meteors and disease, humankind has added (what Bostrom, 2006; calls) *existential risks* such as anthropogenic climate change, chemical and biological warfare, environmental collapse, technological blowback including nuclear meltdown, financial and economic implosion etc., (Macpherson, 2011b; Leslie, 1996; Auerbach, 2015). Indeed, the possibility/probability of our own (near) extinction is a matter that one might have thought was somewhat compelling to the modern scholar. But whilst there is important scholarship pursued in the nooks and crannies of academe (see, for example, Livi-Bacci, 2015; Morgan, 2009; Carpenter and Bishop, 2009), this work, as Bostrom (2006) observes, rarely enters mainstream debate and reflection.

Speculation on the matter of our own demise is not, as might perhaps appear to be the case, simply the domain of doomsayers, fear-mongers and madmen, (see especially Tonn and MacGregor, 2009; Tonn and Stiefel, 2014; Bostrom, 2009). Perhaps the most eminent such commentator is the late Frank Fenner, a world renowned virologist who helped eradicate smallpox and who states:

*Homo sapiens will become extinct, perhaps within 100 years...A lot of other animals will, too. It's an irreversible situation. I think it's too late. I try not to express that because people are*

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<sup>20</sup> If for no other reason than common (if not always accurate) human narratives of prior apparent (local) extinctions like that associated with Easter Island. See, for example, Diamond (2005).

Should dodos account for humanity?

1  
2           *trying to do something, but they keep putting it off. Mitigation would slow things down a bit,*  
3           *but there are too many people here already.*<sup>21</sup>  
4

5 Others are more direct still. Both Leslie (1996) and Auerbach (2015) confront the highly  
6 disruptive prospect of humanity heading for extinction – possibly in current lifetimes - and  
7 Macpherson (2011b) is characteristically direct when he says:  
8  
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10  
11           *About a decade ago I realized we were putting the finishing touches on our own extinction*  
12           *party, with the party probably over by 2030. During the intervening period I've seen nothing*  
13           *to sway this belief, and much evidence to reinforce it.*<sup>22</sup>  
14

15 Attempting to be a little more analytical about the prospect and recognising that humanity is  
16 both very widespread and has a virus-like capacity for reproduction and survival, planet-  
17 killing events aside, the complete extinction of humanity is probably unlikely: it seems more  
18 likely that our concern here is with near-extinction (Bryner, 1999; Diamond, 2005; Kolbert,  
19 2014).  
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22  
23 And here the arguments seem to divide into three broad themes: devastation of the human  
24 species through existential threats manifest through western ways of organising; selective  
25 exterminations through which those societies less in thrall to modernity may survive in some  
26 form or other; and the erosion of the quality of “humanity” – the loss of what it is to be  
27 human. We touch briefly on each of these below.  
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31  
32 It is clear, to a considerable degree at least, that humanity’s survival/extinction depends,  
33 instrumentally, upon the planetary ecology and biodiversity in particular. Reductions in  
34 biodiversity offer one of the major existential threats to humanity’s well-being and  
35 continuance (Rockstrom et al., 2009). And whilst this seems to be definitionally true, Kolbert  
36 (2014) argues that humanity has managed to survive to the 21<sup>st</sup> century with the loss of  
37 many species; it could probably continue to do so with the loss of yet more species. Whilst  
38 humankind’s ingenuity seems unable to find ways to prevent our destruction of other  
39 species, it does continue to find ways to manufacture substitutes (proteins, plasma etc)  
40 which fill some of the gaps left by humanity’s “stewardship” of the planet. Whether this could  
41 ever be sustainable is a matter of some doubt but there is little question that such acts also  
42 increase the existential risks we face as a species (Borstrom, 2009). Rifkin (1980), for  
43 example, in contemplating the future of humanity sees two major paths forward, one in which  
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52 <sup>21</sup> Cheryl Jones (2010) “Frank Fenner sees no hope for humans” *The Australian: Higher Education* June 16,  
53 2010, [http://www.theaustralian.com.au/higher-education/frank-fenner-sees-no-hope-for-humans/story-](http://www.theaustralian.com.au/higher-education/frank-fenner-sees-no-hope-for-humans/story-e6frgcjx-1225880091722)  
54 [e6frgcjx-1225880091722](http://www.theaustralian.com.au/higher-education/frank-fenner-sees-no-hope-for-humans/story-e6frgcjx-1225880091722) and see also Melissa Sweet (2010) *Obituaries: Frank Fenner BMJ (British Medical*  
55 *Journal)* 2010;341:c6850  
56

57 <sup>22</sup> Guy Macpherson (2011b) [Three paths to near-term human extinction](http://guymcpherson.com/2011/08/three-paths-to-near-term-human-extinction/) Sat, Aug 20, 2011  
58 <http://guymcpherson.com/2011/08/three-paths-to-near-term-human-extinction/>  
59  
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Should dodos account for humanity?

1  
2 we increasingly seek to exist in a world divorced from our place in the cosmos and become  
3 entirely reliant on synthetic substitutes – such a world, he suggests, is being promoted by  
4 powerful corporate elites. And another in which we accept planetary limits, fundamentally  
5 recognise the implications of the second law of thermodynamics, and adopt a moral  
6 imperative to preserve all forms of life for as long as possible.<sup>23</sup>

7  
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9  
10 Perhaps the most instrumental of the arguments employed to justify the maintenance of  
11 “nature” is that peculiar approach which values nature by reference to the economic “good”  
12 it (potentially) provides to (elements of) humanity, (see, for example, Helm, 2015; Juniper.  
13 2013; Monbiot, 2014; Trucost, 2013; Stone, 1974). At its extreme this approach seems to  
14 reduce humanity and nature to purely economic existence: as if life has no meaning outside  
15 an economic nexus (see for example Roscoe, 2014; Sandel, 2012). Such reasoning is  
16 widespread and even work from the United Nations such as CohabInitiative (2010) argues  
17 for biodiversity on the grounds that it is an essential component of human health which is, in  
18 turn, an essential human right. And, as we noted earlier, Spash (2015a; see also Spash  
19 2015b; 2013; 2011; Sullivan, 2013; 2014) has been a particularly outspoken critic of the  
20 colonisation of environmental issues and Nature by a discourse of economics and financial  
21 capitalism both within the profession of environmental economics and within the  
22 environmental movement more widely<sup>24</sup>.

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31 A more subtle argument – to our mind at least – is nicely captured by Caldwell (1999):

32  
33 *Having abandoned reciprocity with the natural world in pursuit of command over it, modern*  
34 *civilization has broken an ancient covenant with nature.....but until the present era,*  
35 *humanity and the living Earth itself were not threatened (p3)*

36  
37 That is, modernity has caused (enabled?) mankind to become distanced from the natural  
38 world of which it is a part and to ignore the signs of limits in the natural world that we do not  
39 (yet?) fully understand.<sup>25</sup> This view resonates strongly with Rees’ thesis in which he  
40 contends that “...*technical advances will in themselves render society more vulnerable to*  
41 *disruption*” (p21). Both Caldwell and Rees therefore join a long line of commentators (see,  
42 for example, Leopold, 1949; Passmore, 1980) that suggest that humankind is not just at risk

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47 <sup>23</sup> This latter position recognises that in Earth’s future the Sun’s energy is ultimately finite, albeit in the very far  
48 distant future, and ultimately all life will cease to exist. Furthermore, when energy is used by one life form,  
49 because of the second law of thermodynamics (entropy) it is degraded and less available for another. To  
50 preserve the process of life for as long as possible, Rifkin believes we have a moral obligation to pursue our  
51 existence drawing down the least necessary amount of energy.

52  
53 <sup>24</sup> Accounting – and even environmental accounting – has been subject to similar critique: see, for example,  
54 Cooper, 1992; Gray, 2013).

55  
56 <sup>25</sup> This distancing, increasingly driven by urbanisation and technology, may manifest itself in numerous ways  
57 such as lack of basic knowledge of sources of food and a lack of interest in natural life (Pergams & Zaradic,  
58 2006; Zaradic & Pergams, 2007; Kareiva, 2008) in which modern humanity exists in an insular, self-referential  
59 and synthetic world lacking ecological awareness, consciousness and literacy.

Should dodos account for humanity?

1  
2 in its separation from its essential self but has abandoned its *species-being* and might no  
3 longer be the humanity about which we choose to give accounts. Perhaps our humanity has  
4 already been lost. (We return to this shortly).  
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7

8 Caldwell's argument above stirred up considerable interest at the time and led to a special  
9 issue of *Politics and Life Sciences* and this, in turn, introduces our second theme of  
10 extinction. That is, Caldwell, in common with many of the commentators cited here, is  
11 largely focused on western modernity when, in fact, societies are clearly not homogeneous  
12 and many non-western societies may be less vulnerable to the threats of extinction –  
13 assuming of course that western international financial capitalism has not completely  
14 destroyed *their* basis of life (Elliott, 1999). Such observations seem to reinforce the need for  
15 holistic perceptions and recognition of the systematic violence of western modernity whilst  
16 offering a glimmer of hope that some non-western societies may be less vulnerable to near  
17 extinction threats.  
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24 It seems inescapable to us that such reflections raise the third of our extinction themes:  
25 namely the imponderable questions of what it is to be human and, at its most unthinkable,  
26 whether the humanity of western international financial capitalism and the utopian visions of  
27 neo-liberalism that populate, *inter alia*, the halls of accounting, finance and economics  
28 remain worthy of the title "humanity". Might we speculate, perhaps, that any notion of an  
29 aspirational, spiritual, human kind – in western contexts at least – is already near extinct?  
30 Such dystopian memes are clearly visible in so much of the commentary we have reviewed  
31 here. Commentators such as Macpherson (2011b), Leslie (1996), McKibben (2012), Kolbert  
32 (2014) and Ceballos et al. (2015), all seem to be able to confront the notion that, as a  
33 species, humanity no longer has any claims to legitimacy. As we read these exegeses, they  
34 are so much more than fantasies of Christian original sin and a yearning for redemption.  
35 Rather they speak to us of an inchoate reaching for some means of articulating and  
36 understanding the accounts of humanity on which our histories and selves are built: but they  
37 do so whilst gripped by a sense that those aspirational, inspirational accounts may indeed be  
38 accounts of either another species than humanity or of a species of humanity which no  
39 longer exists (see, for example, Katovich, 2010).  
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50 This collective ennui is, ironically perhaps, at its most alive and well in the Voluntary Human  
51 Extinction Movement who state:  
52

53 *When every human chooses to stop breeding, Earth's biosphere will be allowed to return to*  
54 *its former glory, and all remaining creatures will be free to live, die, evolve (if they believe in*  
55 *evolution), and will perhaps pass away, as so many of Nature's "experiments" have done*  
56 *throughout the eons... It's going to take all of us going.*  
57

58 <http://www.vhemt.org/aboutvhemt.htm>  
59  
60



Should dodos account for humanity?

1  
2 It falls to Latour (1988) to offer what is possibly the most subtle (if difficult) articulation of this  
3 issue of humanity and why, arguably, humankind seems unable to embrace arguments  
4 which drive to the heart of “nature”. Briefly, Latour argues that *“political ecology cannot be*  
5 *inserted into the niches of modernity. On the contrary, it requires to be understood as an*  
6 *alternative to modernization”* (Latour, 1988; p222). This is, essentially, because all aspects  
7 of ecological argument in the political domain have ended up appropriated by various  
8 (commercial, domestic etc.) incompatible discourses of modernity which (definitionally) have  
9 nothing to say about “nature”. Consequently, in this reading, ecology as manifest in the  
10 political domain has nothing to say about nature. Nature, Latour (1998, p236) argues,  
11 represents a higher unity of which mankind may be included if, and perhaps only if, our  
12 “common humanity” can be abandoned:  
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19 *..... we do not know what makes the common humanity of human beings and that, yes,*  
20 *maybe, without the elephants of the Amboseli, without the meandering waters of the*  
21 *Drôme, without the bears of the Pyrenees, without the doves of the Lot or without the water*  
22 *table of the Beauce they would not be human”.*  
23

24 The essence, if we follow correctly, is that (following from Kant) humanity is both *means and*  
25 *ends* and that, for a true ecology, nature must be thought of similarly: a river is not a tool, it is  
26 both a means and an end and exists outside any human context, (see also, Vinnari, 2013).  
27 In terms of our arguments above, we understand this to suggest that humankind has not just  
28 abandoned its humanity to modernity but must find a new notion of self subsumed within  
29 nature. This, in turn, sounds to us like a (potentially romantic) appeal to the conceptions of  
30 aboriginal and indigenous peoples with all that this could entail.  
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36 It seems to us that accounts of human extinction are essential if accounts of other species  
37 endangerment are to be addressed seriously: species extinction is fundamentally  
38 inseparable from humanity’s existence and humanity’s putative extinction. Humanity, it  
39 seems to us, has relatively few such accounts (beyond, for example, Biblical accounts of the  
40 Flood). This repertoire of accounts we would wish to see expanded and made more  
41 common so that the unthinkable (human culpability and vulnerability) can become thinkable.  
42 In this, reflecting upon accounts of humanity’s extinction might be thought of as no more  
43 than the ultimate proposal for social, environmental and sustainability accounts: accounts  
44 which at their best expose and make the unthinkable, thinkable, (Jones and Solomon, 2013;  
45 Atkins et al., 2015; Gray et al, 2014).  
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52 Conscious that such suggestions might appear to be essentially dystopian (although we  
53 might commend Macpherson (2011a) and Hamilton (2010) in this context) we return to  
54 Levitas’ call to utopian thinking and pick up Rees’ challenge that we must start to build  
55 plausible rigorous narratives – not the self-deluding lotus-eating nonsense of corporate  
56 sustainability and progress – but accounts of how some future for humanity might be found  
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Should dodos account for humanity?

in a way which pays a great deal more respect to both non-human species and to those parts of the human species who suffer for the hubris of the rest of us.

## 5. Utopias and Dystopias

*If utopia is a space for the fictional resolution of problems that humankind has not (yet) solved, incommensurability can only enter as a dystopian shadow (Levitas, 2013, p120)*

The late Donella Meadows did not simply understand that there are limits to growth and that humanity was pressing up against them, she also understood that in changing (human) systems the greatest challenges lay in the systems' goals, and the mindset out of which the systems, their goals, power structure, rules, and culture arise.<sup>26</sup> For Meadows, the greatest leverage point lay in transcending that mindset. It seems that new stories, narratives, accounts, are essential if humans are to be helped to imagine the currently unthinkable, (Atkins et al, 2015). To a considerable degree, it seems as though western, modern humanity does not (currently) possess the necessary imagination to conceive of a possible future in which humanity is steadily taken to a state of near-extinction or the imagination to conceive of a world where humanity renews, what Caldwell (1999) called, our reciprocity with the natural world: to imagine what a path towards a state of grace might look like. That gap in imagination can be filled by a variety of endeavours: new accounts (as we accountants might choose to understand them) is one; stories, music, film, poetry and other cultural communications are others which satisfy the need that a society has for new narratives when faced with substantial upheaval (Norminton, 2013; pvii). Other commentators reinforce this notion: so, for example, Benking (1999), in one of the responses to the Caldwell piece, calls for more attention to the "... *pictures and icons we use to paint and communicate possible futures*" (p203) whilst the novelist Ursula LeGuin says "*Resistance and change often begin in art. Very often in our art, the art of words.*"<sup>27</sup>

Trying to identify utopian possibilities, the instinct for "utopia as method" as Levitas calls it, is not an easy exercise, (see also Atkins et al., 2015). One particularly striking illustration looks a lot like an exception which proves the rule. Norminton (2013) states that:

*We have a duty to imagine what we fear to look at, for in looking away we fail, not only to avert the worst for our children, but also to create the happier and more just society in which*

<sup>26</sup> See for example <http://donellameadows.org/archives/leverage-points-places-to-intervene-in-a-system/>

<sup>27</sup> Ursula K Le Guin's speech at National Book Awards: 'Books aren't just commodities'

<http://www.theguardian.com/books/2014/nov/20/ursula-k-le-guin-national-book-awards-speech>

Should dodos account for humanity?

1  
2 *we wish them to live. More than ever we need stories that tell us where we stand, that help*  
3 *us imagine our predicament. (pix)*  
4

5 This quotation from Norminton is part of the introduction to a specially commissioned set of  
6 texts, stories, poems and reflections, because, as the editor and collaborators note, there  
7 are so few such accounts and we need them so badly.  
8

9  
10 Why there might be this dearth of imaginative and desirable narratives of new possibilities is  
11 probably very complex. Fear of confronting that which we find uncomfortable or outside the  
12 current acceptable orthodoxy is, as we have seen, offered as one explanation, (see also  
13 Hamilton, 2010; Macpherson, 2011a). Giampietro (1999) offers a very challenging further  
14 possibility when he addresses the notion of the way in which modern western mankind is  
15 encouraged to think and the ways in which universities in particular favour and reward only  
16 certain types of intellectual endeavour. In particular, Giampietro identifies *normal science* as  
17 a major part of the problem – not the solution that a technocratic world seems to encourage.  
18 Normal science privileges analyses of the present over any possibilities of the future and in  
19 its constrained conceptions of knowledge misses both the holistic possibilities of a wider-  
20 ranging intellect and, in the process, also misses the lived reality of much of humankind. As  
21 Vucetich, an ecologist, (2010, pp340-342) suggests:  
22  
23

24 *One kind of [scientific] knowledge helps us do things in the world – helps us conserve nature,*  
25 *restore damage, and live sustainably... However, the knowledge that helps us do good things*  
26 *can also be used for the most disgraceful endeavours... Knowledge that can change our*  
27 *attitude about nature is the second, and more important, kind of knowledge... When we*  
28 *decide that the purpose of science is to generate wonder about nature, rather than control*  
29 *nature, we will not be far from a relationship with nature that can flourish for all time and*  
30 *generations.*  
31

32 In a similar vein, Callicott (2010, p361, – see also Midgley, 1983; Singer, 1976/1996)  
33 challenges us to modify our ethical approaches away from a purely rational concern for the  
34 welfare of individual human beings and towards the biotic community. He stresses a need  
35 for our ethics to recognise mutualism, reciprocity, and to connect to our essential emotional  
36 selves.  
37

38 *Ethics, as the contrarian philosopher David Hume observed, is rooted in moral sentiments –*  
39 *other-oriented feelings of love, well-wishing, loyalty, patriotism – not in reason alone. And as*  
40 *Charles Darwin argued, the moral sentiments are naturally selected to facilitate the existence*  
41 *of cooperative societies. The ethical paradigm that meets the challenge of global climate*  
42 *change must shift the emphasis of moral psychology from reason to feeling.<sup>28</sup>*  
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54 <sup>28</sup> Midgley (1983, pp 89-97) makes a similar argument, and acknowledges that classical Utilitarians like Mill and  
55 Bentham, who strongly influenced thinkers like Peter Singer, were compassionately concerned not with an  
56 entity's ability to reason, but its capacity for equal suffering. See also Roberto Unger  
57 [http://www.socialsciencespace.com/2014/01/roberto-mangabeira-unger-what-is-wrong-with-the-social-  
59 sciences-today/](http://www.socialsciencespace.com/2014/01/roberto-mangabeira-unger-what-is-wrong-with-the-social-<br/>58 sciences-today/)  
60

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3 Kellert (2010, p 376-378, see also Kellert & Wilson, 1995, and in accounting see Broadbent  
4 1998; Shearer, 2002) makes two striking observations concerning our attempts to invoke our  
5 emotions in developing and articulating closer connections with nature. First, loving nature,  
6 delighting in its beauty, and remaining in awe of it are just as essential human motivators in  
7 seeking to sustain nature as are concerns over its utility to provide goods and services. And,  
8 second, and despite the first, there remains a mindset that such concerns are impractical  
9 and romantic preoccupations lacking the realism of motivators for material gain, or  
10 avoidance of catastrophe. Leopold (1949, p198) could only see one force behind  
11 conservation that had the power to reach into all times and places, one force that could unify  
12 concern for land as an organism: not profit, not government, not sport, but “*love for and*  
13 *obligation to that great biota*”.

20  
21 These compelling suggestions have echoed through social science scholarship for years  
22 (see, for example, Ackoff, 1972; Gray and Milne, 2015; Bebbington and Larrinaga, 2014).

24 One further compelling possibility as to why we have so few enlivening new narratives of  
25 possibility is perhaps the most disturbing. Levitas (2013, p10) is not alone in arguing that it  
26 may be that it is *dystopia*, rather than utopia which seems to be a more appropriate concept  
27 for the times. The sheer volume of dystopian novels and films<sup>29</sup> seems to speak of a culture  
28 no longer able to conceive of a desirable “other” except through the lens of corporate  
29 dominance and neo-liberal excess.

34  
35 *But if the critical dystopia can be a vehicle of resistance, it is much less able to register*  
36 *transformation and redemption. It may point to the exit but it does not suggest what we*  
37 *might find, or make, when we leave. (Levitas, 2013; p.111)*

39 And this leaves us, as Atkins et al, (2105) suggest, in need of guidance from, for example,  
40 writers and activists of the past who held and manifested possibilities for liberating futures.

42 Our lack of new accounts - and therefore our need for new stories –is at its most clear in the  
43 uncompromising but brave initiative known as the *Dark Mountain Project*. They state:

46  
47 *We live in an age in which familiar restraints are being kicked away, and foundations*  
48 *snatched from under us. After a quarter century of complacency, in which we were invited to*  
49 *believe in bubbles that would never burst, prices that would never fall, the end of history, the*  
50 *crude repackaging of the triumphalism of Conrad’s Victorian twilight — Hubris has been*  
51 *introduced to Nemesis. Now a familiar human story is being played out. It is the story of an*  
52 *empire corroding from within. It is the story of a people who believed, for a long time, that*  
53 *their actions did not have consequences. It is the story of how that people will cope with the*  
54 *crumbling of their own myth. It is our story.*

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58 <sup>29</sup> See, for example, Cavna (2016) [https://www.washingtonpost.com/news/comic-riffs/wp/2016/03/21/as-](https://www.washingtonpost.com/news/comic-riffs/wp/2016/03/21/as-divergent-allegiant-dips-have-we-reached-the-fatigue-point-with-ya-dystopian-films/)  
59 [divergent-allegiant-dips-have-we-reached-the-fatigue-point-with-ya-dystopian-films/](https://www.washingtonpost.com/news/comic-riffs/wp/2016/03/21/as-divergent-allegiant-dips-have-we-reached-the-fatigue-point-with-ya-dystopian-films/)

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*We imagined ourselves isolated from the source of our existence.*

*Humans have always lived by stories, and those with skill in telling them have been treated with respect and, often, a certain wariness. Beyond the limits of reason, reality remains mysterious, as incapable of being approached directly as a hunter's quarry. With stories, with art, with symbols and layers of meaning, we stalk those elusive aspects of reality that go undreamed of in our philosophy. The storyteller weaves the mysterious into the fabric of life, lacing it with the comic, the tragic, the obscene, making safe paths through dangerous territory.*

*We believe that the roots of these crises lie in the stories we have been telling ourselves. We intend to challenge the stories which underpin our civilisation: the myth of progress, the myth of human centrality, and the myth of our separation from 'nature'. These myths are more dangerous for the fact that we have forgotten they are myths. ("Uncivilisation: The Dark Mountain Manifesto" <http://dark-mountain.net/about/manifesto/>)*

David Korten's (2015)<sup>30</sup> report to the Club of Rome seems to wholeheartedly embrace the conclusions reached by the Dark Mountain Project. Korten (pp. 23-27) seeks to explode the "sacred money and markets story", in which money is king. This story has, he argues, gripped modern society for too long. Under this story Earth is dead rock populated by money-seeking robots. Money has become "...*society's object of worship...life's purpose, shopping a civic duty, markets our moral compass, institutions of finance our temples, and economists the priests...*" Under this story, nature and people are simply means pressed into the service of money and their money-seeking robots (corporations), with lavish benefits for a few who serve them and dire consequences for the majority of people and life. The story will be familiar to us all, not least because, as Korten notes, it is the story we tell time over, year in and year out, to our students. It is a story that most of our graduates will spend most of their lives reinforcing. It is the story that is bound up in the myth of progress.

Korten's (pp30-36) response is that in order to change the future we must change the story. He seeks to supplant it with a new myth, to reframe our worldview with one that will obviously resonate with many indigenous peoples, and one that (notwithstanding Kellert's observation) seeks to engender hope and optimism – the "sacred life and living Earth story". Under this story, life is king. Human beings are nurtured by a living Earth. Wealth is living wealth. Life exists in a living community, and the essential task is to maintain the conditions of life for its members – human and non-human. "*A connection to nature and community is essential to our physical and mental health...It is our nature to care and share for the benefit of all*" (p. 30). Under this frame, individual greed, ruthless competition, environmental damage and extreme inequality indicate inhumanity: they are signs that we have lost touch with our nature, and provide signs of a sick society and a dysfunctional system. They are signs we are headed for extinction, and in many ways have already got there.

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<sup>30</sup> An abridged online version of this work can be found here:  
<http://www.yesmagazine.org/pdf/kortennewstory.pdf>

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## 6. Conclusions and Reflections?

Our principle purpose in this short essay has been to try and add a counter-narrative, a counter-account, to the mostly excellent literature that is building around accounts of species extinction, bio-diversity and possibility/utopia. This narrative is self-consciously designed to sit within the context of the *AAAJ* special section on extinction accounts. Accounts of endangerment and extinction very properly engage us in the process of exploring how such threats might be explained, overcome, mitigated or even reversed. However, our primary challenge here is to suggest that we must balance all such accounts – i.e. accounts about symptoms – with meta accounts about causes. In that sense, this essay might be seen as a (counter) account for counter-accounts. Such an account, hopefully, might: offer an alternative account to those concerned with specific species' endangerment; encourage wider consideration of context in the act of species accounting; and suggest that a very proper lens of species accounts might embrace an analysis of threats to human continuance. Indeed, such hopes bring us to the edge of the work of Mouffe and of Latour (Vinnari and Dillard, 2016) in which multiple accounts, including those which embrace nature as actor, offer one, albeit complex and contentious route to generating new accounts that may escape the essential problems on singularity and immanence<sup>31</sup>.

The problem of species extinction is, in all probability, a problem with humankind and its modern ways of organising – most obviously through international financial capitalism. It is a problem of spirituality, growth, profit, consumption, individualism and the pursuit of more. It is a problem rooted in the very essence of our craft and the very core of our being, (Hamilton, 2010). What we need are honest and penetrating accounts of humanity that sit alongside imaginative new accounts of a selfhood that is part of - and that renews its covenant with – nature, (see also Vinnari and Dillard, 2016). For this we need accounts that challenge our sense of modernity and which, as Bostrom (2009) so eloquently argues, and Korten (2015) pursues, change the stories we tell ourselves about ourselves and about new and more admirable possibilities.

The seeds of these new accounts are emerging in the accounting and management literatures as we see managers struggling to make sense of environmental issues (Hill and Thompson, 2006) and organisational disclosure struggling to reconcile the irreconcilable notions of nature as commodity and as of intrinsic worth. These conflicts seem to us essential - much that we have seen here is irreconcilable and the essential senses of

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<sup>31</sup> We are grateful to one of the referees for this suggestion but have not explored its complex and significant implications here as to do so would change the essential nature of this essay and take us into more contentious issues of ontology than we care to embrace at this point.

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2 modern western self must be challenged, (Vinnari and Dillard, 2016).. And for this, we  
3 endorse Atkins et al.'s (2015) commending of utopian and visionary possibilities. We need  
4 the imagination that lets us see that for species to have any reasonable chance of survival,  
5 humanity must regain its integrity, rediscover its covenant with nature and offer accounts of a  
6 future worthy of our attentions.  
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10 There are wider implications that we think we may be able to draw from the essay –  
11 implications most notably about social, environmental and sustainability accounting. These  
12 reflections lead us to acknowledge more explicitly the way in which most of the accounts that  
13 we recognise, construct or critique are essentially immanent. They either are produced by  
14 powerful organisations who essentially lie at the heart of the sustainability and species  
15 problem or they are produced by individuals and groups in response to issues but, as we  
16 have already stated, self-disciplining seems to suggest that we tend to fold the “accounts”  
17 into some realm of the acceptable when the essence of the problem may well be the implicit  
18 and self-disciplining constraints within which the account is couched. Thus we may come to  
19 recognise that all accounts with which (social) accounting is generally concerned are  
20 essentially very partial reflections of humanity:- but with very little serious consideration of  
21 what that humanity might mean for the terms and contents of the accounts themselves. The  
22 terms under which the account is produced and under which we critique other accounts are,  
23 in all important ways, set for us in ways in which, typically, we do not explicitly consider.  
24 Precisely how we might escape from this immanence is not obvious although two  
25 possibilities suggest themselves for further exploration. First, we might speculate that, at a  
26 minimum, any substantive account might be expected to challenge the existence and  
27 purpose of the core elements of the organisation, cause, phenomenon or characters about  
28 which the account is most immediately concerned. Second, more detailed exploration of the  
29 possibilities suggested by dialogic and agonistic accounts is an increasingly substantive  
30 suggestion within the literature, (see, for example, Brown and Dillard, 2013; Vinnari and  
31 Dillard, 2016).  
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45 Stories/accounts are what we live by, we create them and they, in turn, create us: much as  
46 Barthes (1957/1972) recognised, deeply embedded stories act like myths holding a vice-like  
47 grip on our lives. Despite this, they are not immutable: they do, and can be changed. And in  
48 doing so, humans can change. It is clear to us we need to, and we must try. Whether we will,  
49 is a more open question. There is a certain irony in the Dodo being humanity's poster child  
50 for extinction. The Dodo, if our story is correct<sup>32</sup>, inhabited Earth for over 25 million years. In  
51 its last home on a remote island in the Indian Ocean, it had become sufficiently comfortable  
52 to shed the need for flight and escape. What of *homo sapiens*? We have inhabited Earth for  
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59 <sup>32</sup> See, for example, Shapiro et al (2002).  
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less than a few hundred thousand years, and also inhabit a home in a remote ocean of space. Yet, we appear far from settled, comfortable and ready to forsake the need to escape.



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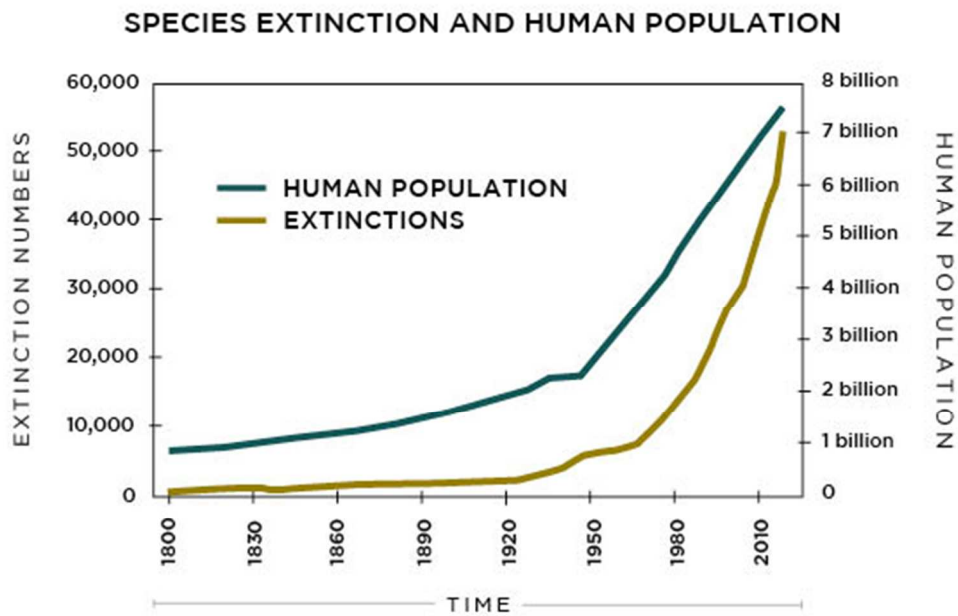
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Text Shown in the Figure. Appears with "Figure 1 about here",... the source is in the text.  
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## RESPONSES TO THE REVIEWERS

Manuscript ID AAAJ-03-2016-2483

"PERHAPS THE DODO SHOULD HAVE ACCOUNTED FOR HUMAN BEINGS? Accounts of humanity and (its) extinction"

We would like to thank you as reviewers for providing insightful comments and valuable suggestions for improving the quality of our paper. We respond to the issues raised by each reviewer in the table below. In brief, our revisions have sought to principally, clarify terminology, clarify the structure of the arguments and, especially, clarify the aim(s) of the essay. We have made amendments and additions throughout the text but our principal additions (and clarifications) are in the first and final sections of the paper. We hope you find the amendments we have made address your points.

The changes we have made are substantial and so we have not used track changes.

Reviewer Comment	Our Response
<b>Reviewer #1:</b>	
	<p><i>General Comments: Thank you very much for the very challenging but supportive review of our essay. In broad terms we saw your review as containing four main, substantive challenges: to address why this is “accounting”; to clarify what sort of “counter-account” this really is; to consider what we expect might happen as a consequence of our suggestions; and to clarify the purpose and structure of the essay – employing more of Latour’s work and perhaps even hanging the whole essay around his arguments. The first three of these challenges we have addressed, substantively although to varying degrees, in our direct responses below. The final challenge was more difficult and is the principal reason our revisions have taken so long to emerge. We need, we believe, to explain with some care how we have responded to this challenge.</i></p> <p><i>There is, of course, some overlap between the different comments that you make. As we have clarified below, the essay sits exclusively in the context of a special issue of AAAJ addressing accounts of species extinction. We have clarified this (and the counter-accounts) issue below and added that, in the first place, our account is addressed to those who are producing accounts of species extinction and bio-diversity and therefore, our essay is, initially, by way of a counter-account to those accounts. Hopefully that makes sense and comes across.</i></p> <p><i>Consequently, there is no attempt to develop a single thread of argument: rather we lay out a range of issues, views, arguments and suggestions, drawn widely (as you note), within which we hope a reader may find some personal resonance. As you appreciate, there are many different possible emphases that one might bring to these issues and we were keen not to narrow those down. We have, however, sought to clarify the different themes within the essay – this most obviously undertaken in the introduction but we have tidied throughout as well.</i></p> <p><i>Finally, after a lot of thought and further reading we have chosen, respectfully, to resist your suggestion of placing Latour at the heart of our essay. We have two, quite distinct reasons for taking this line. The first may not persuade you: even Latour’s greatest supporters have never claimed his work to be easily accessible and we certainly find times when the complexity of his theorisations works to obscure the essential (urgent) matter at the heart of our concerns. Whilst we engage Latour in support of our thesis (es) we have come to the view that the greater sophistication obtained via his work does not work to advance the overall message.</i></p>



*The second matter is perhaps a little more nuanced. Our subscription to a, broadly, critical realist understanding of the world drives a sense that the essential matter of reconceiving of human agency transcends how this re-conception might be achieved. In a sense, we are sympathetic to the agonistic argument in that we ask that writers re-address their conceptions of humanity and nature, but are reluctant to specify how they might go about this. One does not need to be immersed in Latour for this to occur and an immersion in Latour may limit the range of possible ways in which a re-understanding of self might be empowered. However, as a result of this reconsideration, we have developed slightly the consideration (and references to) Latour's work and sought, in several places throughout the text, to make a more explicit recognition of the complex and challenging nature of Latour's conceptions. These two reasons together persuaded us that, as we would need to extend the paper really quite substantially and change its essential focus and tone, this was really beyond our scope. OK? Thank you.*

First, I wish to make it explicit that I very much sympathize with your concern about the state of our planet. I have no problems in recognizing that the human species can become totally or selectively extinct; as you insinuate, it would probably be for the good of the rest of the Earth. So, in principle I support the publication of thought provoking pieces that might awaken the mainstream accounting community from its collective slumber.

Thank you, we appreciate that our intent is clearly recognised, and valued.

However, I consider it equally important that critical articles are clearly motivated, linked to the subject matter of the journal in question, and coherent and logical in their argumentation. I found parts of your essay lacking in these aspects and therefore in need of revision.

OK. There are two aspects to this comment. First, as the essay is intended to sit within a special section of AAAJ on accounting for species extinction, the context of the work will, we anticipate, be that much clearer. The lack of logical progression to the argument we have addressed directly. In essence there is no single thread of argument but we have sought to provide a coherent representation of several arguments around the issues of concern. This has been explicitly addressed in the first and final sections but we have also undertaken revision all the way through. Hopefully you are satisfied with this response and that the essay now reads more coherently.

The paper addresses a societally significant topic from a rather original perspective. However, the authors need to be more explicit about what the "new accounts and utopian possibilities" that they call for would mean in more concrete terms as several scholars have already sounded similar calls. If I'm not mistaken, the authors' idea is that if such "new accounts" - of un-sustainability in general and biodiversity loss in particular; proliferate and circulate, they will over time form a discourse with constitutive effects on humankind's collective identity. This new conception of identity would entail the obliteration of the artificial boundary between humans and nature along the lines argued by e.g. Latour, and the construction of utopian ideas about harmonious co-existence.

- But how, and by whom, would such accounts be construed and where

We do not completely share your conception here. Our task is not to invent a new accounting ... counter or otherwise – but to speak about a range of context issues which are implicit in species accounting but rarely (if ever) to our knowledge formally considered. Our argument is both about levels of resolution that are brought to bear on the accounting and a critique ('counter-account') to those accounts. We have (we believe) made this very much clearer now... BUT we have not specified what concrete outcomes we would favour – as you say later we all probably have different utopias and outlining such a utopia was not our purpose. As, ourselves, creatures of modernity, we doubt we could obliterate our distinction between ourselves and nature – and it would be facile to ask that of others.

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would they be circulated?

- And if the key message is as simple as you yourself admit in the abstract, that humankind should acknowledge its complicity in destroying the Earth, what else is there left to say in alternative accounts?
- What role would accounting scholars and practitioners have in the process of imagining new futures?
- What if the utopias of some are the dystopias of others? For instance, some seem to believe that we can ravish the Earth and then escape to a colony on Mars; to me this is an extremely dystopian vision.

The last section of the paper addresses these more specific concerns to a degree.

We do not seek to be prescriptive and whilst our own preferences inevitably come through in the essay: we have no intention of restricting futures by specifying how the future might play out. I guess we really do not know for sure.

You refer to your essay as a counter narrative (p. 1) or a counter account (p. 19) but you do not really engage with the associated accounting literature. You seem to employ the concept of “account” in a very broad sense, which begs the question of the paper’s linkages to the domain of accounting and hence its appropriateness for AAAJ (even when considering the journal’s benevolence towards interdisciplinary work).

One way or the other, you need to indicate how this paper qualifies as an accounting study and to keep the connection to accounting visible throughout the paper. It is not enough to make fleeting references to accountants, economists and financial markets; you need to somehow tie your arguments to basic concepts such as accountability and/or information for decision-making.

Besides, it is not quite clear what your essay is intended to “counter” – is it really the accounts of distinction as you seem to imply in the abstract? I would argue that, ultimately, your critique is directed at humankind’s way of organizing and governing.

One might also ask if this is a counter account or rather a meta-account (p. 19); what is the difference between the two? Perhaps it would be helpful if you clarified the nature of your counter narrative with reference to the typology of counter accounts developed by Thomson, Dey & Russell (2015, AAAJ).

You could also position your piece in relation to more conventional approaches to

I think we meet you half-way here. We have mentioned the context of the special issue. We have taken some steps to separate the different themes which underlie the essay and been rather more explicit about the forms of account we are considering. Yes, they are very wide in places but we do bring this back in the conclusions. However, the purpose of the essay is to engage with the species extinction/accounting literature, not the counter-account literature specifically (although we do acknowledge this in places throughout.)

We think we have successfully addressed these points with some care. Hope you agree.

<p>counter accounts, e.g. Cooper et al. (2005, CPA). For inspiration, see also Tregidga, Milne &amp; Kearins on “ramping up resistance” (forthcoming in Business &amp; Society).</p>	
<p>The paper draws from numerous sources, from natural to social sciences, from academic journals to blogs, and is rather eclectic. Quite a few themes and concepts are introduced but not employed further on (e.g. ‘closeness’ is italicized on p. 3 but not really discussed; the same applies to e.g. ‘calculable person’ on p. 8.).</p>	<p>Thank you for raising this point.. ....we would not have noticed it otherwise (given the references in the texts). We have addressed both of these terms and (where we could spot them) clarified others like this.</p>
<p>The main line of argumentation is difficult to follow. I think it would be helpful if you chose a couple of key themes and returned to these in each section.</p> <p>For instance, you mention Latour (1988) when discussing humanity’s conception of itself and this is something that could be developed into a more overarching theme of the paper. As you probably know, the nature/culture division is a recurrent theme in Latour’s writings and his overall idea of extending democracy to non-humans is made explicit in his 2014 book Politics of Nature, which I recommend you read. In this book Latour develops these ideas further and in more detail (for a summary of the book’s main argument and its applicability to accounting, see Vinnari &amp; Dillard, forthcoming in CPA). For instance, he appropriates Isabelle Stenger’s notion of cosmopolitics in a way that in my view comes close to the idea you are trying to promote.</p>	<p>This was an especially challenging comment. Our hope is that our opening response to you has seriously addressed this. <i>Incidentally, these comments are those about which we would dearly love to have a serious conversation with you over a drink in the evening of a conference. Difficult (and frustrating) to try and deal with them by text rather than through discussion!</i></p>
<p>The main line of argumentation is made clear at the beginning of the paper and recited in the conclusions but, as mentioned above, it is not quite clear what this essay is – a counter account or a meta-narrative? I get the feeling that the essay is trying to serve these two related but distinct functions simultaneously. I recommend that you critically scrutinize the organization and flow of your text to see if you can make it more internally coherent.</p>	<p>We think we have addressed this above.</p>
<p>As mentioned above, the paper does not explicate how accounting scholars and/or practitioners could be involved in envisioning alternative and better futures.</p>	<p>We have probably dealt with this above: we are not placing all the responsibility onto accountants... just arguing that accountants have a duty to be aware of these matters. We directed our comments more obviously to accountants throughout the text and have expanded a little in the conclusion in an attempt to make this clearer.</p>

<p><b>Minor points.</b></p> <p>Page 2 seems cluttered in the sense of containing two footnotes and three opening quotations, some of which are quite lengthy. The second half of footnote 1 is especially difficult to read as it contains layers of embedded citations. Please take a critical look at these to see all of them are necessary, at least in the current lengths.</p>	<p>We agree. Sorry. We have trimmed this down.</p>
<p>Further, if you wish to modify Einstein's words, I think you should indicate this modification right after the cited sentence and then elaborate in the footnote.</p>	<p>Yes, this was careless ... we have been unable to reliably identify the original of the whole quote and so have just reduced it to the bit that appears to be authentic.</p>
<p>To my taste, the text contains too many sentences in parentheses. You could probably remove most of these signs, as they do not seem necessary.</p>	<p>This is difficult. On carefully reviewing the paper, we can see that there are a fair number of examples of using parentheses. We have managed to remove a few of these but, in general, we find the style suits the form of exploration we are using in the essay. We actually favour the conditional sense that the use of parentheses suggests. If you insisted we could, of course, remove more. We would actively prefer not to though. Is that OK?</p>
<p>Similarly, there are quite a few direct quotes that could probably be paraphrased.</p>	<p>I fear we might have to agree to disagree on this one. After a careful re-read through we can recognise that there are a large number of quotations and, indeed, we have managed to paraphrase a few of them. But largely we are keen to introduce multiple voices. The advantages of this are not just diversity but, in addition, we benefit from the eloquence of the statements plus there are statements which we believe have rhetorical value but which we ourselves might not phrase as strongly as this.... And if we did we would need to offer chapter and verse in support of what are, on occasions, somewhat arresting assertions. The references ensure that a reader can pursue the issues should they so wish.</p>
<p>Personally, I would prefer "humankind" over "mankind".</p>	<p>We found this quite a challenge. One can easily understand why "mankind" may be an inappropriate phrase but it is widely used and, more importantly, there is rhetorical thread in the essay that recognises the essentially masculine source of the issues we discuss. We were reluctant to lose all of that implication and, similarly, reluctant to interrupt the flow of the essay, However, we have, in most cases (but not in all) replaced "mankind" with either "humankind" or "humanity"</p>

p. 6, line 40: 'anthropocentrically' instead of 'anthropologically'?	Thank you – done
p. 10, line 2: what does 'between 50S and 50N' mean?	Clarified
p. 17, line 18: 'sustainably' instead of 'sustainability'?	Thank you – done.
<b>Reviewer #2:</b>	
This is a very interesting opinion piece which reviews accounts of biodiversity loss and extinction of species in order to provide a counter-narrative on the need to account for human extinction. It raises a number of very interesting ideas, not least of which is the lack of transformative potential characterising periods of late modernity. The paper concludes by posing the ironic question: Should the Dodo return the favour and provide an account of humanity's decline?	Thank you, we appreciate the positive interpretation of our work, and your understanding of irony (not everybody does). Your encouragement has been especially cheering. Thank you.
I think that the introduction is very good. It introduces the major themes/principles which are developed in more detail in later parts of the essay and provides the reader with a clear frame of reference. My only concern is that the parts preceding the purpose statement (page 4 line 26) could be condensed to make the paper easier to follow, especially for readers not familiar with the complex body of interpretive research/narrative framing which the author(s) engage.	Thank you very much. We have, following your lead, re-read the paper several times and sought to clarify wherever possible. There are several points where the language of the essay becomes more oblique than is necessary. We hope you find it much more accessible now. To be frank, we have not condensed the specific parts you mention but tried to make them more accessible. In part, the rhythms of the essay (it is, after all, an essay) remain important.
Section 2 and 3 are fluidly written and cite the relevant literature. A clear analysis of the present state of biodiversity loss/extinction is provided and the author(s) follow logically with an account of human activity. I would suggest that the idea of the 'calculable person' be expanded to make clearer the fact that conventional neo-classical economic frameworks (on which most of modern corporate reporting is based) simply fail to take into account the broader impact of human activity on the natural world. In this sense, the accounting system creates a partial visibility which is misunderstood as a complete account and constrains the visualisation of a more sustainable alternative (Tregidga et al, 2014; Atkins et al, 2015).	Thank you. We have briefly expanded this paragraph to acknowledge prior work in the accounting field that recognises the limits of conventional accounts both in terms of environmental/ecological impacts (e.g., Milne 1996; Gray 1992; Hopwood, 2009) but also the logical/rationale aspect (e.g., Hines 1991; Broadbent 1998, Shearer 2002).
Based on the comments in Section 4 and 5, I wonder if there would be any merit	We dwelt a long time on this comment – thank you for the stimulation! The

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<p>on touching on the possibility of an anthropocentric method of accounting for the natural world as part of a process of avoiding accountability? The essay touches on the fact that accounting is designed to provide a calculable construction of reality and perhaps its persistence as the dominant discourse for providing ‘an account’ is precisely because a non-anthropocentric view would produce the conclusion that human extinction is desirable?</p>	<p>suggestion opens up an enormous potential that, we plead, is way beyond the scope of this modest essay. This seriously radical extension of what we are arguing could take us off into a whole new area of analysis and theorising. We have resisted this temptation as it would require, in effect, another paper and a great deal of additional research, reading and reflection. One step at a time perhaps?</p> <p>We HAVE, however, sought to flag up the essence of this comment throughout the paper and especially in the closing section. Not a complete but a satisficing(?) response we hope.</p>
<p>Overall, I think that this is a very good opinion piece. It is clearly written and would fit well with the special edition on extinction accounting. I would recommend that the paper be accepted with minor revisions.</p>	<p>Thank you.</p>
<p><b>Minor Points</b></p>	
<p>I do not think that the three opening quotations added much value.</p>	<p>We can see your point (although our argument was about setting scenes and introducing context.) They have been severely curtailed.</p>
<p>Please check the manuscript for the use of acronyms/abbreviations. Some of the uncommon ones could be included as a footnote to the introduction.</p>	<p>Thank you – we believe that we have now done this....</p>
<p>Should heading 2 read “and their causes”?</p>	<p>Thank you. Yes it should</p>
<p>Please check the formatting of the paragraphs. Some of the text justification needs correction</p>	<p>Done: this sort of thing often goes awry in the submission process</p>