Critical Perspectives on Accounting xxx (xxxx) xxx



Contents lists available at ScienceDirect

Critical Perspectives on Accounting

journal homepage: www.elsevier.com/locate/cpa

On crisis and emergency: Is it time to rethink long-term environmental accounting?

Helen Tregidga^a, Matias Laine^{b,*}

^a Royal Holloway, University of London, United Kingdom ^b Tampere University, Finland

ARTICLE INFO

Article history: Received 1 March 2021 Revised 26 March 2021 Accepted 5 April 2021 Available online xxxx

Keywords: Environmental accounting Crisis Urgency Time

ABSTRACT

The environment is in crisis. Climate science and biodiversity loss indicators, for example, illustrate the extent of environmental degradation and the concerns with the sustainability of Earth, or perhaps more specifically, the ability of Earth to sustain (human) life. There is also an increasing recognition of the environmental crisis as urgent, as an emergency, yet whether we are acting sufficiently to the environmental crisis is still up for debate. These debates have become more evident in light of the COVID-19 pandemic, creating a context within which to consider what it means to respond to a crisis and how the environment might feature in any post-COVID recovery. In this essay, we first outline and reflect on crisis, urgency and (in)action through a consideration of the environmental crisis and the COVID-19 crisis before moving to our main focus - the implications for environmental accounting. Specifically, we suggest that the construction of environmental accounting as accounting for the long-term, an attempt to contrast it with and overcome the problems with short-term conventional accounting, potentially contributes to the construction of the environment as lacking urgency and potentially enables its marginalisation. We argue that in order to make the most of accounting's potential as a constitutive force, capable of participating in transforming preferences, decisions and behaviour in organisations and societies, environmental accounting needs to be about the short-term. We contribute to the ongoing discussions on how accounting needs to change if it is to recognise the urgent nature of the environmental crisis. © 2021 The Authors. Published by Elsevier Ltd. This is an open access article under the CC BY

license (http://creativecommons.org/licenses/by/4.0/).

1. Introduction

The environment is in crisis. This is well established and broadly understood. Planetary boundaries are being breached (Steffen et al., 2015), devastating climate change looming with many of its effects already being felt (IPCC, 2018), biodiversity is in decline putting ecological services at risk (Dasgupta, 2021; WWF-International, 2020), and we are increasingly coming to understand the level and effects of plastic waste and such things as soil degradation. While it is likely that nature will eventually hold up and take its course, the prospects of well-being and flourishing humanity are far more uncertain. No matter whether we speak of south, north, east or west, societies are dependent on the natural environment and the ecological services it provides. It appears that humanity is increasingly, but still painstakingly slowly, coming to realise (or accept) that these are at threat.

* Corresponding author. E-mail addresses: helen.tregidga@rhul.ac.uk (H. Tregidga), matias.laine@tuni.fi (M. Laine).

https://doi.org/10.1016/j.cpa.2021.102311

1045-2354/© 2021 The Authors. Published by Elsevier Ltd.

This is an open access article under the CC BY license (http://creativecommons.org/licenses/by/4.0/).

Please cite this article as: H. Tregidga and M. Laine, On crisis and emergency: Is it time to rethink long-term environmental accounting?, Critical Perspectives on Accounting, https://doi.org/10.1016/j.cpa.2021.102311

H. Tregidga and M. Laine

The deteriorating state of the natural environment as well as the potential implications of this phenomenon has become a fairly prominent feature within political arenas, for organisations as well as in the media. State- and regional level sustainability policy statements and action plans are numerous, corporate sustainability reports, certificates and roundtables ubiquitous, press coverage of climate, biodiversity and plastic waste seems constant. Yet despite this large amount of attention and 'action' there are concerns, and the scientific evidence would support them, that we are not responding or acting fast enough (IPCC, 2018). More recently, and perhaps as a response to this (in)action, there is an increasing discourse seeking to position the environmental crisis as an emergency and therefore urgent. This is most starkly represented within the area of climate change, with the framing of "Climate Emergency" and attempts to get governments to declare one (Rockström, 2020), or those emphasising the need for action as the UN SDG13 Climate Action has it (UN, 2021). This framing aims to push for faster decisions and stronger measures on a shorter time frame, and thus position the humanity's relationship with the natural environment as one in serious crisis, thereby necessitating immediate crisis measures to be taken.

These observations and debates have become more evident in light of the COVID-19 pandemic. COVID-19 has created a context within which to consider what it means to respond to a crisis and, in particular, an urgent crisis or emergency (see, for example, Thunberg, 2020). Furthermore, as attention turns to a consideration of post-COVID recovery, how the environment will feature in that recovery is being discussed. While the post-COVID recovery is constructed by some as an opportunity to place the environmental crisis at the centre (e.g. OECD, 2020), it would perhaps be naïve to consider that this will necessarily be the case. At the least, we would argue, we need to consider the institutions, practices and structures, and how these might need changing, if we are to ensure the environment is considered at least alongside the economic and not marginalised or de-prioritised.

In this essay we reflect on the COVID-19 pandemic and the worldwide response to it in relation to the environmental crisis more broadly and environmental accounting specifically. Before proceeding to our key argument, which is to highlight that to create and reinforce urgent action on the environmental crisis environmental accounting needs to be reframed as accounting for the short-term, there are three things we should mention. First, we refer explicitly, and purposively, to environmental accounting. That is, we are not referring to social accounting or sustainability accounting which can be considered broader in focus (Gray, 2010; Bebbington et al., 2021; Laine et al., 2021). We do so as we wish to focus on the environmental crisis and draw our reflections in relation to the environment. However, we do, of course, recognise the social crisis that exists, the complex and devastating impacts that the COVID-19 pandemic has had on the social crisis, and the potential implications for accounting. However, that is not our focus here¹.

Second, while we draw parallels between the COVID-19 crisis and the environmental crisis in relation to action and response, and as the context to consider accounting, we are not suggesting the two crises are the same. Indeed, we fully recognise that these are different types of phenomena. For instance, while the COVID-19 crisis has been an instant event, diffusing and developing around the world with great speed, the environmental crisis is better described as a slow burning crisis (see Seabrooke & Tsingou, 2019; t'Hart & Boin, 2001), of which societies have known about for some time and which has developed at a (seemingly) slower pace. Perhaps, due to its slower pace, the environmental crisis, unlike the COVID-19 crisis, has even become normalised which itself has potential implications. Still, we perceive the COVID-19 pandemic and the global response to it as a context within we can reflect on how societies can react to different types of crises.

Third, we should highlight that one of the motivations behind this essay is a personal one. That is, we both have strong personal frustration over how the environmental crisis is not being sufficiently addressed, with governments, organisations and individuals citing a plethora of explanations on how there are limits to what can be done, how alternatives would be too expensive, or how particular decisions are not realistic (see Tregidga et al., 2018; Laine et al., 2020). Again, we think that the global response to the COVID-19 pandemic has put humanity's prior (in)action on the environmental crisis in a new light, and as such we see this as an opportunity to reconsider how we respond to it and how accounting can play a role in that response.

From here, this essay proceeds as follows. After first providing a very brief reflection on crises and in particular response to crisis to provide context, we turn our discussion to our main focus, environmental accounting. In line with a strong body of prior literature (see Bebbington et al., 2021), we highlight in section 3 how, in its attempts to remedy some of the problems of conventional accounting in relation to the environment, environmental accounting has sought to establish a long-term perspective, emphasising the importance of going beyond the short-term view of conventional accounting. However, and as we argue in section 4, drawing on discussions of the performative effects of accounting, we suggest this emphasis on the long-term potentially undermines the ability of environmental accounting to bring out urgent and radical changes needed in societies and organisations in the face of the environmental crisis. We suggest such framing contributes to the environmental crisis being constructed as a nonurgent crisis, able to be sidestepped by what is considered to be more urgent short-term thinking, the economic/financial. We again draw some reflections here from the current COVID-19 crisis, considering the discourse of the post-COVID *economic* recovery response. In section 5 we advocate for constructing environmental accounting for the short-term, with the intention of making the urgency more prominent and avoiding the

¹ We recognise that social and environmental crisis are interconnected, as highlighted for instance by Raworth (2017). Acknowledging this, we maintain that focusing on environmental issues is relevant, and useful, in the context of our argument. We would also suggest that some aspects of our argument could have relevance for some social issues, however, we do not explore these specifically here.

H. Tregidga and M. Laine

marginalisation of environmental accounting for the prioritisation of the economic/financial. We conclude in section 6 with some final comments. Through this discussion we seek to both highlight how the construction of environmental accounting has an effect and implications, as well as seek to continue with the ongoing discussion and debate as to how accounting needs to change if it is to recognise the urgent nature of the environmental crisis (Maunders & Burritt, 1991; Milne, 1996; Gray, 2010; Russell et al., 2017).

2. Crises and responding to crises

The immediate and ongoing response of societies to COVID-19 offers us a view on what it means when societies and global institutions seriously respond to a crisis. The global response to COVID-19 has illustrated how different societies, no matter what type of social, economic and political institutions and systems underlying them, have taken immediate and at times extreme actions in trying to manage and navigate the pandemic. In seeking to find ways to cope with a substantial challenge threatening the health and lives of populations, many societies opted to change their standard operating policies, usual practices and general priorities (see HBS, 2020).

Simultaneously, economic considerations and budgetary control, usually the forefront of state politics, appear to have temporarily lost their hegemonic status as the primary factor behind decisions (see Grossi et al., 2020; IMF, 2021). Cities, regions and entire countries have been put under lockdown, some over and over again, to limit the spread of the virus. Sections of the economy have been shut down, or placed under massive health and safety restrictions, in seeking to curtail people from moving around and physically interacting. States have directed vast amounts of financial resources to health care, protection gear and temporary infrastructure, together with providing stimulus packages and different forms of economic aid to private organisations, public sector institutions and individual citizens. Within science, research and development, imminent amounts of resources, brain power and infrastructure have been directed to development of vaccines (Ball, 2020). Moreover, scientific development saw interaction and collaboration to extents previously unforeseen, with researchers sharing their insights and providing comments in almost real time to speed up the collective effort.²

Of course this is not all uncontested or without problems. The unclarity of a swiftly evolving pandemic and the various reactions to both the pandemic itself and the social measures taken towards it mean that life under COVID-19 has not been straightforward. The responses of societies varied, in some situations policy measures were first delayed and then reversed the next day, and the various frustrations of the public became evident – and appear to have grown each week. Many decisions have been contested and controversial, such as the debates on the closing of schools illustrate (Rice et al., 2020; Strauss, 2021). Some actions brought intended outcomes by effectively curtailing the spread of the virus, but they simultaneously also had many unintended consequences, such as increasing poverty, deepening inequality and potentially worsening other social challenges, some in yet fully unknown ways (e.g. Blake & Wadhwa, 2020; Goldin & Muggah, 2020; UNDP, 2020).

In essence, the range and extent of societies' response to COVID-19 has been vast, and the costs (social and economic) are high. The response effort has not only been about targeting resources and working in new ways, but the lockdowns, shutting down of entire sectors of economies and restrictions across societies have come with major negative economic implications – to extents that have been beyond imagination and definitely beyond anything that would have previously been considered possible political alternatives (see Blake & Wadhwa, 2020; IMF, 2020). It is evident that it has been important to take a range of measures seeking to slow and stop the pandemic despite the extensive economic costs. At the same time, these actions illustrate the type of societal efforts and political decisions that can be taken when society is considered to face an immediate, urgent emergency. That is, decisions that in ordinary times would be seen as impossible. Moreover, another aspect of the response that we suggest is interesting is that major measures have been put in place even in situations where scientific knowledge has been limited and evolving. The potential risks and consequences have been considered so severe that grand scale actions were in most countries deemed necessary, even if there was substantial uncertainty concerning the type and scale of outcomes that might follow.

As we have noted above, this global pandemic has elucidated modern societies' position on the environmental crisis. While it would seem that anywhere one looks there are initiatives, strategies, pathways and programs, pledging to take organisations and societies towards a green state, to a low-carbon future, creating sustainability transformations, the efforts taken to tackle the COVID-19 pandemic have exposed how we do not treat our relationship with the environment to be in a crisis, as something urgent, something requiring emergency measures, despite such nomenclature sometimes associated with it. Some of the reasons for this may lie in the framing of environmental targets and timelines. While it is acknowledged that a lack of action on scientific knowledge to date has led to the extent of the current environmental crisis (Jackson, 2017), and it is well understood that the sooner we are to act the more likely we are to prevent major catastrophe (IPCC, 2018; WWF-International, 2020), environmental targets and timelines are often set into the future. For example, within organisations, environmental performance targets are often five, even ten years into the future with targets of 2025 and 2030 (in line with the UN Sustainable Development Goals) not uncommon. Within societies such

² The debate concerning the intellectual property rights (IPR) of vaccines is worth noting here. To simplify, the question is whether the IPRs held by pharmaceutical companies are slowing down global effort to roll out vaccinations as well as whether those IPRs should be voided in the interest of public good. Those backing the temporary suspension of critical IPRs maintain that such a move would be particularly helpful for low-income countries to have access to COVID-vaccinations (Usher, 2020).

timelines can be even more future orientated with a common reference point seemingly 2050 (e.g. European Commission, 2018). That is, it seems that despite the recognition of a serious and urgent environmental crisis, and the need for urgent action in the hope of achieving the required targets, longer term targets are set. These longer framed targets potentially also mean that immediate actions are delayed until closer to the time. Here, as the story goes, faster action might be prohibitively expensive, cause too much social disruption, or be framed outright impossible to implement.

As we have discussed, the COVID-19 global pandemic response shut down sectors of the economy and shattered social institutions, as many in societies saw it as important to act, at short/mid-term economic cost, to protect lives. Meanwhile, science highlights how biodiversity loss, soil degradation and climate change are gathering pace and about to shatter social institutions, jeopardize global food production, make vast regions inhabitable, put millions of lives in direct danger, and limit the potential and capabilities to flourish (Rockström et al., 2009; IPCC, 2018). In addition to moral implications related to human hardship and suffering, these developments will also have major economic implications (e.g. Dasgupta, 2021; Stern, 2007). Such a context leads to several questions. For example, has the response to the global environmental crisis? Has the COVID-19 response highlighted that different decision-making is possible in a crisis situation? Has the pandemic shed further light on what type of information can trigger major and disruptive decisions in society even under considerable uncertainty?

While many societies are continuing to experience the immediate impacts of the virus, attention is also turning to post-COVID recovery, or the post-COVID *economic* recovery. As noted, this has been constructed by some as an opportunity to simultaneously address the environmental crisis alongside the economic recovery (e.g. IEA, 2020; OECD, 2020). We too view this as an opportunity to seriously consider the environment. However, we believe that it should not be taken-for-granted. In order to ensure that the environmental crisis is taken seriously, and importantly considered as urgent, we need to ensure that the practices, structures and institutions that are part of that rebuild are reflected upon and changed. This, we argue next, includes accounting.

3. From short-term to long-term accounting: The temporal dimension of environmental accounting

Accounting is a powerful form of governance in modern societies (Burchell et al., 1980; Miller & Power, 2013). Accounting practices, in their various shapes and forms, have substantial implications in and for societies. Accounting practices have an impact on what is being valued and considered valuable, by individuals, organisations, markets and societies (Kornberger et al., 2015). Accounting figures affect which types of alternatives are chosen in different levels of decision-making. Accounting practices, conventions and numbers affect which products, processes and firms are considered to be profitable and worthy of continuing. The calculative mechanisms of accounting have an influential role in the decisions concerning which organisations receive capital to bring novel innovations to the market. Such areas have been well discussed and accounting is widely understood as a major force shaping how societies, markets, institutions and organisations operate and the form they take. This is not without consequences.

As has been argued in previous literature, conventional accounting practices are a driving force behind the current environmental crisis (Maunders & Burritt, 1991; Gray, 1992). This is due to a number of factors. In general terms, conventional accounting focuses on economic considerations and financial capital, ignoring other types of capital and considerations, such as environmental aspects (Milne, 1996). Conventional accounting is based on the ideas of organisational boundaries and the entity principle, implying that it tends to focus in an atomistic fashion on an organisation, simultaneously ignoring the systemic implications actions and decisions may have on other organisations and within the broader system (Gray et al., 1996; Jones, 2010). Jointly, these two factors take us to externalities, which are the consequences, impacts and implications caused by an entity's decisions and actions, but which are not borne by the entity itself and hence not included in the accounting considerations (Hines, 1988; Unerman et al., 2018). Finally, the short-term nature of conventional accounting gets manifested for instance in discounting, which is the predominant practice through which future events are taken into consideration in accounting. In simple terms, discounting by definition values present and short-term events at a substantially higher value than it does those taking place in the more distant future, which tends to have negative implications on environmental considerations (e.g. Hopwood, 2009).³

It is now well established that due to a combination of these features conventional accounting is problematic from the perspective of the natural environment. One of the remedies has been the development of a plethora of environmental accounting research and practice, which attempts to alleviate some of the problems and shortcomings conventional accounting craft, practice and conventions cause (see Bebbington et al., 2021). For instance, through environmental disclosures there has been an attempt to broaden the information organisations communicate to stakeholders about their aims, policies and performance. These disclosures bring non-financial matters to the same space with the financial information and thereby within the sphere of accountability in various degrees. Environmental accounting oftentimes

³ We recognise that the role and relevance of discounting and different discount rates for environmental considerations is a complex terrain, which touches upon questions such as inter-generational equality, substitutability of different forms of capital as well as the perceived (non-)limits of natural resources, ecological services and economic growth. Engaging in this conversation involving both ethical and economic considerations lies beyond the scope of this essay. Further discussion on the role of discounting and discount rates in the economics of climate change can be found in Weitzman (2007), Caney (2008) and Sachs (2014), whereas Milne (1996), Gray (1992), Schaltegger and Burritt (2000) and Freeman and Groom (2013) provide further insights on the implications discounting has on environmental accounting.

H. Tregidga and M. Laine

emphasises the need to extend organisational boundaries (Gray et al., 1996, 1997) or the significance of looking beyond the organisational boundaries and taking a more systemic view of the implications any decisions and actions have (Larrinaga, 2020). This could, for instance, imply taking a more focused look at the environmental consequences organisational decisions have in their lengthy supply chains, a matter generally excluded by conventional accounting due to the entity principle (Maunders & Burritt, 1991, see also Antonini et al., 2020 for a discussion relating to reporting). In general terms, many environmental accounting practices have sought to bring other forms of capital into the same standing with the financial capital so that in decision-making organisations would consider the decisions through the lens of multiple capitals. Attempts to internalise the externalities, taking place for instance through carbon markets, would be one such example, although oftentimes such attempts are fairly modest (see Antheaume & Bebbington, 2021; Bebbington et al., 2001; Lohmann, 2009).

A key way in which proponents of environmental accounting have sought to overcome the problems with conventional accounting is to expose the limits of its short-term perspective. While in general terms there has been limited in-depth discussion concerning time within environmental accounting (c.f. Chakhovich, 2019, forthcoming; although see Kim et al., 2019; Reinecke & Ansari, 2015 for discussion in the organization studies literature), a short-term/long-term construction of accounting is evident in the literature. Essentially environmental accounting has been constructed as accounting for the long-term either implicitly, or explicitly. For example, Hopwood (2009, p.433) in his piece titled Accounting and the Environment states "[e]ven now, as the findings of environmentalists and scientists get ever more certain and disturbing, the vast majority of politicians still have difficulty in responding, continuing to put what they see as their short-term economic and political imperatives above the longer term interests of the human race" (p.433) and "[i]t certainly would appear that corporate interests and fairly conventional short-term nationalistic economics were given priority over environmental considerations, despite the underlying rationale for the scheme" (p.435). Tweedie and Martinov-Bennie (2015) also raise the temporal dimension of financial and environmental/social accounting in their discussion of the IR Framework. Here, in their discussion of the double-edged agenda of IR, they note how IR's longer-term perspective has some significance in addressing the problematic short-term orientation of much financial investment. For example, they note "IR aims to re-focus capital markets on the longer term time frame that more sustainable corporate practice requires. Hence, IR has the potential to contribute to sustainability if it forms part of a broader re-organisation of capital markets to prioritise longer term investment" (Tweedie & Martinov-Bennie, 2015, p. 50).

Jones (2010) too discusses the temporal dimension of conventional and environmental accounting in his paper seeking to develop a "theoretical perspective for environmental accounting and reporting". For example, Jones (2010, p. 130) states, "Accounting, as practiced in the modern corporation, is notoriously short-term in orientation, while environmental problems, such as global warming, have very long time spans. This mismatch in periodicity does not make an easy marriage between accounting and the environment". However, in an attempt to advance accounting along more environmental lines, Jones (2010) argues for sustainable development accounting in the short-term while considering more radical environmental accounting as a longer term endeavour.

"In the long term we need to redress environmental damage, reverse global warming, and remediate habitats and thus biodiversity....In the short term, however unpalatable to deep green environmentalists, such radical reorientations, such as zero growth or population control, although ecologically desirable, would be socially, economically and politically impossible to achieve. A more realistic goal which would provide a possible first step towards any radical reorientation of the human relationship with the environment (see, for example, Pearce, Markandya, & Barbier, 1989) is sustainable development." (Jones, 2010, pp. 127–128).

This conception of time is useful to reflect on in establishing our own argument. As we will argue below, we would suggest that what is needed is, in fact, a switching of the suggestion by Jones (2010). We suggest that what is needed is short-term environmental accounting which would work to support longer-term sustainability accounting. That is, to address the urgent environmental crisis an accounting that supports it is required – which, while embedded within a broader sustainability accounting which may usefully have a longer time-frame, is not equated with this longer-term perspective. It should instead focus on immediacy.

Lastly, Unerman and Chapman (2014) in their editorial also include an interesting discussion of time in accounting which also has useful connections to our own position and is hence worth reflecting on. They position the sustainability science literature as recognising that short-term action is required noting that "[s]ustainability studies from natural science demonstrate that organizations need to make substantive changes in the short term if we are to avert catastrophic global environmental change and resultant societal dislocation" (p. 385). They too raise concerns with the short-term noting that "[a]ccounting for sustainable development necessitates the broadening of these short-term economically-oriented accounting practices to incorporate not just direct short-term economic interactions and impacts but also to incorporate the direct interactions and impacts between the organization, the society in which it operates and the natural environment". Interesting for our argument here is that Unerman and Chapman (2014) recognise the short-term and long-term dynamics of accounting for the environment as well as explicitly note that "social and environmental interactions and impacts will often have an economic impact in the longer term" (p. 387, see also Bebbington et al., 2001). They highlight that accounting needs "to consider of a range of direct short-term discussions of accounting (both environmental and financial) is something that we are suggesting requires much more explicit reflection and engagement.

H. Tregidga and M. Laine

Overall, we argue that in attempting to highlight the problems with short-termism within conventional accounting, environmental accounting, either explicitly or implicitly, has been constructed predominantly as accounting for the long-term. While there are some nuances in this discussion as highlighted above, the implications of this construction have not been sufficiently considered, something that we believe is required due to its performative effects. We now move to discuss these effects in the next section before presenting our argument as to why, we believe, we should be seeking to (re)frame environmental accounting as accounting for the short-term.

4. The performative effect of long-term environmental accounting

As mentioned above, accounting is a constitutive force (Miller & Power, 2013). The calculative practices of accounting and the numbers those practices produce do not only reflect and describe how things are, but also have a substantive performative element. How we do accounting, how we speak of accounts and accounting, and what we consider to be included in and excluded from accounting all have implications on the individuals, organisations, institutions, societies and the environment this very accounting focuses on. In other words, organisational activities and behaviour get shaped based on the forms of accounting that are being cast upon them, on the types of reports expected for discharging accountability, as well as on how those accounts, calculations, numbers and reports are talked about (Boedker et al. 2020).

Through its performative nature, accounting makes things visible, shows priorities, assigns value and makes various things governable. Accounting mediates between different elements and participates in transforming social structures, institutions and organisations. We can draw on the COVID-19 pandemic again for a moment to illustrate, as it has highlighted how specific calculative practices and particular numbers can have tremendous power.

Since March 2020, many within societies have been staring at numbers and graphs depicting how many people have been hospitalized or died during the previous 24 hours, what the most recent number of positive cases in each country is, what the rate of positive tests in a given area is, and where the R0-indicator describing the spread of the virus currently stands (or R-indicator, see Adam, 2020). These numbers, and importantly their trends, have communicated extreme urgency, they have shaped how individuals, organisations and governments operate and how the pandemic has been understood. Essentially, these figures have constructed how we perceive the pandemic and served as the basis for decisions, the extent and consequences of which were previously considered impossible in various contexts. A nation is set in lockdown based on a projection, a key part of which is based on the figures depicting the number of current cases, the R0-indicator in the area, the relative prevalence of different variants, and the rate of recent hospitalisations and lost lives. These calculative mechanisms are about tackling a crisis, in the immediate short-term.

The framing of environmental accounting as accounting for the long-term also has performative effects. Above we noted how environmental accounting is usually framed as being about the long-term, contrasting it to, and seeking to overcome some of the problems with the more conventional accounting and its short-term focus. However, while this is well-intended and probably to an extent helpful in steering organisations and societies to somewhat less unsustainable trajectories, is this long-term perspective sufficient in the face of the magnitude of the environmental crisis? That is, is environmental accounting creating the conditions for environmental transformation and facilitating the paradigmatic shifts societies need (see Bebbington & Thomson, 2013; Gray, 2010)?

We would suggest, by framing environmental accounting primarily as being about the long-term, while being a reasonable claim in its own right, we simultaneously risk positioning such accounting practices as something that focus on aspects that are less immediate, less urgent, and which are essentially relevant in the more distant future. At the same time, environmental accounting becomes something that can give way to the apparently more significant, the more immediate, the short-term, that is, to the economic and financial considerations that require urgent attention. Accounting for the environment, we posit, potentially undermines its possibilities for creating the conditions under which the radical changes immediately required to tackle the environmental crisis can take place. That is, as environmental accounting is about the long-term, and less urgent, it can be put aside as potentially impossible, as too socially disruptive, as economically prohibitively expensive. Or, at the least, in the times of economic/financial crisis marginalised or considered as a secondary concern.⁴

If we are to take the performative nature of accounting and accounting discourse seriously, we suggest that there is a need to explore how environmental accounting can been changed from being about the long-term into questions of short-term and immediate. The scientific community has been raising alarm over the vast consequences climate change, biodiversity loss and other breaches of planetary boundaries will cause to societies unless immediate action is taken to make a substantial transformation in how societies operate. Environmental accounting can play a role here. While discussions and framings of environmental accounting as accounting for the long-term were likely never intended to position environmental accounting as only long-term (e.g. in the scholarly literature it was never intended to imply that short-term, even immediate, action was not required) we suggest that such a framing can nonetheless marginalise environmental accounting as less urgent than its counterpart – short-term financial or economic.

⁴ Elsewhere, Chakhovich (*forthcoming*) makes an interesting point regarding how the idea of long-term can be a "significant instrument for deploying ideologies". Her discussion is on an entirely different subject matter, that of share-based compensation, but it nonetheless serves to illustrate the relevance of considering how time and different timeframes are relevant in the context of accounting.

H. Tregidga and M. Laine

If we are to again return to a consideration of the current context within which to illustrate the performative nature of discourse and our concerns as to the marginalisation or subjugation of the environment as secondary due to its long term construction we can draw on the discourse of the post-COVID *economic* recovery. At the beginning of the pandemic there was, at least in some contexts, a sense of optimism of the opportunities that would be created. While it is obviously too early to ascertain to what extent the environmental crisis will be addressed post-COVID, the discourse provides some interesting points of reflection in relation to our discussion of the short-term/long-term and reflection on urgency. As highlighted above, there is currently a discourse relating to the post-COVID *economic* recovery and the role of the environment. In considering this discourse we can draw a distinction between two common phrasings in the political arena. The first relates to the economic recovery. We suggest that recovery implies urgency as something is broken and in need of immediate fixing. Recovery feels urgent in the sense that while the whole process can take a long time, there is an urgent need to consider the environment post-COVID phrases such as "build back better" appear. Building implies something slower, longer term, requires things such as getting the foundations right, for example. Indeed, the idea of getting things "right" in the rebuild is often discussed, or at least implied. This also suggests we must not get things "wrong", we must know what we do before we do it.

We would argue that this framing is potentially problematic as it has the potential for the economic to be once again prioritised, indeed, taking a "business as usual" approach of fix the economy and then worry about the environment later (perhaps when we have the required economic resources to do so). The risk here is that it could be implied that we need to plan for the rebuild – and, given that planning can take time – the sense that economic recovery must begin while we undertake the rebuild planning. Yet, we have the science, we know what we must do (at least as much as we need to). If we want to ensure that the environmental crisis is not going to continually be deprioritised we need to see it as a crisis and worthy of responding as one. And again, as we highlighted above, the response to COVID-19 has demonstrated the potential to act in a crisis even if things are still unknown.

Reflecting on this and the need to consider the performative effects of discourse we would argue that in order to make the most of accounting's potential as a constitutive force, capable of participating in transforming preferences, decisions and behaviour of individuals, organisations, institutions, markets and societies, environmental accounting needs to be about the short term. Only then, it will be able to use the powerful characteristics accounting has for bringing environmental crisis to the level of emergency, as something immediate, urgent and critical. Such framing and practices can potentially pave the way for such unforeseen and transformative policies, which thus far have constantly been labelled as prohibitively expensive or outright impossible. Just as the COVID-19 pandemic has shown, (accounting) figures can be a powerful transformative force.

5. Reframing environmental accounting as short-term accounting

To illustrate what environmental accounting as accounting for the short-term might entail, it is perhaps worth taking a moment to consider what the different timeframes mean in the interplay between conventional accounting and environmental accounting. We provide a simplified illustration in Fig. 1 in the form of a two-by-two matrix, the quadrants of which describe what we could envision the combinations of different forms of conventional and environmental accounting to imply, before briefly elaborating in our discussion below.⁵

The bottom right quadrant could be seen as the situation in which we have resided for some time. As we outlined earlier, conventional accounting emphasises short-term thinking and does not consider environmental issues as relevant in the short-term. The position of short-term economics prioritises this aspect of accounting and, if there is a situation where there is poor financial performance (whether that be a product, a process, a project, or an organisation), this is seen as something that needs to be urgently addressed. Environmental accounting has been positioned as a counter force, promoting longer-term thinking and inclusion of environmental issues within accounting, reporting and accountability considerations. It has often been noted, however, how environmental matters are marginalised, with the short-term financial being prioritised by conventional accounting and overriding any other potential aspects.

As environmental issues have gained prominence in recent years and the implications of environmental issues on business become more understood, there have been an increasing number of arguments highlighting that addressing environmental issues would be in the long-term economic interests of the organisation or society. This is despite such an approach potentially coming with cost implications in the immediate short-term. This is evident in several initiatives, such as the <IR> which speaks of long-term value creation (Tweedie & Martinov-Bennie, 2015), as well as in the current ethos of Big4 consultancies, which highlight the long-term economic considerations of environmental initiatives (see Cooper & Senkl, 2016). At the same time, it seems that conventional accounting has not been very adept at capturing

⁵ We acknowledge that like most dichotomies our distinction between short-term and long-term is a simplification. Not only are boundaries never clear cut, but in addition it is also clear that by focusing our attention increasingly on something (short-term) will inevitably mean leaving something else (potentially the long-term) with less attention or out of the picture altogether. Moreover, the distinction we have here is also deeply embedded within the Western conceptualisation of linear time (see Kim et al., 2019; Reinecke & Ansari, 2015). We maintain however that this does not mitigate the argument being made, i.e. that by focusing more on the short-term environmental accounting could partake in creating the urgency needed to fuel the immediate action needed for tackling global environmental crisis.

Conventional accounting	short-term	Economic: long-term Environment: short-term	Economic: long-term Environment: long-term
		Environment signifies short-term emergency. Economic helps justify tackling long-term issues.	Useful context but limited urgency. Leaves a vacuum for the short-term decisions.
		< most ideal, should be the aim >	< not ideal, too slow >
		Economic: short-term Environment: short-term	Economic: short-term Environment: long-term
		Short-termist myopia. Slow-burning crisis given less consideration. Focus on eco-efficiency.	Prioritises economic. Environment sidestepped with no emergency.
		< not ideal, wrong focus >	< least ideal, problematic focus >
		short-term	Iong-term

Environmental accounting

Fig. 1. Alternative timeframes in accounting.

such long-term economic value creation either, partly due to the problems we described earlier. Accordingly, new types of accounting initiatives, such as the Taskforce for Climate Related Financial Disclosures (TCFD), have aimed at expanding the scope of financial accounting in such ways that would help incorporate the long-term economic value of environmental consequences within financial accounting considerations (O'Dwyer & Unerman, 2020). Similarly, the increasing popularity of various types of ESG-metrics within the financial markets help investors take into account the potential long-term financial value of environmental issues in their investment decisions (Chelli & Gendron, 2013).

In our figure, such developments are slowly taking us from the bottom-right to the upper-right corner of the matrix. From the perspective of the environmental crisis, such developments are potentially helpful, as they broaden the domain within which environmental issues are considered. At the same time, however, we caution that they are too slow. Urgency and emergency are lost in the midst of seemingly good progress. Furthermore, such constructions also risk potential action being delayed – if a target is set for 2030 then does it need to be a priority in 2021 – or can it wait?

We would also suggest that the environmental crisis would not be addressed through a position illustrated by the lower left quadrant, a short-term/short-term perspective. While not only likely to prove challenging, the risk here would be a short-termist myopia. We would also suggest that this position is likely to bring about a focus which does not align with the challenges we face. For example, an attempt to prioritise both economic and environmental considerations in the short-term is likely to lead to a focus on such things as eco-efficiencies, a position which has been argued to be problematic (Bebbington & Thomson, 2013). In short, this perspective is unlikely to lead to a perspective where the focus is on relevant aspects – neither for the environment nor the economic.

Therefore, in order to respond to the urgent environmental crisis, we are suggesting the need for an environmental accounting that focuses on the short-term complementing conventional accounting for the long-term. A position represented in the top left quadrant of our figure. This position communicates the importance of urgency and emergency which is lacking from current environmental accounting. Again, long-term sustainability accounting, such as those focusing on systemic issues and long-term trends are important and highly relevant for framing the context (Schaltegger, 2018; Bebbington et al., 2020). At the same time, we are concerned that those do not suffice to create the urgency needed in the current emergency. The aspects might be too far away, the interconnections too complex or the timeframe too long. So, to supplement such sustainability accounting, we need short-term environmental accounting, which focuses on immediate, tangible and urgent issues (see Milne & Gray, 2013). This also resonates with Unerman and Chapman (2014), who as we noted called for accounting which would consider "a range of direct short-term impacts along with less direct longer-term impacts" (p. 387). However, and an essential point to note, such short-term environmental accounting would need to look different from what we currently have, again, it would need to construct and highlight the issue of urgency.⁶

⁶ This resonates with Schaltegger (2018), who notes that addressing planetary boundaries on an organisational level and within decision-making may require new types of environmental management accounting, which would break down the systemic issues into practical level methods and information that can be used in an organisational context.

H. Tregidga and M. Laine

We would also note that in addition to requiring a critical reflection as to the form short-term environmental accounting would take, such reflection of a long-term conventional accounting is also needed. Thinking from the perspective of the natural environment, there is perhaps a case to be made that long-term financial value creation is all well and good. However, critical reflection is again needed here. Such an approach can lead to practices such as putting a monetary value on the natural environment, flora and fauna and the ecological services. This might be ok - but probably only up to a point. The idea of long-term value creation is largely based on a logic of consistency, steady economic progress, and an idea of linear natural processes that can be managed and controlled. However, science exploring ecological systems, processes and resilience keep highlighting the inherent interconnections and non-liner dynamics within the natural environment, and emphasise the fragility of ecological systems in the sense that systems may appear to be resilient and strong, but once a specific tipping point or ecological threshold is reached they can suddenly become highly unstable, lose capacity to regenerate, and end up prone of collapsing (see Lenton et al., 2019; Rockström et al., 2009; Folke et al., 2002). Accordingly, the scientific community keeps flagging that societies cannot wait until the long-term, but need to take immediate and urgent action to transform their relationship with the natural environment (e.g. Ripple et al., 2019). We maintain that we need to make use of the performative power of accounting to transform the discourse and behaviour across organisations, institutions and societies and are suggesting that an accounting represented by the upper left guadrant of our illustration is potentially the best way to achieve this.

It is perhaps useful to return to and draw on the experiences of the COVID-19 pandemic once again at this point. As we noted above, societies have taken extreme and unforeseen measures to stop the spread of the virus. In an emergency, a small number of short-term health-related figures, such as new positive cases, hospitalizations, deaths and the R0-rate depicting the spread of the virus, have turned to be key indicators driving massive and transformative policy decisions, with dramatic changes to social and economic life. Addressing the environmental crisis, posing arguably an existential crisis for human societies, requires similar powerful accounting figures to steer the massive and transformative decisions needed. We accept that achieving such a position would not be easy, and requires further discussion and theorisation, but if we are to address the urgent environmental crisis then it is worth pursuing.

This perspective, and we hope this essay, raises some important questions that require further discussion and investigation. Indeed, we offer this provocation with the express purpose of beginning a conversation, as well as contributing to ongoing ones about (environmental) accounting and its need to change if it is to address the environmental crisis (see Russell et al., 2017). What would be such environmental accounting information and practices that are needed to create and make visible the environmental crisis and the urgency of action? What would be equivalents to the R rate, the daily infection rate and the death rate, information that frames the crisis and creates urgency, in environmental accounting? What type of environmental accounting numbers would serve in creating positive hope in societies in a similar way that the figures of vaccinations and vaccination rates convey? Which types of issues should we be looking at in order to create the sense of urgency that would prioritise the environment over conventional accounting consideration on a corporate, national or international level? What are the types of numbers that would be reported on a daily/weekly basis, discussed at press conferences and followed across organisations and news sites with multiple graphs, illustrations and fact sheets? How can we ensure that individuals, organisations and societies maintain their interest in the numbers over a sufficient period of time, given the influx of information available and the short attention spans of both individuals and media? How might we work to position environmental accounting as short-term - and could this also assist in attempts to construct the longer-term perspective in conventional accounting? How is the environmental crisis constructed within the organisational context in relation to short term/long term? And how does this construction of the environmental crisis impact the short-term organisational response? What discursive strategies could be employed to construct urgency within environmental accounting – perhaps connecting with nodal points from conventional accounting or from the environmental movement more broadly? Also, in seeking to understand the conditions of possibility for constructing short-term accounts, there is a need to engage in a critique of how environmental accounting came to be constructed as long-term in the first place. In other words, how and why did environmental accounting become different from conventional accounting, and did this create the conditions for its marginalisation?

6. Conclusions

With this essay we have sought to challenge the scholarly environmental accounting community to address the time horizon within which we think and work, and to consider the effects our conceptualisation of time has on our capacity to act within the urgent timelines before us. We have proposed that in order to construct the environmental crisis as urgent within the organisational context and beyond we should move from a construction of environmental accounting being for the long-term to one of short-term environmental accounting. We have drawn on the response to the COVID-19 pandemic and discussions of the post-COVID recovery to argue that the current positioning of environmental accounting as long-term has failed to create a sense of urgency that societies need in their collective response to the environmental crisis. We have highlighted the tremendous power some specific short-term health-related figures have had over societies during the COVID-19 crisis, constantly prompting decisions and policy choices of unforeseen shape and scale. We propose that such an accounting is required to address the current environmental crisis.

H. Tregidga and M. Laine

The global environmental crisis is admittedly different from the COVID-19 pandemic. We are not suggesting otherwise. Yet, as we have noted, there are similarities in relation to the need to change conventions, taken-for-granted practices, and institutionalised beliefs in our response. There is a similarity in relation to a need to do things differently. There is a need to limit certain types of activities. To take a global approach (which has unfortunately proven challenging in the pandemic). And there are potentially also similarities in the need to act, even without full knowledge, in order to avoid the cost to human life and well-being, and even greater economic costs resulting from failure to act fast enough. This is why we argue that environmental accounting should be reframed as being about the short-term, thereby leveraging the performativity of accounting to urgently transform the behaviour of individuals, organisations, institutions and societies for the common good.

We appreciate that this represents a challenge. It will require more than simply changing the discourse of environmental accounting. We also recognise that the COVID-19 crisis, while creating opportunities that show us what is possible in a global response to an urgent crisis, simultaneously presents challenges. We are still in the midst of the pandemic, and it is not clear how long it will continue to require our attention. Resources are stretched. We are all tired, and the effects will linger. Can individuals, organisations and societies be mobilised with the necessary energy, finances and commitment to deal with the environmental crisis? Is there a choice?

Acknowledgements

We would like to thank the Editor and Reviewers for their comments which helped develop this essay. Matias Laine acknowledges the financial support provided by the Academy of Finland (309884).

References

Adam, D. (2020). A guide to R - the pandemic's misunderstood metric. Nature, 583(7816), 346-348.

- Antheaume, & Bebbington, J, (2021). Externalities and decision making. In J. Bebbington, C. Larrinaga, B. O'Dwyer, and I. Thomson (Eds). Handbook on environmental accounting, Routledge: Abingdon.
- Antonini, C., Beck, C., & Larrinaga, C. (2020). Subpolitics and sustainability reporting boundaries. The case of working conditions in global supply chains. Accounting, Auditing and Accountability Journal, 33(7), 1535–1567.
- Ball, P. (2020). The lightning-fast quest for COVID vaccines and what it means for other diseases. *Nature*, 589(7840), 16–18.
- Bebbington, J., Gray, R., Hibbitt, C., & Kirk, E. (2001). Full cost accounting: An agenda for action (p. 73). London: Certified Accountants Educational Trust. ACCA Research Report.
- Bebbington, J., Larrinaga, C., O'Dwyer, B., & Thomson, I. (Eds.). (2021). Handbook on environmental accounting. Abingdon: Routledge.
- Bebbington, J., Österblom, H., Crona, B., Jouffray, J.-B., Larrinaga, C., Russell, S., et al (2020). Accounting and accountability in the Anthropocene. Accounting, Auditing and Accountability Journal, 33(1), 152–177.
- Bebbington, J., & Thomson, I. (2013). Sustainable development, management and accounting: Boundary crossing. Management Accounting Research, 24(4), 277–283.
- Blake, P. & Wadhwa, D. (2020). 2020 Year in Review: The impact of COVID-19 in 12 charts. Available at https://blogs.worldbank.org/voices/2020-yearreview-impact-covid-19-12-charts. (Accessed 11 March 2021).
- Boedker, C., Chong, K.-M., & Mouritsen, J. (2020). The counter-performativity of calculative practices: Mobilising rankings of intellectual capital. *Critical Perspectives on Accounting*, 72 102100.
- Burchell, S., Clubb, C., Hopwood, A., Hughes, J., & Nahapiet, J. (1980). The roles of accounting in organizations and society. Accounting, Organisations and Society, 5(1), 5–27.
- Caney, S. (2008). Human rights, climate change, and discounting. Environmental Politics, 17(4), 536-555.
- Chakhovich, T. (2019). Time rationalities: Complementing "the orientation from the present" and the focus on "short" and "long terms" in performance measurement. Accounting, Auditing and Accountability Journal, 32(2), 456–482.
 Chakhovich, T. (forthcoming). The "long term" as an instrument for deploying neoliberalism: the case of the myth of long-term compensation. Accounting,
- Auditing and Accountability Journal. 10.1108/AAAJ-12-2018-3783.
- Chelli, M., & Gendron, Y. (2013). Sustainability ratings and the disciplinary power of the ideology of numbers. *Journal of Business Ethics*, 112(2), 187–203. Cooper, C., & Senkl, D. (2016). An(other) truth: A feminist perspective on KPMG's true value. *Sustainability Accounting, Management and Policy Journal*, 7(4), 494–516.
- Dasgupta, P. (2021). The economics of biodiversity: The Dasgupta review. HM Treasury: London, UK.
- European Commission (2018). The Commission calls for a climate neutral Europe by 2050. Available at https://ec.europa.eu/commission/presscorner/detail/ en/IP_18_6543. (Accessed 11 March 2021).
- Folke, C., Carpenter, S., Elmqvist, T., Gunderson, L., Holling, C. S., & Walker, B. (2002). Resilience and sustainable development: building adaptive capacity in a world of transformations. AMBIO: A Journal of the Human Environment, 31(5), 437–440.
- Freeman, M. C., & Groom, B. (2013). Biodiversity valuation and the discount rate problem. Accounting, Auditing & Accountability Journal, 26(5), 715–745.
- Goldin, I. & Muggah, R. (2020). COVID-19 is increasing multiple kinds of inequality. Here's what we can do about it. Available at https://www.weforum.org/ agenda/2020/10/covid-19-is-increasing-multiple-kinds-of-inequality-here-s-what-we-can-do-about-it. (Accessed 11 March 2021).
- Gray, R. (1992). Accounting and environmentalism: An exploration of the challenge of gently accounting for accountability, transparency and sustainability. *Accounting, Organisations and Society*, 17(5), 399–425.
- Gray, R. (2010). Is accounting for sustainability actually accounting for sustainability...and how Would we Know? An exploration of narratives of organisations and the planet. Accounting, Organizations and Society, 35(1), 47–62.
- Gray, R., Owen, D., & Adams, C. (1996). Accounting and accountability. Hemel Hempstead: Prentice Hall.
- Gray, R., Dey, C., Owen, D., Evans, R., & Zadek, S. (1997). Struggling with the praxis of social accounting: Stakeholders, accountability, audits and procedures. Accounting, Auditing & Accountability Journal, 10(3), 325–364.
- Grossi, G., Ho, A. T., & Joyce, P. G. (2020). Budgetary responses to a global pandemic: International experiences and lessons for a sustainable future. *Journal of Public Budgeting, Accounting & Financial Management,* 32(5), 737–744.
- HBS [Harvard Business School] (2020). COVID-19 Business Impact Center: Global Policy Tracker. Available at https://www.hbs.edu/covid-19-businessimpact/Insights/Economic-and-Financial-Impacts/Global-Policy-Tracker. (Accessed 11 March 2021).
- Hines, R. D. (1988). Financial accounting: In communicating reality, we construct reality. Accounting, Organisations and Society., 13(3), 251–261.
- Hopwood, A. G. (2009). Accounting and the environment. Accounting, Organizations and Society, 34(3-4), 433-439.

H. Tregidga and M. Laine

Critical Perspectives on Accounting xxx (xxxx) xxx

IEA [International Energy Agency] (2020). Sustainable Recovery. Available at https://www.iea.org/reports/sustainable-recovery. (Accessed 25 February 2021).

IMF [International Monetary Fund] (2021). Policy responses to COVID-19. Available at https://www.imf.org/en/Topics/imf-and-covid19/Policy-Responsesto-COVID-19. (Accessed 11 March 2021).

IMF [International Monetary Fund] (2020). World economic outlook, October 2020: A long and difficult ascent. Washington DC: IMF.

IPCC (2018). Summary for Policymakers. In: Global Warming of 1.5°C. An IPCC Special Report on the impacts of global warming of 1.5°C above pre-industrial levels and related global greenhouse gas emission pathways, in the context of strengthening the global response to the threat of climate change, sustainable development, and efforts to eradicate poverty [Masson-Delmotte, V., P. Zhai, H.-O. Pörtner, D. Roberts, J. Skea, P.R. et al. (eds.)]. World Meteorological Organization, Geneva, Switzerland, 32 pp.

Jackson, T. (2017). Prosperity without growth. Foundations for the economy of tomorrow (Second Edition). Routledge: London.

Jones, M. (2010), Accounting for the environment: A theoretical perspective, Accounting Forum, 34(2), 123–138.

Kim, A., Bansal, P., & Haugh, H. (2019). No time like present: How a present time perspective can foster sustainable development. Academy of Management Journal, 62(2), 607-634.

Kornberger, M., Justesen, L., Madsen, A. K., & Mouritsen, J. (Eds.). (2015). Making things valuable. Oxford, UK: Oxford UP.

Laine, M., Scobie, M., Sorola, M. & Tregidga, H. (2020). Special issue editorial: Social and environmental account/ability 2020 and beyond. Social and Environmental Accountability Journal, 40(1), 1–23.

Laine, M., Tregidga, H., & Unerman, J. (2021). Sustainability accounting and accountability (3rd edition). Routledge: Abingdon.

Larrinaga, C. (2020). 'The world for which we account': Systems thinking in Rob Gray's works. Social and Environmental Accountability Journal, 40(3), 186–190.

Lenton, T. M., Rockström, J., Gaffney, O., Rahmstrof, S., Richardson, K., Steffen, W., et al (2019). Climate tipping points – too risky to bet against. *Nature*, 575, 592–595.

Lohmann, L. (2009). Toward a different debate in environmental accounting: The cases of carbon and cost-benefit. Accounting, Organizations and Society, 34 (3-4), 499–534.

Maunders, K. T., & Burritt, R. (1991). Accounting and ecological crisis. Accounting, Auditing and Accountability Journal, 4(3), 9-26.

Miller, P., & Power, M. (2013). Accounting, organizing, and economizing: Connecting accounting research and organization theory. Academy of Management Annals, 7(1), 557–605.

Milne, M. J. (1996). On sustainability, the environment and management accounting. Management Accounting Research, 7(1), 135-161.

Milne, M. J., & Gray, R. (2013). W(h)ither ecology? The triple bottom line, the global reporting initiative, and corporate sustainability reporting. Journal of Business Ethics, 118(1), 13–29.

O'Dwyer, B., & Unerman, J. (2020). Shifting the focus of sustainability accounting from impacts to risks and dependencies: Researching the transformative potential of TCFD reporting. Accounting, Auditing and Accountability Journal, 33(5), 1113–1141.

OECD (2020). OECD Policy Responses to Coronavirus (COVID-19): Making the green recovery work for jobs, income and growth. Available at http://www. oecd.org/coronavirus/en/themes/green-recovery. (Accessed 25 February 2021).

Pearce, D., Markandya, A., & Barbier, E. B. (1989). Blueprint for a green economy. London: Earthscan Publications Ltd.

Raworth, K. (2017). Doughnut economics: Seven ways to think like a 21st-century economist. London: Random House.

Reinecke, J., & Ansari, S. (2015). When times collide: Temporal brokerage at the intersection of markets and developments. Academy of Management Journal, 58(2), 618-648.

Rice, K., Wynne, B., Martin, V., & Ackland, G. (2020). Effect of school closures on mortality from coronavirus disease 2019: Old and new predictions. *BMJ*, 2020(371) m3588.

Ripple, W. J., Wolf, C., Newsome, T. M., Barnard, P., & Moomaw, W. R. (2019). World scientists' warning of a climate emergency. *BioScience*, 70(1), 8–12. Rockström, J. (2020). Opinion: Why we need to declare a global climate emergency now. Available at https://www.ft.com/content/b4a112dd-cafd-4522bf79-9e25704577ab. (Accessed 11 March 2021).

Rockström, J., Steffen, W., Noone, K., Persson, Å., Chapin, F. S., III, Lambin, E., et al (2009). Planetary boundaries: Exploring the safe operating space for humanity. Ecology and Society, 14(2), 32.

Russell, S., Milne, M., & Dey, C. (2017). Accounts of nature and the nature of accounts: Critical reflections on environmental accounting and propositions for ecologically informed accounting. Accounting, Auditing & Accountability Journal, 30(7), 1426–1458.

Sachs, J. D. (2014). Climate change and inter-generational well-being. In L. Bernard & W. Semmier (Eds.), The oxford handbook of the macroeconomics of global warming (pp. 248–259). Oxford: Oxford UP.

Schaltegger, S. (2018). Linking environmental management accounting: A reflection on (missing) links to sustainability and planetary boundaries. Social and Environmental Accountability Journal, 38(1), 19–29.

Schaltegger, S., & Burritt, R. (2000). Contemporary environmental accounting. Greenleaf: Sheffield.

Seabrooke, L, & Tsingou, E. (2019). Europe's fast- and slow-burning crises. Journal of European Public Policy, 26(3), 468-481.

Steffen, W., Richardson, K., Rockström, J., Cornell, S.E., Fetzer, I., Bennett, E.M., Biggs, R., Carpenter, S.R., de Vries, W., de Wit, C.A., Folke, C., Gerten, D., Heinke, J., Mace, G.M., Persson, L.M., Ramanathan, V., Reyers, B. & Sörlin, S. (2015). Planetary boundaries: Guiding human development on a changing planet. Science, 13 Feb 2015, 347(6223).

Stern, N. (2007). The economics of climate change. Cambridge, UK: Cambridge UP.

Strauss, V. (2021). The deeply distorted debate about reopening schools. Available at https://www.washingtonpost.com/education/2021/02/16/distorteddebate-on-reopening-schools. (Accessed 11 March 2021).

't Hart, P. & Boin, A.R. (2001). Between crisis and normalcy: The long shadow of post-crisis politics. in U. Rosenthal, A.R. Boin and L.K. Comfort (eds.), Managing crises: Threats, dilemmas, opportunities, pp. 28–46. Charles C. Thomas Publisher: Springfield, IL.

Thunberg, G. (2020). Humanity has not yet failed. Sommar & Vinter i P1. Available at http://open.spotify.com/episode/7E2Wz3C5XwtEw3Pi96tLQA. (Accessed 24 February 2021).

Tregidga, H., Milne, M., & Kearins, K. (2018). Ramping up resistance: Corporate sustainable development and academic research. Business and Society, 57, 292–334.

Tweedie, D., & Martinov-Bennie, N. (2015). Entitlements and time: Integrated reporting's double-edged agenda. Social and Environmental Accountability Journal, 35(1), 49-61.

UN (2021). www.un.org/sustainabledevelopment/sustainable-development-goals/. (Accessed 15 February 2021).

UNDP (2020). Impact of COVID-19 on the sustainable development goals: Pursuing the sustainable development goals (SDGs) in a world reshaped by COVID-19. Available at https://sdgintegration.undp.org/accelerating-development-progressduring-covid-19. (Accessed 11 March 2021).

Unerman, J., & Chapman, C. (2014). Academic contributions to enhancing accounting for sustainable development. Accounting, Organizations and Society, 39 (6), 385–394.

Unerman, J., Bebbington, J., & O'Dwyer, B. (2018). Corporate reporting and accounting for externalities. *Accounting and Business Research*, 48(5), 497–522. Usher, A. D. (2020). South Africa and India push for COVID-19 patents ban. *Lancet*, 396(10265), 1790–1791.

Weitzman, M. L. (2007). A review of the stern review on the economics of climate change. Journal of Economic Literature, 45(3), 703-724.

WWF-International (2020). Living planet report: Bending the curve of biodiversity loss. Gland: WWF-International.