

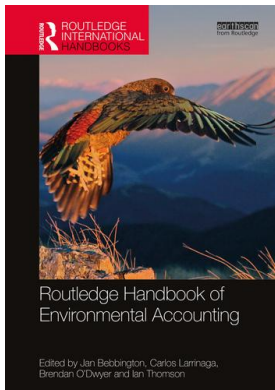
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## **Routledge Handbook of Environmental Accounting**

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### **Curating environmental accounting knowledge**

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# 1

# CURATING ENVIRONMENTAL ACCOUNTING KNOWLEDGE

*Jan Bebbington, Carlos Larrinaga and Ian Thomson*

## Introduction

In this handbook, we date the start of a distinctive field of academic inquiry into the “hybrid” of accounting and the natural environment to Gray (1990). Thirty years on, it is a suitable time to present chapters dedicated to elements of the field as well as to identify challenges that remain. We are indebted to the large team of writers who contributed chapters for this handbook and who responded in a positive way to our deadlines and editorial suggestions. This substantive piece of work was only possible because of the network of authors who have been working on this material for the last 18 months and we thank them all.

We approached this handbook as a “knowledge project” and in gathering this material together we thought of ourselves as curators of a variety of perspectives and insights. At the same time, we hope the synergy created by virtue of having these contributions in one place (and edited by a common team) might also generate overarching insights into environmental accounting. With these hopes in mind, this chapter undertakes several tasks, namely, it:

- describes the nature of the problem that environmental accounting seeks to address (including a consideration of the social aspects of environmental change);
- outlines the practice and other academic partners who have strengthened environmental accounting research;
- considers how future accountants might become ecologically literate, focusing on the role of accounting education (in universities and professional training/continuing education); and
- provides some reflections that emerge from having read the handbook as a whole and which may provide a glimpse into some of the contours of future environmental accounting.

Before moving onto these various topic areas, we also wished to provide some personal reflections on environmental accounting (see also Bebbington, Russell and Thomson 2017).

We all started our careers around 1990 and hence were part of the “first generation” of scholars who had the opportunity to dedicate themselves to researching environmental accounting. This opportunity was afforded to us by the leadership of the pioneers of the field including Rob

Gray, James Guthrie, Richard Laughlin, Reg Matthews, Keith Maunders, Dave Owen and Lee Parker. This handbook is possible because of their vision and leadership over many decades. Moreover, this group of scholars (along with the “first generation”) engaged in institutional building that created, sustained, expanded and legitimated environmental accounting scholarship and practice. Elements of this process included the adoption of the pre-existing *Social Accounting Monitor* (which eventually became the *Social and Environmental Accountability Journal*) and the founding of the Centre for Social and Environmental Accounting Research (CSEAR) and the development of a series of specialist conferences to support scholars in the area (of which more will be discussed later).

Part of the excitement of being around at the start of an academic field was that we experienced its development first-hand rather than trying to piece the field together from academic literature. As a result, the handbook has sought to shed light on the (sometimes hidden and/or forgotten) foundations of environmental accounting (see especially Chapter 2). At the same time, a retrospective should also seek to identify missed opportunities, false turns, dead ends as well as a foundation from which to look forward as to what practice, policy and scholarship might emerge in the future. These desires shaped the structure and content of the handbook: some chapters deal with material that is still in embryonic form (e.g. accounting for circularity in Chapter 18 and accounting for animal rights in Chapter 29) while others deal with as yet unresolved issues of long-standing concern (such as “stand-alone” reporting in Chapter 8). That being said, most of the chapters reflect on the origins, current status and future shape of their respective topics.

In commissioning the chapters (and in conceptualising this handbook as a knowledge project), we also wanted diversity in the author set. We deliberately invited scholars who might be described as “second generation” environmental accounting researchers to contribute their perspectives. These colleagues will have the responsibility of shaping environmental accounting in the next 20–30 years through their research, supervision of PhD students, editing of journals and through the influence they will exert on policy and professional processes in their respective countries and regions.

In addition, and as with any academic field, the development of environmental accounting reflects a number of privileges and biases. These biases include gender, race, language, culture and geographical dimensions. We integrated these concerns in our commissioning process so that we could create a space for voices that are less often heard within the field. Intellectually, fostering diversity also supports addressing the globally connected nature of the natural environment (this is one hallmark of sustainability science – see Bebbington and Larrinaga 2014). There are also contemporary reasons for this strategy. The implications of the Black Lives Matter movement, the recognition of white privilege, the dominance of male voices/perspectives and the ongoing struggles of indigenous peoples against colonisation are issues for accounting scholars. The environmental accounting literature (in our view) currently suffers from a concentration on Western concerns and contexts as well as from being communicated primarily in English (see Chapter 25 for an explicit consideration of this problem). We accept that this handbook does not perfectly address the biases we identify, but we have sought to dilute them by drawing from a diverse author field as well as including a dedicated section on regional perspectives.

Taken together, this handbook is intended to mark a transition in environmental accounting: a transition that respects the past, present and future scholars involved in the collective co-production of environmental accounting theory, evidence, policy and practice. The inclusion of different voices from different places enables new insights to be drawn, while reducing the risk of finding in one study inadvertently oppressing those in another domain. Given that we

curated (rather than orchestrated) this process, there remain areas of contradiction, contestation and friction between the materials presented. We did not seek to hide these tensions, but rather see this as evidence of an active, authentic research field that is struggling to make sense of our, often abusive, relationship with nature. It is to the outcomes of that relationship that attention now turns.

## **Defining the problem arena**

### ***Environment and accounting linkages***

Bebbington and Thomson (2013, p. 281) highlighted that accounting seeks to respond to concerns “that economic systems (embedded in systems of cultural expectations) create outcomes that undermine the ecological systems on which human (and other species) prosperity rests”. Any concern with the(a) state of the environment is therefore also a concern about the economic and social systems that co-created these challenges. It is also the case that science (as one possible knowledge system) has been narrating the myriad ways in which individual and collective human actions have affected the functioning of the environment, including phenomena such as: global climate change; biodiversity loss; the translocation of organisms; disruption to water, nitrogen and phosphorus cycles; the mass movement of materials within natural systems; and the creation of novel materials which have no parallel in nature. The extent and complexity of specific environmental changes have led to the current time being characterised as the Anthropocene: denoting an era where human actions are a perceptible driver of earth system processes (see Bebbington et al. 2020 for an introduction). Taken together there are concerns that this process will lead to simplified and less robust ecosystems (Nyström et al. 2019) and to the breaching of “planetary boundaries” (Rockstrom et al. 2009), beyond which all living beings will be threatened. It is within the context of these concerns that environmental accounting seeks to intervene.

At its core, environmental accounting focuses on processes that exert control over the impacts of organisations such that these diverse adverse effects are addressed or minimised (see, e.g., in this handbook, Chapter 14 on management control and Chapter 15 that addresses material and energy accounting). At other times, accounting techniques are used to demonstrate effects that are not experienced by or managed by organisations themselves: see Chapter 16 on externalities. In addition, environmental accounting scholars have examined how external accounts produced by organisations have provided (or not) visibility of these environmental effects in traditional accounting (see Chapter 7) or other reporting formats (see Chapter 8). Likewise, assuring this information (see Chapter 8), understanding why it has become normal (see Chapter 9) and the impact information provision has had on financial markets (see Chapter 12) is within the domain of environmental accounting. In all these examples, accounting functions are central, with environmental aspects of their functionality being highlighted.

In contrast, other scholarship starts with an element of the environment (in the case of this handbook: greenhouse gas emissions, water and biodiversity in chapters 26, 27 and 28, respectively) and assembles accounting “technologies” around that element in order to address environmental concerns. This approach to environmental accounting has relatively recently developed and also cross-fertilised with accounting subject domains (such as control systems, performance reporting, auditing and assurance activities and standard setting processes). This is a different way in which to link accounting and the environment but one that is gaining in salience. Moreover, it would be possible to imagine an “accounting for the total environment”

from an account for a single entity that incorporated greenhouse gas emissions, water and biodiversity impacts and which would like to address issues of accounting for nature (for an introduction, see Russell, Milne and Dey 2017). This is an area of environmental accounting that is likely to develop considerably in the future.

At the same time, the commission to create a handbook specifically on *environmental* accounting (rather than social and environmental accounting or accounting for sustainable development) caused us concern. Here we seek to narrate how we have sought to deal with the particular challenge of delineating environmental accounting in a research and practice landscape that has not always separated social and environmental concerns.

### ***Social dimensions of environmental change***

Critically, it should be noted that environmental matters are always social. For example, those who are most likely to suffer environmental harm are often also the poorest in society (see, e.g., chapters 19, 24 and 25 where this case is powerfully articulated). This means that a focus on environmental concerns should also entail a concern with social issues. At the same time, environmental accounting itself has also had closer and more distant relationships with social issues and changes in these connections are now outlined.

First, as accounting was emerging as an academic area of research in the 1970s (see also Chapter 2), social accounting was not easily separated from environmental accounting, as illustrated by the label that was then used for the field: corporate social reporting (Gray et al. 1988) or social accounting, which was defined as dealing with “the social and economic effects of an institution on society” as well as concerns relating to “[p]hysical resources and environmental contributions” (Epstein et al. 1976, pp. 24 and 25, respectively). Social concerns gained particular salience in Europe in the 1970s when workers and unions were powerful in political and corporate governance and discussions about social dialogue and/or industrial democracy flourished. In this political climate, the value-added statement in countries such as the France, Germany, Spain and the UK (Reichmann and Lange 1981; Larrinaga 2001; Burchell et al. 1985) and the *bilan social* in France (Gond et al. 2013) were conceived as accounting instruments that could display the commonality of purpose of labour and capital within the corporation. However, as the political climate changed (particularly in the Anglo-Saxon world with the Thatcher–Reagan conservative revolution of the 1980) interest in the regulation of and research about the social aspects of accounting faded away.

Second, in the 1980s and 1990s, environmental accounting gained prominence at the cost of the social. The concern for the environment was not new, but it certainly grew in political salience (for more details, see Chapter 2). In accounting research, Gray (1992) was trying to bring the environment to a central position in the area. By the end of this period, however, there was a sense that the balance had moved too strongly towards the environment and leading authors argued for a renewal of interest in social accounting, without reducing attention given to environmental issues (Mathews 1997). This recovery of the social was perhaps more visibly enacted when Gray (2002) provided a definition for the field with his notion of the “social accounting project”, based on the idea of challenging conventional accounting. The social accounting project did not just recover the social but what Gray (2002) reflected was the metamorphosis of the object of social and environmental accounting, which from then on went well beyond the limits of corporate disclosures to the employees and environmental reporting, to cover any aspect that challenges the implication of organisations in the social and environmental problems of our time (from forced labour to climate change and from animal welfare to coloniality). These ideas were reflected in other processes, for example, they underpinned and reflected the Global

Reporting Initiative guidelines and their desire to integrate economic, environmental and social indicators in sustainability reports (more information is available in chapters 8 and 10).

Third, although the debates since the end of the 1990s put the social back in the centre of the stage, it is the debate about planetary boundaries that created a new impetus for the integration between social and environment categories. As developed in more detail in Chapter 6, Rockström et al. (2009) identified nine boundaries whose transgression would strike at the foundations of socio-ecological systems, with evidence signalling that various processes are outside of the safe space for humanity (i.e. threatening the survival of human societies). The other side of the coin is how human activities are impacting the earth system itself, something that is captured by the debates about the Anthropocene (Bebbington et al. 2020). It is now evident is that the social cannot be easily separated from the ecological (Lade et al. 2020) and that any sustainable future will need the partnership between natural and social science (Bebbington and Larrinaga 2014).

Socio-ecological systems and planetary boundaries are also closely linked to the development of an awareness of globalisation (Martens and Rotmans 2005). A final point we wish to make concerning the recovery of a social focus in environmental accounting is the extent to which, contrasting with the globalisation of natural systems, the social structures of globalisation have privileged some perspectives above others (Chakrabarty 2000; Ibarra-Colado 2006). Indeed, global sustainability is not possible without equity in the access to economic and environmental resources (something that is reflected in the construction of the Sustainable Development Goals – Bebbington and Unerman 2018, 2020). An inclusive and global perspective of environmental accounting will need to explore perspectives on the environment coming from indigenous communities and the global South, which have been marginalised within the literature to date (see Chapter 25 in detail and also chapters 19, 22 and 24 which include traces of this concern). Just as environmental accounting cannot be formally separated from society and the economy, neither can academic activities be considered separate from accounting practice and policies that focus on both. It is to the consilience between practice and research that attention now turns.

### **Professional accounting and research partners**

While we have pinned Gray (1990) as the starting point of the field, the reality is a little more nuanced. The notion that one might be concerned with the intersection of accounting and the natural environment has a long academic history (see Hopwood, 1979) as well as being reflected in accounting practice/policy making for an extended period of time (see Accounting Standards Steering Committee 1975; American Accounting Association 1972, 1973, 1974, 1975, 1976; American Institute of Chartered Public Accountants 1977). It is the case, however, that the dedicated focus on the accounting–environment hybrid accelerated after 1990 and drew in several communities of practice who supported the development of the field: it takes a research and practice “village” to raise an academic “child”.

The accounting profession has championed environmental accounting, even if the support from any one body has shifted as the particular body’s priorities have evolved (for a contemporary summary, see Chapter 5 and Collison and Slomp 2000 for an analysis of the role of the Fédération des Experts Comptables Européens – hereafter FEE). While professional accounting bodies funded research projects in selected topics, they were also influential because they published material aimed at informing their members of environmental matters (e.g., ICAEW Environment Research Group 1992; Canadian Institute of Chartered Accountants 1993a; FEE 1998). In addition, the profession was active in considering core financial accounting issues

(e.g., see Canadian Institute of Chartered Accountants 1993b; Gray et al. 1998; FEE 1999a as well as Chapter 7) and financial audit (e.g., see Canadian Institute of Chartered Accountants 1992, 1994; FEE 1993, 1995; Collison, Gray and Innes 1996; Kamp-Roelands 1999 as well as Chapter 9). The role of the profession as carriers and amplifiers of ideas has been important in general (see also Chapter 10) and was particularly influential in terms of championing the development of environmental reporting, as a precursor to “sustainability reporting” (e.g., FEE 1999b as well as Chapter 8). Likewise, the role of umbrella bodies such as FEE (in 2016 this body become Accountancy Europe, whose members include 51 professional associations from 35 countries) promoted the ideas of environmental accounting across a wider geography as does the United Nations Conference for Trade and Development, International Standards of Accounting and Reporting (this is the United Nations focal point on accounting and corporate governance that was established by the United Nations Economic and Social Council in 1982). Finally, and critically, many professional accounting bodies have committees that shape their own responses to environmental challenges and public engagement (see also Chapter 5 that frames this activity as “thought leadership”). This activity is in addition to committees that oversee professional training, continuing professional development and which shape university accounting curriculums. In summary, academic environmental accounting has been intimately connected to professional body activities and has had its work funded and amplified by said bodies as well.

At the same time, there has also been support for environmental accounting from other parts of academia. For example, “mainstream” accounting colleagues (perhaps more so in Europe than elsewhere) have been welcoming of environmental accounting insights in conferences and journals such as *British Accounting Review* and *European Accounting Review* (in general and through special issues). At the same time, interpretative and critical accounting scholars have engaged in environmental accounting topic areas and, crucially, have strengthened the field through challenging environmental accountants to “do better” in their scholarship. At the same time, as environmental accounting scholarship has matured, these communities have been a productive source of underpinning theories and have thereby supporting conceptual development. This community also provided places where environmental accounting scholarship could be presented and refined (through, e.g., the Asia Pacific Interdisciplinary Perspectives on Accounting [APIRA], the Critical Perspectives on Accounting [CPA] and the Interdisciplinary Perspectives on Accounting [IPA] conferences). Likewise, journal such as *Accounting, Organizations and Society* and *Critical Perspectives on Accounting* complemented the work of *Accounting Auditing and Accountability Journal* and *Accounting Forum*. Various “public interest” networks (such as the Academy of Management and the American Accounting Association) also contain “fellow travellers” in tackling environmental challenges. It is also the case that specialist research networks have provided “safe” places where ideas could be developed and have been especially critical for colleagues who did not have an active and/or a supportive community of scholars around them. Of particular relevance is the Environmental and Sustainability Management Accounting Network (EMAN) and the CSEAR – along with its “house” journal *Social and Environmental Accountability Journal*). While these various activities speak about supporting academic research, there is also a need for future accountants to be able to support organisations as they seek to deal with their environmental dependencies and impacts.

### **Ecological literacy of future accountants**

Critically, accounting education plays a constitutive role in creating environmentally (ir)responsible accounting professionals and citizens. This constitutive role can be either positive or

negative, depending on how and what “accountants” are taught about the environment and environmental accounting in the context of their wider primary, secondary, tertiary and professional education (Thomson and Bebbington 2004; Gray 2013; Owen 2013; Contrafatto et al. 2015; Deegan 2017; Boulianne et al. 2018; Boulianne and Keddie 2018; Egan and Tweedie 2018). Whilst this handbook is primarily designed to inform future research projects and practice, it has the potential to play a major role in informing and reforming environmental accounting education. At the very least it provides part of the evolving answer to the question asked by Gray and Collison (2002) – what do accountants need to know about the environment?

Concerns over the limited inclusion of the environment in accounting programmes were expressed in the 1990s (Lewis et al., 1992 and Humphrey et al., 1996) and continue to be a cause for concern. While researchers report a gradual increase and innovation in environmental content (see, e.g., Wydner et al. 2013; Garcia and Thomson 2018), Deegan (2017, p. 85) argued that:

The reality, sadly, is that most accounting programs throughout the world have probably not really changed that much in the last 25 years in terms of fixating on financial performance and related measures, and ignoring the role that “accounting” can play in both creating social and environmental problems, as well as in addressing them. Social and environmental accounting and related issues typically get no more than a few weeks consideration across an accounting degree.

Similar concerns also exist about the inclusion of the environment in professional accounting exam syllabi (Lewis et al. 1992; Boulianne et al. 2018; Boulianne and Keddie 2018). There are, however, examples of good practice. For example, the 2021 Institute of Chartered Accountants of England and Wales (ICAEW) syllabus includes a learning and development objective for students to be able to identify ethical issues including public interest and sustainability issues in a scenario. Another pertinent example can be seen in the Association of Chartered Certified Accountants (ACCA), F5 Performance Management paper which includes as learning outcomes the ability to discuss the issues that businesses face in the management of environmental costs and describe the different methods a business may use to account for its environmental costs. The argument that environmental accounting does not form any part of professional accounting educational programme is difficult to sustain. In addition, the notion that it is not possible to justify the inclusion of environmental accounting from professional accounting syllabi or accreditation requirements is somewhat outdated. However, there remains questions about the scope/depth/coverage of this material and its relationship with the rest of the professional syllabi.

Despite the rising importance of environmental issues, the growth of research and teaching material (for an example of debates in this area, see Contrafatto 2013; Gray 2013) and increasing examples of professional practice in the area, challenges remain. Many readers will have experienced how quickly discussions on environmental accounting education highlight the problems of institutional resistance or indifference to anything other than the environment as an add-on to curricula.

In the development of this handbook, we had accounting education in mind and sought to design the handbook so that it could support accounting educational practices (i.e., we hope the handbook has “dip-ability”, i.e., that single chapters can be used to support teaching programmes). For example, the presentation of research in different geographic regions, in Part 4, challenges the hidden European, business-oriented curricula of past environmental accounting research (Thomson and Bebbington 2004). This geographic perspective (Part 4) alongside the thematic perspectives (Part 5) sought to create closer alignment between research



and the existential realities, oppressions and priorities in different parts of the world. That is, the handbook structure was designed to improve the ability to connect accounting research with local “manifestations” of environmental imperatives and conflicts. This increases the probability of making environmental accounting appear more real in different institutional fields and to emerging environmental challenges. Likewise, we sought to provide multiple chapters on environmental accounting fields that map onto structural elements of accounting programmes, thereby offering greater prospects of assimilation. For example, there are chapters that can inform more theoretical critical modules (Part 1), financial reporting (Part 2), management accounting (Part 3), global and local issues (Part 4) or emerging or contemporary issues (Part 5). We also hope that the material on methods in Chapter 4 will provide inspirations for projects or dissertations in environmental accounting topics. While these aspirations are content driven, how education is approached is also important.

Thomson and Bebbington (2004) utilised the work of Freire to explore the role of conventional accounting education in creating and sustaining environmental oppression and the potential of dialogic accounting education to move environmental accounting beyond its oppressive limit situation. This work is based on three interconnected concepts. First, education plays a constitutive role in that it creates an authoritative narrative about what we know about the world. Second, education can be used to maintain existing power differentials and to keep people in their place. Third, education can enable the co-creation of different narratives of what the world could be as the inspiration for transformation.

Reforming accounting educational programmes is critical to any transformation of individual action, collective values, norms or what constitutes legitimate conduct (Illich 1971). When we educate, we must be conscious that we are not only teaching accounting tools and techniques but we are reinforcing implicit assumptions about accountants’ and social scientists’ roles in perpetuating social and ecological risks and injustices (for an insightful work in this vein, see Ferguson, Collison, Power and Stevenson 2009). Environmental accounting education has the potential to form part of the process of exposing these risks and injustices, creating the capacity for change and enabling transformative action. Education should form part of what Freire describes as “the action and reflection of men and women upon their world in order to transform it” (Freire 1996, p. 60). Environmental accounting education should strive to co-investigate the realities of social-environmental relationships, leading to the problematisation of hidden or mystified knowledge that underpins the production and interpretation of all accounts. This involves both asking questions and calling into question and developing a challenging attitude, which should be an essential attribute of a professional accountant.

In our role as educators, we suggest that readers could use the material in this handbook to:

- critically evaluate the content of any educational programme they are involved in;
- reflect on any problematic hidden curriculum underpinning educational materials (e.g., the existence of managerialism, neoliberal assumptions or utopian theories of change);
- identify educational content that may be unintentionally alien or alienating to students’ experiences or agency;
- identify any misalignment between what is “taught” and what is “assessed”;
- identify the extent to which students are able to contribute their knowledge and experience of environmental problems or solutions;
- identify the extent to which students can inform the design and delivery of the educative material; and

- reflect on the appropriateness of the overall blend of these educational processes, in particular, how they relate to the past, present and future agency and transformative potential of the students.

We would encourage opening up the education “black box” to understand how your educational practices could allow accountants to engage effectively with resolving complex environmental problems. Gray (2013), Schaltegger (2013), Contrafatto (2013), Laine (2013) and Larrinaga (2013) all concur on the positive impact of integrating sustainability and environmental management into accounting education. For example, Schaltegger (2013) argues for the redesign of accounting education to support “change agents for sustainability” commenting on the value of case studies in exploring possible solutions to environmental and social problems. This handbook contains many examples of case studies that are suitable for this type of dialogic environmental accounting engagement. Larrinaga (2013) noted how positive attitudes in students emerged from educational experiences that critically engaged with environmental concepts and practices, but did qualify this with calls for further research into what constitutes effective environmental and sustainable accounting educational programmes, as well as consideration of the organisational contexts in which they will work. We support the desire for all accounting educators to reflect on their power and agency, and wherever possible act to help create environmentally responsible accounting professionals and citizens.

### A glimpse to the future

It would be virtually impossible to synthesise from the contents of this handbook what the future of environmental accounting might entail because of the multitude of topics covered, the contexts in which any accounting might play out and the inherent uncertainty in such a task. That being said, we do have views of three areas where the field of environmental accounting might benefit from closer reflection (noting that these views reflect our particular perspectives at this point in time). These areas relate to:

- the ways in which accountability (as the assumed purpose of environmental accounting) might be understood and updated for current environmental challenges (this is also discussed in Chapter 2);
- the assumed objects of analysis for environmental accounting (shifting focus from external reporting of listed for-profit companies); and
- the need to bring greater ecological literacy to our research endeavours.

Each of these themes will be explored in more detail here, noting that these are not areas which are easily resolved, that others have raised similar concerns to us in each of these areas, and that we have intentionally been more provocative than we might actually feel in order to stimulate responses.

The framing of what duties/responsibilities organisations owe to significant others (most usually construed as being owners and other providers of capital) as determined by legal (and sometimes social contract) responsibilities is central to a relatively “thin” conception of accountability that pervades environmental accounting. Such a constrained view flies in the face of considerable literature elsewhere, including scholarship that problematises corporate responsibility and sketches a more expansive conception of responsibility. For example, Mansell, Ferguson, Gindis and Pasternak (2019) outline the context for these questions and assemble an array of valuable papers in their *Journal of Business Ethics* special issue on “Rethinking Corporate Agency

in Business, Philosophy, and Law”. This special issue provides one possible “jumping off” point for environmental accounting to become more theoretically sophisticated in its conception of corporate agency and responsibility. Conceiving of a responsibility to non-human animals (see, e.g., Chapter 29) as well as the rights of nature also expands discussions of responsibility from a more eco-centric view point. At the same time (and Chapter 2 highlights this), it might be the time to re-configure the notion of stewardship in accounting to move away from a narrow focus on financial stewardship to one that might reflect the driving role that organisations have across global eco-systems and the earth system as a whole. This proposal is grounded in the paper by Folke et al. (2019) who identified that 189 companies (focused on mining, fossil fuels, agriculture and forestry, seafood and agrochemicals) collectively move these key resources around the globe. From detailed work conducted on some of the seafood firms in this sample (Bebbington et al. 2020), it is possible to imagine working alongside these “keystone” actors to explore what it might mean to be “biosphere stewards”. This work prompts the second concern that we have as it relates to the question of suitable objects of analysis for environmental accountants.

Given the mainstream accounting research preoccupation with for-profit, listed companies and a research bias towards understanding these organisations through what they say externally (with data being collated in research databases on aspects of this reporting), it should be no surprise that environmental accounting scholarship has taken a strong interest in the listed company-reporting nexus (for a discussion of this, see Chapter 23 and Gendron and Rodrigue in press for a wider perspective). While there is nothing inherently “wrong” with this approach (listed companies are powerful shapers of the landscape in which other organisations operate as well as conditioners of expectations about the nature and role of business), this has created some weaknesses in the field. First, this approach has lacked a sophisticated articulation of why organisations report, leading to a reliance on a relatively underspecified version of legitimacy theory (see also Chapter 3) as well as an uncertainty (and lack of a robust evidence base) as to whether reporting is related to performance (for a more in-depth consideration, see Chapter 8). A comparative lack of academic/research engagement with organisations themselves has also impoverished our collective understanding of why reporting has increased and how this reflects/affects organisational operations. A change in research approach towards more intimate research approaches (i.e., actually talking to and engaging closely with organisational participants) might deepen environmental accounting understandings of the phenomena of reporting as would a synthesis between qualitative and quantitative study findings. The second problem we wish to highlight in this context is the lack of strong ties in reporting research to wider considerations of transparency. This notion has been explored in depth, for example, by political scientists who link transparency (including corporate transparency) to particular approaches to governing (see Mol 2006 for an introduction). Linking these conceptual discussions about the shape of “globalised modernity” (Mol 2010, p. 132) and the extent to which corporate reporting might constitute “tamed transparency” (Dingwerth and Eichinger 2010, p. 74) will be critical for increasing the depth of sophistication that we might bring to reporting studies. This is a step-change from the current mainstream approach of regressing proxies that may well lack any underlying basis in organisational reality, as well as a movement beyond simple recourse to framing reporting as promotional “fluff”. A deepening of perspectives is sorely needed in environmental reporting scholarship.

The final provocation we offer links to the encouragement in Chapter 4 to undertake “pre-study” seriously when constructing environmental accounting topics. This provocation also links to the previous point made that the norms of accounting scholarship have narrowed our understanding of the world-as-it-is and can-be and that we have tended to be self-contained in our use of insights from other fields. As we have highlighted in the preceding two

provocations, political scientists, philosophers and legal researchers can bring valuable insight to environmental accounting. At the same time, greater ecological (and social) literacy would also strengthen accounting scholarship (see, e.g., Chapter 27 where this point is made in the case of water accounting). This point is developed in Bebbington and Larrinaga (2014) where we argue for sustainability science motifs to infuse accounting research and in Bebbington et al. (2020) where we suggest that an ecological framing would draw out different research samples than what has previously been the case. The aim of both of these papers has been to draw accounting closer to ecological thinking and scholars (see Österblom et al. 2020 for a complementary proposal: a discussion of how science and industry can work together). Bebbington and Unerman (2020) also highlight this point and note that there are practice-based initiatives (in the form of the Science-Based Targets Initiative as well as the World Benchmarking Alliance SDG2000 company benchmark) that provide points of translation between organisations and ecological salience. This is an area where we anticipate that environmental accounting will move in the future, drawing from insights drawn out in accounting for nature/biodiversity (see Chapter 28) as well as in carbon accounting (see Chapter 26).

## Conclusion

A 30-year retrospective begs questions about what the next 30 years might entail. If 2020 has taught us anything, it is that the shape of the future can change in an instant in ways that were unimaginable just a few weeks earlier. That being said, there is an appeal to try to imagine what 2050 will look like and to wonder about the shape of environmental accounting scholarship (see also Chapter 2). While the detail of the 2050 state of the natural environment, and what impact this state will have had on human and more-than-human populations, is unknown, it seems likely that the situation will be worse than it is presently (see chapters 26, 27 and 28 alongside any serious policy analysis of various environmental challenges). By the middle of this century, global climate change is predicted (even under best-outcome scenarios using the most optimistic mitigation pathways) to have accelerated and widespread adaptation will be the norm. The knock-on effect of climate change on the living world will be substantial, with a changing distribution of food production systems, water stress, biodiversity disruption and movement of human populations across the globe. In this (granted dystopian) world, information from accountants to support organisations as they navigate the complexity of the Anthropocene and insights from academia will be required. Taking the combined insights from this handbook (and the work that will emerge in the next 30 years) we will as a scholarly community have a role to play: we hope it will be a transformational and positive one.

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