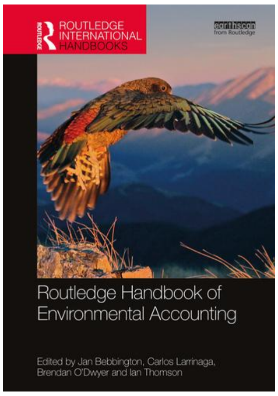

Routledge Handbook of Environmental Accounting

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THE FOUNDATIONS OF ENVIRONMENTAL ACCOUNTING

Jan Bebbington

Introduction[1]

Other chapters in this handbook delve into the activities that emerge in particular environmental accounting and reporting topic areas, including a description of the background to specific innovations in those domains. In contrast, this chapter takes an overarching view of environmental accounting and will address three topics. First, it explores the conditions that made accounting for the environment possible in a practice sense and thinkable in a conceptual sense. Second, the chapter will characterise the foundations that underpin environmental accounting. The final section will look to the future and suggest how environmental accounting (now intertwined with sustainability concerns) might/could/should evolve in the future.

Environmental accounting: the start of the field

At least three elements came together to create the conditions for environmental accounting to emerge. First, from the late 1960s there had been debate within the accounting profession about how accounting might provide insight into the negative social and environmental effects of corporate behaviour (see, e.g., Accounting Standards Steering Committee 1975; American Accounting Association 1972, 1973, 1974, 1975, 1976; American Institute of Chartered Public Accountants 1977). The debates taking place in the professional space echoed wider debates about the responsibility of organisations (see Narver 1971 for a seminal paper[2] and Estes 1976 for an accounting equivalent). These debates had underpinned the field of social accounting (see especially Gray, Owen and Maunders 1987) and it was logical that as environmental issues gained greater salience (see more below), scholarly work would also seek to address the external environmental effects of organisational action. This also explains why key social accounting scholars (such as Rob Gray, James Guthrie, Reg Matthews, Keith Maunders, David Owen and Lee Parker) would become key instigators and contributors to environmental accounting.

At the same time, a second trend was evident: specifically, the emergence of a self-conscious and changing perception of accounting scholarship (noting also that accounting was a relatively newcomer to universities in the 1960s, at least in the United Kingdom). The mainstream conception of accounting was that it should focus on economic matters that could be translated into financial terms and that accounting was a neutral technical activity. In contrast, there had been a growing understanding of accounting as a social and institutional practice (Hopwood 1976, 1983; Burchell et al. 1980) with widespread effects (see, e.g., Tinker 1985 but also Solomons 1991 for a contestation of this view). This understanding opened up what could be seen as valid topics for an accountant to research as well as approaches to that activity (Chua 1986 and Tinker, Merino and Neimark 1982). An interpretative and socially constructionist approach supported the belief that accounting could create visibility around environmental harm (Hines 1988) and that accounting could and should be brought to bear on addressing that harm.

The third element that made environmental accounting possible was a greater science, policy and political awareness of problems associated with ensuring the integrity of environmental systems (see Bebbington 2001 and Warde, Robin and Sörlin 2018 for a political overview). For example, the *Brundtland Report* (United Nations World Commission on Environment and Development 1987) had recently been published; the United Nations Intergovernmental Panel on Climate Change was founded (in 1988) and research initiatives (such as the International Geosphere-Biosphere Programme, with a focus on studying the phenomenon of global change) commenced in 1987. These elements had knock-on effects in domestic politics and knowledge production system (see Warde, Robin and Sörlin 2018). For example, in the United Kingdom, the government of the time had commissioned a report to lay out their response to the *Brundtland Report*, resulting in the publication of what was known as the *Pearce Report* (Pearce, Markandya and Barbier 1989), which attempted to describe the "blue print for a green economy" (the subtitle of the report).

This rise of environmental awareness in the late 1980s and its salience for policy-making built on even earlier foundations. For example, a seminal contribution to this changing context was the publication of *Silent Spring* in 1962, which documented the hitherto underappreciated effects of pesticides (Carson 1962). At the same time, the 1960s saw the post-World War II generation become adults and champion new social movements such as civil rights in the United States of America, indigenous rights across the globe, decolonisation (e.g., many countries gaining independence from the British "Empire" in the 1960s), championing peace and opposing the Vietnam War, and opposing nuclear energy. The first "green" parties contested elections in 1972 in Australasia and political parties founded on peace and environmental values subsequently emerged across the world, gradually taking more prominent roles in governments (the West Germany Green Party, Die Grünen, being perhaps the most successful of these). In a more formal context, legislation was also passed to address systemic environmental problems (e.g., the Clean Air Act in the United States of America was passed in 1963 and the precursor to the European Union published its first environmental action plan in 1973).

It was against this background, and into this mix, that the first formal document to address environmental accounting emerged (Gray 1990), with the subtitle of "the profession after Pearce". This report was sponsored by the Association of Chartered Certified Accountants, with Roger Adams being an influential champion of environmental accounting and reporting within the association and the accounting profession more widely. The following years witnessed the first special issues dedicated to environmental accounting in journals that have become long-standing supporters of this line of work (especially *Accounting, Auditing and Accountability Journal* and *Accounting, Organizations and Society* in 1991 and 1992, respectively). Table 2.1 outlines additional resources that shed light on the history of and reflections upon environmental accounting (alongside social accounting). In addition, the table notes the founding of the *Centre for Social and Environmental Accounting Research*, a body that has been pivotal for the field (see also Chapter 1 of this handbook).

Table 2.1 Some resources and retrospectives on (social and) environmental accounting

Collection of 80 key articles in social and environmental accounting, arranged thematically into four volumes (Gray, Bebbington and Gray 2010):

- Vol I: Laying the foundations
- Vol II: Developing the field
- Vol III: Controversies and conflicts
- Vol IV: Practices, initiatives and possibilities for the future

Reflections on the field by selected authors:

- Matthews (1997) – a reflection on how social and environmental accounting has developed since 1971
- Owen (2008) – a personal reflection on the current state of, and future prospects for, social and environmental accounting research
- Gray and Laughlin (2012) – a retrospective some 20 years after the first special issue in environmental accounting in *Accounting, Auditing and Accountability Journal* in 1991
- Bebbington and Thomson (2013) – examining issues in management accounting specifically
- Guthrie and Parker (2017) – this 30-year retrospective is from the founding editors of *Accounting, Auditing and Accountability Journal*
- Bebbington, Russell and Thomson (2017) – personal reflections on motivations and understanding of how social/environmental accounting
- Adams and Larrinaga (2019) – analysis of papers that focus on engagement focused research themes and trends

The Centre for Social and Environmental Accounting Research (see www.st-andrews.ac.uk/csear/) functions as a learned society through its journal (the *Social and Environmental Accountability Journal*) as well as supporting conferences in the field world-wide. The Centre was founded in 1992 by Rob Gray who also produced a number of seminal works in the field. Milestones in terms of reports, books and papers produced by him (and co-authors) include the following: Gray, Owen and Maunders (1987); Gray (1990); Gray (1992); Gray, Owen and Adams (1996); Gray (2002); Gray (2010); and Gray, Adams and Owen (2014).

Underpinning elements of environmental accounting

The elements that underpinned Gray (1990) are threefold and relate to:

- the nature and functionality of the system from which environmental effects are generated and on which it is hoped that environmental accounting interventions might have an effect;
- the grounds for assigning responsibility for effects to organisations and the way in which such responsibilities could be governed and could be said to have been discharged; and
- a deeper set of assumptions about the ethical and moral context in which human–nature relations might be understood.

Gray (1990) draws on general systems theory as a way to characterise the exchanges that arise between organisations and their environment (in its broadest sense). The version of systems theory used (von Bertalanffy 1956; Ackoff 1960; and Lovelock 1982) is drawn from biological sciences and contains ideas about emergent properties from systems that are subject to feedback loops that seek to bring a system back into some, possibly steady, state. If one knows what drives a system and how feedback loops operate, then it is possible to think about intervening in systems to achieve a desired state (Meadows 1999). In using this framing for accounting, Gray (1990) believed systems theory concepts had resonance in social domains and can be used to identify effects that arise from organisational action and suggest what a feedback mechanism would be. For example, in the case of organisationally generated externalities, we might hypothesise that a lack of "good" regulation and/or a lack of consumer knowledge about the link between organisations and their externalities might be remedied by the provision of information about externalities. The aim of such information provision would be to provide a basis to argue for "better" regulation and/or to inform consumer boycotts of organisations or products creating externalities (it might also be used for an organisation to better inform itself about its wider impacts and change those effects in response to that information).

Cognate with this systems conception of organisational impacts was a social contract informed framing of how responsibility for such impacts is determined (Gray, Owens and Maunders 1988; Gray 1992, as inspired by the work of John Rawls). Specifically, environmental accounting (as with social accounting before it) was founded on the idea that organisations and society have mutually constitutive effects on each other. Organisations are granted rights by society (e.g., to have legal personhood and limited liability) and society expects goods/services in return as well as behaviour that underpins sound societal functioning (lobbying for corporate self-interests, e.g., would not fit with this conception of a social contract). Given the power differences between organisations and society, the law provides a minimum set of responsibilities for organisations and mechanisms to monitor if the law is complied with along with sanctions should it not be (these elements are present to varying degrees, depending on the issue in question).

This framing is consistent with the focus of environmental accounting on the provision of information from organisations to wider relevant publics about organisational actions and impacts. It is assumed that information provision will support the sound functioning of a democratic society (Gray et al. 1987). These beliefs also underpin the idea of accountability: that organisations owe both a duty to act in certain ways and to provide information about their actions (the latter being transparency). In combination, the delineation of responsibilities, enforced by some governing process, coupled with information provision to interested and active persons provides the driving force for environmental accounting.

How environmental accounting might achieve the ambitions outlined above also reflected its close association with the fundamentals of the accounting craft. For example, environmental accounting maintained a focus on discrete economic entities as being the object for accounting/reporting activities. Likewise, there is a preference for some form of financial measurement/reporting as a way to articulate actions and their impacts. Moreover, the practice of reporting has been central to empirical investigations in the field (influenced by the dual themes of decision usefulness and information inductance – see Prakash and Rappaport 1977). To these, the notion that organisations owed a duty of accountability to stakeholders for the maintenance of legitimacy became the central organising principle of the field (with stakeholder theory drawing from the wider field of corporate social responsibility). In this way, accountability became the normative basis for environmental accounting and especially environmental reporting.

This position was contested from both those for whom environmental accounting breached the norms of accounting practice and those who sought more radical and critical responses to the problems facing society (the best example of the latter stream of works is Tinker, Lehman and Neimark 1991). It could be argued that the earlier critique (that environmental accounting is not accounting) has lost ground as policy and practice has recognised environmental protection as a mainstream position. On the other hand, the criticism that environmental accounting does not pay sufficient attention to achieving more critical societal ambitions is reflected in the disappointments expressed about what has not been achieved that have emerged from the founders of the field (see, e.g., Owen 2008; Gray 2010; Gray and Milne 2018) and remains a potent disciplining effect for the field as a whole (see Bebbington et al. 2017). Indeed, if you wished to gain a sense of how the hopes for environmental accounting have changed over time, Gray (1992, 2002 and 2010) provides a powerful run-through of the various issues at stake. Underlying worries about the achievements of environmental accounting are questions about the relative power of organisations to order society to suit themselves (rather than being held accountable) as well as deeper questions about the relationship between nature and human culture.

At the outset of environmental accounting, there was explicit attention paid to the conception of "nature" and what kind of relationship individuals and society might have with the natural world (see Gray 1992; Maunders and Burritt 1991; Birkin 1996; Milne and Gray 2013; Russell, Milne and Dey 2017 as well as Chapter 28 of this handbook). Concerns about the colonisation of the "environment" by the modes and values of accounting was also part of the early critiques of environmental accounting (Cooper 1992) and remain a potent source of reflection. There is no way to "resolve" these concerns, but they do remind us that the issues that environmental accounting seeks to address have resonance with much deeper questions that are debated in environmental philosophy and ethics.

Indeed, philosophy (and particularly environmental ethics) can help us to better understand our own underlying values and beliefs (Andrew 2000) in the context of seeking to develop environmental accounting as a scholarly area of activity as well as how values and beliefs drive personal commitment and activism (Carson 1962; Cafaro 2013). Environmental ethics provides ways of exploring the issues and consequences of human actions and is underpinned by multiple and broad ethical perspectives (e.g., human, animal or life-centred; "rights for rocks"; or ecological holism). Ethical issues from an environmental accounting perspective can be based within frames of utility (cost–benefit analysis or ethical protection); rights (human rights or animal rights – see also Chapter 29 of the handbook) or contract (legal frames and theories of justice). The different frames are linked to contrasting values and form the deeper underpinning and rationale of a commitment to environmental accounting.

While noting the complexity and nuance in environmental ethics, most approaches are pluralistic and encompass varying philosophical perspectives and orientations (Cafaro 2011). The writings of Leopold (1949) and Callicott (1979), for example, articulate the principles of such an approach whereby humans extend their sense of moral concern and vision to include soils, water and non-human animals and "value" these aspects in ways that are different from the more usual economic or instrumental conception of value. Rather, and as articulated by Rolston (1975), values inherent in nature are independent of human valuing agents and extend to all individual living things: this perspective has been extended to ecosystems as a whole as well. There is insufficient space to develop these arguments further here, but it is worth noting key sources which include deep ecology (Naess 1973), environmental pragmatism and anthropocentrism (Norton 1984) and ecofeminism, gender and inequality (Plumwood 1993; Warren 1990; Shiva 1989). Furthermore, Sandel (2012) provides a moral justice framework for market-based ethical issues. An introductory overview to this field as a whole can be found in Attfield (2018), while the edited collection of Gardiner and Thompson (2017) provides a comprehensive view. A specific review of environmental ethics for social and environmental accounting can be found in Andrew (2000) and the rights of non-human nature can be found in Barrett, Watene and McNicholas (2020).

Taken together, this section has sought to illuminate the founding principles of environmental accounting: principles that are not evident if one only examines more recent published work. At the same time, conceptions of the nature and functionality of the system from which environmental effects are generated, changing perceptions of organisational responsibilities (and associated accountability relationships) as well as beliefs about the ethical and moral context in which human–nature relations might be understood continue to evolve and will be considered later on in this chapter. Before this, however, attention will turn to "what happened next".

What happened next?

A great number of "things" happened in the 30 years since Gray (1990) and the various chapters of this handbook describe these happenings as well as evaluating their successes, shortcomings and possible futures. What is most interesting is that a myriad of "things" did happen, both in the internal accounting/management routines of organisations and in how organisations used accounting and reporting techniques to present their actions and outcomes to wider audiences. Indeed, it is clear from the last 30 years that environmental accounting scholarship and activism created novel forms of accounting and reporting, some of which have become the mainstay of organisational activity. This is, as far as I can tell, relatively unusual in accounting terms. While different forms of accounting have arisen from time to time (with the value-added statement being one such example – Burchell, Clubb and Hopwood 1985), they have not been sustained over time and have not become institutionalised to the degree that environmental accounting and reporting has been.

Likewise, academic activism/engagement with practice seeded a significant change in (especially) reporting practices. Critical to this was the partnership between Roger Adams, Rob Gray and David Owen who together "hatched" the idea of encouraging environmental reporting by way of an awards scheme. This approach was pivotal in creating, sustaining and formalising practices (awards schemes have been noted as being carriers of reporting practices – Amran and Haniffa 2011; Bebbington, Kirk and Larrinaga 2012) and the eventual formalisation of reporting norms into the Global Reporting Initiative in 1999 (see Levy, Brown and de Jong 2010 for an analysis of this process). Firms of accountants, in their consultancy roles and also as assurers, further encouraged reporting practices (Etzion and Ferraro 2010) as well as "carrying" environmental accounting practices to organisations they advised. While there are considerable doubts about the functionality of such reporting (see Chapter 8), it was by no means guaranteed that it would have emerged or would have become a legal requirement in some countries (e.g., see Chapter 21 of this handbook that traces this process in Europe). The outcome has been that reporting on environmental impacts has become de facto compulsory for many larger and environmentally sensitive companies: a process described in more detail in Chapter 10 of this handbook.

All this does not mean that environmental accounting has been "successful" against its original ambitions of enhancing transparency, discharging accountability, contributing to broader democratic processes and addressing environmental problems. Indeed, despite the proliferation of reporting practices there is widespread concern that reporting is used for isomorphic and/or reputational reasons in comparison to being about demonstrating operational impacts (Laine 2009). In addition, environmental accounting scholarship has been dominated by North America and the United Kingdom perspectives, priorities and publishing norms which have constrained the field. For an example of these concerns, see Patten (2013), Roberts and Wallace (2015) and Roberts (2018): Part 4 of this handbook seeks to address this problem, at least to some extent. Of course, the counterfactual of what "the world" would look like had environmental accounting and reporting had not become a widespread practice is unknown. At the same time, if we return to the foundations of the field, it is evident that these need to be updated in the context of the current moment as well as by 30 years of scholarship in related foundational fields.

Lessons from the past and looking to the future

The purpose of this chapter was to provide insights into the foundation of environmental accounting. This section will extend this work to describe current understandings of the nature and functionality of the earth system (the perceived "state of the environment" is the underpinning to any accounting for the environment). Here the news is nearly universally negative. In the last 30 years, the state of the natural environment has continued to deteriorate, including in the core areas of climate change, water resources and biodiversity (see chapters 26, 27 and 28 of this handbook). Moreover, the simultaneous breaching of planetary boundaries has moved humanity beyond a "safe operating space" (for accounting ramifications of this, see Chapter 6 of this handbook) and has brought global society to a realisation that we may be exiting the Holocene and entering the Anthropocene (see Bebbington et al. 2020 for an in-depth exposition). At the same time, global policy processes continue to adapt and evolve, with the Sustainable Development Goals being the most current incarnation of these concerns (see Bebbington and Unerman 2018, 2020).

Thinking about how the earth system is driven by a combination of social and economic forces (and vice versa) has also evolved from the general systems theory used by Gray (1990) to complex adaptive systems theory. Just as general systems theory was pivotal to the foundation of environmental accounting, more recent conceptions of how the earth system operates become relevant to future environmental accounting. The motifs of complex adaptive systems is that the system has emergent properties that are more complex than its parts and creates nonlinear systems dynamics. The "adaptive" element refers to the observation that collective behaviour mutates due to pressures and elements of self-organisation create new dynamics (Levin et al. 2012).

This understanding of systems function requires new approaches to accounting scholarship that take full cognisance of the "wickedness" of the problems that environmental accounting (often, now in the guise of sustainability accounting) is seeking to address. This is the context in which environmental accounting and accountants are called to operate in and responses are likely to require a sustainability science response (Bebbington and Larrinaga, 2014) and a further enlarged conception of accounting as well as the entities for which accounts might usefully be developed. Accounting will be called to also provide input to "super wicked" problems (defined by Levin et al. 2012, as consisting of four features, namely, that "time is running out; those who cause the problem also seek to provide a solution; the central authority needed to address it is weak or non-existent; and, partly as a result, policy responses discount the future irrationally" p. 124). It is discomforting to recognise that accounting scholars fit within the characterisation of those that seek to provide a solution are also the cause of the problem.

If we are living in a complex and adaptive world, further analysis of disclosure of a subset of economic actors (listed companies) is unlikely to be the most productive way forward (even while acknowledging the relevance of being informed about disclosure patterns to the extent to which they demonstrate changed operations and/or achievements). The shape of future environmental accounting scholarship that is fit for purpose remains unclear. Discussions within business and management scholars are a little more advanced and they might provide fruitful avenues for accountants to investigate (see, e.g., Whiteman, Walker and Perego 2013; Williams et al. 2017; Williams, Whiteman and Kennedy 2019).

The final theme that this chapter will consider is the extent to which the foundational normative basis for environmental accounting might also need to evolve in the circumstances in which we find ourselves. At the most fundamental level (that of conceptualising the "deal" between society and organisations), there have been doubts expressed outside the accounting literature about the adequacy of a social contract framing for corporate social responsibility. In particular, the context in which social contract theory is founded upon (Rawls 1971, 2001) has changed substantially and global society now faces qualitatively different challenges: namely, breaching ecological limits and persistent and structural inequality. Within political and philosophy scholarship, a "capabilities" approach has emerged as a successor to the social contract approach (see Nussbaum 2011 in particular, building on Sen 1999 and 2009 and sometimes described as a cosmopolitan approach – see Dobson 2006) and this approach has found favour in some sustainable development settings. Given this, it may be that environmental accounting would benefit from a revisiting of its social contract commitments.

In brief, the capabilities approach bases its view of what is "appropriately" due to people on a set of non-negotiable entitlements that are deemed to be necessary in order to have the capacity to flourish, in whatever way makes sense to those seeking to flourish. While this means that there can be a wide set of capacities, there is also an underpinning set of capabilities that are similar to basic human rights entitlements. This approach also differs from that of the social contract, where what individuals are entitled to arises from some societal deal. The capabilities approach has been influential in debates around human development as well as in "flourishing" frameworks that have an inclusive (and strongly ecologically informed) vision of well-being (see Chapter 6 of this handbook and Raworth 2017). Taking this material as a guide, it may be possible to examine human entitlements and explore the extent to which organisations support or impinge upon them, either directly or indirectly. While such thoughts might appear to be a long way from accounting scholarship, there are links between the basic idea of capabilities for flourishing to accounting-based explorations of, for example, animal rights (see Chapter 29 of this handbook); the rights of nature (see also Barrett, Watene and McNicholas 2020); accounting's engagement with notions of the common good (Killian and O'Regan 2020) and economic democracy (Bebbington and Campbell 2015). The proposition that the social contract basis for environmental accounting (alongside social and sustainability accounting) needs to be revisited is more an intuition than a well-formed hypothesis, the resolution of which awaits an academic year with time for reading and slow reflection.

In conclusion, this chapter has sought to illuminate the foundational principles on which environmental accounting was forged, which themselves may have faded from conscious collective memory. The ideals that motivated the field were focused on the provision of information about "things" for which organisations were (or could be held to be) responsible for. If this process operated effectively, organisations could be held accountable for their impacts and could be made to behave in ways that satisfied the social contract between organisations and society. Of course, this ambition has only been partially fulfilled and the multiple ways in which accounting has been implicated in this process makes up the contents of this handbook. At the same time, a revisiting of foundations required a reconsideration of the context in which environmental accounting is seeking to effect. As the Anthropocene becomes a reality, and as the cumulative effects of breaching various planetary boundaries come to the fore, it might be that how we seek to hold organisations accountable needs to be updated in practice and also in conceptual underpinnings. One proposition for re-envisioning the goals of environmental accounting sees a return to an earlier core accounting notion: that of stewardship of more than financial resources (see, e.g., Contrafatto and Bebbington 2013 and Bebbington et al. 2020). A focus on organisations and biosphere stewardship is also gaining consideration in the sustainability science context (see Folke et al. 2019). How stewardship and environmental accounting might "mesh" is something that might be the subject to take forward into the next 30 years of the field.

Notes

1 The author thanks Bisola Joloko for the helpful insights provided on an earlier version of this chapter and for input from Jane Gibbon on environmental ethics.

2 The author thanks Tom Schneider for identifying this neglected paper. Issues of the social responsibility of business began much earlier (Bowen 1953), but from an accounting/reporting perspective debates about the appropriate form of any additional reporting in this arena emerged a little later.

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