

Reimagining the Conceptual Foundation of Accounting: Environmental Wealth and the Society at Large

Abstract

There is increasing awareness in the critical accounting literature of the need for a sea change in financial reporting that goes beyond expanding disclosures. However, efforts to bring environmental matters onto the balance sheet have been criticized for being inconsistent with many core accounting conventions. This paper contributes to research on ‘out-of-the-box’ solutions to tackle the environmental crisis by proposing an alternative conceptual foundation that extends the boundaries of conventional accounting. To this end, the paper revisits the ideational foundation of economics and develops an alternative concept that allows considering an entity’s environmental responsibilities in its financial accounts. In our endeavor, we draw inspiration from Boltanski and Thévenot’s (2006) ‘orders of worth’ framework to detail how the translation of the market world in the conceptual foundation of traditional accounting only leads to an ill-fitting hybrid with the green world. We examine how market logic has been translated into the concepts of wealth and property rights in economic accounting (Fisher, [1906] 1965; Coase, 1960) and how it has shaped our contemporary definitions of assets and liabilities. We also demonstrate how this specific economic thought imposed conceptual obstacles for the recognition of environmental matters on the balance sheet. Based on this analysis, the paper mobilizes features of a green order of worth and proposes introducing the concept of environmental wealth owned by the global society at large. We argue that the institutionalization of a ‘society at large’ creates a vessel that may transcend both market and green rationality within financial reporting.

Keywords: Environmental accounting, Environmental liabilities, Orders of worth, Property rights

1. Introduction

Over the last 30 years, accounting scholars have discussed whether and how environmental matters can be adequately addressed in accounting (Bebbington & Gray, 2001; Deegan, 2017; Gray, 1992; Gray & Laughlin, 2012; Power, 1992, 1997). They claim that as a predominant economic practice, traditional accounting fails to offer the conceptual rationale to deal with “[m]arket-alien considerations and values” Thielemann (2000, p. 9), such as concerns for the natural environment (Gray, 1992, 2013; Milne, 1991; Milne & Gray, 2013; Owen et al., 1997). Suggestions to bring environmental matters onto the balance sheet (Thornton, 2013; Rubenstein, 1992) have been criticized as unfeasible since any internalization of an entity’s negative externalities, such as air pollution, would be inconsistent with the conceptual underpinnings of financial reporting (Deegan, 2013; Lamberton, 2005).¹ Accounting scholars argue that traditional accounting, rooted in capitalist economics with its reliance on markets and market prices (Gorz, 1989; Ravenscroft & Williams, 2009, 2021), treats the physical environment as “external to the economists’ abstract world of commodities” (Daly, 1980, p. 245), thereby excluding environmental issues from consideration (Gray, 1992, 2002; Unerman et al., 2018). As Gray (2013, p. 462) argues, “it is the very ubiquity of an un-mindful economics that seems to swamp accounting practice, policy and academe that leads, in turn [...], to a relatively superficial and even trite acceptance of the role that accounting plays in the ecological crisis”.

Given the primacy of the information needs of financial statement users (Young, 2006), current standard-setting projects mainly pursue an “information throughput” model (Russel et al., 2017), seeking enhanced transparency of an entity’s environmental externalities through increased disclosure (EFRAG, 2021; ISSB, 2022), regardless of whether the actors are held accountable (Dillard & Vinnari, 2019). Critical accounting scholars increasingly question the usefulness of sustainability disclosure by pointing to its limited transformative potential to a less unsustainable future (Cho et al., 2015; Spence, 2007). Brown & Dillard (2013a) called this fixation on disclosure in practice and academia “disclosure-sclerosis”, arguing that change is hampered if entities continue to prepare organization-centric reports that fail to take heterodox interested groups’ values, visions, and views into consideration. Dillard and Vinnari (2019, p. 35) expressed the need to transcend the traditional accounting system and develop “not only scientifically innovative, but also, more importantly, societally relevant and meaningful solutions” to jump start the debate on how changes to contemporary accounting can stimulate

¹ We understand financial reporting as a compromise between both traditional financial accounting (e.g., balance sheet information) and sustainability-related disclosure.

appropriate and meaningful decision-making, and contribute to tackling the environmental crisis.

This paper addresses the call for box-breaking solutions by reimagining the conceptual foundations of accounting. We propose introducing the concept of ‘environmental wealth owned by the global society at large’, putting forward a set of distinguishing features of environmental wealth and elaborating on the institutionalization of a society at large, which would serve as a vessel for the claims of both present and future generations. By giving priority to environmental wealth, our proposal provides a conceptual rationale for the mandatory recognition of an entity’s environmental obligations in contrast to current disclosure practices. We argue that this concept can provide a missing link through which accountability needs and interests of a broad constituency can feed into financial reporting. We contend that our framework can help break down the silos between the domains of sustainability reporting and traditional financial accounting (Unerman et al., 2018).

Our endeavor is informed by Boltanski and Thévenot’s (2006) ‘orders of worth’ framework which helps us to understand how actors draw on competing justificatory frames (orders of worth) to be morally convincing in a dialogue on what is ‘just’ (see Annisette & Richardson, 2011; van Bommel, 2014, for an application of this framework in accounting). In particular, the framework acknowledges the importance of processes and negotiations for establishing compromise and transcendence between multiple and competing logics. Together with Thévenot et al.’s (2000) work on green justifications, this framework develops a set of coexisting logics, each logic providing actors with a language and justificatory scheme to give substance to their moral legitimacy claims. Our paper mobilizes the framework to reveal tensions between the ‘market’ order of worth and the ‘green’ order of worth within financial reporting. Here, we aim to identify conceptual obstacles that hamper the comprehensive integration of a green logic in traditional financial reporting and predetermine a fixation on extended disclosure. We use the ‘orders of worth’ framework to investigate the reasons for the ill-suited compromise between the market world and the green world in financial reporting. We then use this theoretical lens to propose changes to the conceptual foundations of financial reporting that allows for recognizing environmental liabilities on the balance sheet. We thus attempt to transpose a green rationale into the market-based world of accounting, and to redraw the boundaries between reporting on financial information on the one hand and environmental matters on the other, since our framework allows both to become genuine aspects of financial reporting.

This paper has two goals. First, it seeks to contribute to the debate on putting environmental externalities onto the balance sheet by examining the ideational basis of *what* should be recognized. To this end, we review the economic foundations of assets (rights) and liabilities (obligations) and investigate how economic thinking shaped what is ‘worth’ depicting on accounting reports (Gerboth, 1987; Kunkel, 2021). We contend that developing alternative solutions to account for environmental issues first requires examining the role of property rights as an instrument to coordinate human action and the close connection between property rights and externalities. Previous efforts to account for environmental matters took numerous accounting concepts as datum (Barker & Mayer, 2022), primarily focused on measurement issues (Cook, 2009; Giner, 2014; Herbohn, 2005; Schneider et al., 2017), or drew on the implicit assumptions of financial economics (Morgan, 1988) without providing any detailed explanation for their existence (e.g. Thornton, 2013; see Gray, 2013 for a critique on the range of assumptions in Thornton’s work). Another strand of the literature promoted the idea of natural capital accounts to recognize the impact of human action on the ecosystem (Bebbington & Larrinaga, 2014; Gray 2006, 2010; Milne & Gray, 2013; Rambaud & Richard, 2015). However, all these initiatives to reflect environmental matters on the balance sheet encounter conceptual barriers within conventional financial accounting. Unerman et al. (2018, p. 498) note that sustainability reports are unable to effectively communicate environmental externalities as they “often take a rather siloed approach to individual issues instead of clearly articulating connections between different areas of impact.” An analysis of how the conceptualization of wealth and property rights shaped the notions of assets and liabilities sheds light on the way economic thought influenced the creation of isolated silos, imposing conceptual limits and barriers on the comprehensive inclusion of environmental matters.

Secondly, the paper aims to develop a conceptual basis that attempts to dissolve a major obstacle to acknowledging environmental matters in traditional financial reporting. Based on an analysis of the ideational roots of our contemporary understanding of assets and liabilities, we introduce the notion of environmental wealth owned by the global society at large. This concept lays the foundations for the emergence of property rights attached to an overarching environmental wealth. In assigning initial property rights to the global society at large, our suggested solution provides a conceptual rationale for the mandatory recognition of an entity’s environmental obligations that breaks down the siloed approach in financial accounting and sustainability reporting (Unerman et al., 2018). In this vein, Dillard and Vinnari (2019, p. 35) suggest switching from accounting-based accountability with the focus on financial capital needs to an accountability-based accounting system that pays “more attention to the value-

based, first-order ends of accountability instead of focusing only on the instrumental means through which accountability is to be achieved". Our approach attempts to extend the notion of utilitarianism in economics by considering the legitimate claims of future generations in the conceptual foundations of financial reporting. Complementing Dillard and Vinnari's (2019) proposed pluralistic model, our approach seeks to rewrite the implicit contract between individual organizations and society in traditional accounting (Cho et al., 2015; Demuijnck & Fasterling, 2016) in a way that reflects the importance of environmental matters. In this way, we aim to contribute to the ongoing debate on the establishment of rights in environmental accounting (Batty & Gray, 1996; Milne, 1991; Vinnari & Vinnari, 2022).

The paper proceeds as follows: We start by discussing the relevant literature on the relationship between economic thought and environmental accounting. We then consider proposals to introduce values and public interest into a more pluralistically organized form of accounting. The third section outlines the 'orders of worth' framework as our theoretical lens while the fourth section discusses how the seminal work of Irving Fisher and neo-institutional economists (Coase, 1960; Alchian, 1965; Demsetz, 1964, 1967) formed the ideational basis of financial reporting. In particular, we discuss how a specific market order of worth translated into financial reporting. We then demonstrate how the shortcomings of economic theory translated into the notions of assets and liabilities as set out in conceptual frameworks (FASB, 2021; IASB, 2018), enshrining a model of financial reporting that predefines environmental rights and obligations beyond the boundaries of a firm (Coase, 1937; Robé, 2011). In section 5, we enhance aspects of economic accounting by introducing an additional type of wealth (environmental wealth), laying the conceptual foundation for the recognition of environmental resources and duties as rights and obligations. We then discuss the role of regulatory bodies to mediate property rights and obligations between ordinary firms and society at large. We conclude by considering the implications of our analysis in the debate on the recognition of an entity's environmental matters and propose avenues for future research.

2. Accounting for environmental matters in the literature: Economic theory, property rights and how accounting needs to change

Recent discussions on how to account for and report on environmental matters focus on the creation of transparency through sustainability-related disclosures (Anderson, 2019; Bebbington & Larrinaga, 2014; Laine et al., 2021; see also EFRAG, 2021; GRI, 2016 or ISSB, 2022 for recent disclosure-related policy initiatives). This fixation on disclosure-only approaches has been criticized by another strand of the literature which points to the lack of

short-term consequences for entities (Dillard & Vinnari, 2019; Russel et al., 2017; Tregidga & Laine, 2022; Unerman et al., 2018). It is argued that various forms of sustainability reporting “are used first and foremost as a sustainability cloak to disguise the still largely unsustainable ‘business-as-usual’” (van Bommel, 2014, p. 1178; Gray, 2006; Laine, 2009; see also Bratten et al., 2013 and Clor-Proell & Maines, 2014 on the varying assessment of recognized and disclosed items by users and preparers). For example, examining the multiplicity of views on integrated reporting, van Bommel (2014) shows how the market logic has assimilated the green logic in practice. In expanding on the limited capacity of disclosures to tackle the environmental crisis through more disclosures, the literature offers disparate views on the role that accounting can play in a green transition of the economy.

One strand of the literature examines the usefulness of market-based solutions to address environmental matters in traditional accounting. Examining data collection under the umbrella of the Carbon Disclosure Project (CDP), Andrew and Cortese (2013) argue that neoliberalism has increasingly assimilated environmentalism. They show that companies and the accounting profession adopted the neoliberal agenda with its belief in free markets “to embed and advance neoliberalism and to ensure the ongoing neoliberalisation of our environmental future” (Andrew & Cortese, 2013, p. 398). One expression of neoliberal solutions to combat climate change is the introduction of the European emissions trading scheme in the early 2000s, hailed as a useful tool for a market-green compromise by demanding that entities account for and report on externalities (Andrew et al., 2010; Bebbington & Larrinaga-González, 2008; Blok, 2013; Cook, 2009; Cooper & Morgan, 2013; Giner, 2014). However, the regulatory framework has been criticized for legitimizing entities’ ‘right to pollute’, overemphasis on short-term market efficiency, and absurd price fluctuations with a fairly loose relationship with climate-related environmental issues (Deegan, 2013; Lohmann, 2009). Instead of tackling the underlying causes of the environmental crisis, Lohmann (2010, p. 77) views emissions trading schemes as an “attempt to privatize the climate itself” by treating the earth’s capacity to regulate itself as a measurable commodity that can be cost-effectively allocated via market mechanisms. In similar vein, Deegan (2013, p. 456) argues that “this appeared to be a strange situation of using the very instrument that created the problem (the market) to then try to solve the problem.”

The economics-based conceptualization of accounting thus appears inadequate to address environmental matters in financial reporting (Deegan, 2017; Gray, 1992, 2002; Thielemann, 2000; Rubenstein, 1992). Incorporating the micro-focused assumptions of economic theory, traditional accounting has been blamed for ignoring the macroeconomic impact of corporate operations that contribute to patterns of environmental harm with adverse effects for

individuals, organizations, and wider society (Antheaume & Bebbington, 2021; CRAFiC, 2022). Unerman et al. (2018, p. 500) describe these negative externalities as cases where a “third-party individual or organisation suffers financial costs flowing from a transaction between other parties and for which there is no recourse for the third party to recoup these financial costs from the transacting parties.” This implies that the actions of one party impose costs on another party (external to an exchange), but the adverse effect is not included in the good’s market price (Milne, 1991, p. 85). Put differently, externalities are “the uncompensated-for costs certain exchanges impose on third parties” and can be conceived as ‘harms’ that might “constitute a problem from the standpoint of distributive justice” (Mildenberger, 2018, p. 2108). However, in a capitalist system, accounting for the “injustice of externalities” (Mildenberger, 2018, p. 2109) by voluntarily internalizing externalities seems unlikely given that individuals and firms seek to increase their utility, wealth, and profits (Thielemann, 2000). Despite economic theory framing externalities as market failure resulting from lack of an appropriate system of property rights (Mildenberger, 2018), it fails to provide adequate solutions for the internalization of externalities. Negative externalities are inherent to markets but “can be elusive to identify in time and space and their ‘ownership’ is contested” (Unerman et al., 2018, p. 514). By the same token, accounting scholars relate the internalization of externalities to the existence, reallocation, and enforcement of property rights as set out in economic theory (Deegan, 2013; Mildenberger, 2018; Milne, 1991; Rubenstein, 1994). Without enforceable property rights, it is argued that “the victim of incursion has no rights, and the party imposing unwanted costs has privilege or presumptive rights in the absence of any prohibition” (Milne, 1991, p. 86).

Research points to the central role of Irving Fisher in the colonization of accounting by neoclassical economic theory, and shows how economic thought has shaped our contemporary understanding of assets and liabilities in terms of rights and obligations (Friedrich et al., 2021; Kunkel, 2021, 2022; Mouck, 1995; Markarian, 2018; Williams, 2003). In assigning attributes to assets and liabilities, economic theory drew boundaries around the items to be included or excluded from consideration in an entity’s reporting scope. Given this narrow reporting scope, traditional accounting conventions allow firms to effectively place environmental concerns outside the boundaries of financial reporting, leaving investors with little, if any, indication of environmental obligations. Barker and Mayer (2022), for example, observe that the conceptual rationale of the IASB’s liability standard (IAS 37) does not allow to show a liability for an entity’s future expenses related to a green transition as there is no obligating event. Another example of the artificial “nature-society dichotomy” (Vinnari & Vinnari, 2022) is the

invisibility of animal rights in accounting. Given the lack of enforceability of moral rights, Vinnari & Vinnari (2022) call for an incremental legal framing of animal rights to make animals visible in accounting frameworks. Investigating the struggle of a Native American tribe (the Yavapai) with public authorities over the construction of a dam, Espeland (1998) provides insights into the close relationship between moral rights, property rights, and perceived value of the environment, showing how courts and regulatory agencies frequently create substantive property rights through legislative action. It follows that overall discourse on the role of accounting in the context of environmentalism is strongly embedded, if not to say dominated, by the discourse of rights and obligations.

In recent years, a growing stream of literature has explored the ways accounting needs to change to tackle the environmental crisis (Brown & Dillard, 2013a, b; Carnegie et al., 2021; Deegan, 2017; Dillard & Vinnari, 2019, Gray, 2002; Russel et al., 2017). Dillard & Vinnari (2019) developed a pluralistic approach to switch from contemporary hegemonic accounting-based accountability to accountability-based accounting. Instead of focusing on decision-usefulness, with emphasis on transparency for investors as the overall goal of financial reporting, they claim that accounting should take the diversity of constituents and their diverging information needs into account by establishing “multiple accountability systems comprised of multiple evaluation criteria sets, and multiple, though not necessarily mutually exclusive, accounting systems” (Dillard & Vinnari, 2019, p. 22). To this end, they suggest organizing constituency around responsibility networks (representing a variety of affected groups) to bolster a more democratically governed society. Similarly, Brown & Dillard (2013a) envision progressive transformation of environmental accounting by engaging with antagonisms and ideological arguments between heterodox groups.

To emphasize the intertemporal social and moral dimensions of accounting, Carnegie et al. (2021, p. 69) propose redefining accounting as a “technical, social and moral practice concerned with the sustainable utilization of resources and proper accountability to stakeholders to enable the flourishing of organisations, people and nature.” Relative to this line of reasoning, Tregidga and Laine (2022) elaborate on the tense relationship between short-term and long-term environmental considerations. They suggest that environmental accounting should focus on the short-term to complement conventional accounting for the long-term (Tregidga & Laine, 2022, p. 8). While this approach creates a sense of urgency in environmental accounting for short-term collective action to tackle environmental goals, traditional accounting should focus on long-term value creation to raise investors’ awareness of environmental issues. Complementary, Unerman et al. (2018) argue that greater societal awareness of environmental

issues increases the likelihood of regulatory interventions to transform companies' negative externalities into financial internalities.

From our brief literature review on the role of economic thought in environmental accounting two aspects bear emphasis. First, the existence of externalities in financial accounting arises from its flawed conceptual foundation rooted in economics. In particular, the notions of assets (rights) and liabilities (obligations) categorize items to be within or beyond an entity's boundaries. Hence, our contemporary understanding of both notions narrows the reporting scope and forms a major obstacle to recognizing environmental matters on the balance sheet. Second, a recurring factor in the ongoing debate on reforming accounting to tackle the environmental crisis is the claim that traditional accounting needs to change fundamentally if it is to incorporate more value-oriented, democratic, and sustainable financial accounting. Our explorative paper aims to contribute to both strands of the literature by proposing an approach which allows for a reallocation of initial property rights. We first revisit the economics-based conceptual foundations of financial reporting. Based on this analysis, we address one of the biggest misconceptions in economics-based accounting by introducing a notion of environmental wealth owned by the global society at large. Finally, we propose a potential path for the allocation and aggregation of environmental wealth and related rights that can lay the foundations for mandatory recognition of environmental matters on the balance sheet.

3. A framework for moral values in environmental accounting

Boltanski and Thévenot's (2006) 'orders of worth' framework centers on how actors mobilize different regimes of justification to give substance to their moral legitimacy claims in situations of moral uncertainty. The framework centers on two key factors: justification and reference to a common good. Each order of worth provides actors with a rationale as it sets out a template of what is deemed valuable and worthy by appealing to a higher common good. By establishing criteria to evaluate objects or actions, orders of worth provide "direction to the ordinary sense of what is just" (Boltanski & Thévenot, 2006, p. 74). This involves constructing a reference to a common good that is beneficial to all. Reference to types of common goods help establish an equivalence between entities, thereby defining their relative worth (Boltanski & Thévenot, 2000, p. 213). This leads to a higher state of worth, where self-centered needs are set aside for the common good. On the other hand, claims or certain practices are perceived as illegitimate when they fail to show a link with a higher common good. The notion of worth and the common good are both combined in the higher common principle (Boltanski & Thévenot, 2006, p. 77).

In addition, moral legitimacy claims must satisfy the demand for common humanity. As Reinecke et al. (2017, p. 44) argue, the capacity to achieve “legitimate agreement through justifications thereby rests on the recognition of a shared, common humanity, which surpasses the particular interests of each participant in a dialogue.” The assumption of a common humanity “posits a form of fundamental equivalence among [...] members [of a polity], all of whom belong to humanity on the same basis” (Boltanski & Thévenot, 2006, p. 74). They acknowledge that “every human being is a human being as every other” (Boltanski & Thévenot, 2006, p. 74), rendering any form of hierarchy among humans illegitimate. While members of the polity can have different states of worthiness, thereby differentiating their claims, the orders of worth framework assumes that all members have identical power of access to such states (common dignity) (Boltanski & Thévenot, 2006, p. 75). Based on this framework, Boltanski & Thévenot (2006) and Thévenot et al. (2000) develop seven ideal-type forms of orders of worth, appealing to different types of common goods: ‘Market’, ‘Industrial’, ‘Civic’, ‘Domestic’, ‘Fame’, ‘Inspired Opinion’, and ‘Green’. These seven common worlds coexist in multiplexity, with multiple orders of worth competing for moral legitimacy (Reinecke et al., 2017). This implies that clashes are potentially possible between different orders of worth.

While every world provides a consistent and complete set of assumptions, external and internal tensions can lead to changes within and among different worlds. To relieve these tensions, Boltanski and Thévenot (2006) suggest engaging in dialogical processes aimed at achieving agreement between orders of worth through negotiation. Reinecke et al. (2017, p. 54) note that Boltanski and Thévenot’s framework primarily focuses on agreements based on compromise between competing orders of worth. The authors argue that such hybrid strategies only temporarily stabilize the underlying conflict, without a conclusive resolution in view of a higher common principle. For instance, carbon trading seeks to achieve a hybrid between the market world and the green world but fails to provide a convincing new cognitive-moral format (Blok, 2013). Against this backdrop, Reinecke et al. (2017) suggest placing more emphasis on negotiations aimed “at a common good that transcends the two different forms of worth in presence by including them both” (Boltanski & Thévenot, 2006, p. 278). This transcendence strategy involves creating a “new moral reference point that aligns two or more existing schemes under a new, higher-level point of reference” (Reinecke et al., 2017, p. 54). In contrast to hybrid strategies, transcendence aims to integrate multiple worlds. The newly established reference point provides a strong and stable frame for moral legitimacy as it dissolves the revolving debates between clashing moral logics (Reinecke et al., 2017, pp. 61-62). Reinecke et al. (2017) emphasize that transcendence cannot be achieved through negotiations between

isolated entities. Instead, the involvement of wider society is required. In addition, achieving transcendence is not a goal in its own right, but serves as an aspiration. As Reinecke et al. (2017, p. 55) suggest, “[n]egotiating parties are likely to operate within a grey area between hybridity and transcendence, making transcendence a regulative ideal rather than a reality of dialogue.”

Our analysis focuses on the ‘market’ and ‘green’ worlds.² Following the logic of utilitarian economics, the market world refers to the higher common principle of competition which serves as a central principle of coordination between market participants who consider freely circulating market goods as their object of interest and who enter into transactions in global competitive markets. In the market world, actors’ activities are driven by their self-centered desire to possess scarce goods. Their judgment process centers on prices, costs, and the economic value of goods. It is important to note that market worth primarily concerns the creation of short-term utility for business entities (c.f. Thévenot et al., 2000, pp. 240-243). For instance, discussions between two wood companies about (potential) deforestation of their joint property might be linked to diverging assumptions about the related costs and benefits of this action.

The ‘green’ order of worth provides actors with a rationale based on ecological analysis. Ecology or ecological balance serves to qualify the worth of nature (e.g., air, forests). Natural entities or actions are considered valuable or worthy when they refer to the common higher principle of environmental friendliness, such as sustainability. Green justifications focus attention on the long-term future and “consider the general good of humanity to be advanced through a sensitivity to environmental issues and consequences, protection of wilderness, stewardship of environmental resources, and cultivation of various attachments to nature, the land, or the wild” (Thévenot et al., 2000, p. 257). The green order of worth puts the reciprocal relationship between human beings (and their actions) and their natural environment center stage. What bears importance here is that green justifications “posit a unique type of dependency which assumes more than simply a spatial interaction of humanity with the natural world, but also a temporal extension of humanity by way of an implicit or explicit reference to future generations” (Thévenot et al., 2000, p. 257). Through this extension, the green logic alters the notion of a common humanity, resulting in a reinterpretation of what is considered good for everyone. Under the green order of worth, the community of ‘everyone’ not only includes the present generation, but also the good of future generations, non-human animals, and other natural entities such as air, plants, and rivers (Thévenot et al., 2000, p. 262). The

² For the sake of simplicity, we excluded other worlds from our analysis. However, we acknowledge that other orders of worth might also be relevant (e.g., van Bommel (2014) who investigates the civic and industrial world in addition to the market and green world in his analysis of integrated reporting).

different facets of the ecosystem (or the planet's ecosystem as a whole) are not valued for creating benefits for humans "but for their own sake, for the benefit of the integrated ecosystem (which includes humans) itself" (Thévenot et al., 2000, p. 262). Environmentalists use the uniqueness of nature to justify the intrinsic value (worth) of ecological balance. Table 1 summarizes selected features for the justification of worth in the market world and the green world.

[insert Table 1 here]

While the primary goal of Boltanski and Thévenot's (2006) work is to provide actors with a framework to construct justification based on orders of worth, we use their theoretical lens to examine ways to bridge the gap between the green order of worth and the market order of worth in financial reporting. We argue that the market world and the green world can reach transcendence by introducing the concept of environmental wealth owned by the global society at large. Instead of creating an ill-suited hybrid in which the logics of both worlds (with all their contradictions) remain unresolved, we contend that pursuing a transcendence strategy can help to establish consensus regarding a common higher order of worth in financial reporting.

4. The intellectual link between economic theory and financial reporting

Gray (1992) suggests the following way forward to introduce environmental concerns in financial reporting:

"It would seem that a major part of the process of radically re-thinking the world must begin from the role that economics has played in constructing our world, the ubiquity of that role, the effects of that role and the profound limitations which economists, in general, have failed to notice and/or to sufficiently clarify. [...] We must, therefore, first identify the cage in which we place ourselves through economic thought, and then escape that cage if we are to adequately address either changes in accounting in general, and protection and enhancement of the environment in particular" (p. 401).

Following this line of reasoning, we begin with an examination of the conceptual 'cage' of conventional accounting, induced by economic thought. In the following section, we unpack how our contemporary thinking set out in the conceptual underpinnings of financial reporting embraces various notions from Fisher's work and neo-institutional economics on the relationship between wealth, property rights, and services, predetermining the limits of traditional accounting to deal with negative externalities.

4.1 Translating the market world into the fundamentals of economic accounting: Fisher's conception of wealth, property rights, and services

In his work on economic accounting, Fisher sought to provide “a link long missing between the ideas and usages underlying practical business transactions and the theories of abstract economics” (Fisher, [1906] 1965, Preface, p. vii). To this end, he introduced three distinct but interrelated “chief tools needed in economic study” (Fisher, [1906] 1965, p. 51): wealth, property rights, and services. Fisher further outlined that wealth and property rights are inextricably linked in such a way that existing wealth (the concrete thing owned) lies behind abstract property rights. Wealth is a source of utility. It is useful to its owner who desires its future services, materializing either in the form of desirable changes effected (e.g., farmland yielding crops) or undesirable changes prevented (e.g., a dam preventing water from overflowing onto the land). In this sense, wealth provides a means to achieve future services, and property rights secure future services of that wealth (Fisher, [1906] 1965, pp. 23, 26). While property rights cannot be equated with wealth, they constitute its central characteristic. For Fisher ([1906] 1965, p. 22): “There can be no wealth without property rights applying to it, nor property rights without wealth to which they apply.” To qualify as a single object of wealth, an article must be a *material* and it must be *owned* (Fisher, [1906] 1965, p. 8).

The first attribute, materiality, restricts wealth to objects with physical substance, acknowledging the fact that events/transactions occur in the midst of a physical universe (Fisher, [1906] 1965, p. 323). This notion of wealth allows for the physical measurement of separate articles of wealth in their respective quantity (e.g., by weight-units such as pounds or space-units such as volumes or carbon dioxide equivalents) or considers their value in monetary units (Fisher, [1906] 1965, pp. 8-9, 66). Secondly, wealth must be owned, meaning that a person³ has the right to deal with the object at his/her discretion, excluding others from any influence. To own wealth is to possess and control property rights attached to the underlying tangible article (Fisher, [1906] 1965, pp. 18, 323), entitling the owner to exert a circumscribed list of actions directed towards wealth without interference from other parties aimed at obtaining future services. In short, wealth consists of appropriated material objects, and property rights are present rights in these objects, securing future services.

Based on this concept, Fisher distinguished three types of wealth. The first is immovable wealth, consisting of appropriated portions of the earth's surface (e.g., land) and certain immovable appropriated objects upon it (e.g., buildings). The second type of wealth is

³ A person is defined as any owner of property, whether a single living human being, a collection of human beings, or a fictitious person, such as a firm, corporation, or government (Fisher, [1906] 1965, pp. 68, 335).

moveable wealth (commodities), such as raw materials or finished products. In its broadest sense, wealth has a third form that includes human beings. Fisher's conception of wealth implies that only those parts of the physical universe which mankind "appropriates constitute wealth, whether they remain in their natural state or are 'worked up' by him into products to render them more adapted to his needs" (Fisher, [1906] 1965, p. 323). In elaborating on what constitutes wealth, Fisher also notes which parts of the material universe are excluded, stating that wealth "does not include the sun, moon, or stars, because no man owns them. It is confined to this little planet, and only to parts of that; namely, the appropriated portions of the earth's surface and the appropriated objects upon it" (Fisher, [1906] 1965, p. 4). Hence, wealth does not include those parts of the physical universe over which man has no control, resulting in the exclusion of 'the natural environment' from Fisher's definition of wealth (Fisher, [1906] 1965, p. 323). Rain, wind, or clouds are all useful material objects, but do not qualify as wealth as they cannot be appropriated and are therefore not owned/controlled by a certain party. Given the absence of property rights, any consumption of the natural environment is outside the system of property rights, representing an externality.

Fisher translated his notion of economics into the field of accounting through capital accounts (i.e., balance sheets), employed in business practices. These capital accounts represent an entity's wealth and constitute both positive items (assets) and negative items (liabilities) (Fisher, [1906] 1965, p. 67). Fisher specifies that an owner's assets or resources are all his *property-rights*, embodying the chance to generate future services (i.e., income), while the property rights of other parties represent claims against the entity, constituting an entity's obligations. Both property rights (assets) and obligations (liabilities) are attached to an underlying wealth. In assigning attributes to wealth (*material objects owned*), Fisher in fact defines the boundaries of the reporting scope.

From an 'orders of worth' perspective, Fisher's conceptualization of wealth, property rights, and services serves as an attempt to translate the market world into economic accounting. Capitalism obviously relies heavily on markets and the "deployment of objects is required for market coordination" (Boltanski & Thévenot, 2006, p. 198). Fisher's abstraction transforms the market of goods into a market of contracts that centers on property rights. Property rights that secure future services of underlying wealth function as market objects desired for possession by self-centered entities or individuals. Furthermore, property rights attached to wealth not only serve to objectify the material existence of entities and determine their boundaries, but their possession also determines an entity's worth. Since property rights are objects desired by others, "their possession implies a hierarchical relation in the ordinary sense" (Boltanski & Thévenot,

2006, p. 201). This implies that “the wealthiest incorporate the others by possessing the desire of those who are less wealthy and who remain deprived of goods” (Boltanski & Thévenot, 2006, p. 201) or property rights respectively. In assuming that some parts of the material universe, particularly the ‘natural environment’, cannot be appropriated, and consequently do not qualify as wealth, Fisher’s theoretical foundation delineated what can be considered a market object. Without wealth, property rights cannot exist, placing the ‘unworthy’ natural environment outside the market world.

However, determining what is considered external and what is *de facto* internal to economic activities and thus depicted on capital accounts is often arbitrary and subject to discretionary leeway. Specifying the boundaries of internalities and externalities is a key focus of neo-institutional economics.

4.2 Neo-institutionalism: The property rights approach and externalities

Following Fisher’s notion of wealth and related property rights, neo-institutionalist scholars further elaborated on the concept of property rights and developed a notion of a firm organized around a system of (contractual) rights (Coase, 1937). According to Demsetz (1967, p. 347) “[p]roperty rights are an instrument of society and derive their significance from the fact that they help a man form those expectations which he can reasonably hold in his dealings with others.” A firm that controls private property rights can exert such rights with no restrictions (providing the rights do not conflict with other third-party rights), even though exercising one’s property rights might lead to distasteful or harmful effects on other firms, stakeholders, or wider society (Demsetz, 1967).⁴ This implies that a firm’s execution of rights could impose costs on another party, so property rights specify who must compensate whom to cover any actions taken. The existence of negative externalities can be attributed to a lack of an appropriate system of property rights (Coase, 1960; Alchian, 1965), and the internalization of externalities is usually linked to a change in property rights (Demsetz, 1967, p. 348).

The treatment of these negative externalities and actions to foster internalization of harmful effects depends on the initial allocation of property rights, guaranteed and enforced by institutions such as courts or governments. To illustrate the centrality of property rights allocation in the treatment of externalities, we use Coase’s (1960) example of straying cattle that cause negative externalities to a neighboring farmer. Both the farmer and the rancher own and control property rights linked to private goods (farmland and cattle). In owning a piece of

⁴ Coase (1960, p. 44) noted that the “cost of exercising a right is always the loss which is suffered elsewhere in consequence of the exercise of that right – the inability to cross land, [...] to enjoy a view, to have peace and quiet or to breathe clean air.”

land (wealth), the farmer owns a bundle of property rights attached to wealth and its service which allocates the right to cultivate, sell or otherwise utilize the tract of land. Similarly, in owning cattle, the rancher owns exclusive rights to raise, increase, sell or slaughter the herd or parts of it. It is further assumed that the rancher's cattle roam freely onto unfenced neighboring farmland and thereby destroy the farmer's crops. In identifying whether the rancher has to pay for all the damage caused or whether the damaging party's actions go unsanctioned, we must examine the initial property rights allocation. Below, two cases are presented, where the initial property rights allocation differs.

a) *Initial property rights are assigned to the rancher.* In this case, the rancher holds exclusive authority and is entitled to deal with the cattle at his discretion, even though the straying cattle damage the farmer's crop. In owning initial property rights, the rancher is not forced to internalize these negative externalities. To limit crop damage, the farmer harmed by straying cattle needs to bring his problem to the rancher's attention by offering him a payment. This payment would then form part of the rancher's calculations and might provide an incentive to internalize the harmful effects of his activities and modify his actions (e.g., by reducing the herd size or erecting a fence).

b) *Initial property rights are assigned to the farmer.* In this scenario, the farmer owns the right to cultivate land without any interference. If the rancher's straying cattle damages the crop, the rancher would be held liable to compensate the farmer. Resulting cash outflows related to crop damage would directly influence the rancher's calculations, consequently modifying his/her actions. The rancher might decide either to reduce the herd or to pay the farmer an incentive to reduce cultivation of the land.

The following Fig. 1 depicts the close relationship between the allocation of initial property rights and compensation schemes in neo-institutional economics.

[insert Fig. 1 here]

Both examples illustrate that when initial property rights have been clearly allocated to one party or the other, direct bargaining between the parties involved provides a means to foster internalization of externalities. Both cases deal with private goods, which are scarce and for which property rights have been clearly allocated, allowing to exclude third parties from having access. However, internalization processes become more complex for public and common goods, as when dealing with environmental damage. Public and common goods have been

discussed elsewhere (e.g., Milne, 1991), but a brief review of their main characteristics helps to illustrate the close relationship between property rights allocation and externalities.

Public goods are both non-excludable and non-rival in consumption. The criterion of non-excludability determines that no party can be excluded from accessing the good. Non-rivalry in consumption refers to the resources' ability to confer benefits on additional parties without reducing the benefits conferred on others. In economics, public goods are assumed to exist in superabundance, free of charge, and thus elude the market and its pricing mechanism. Common goods are also non-excludable, are typically finite, and (at least to some extent) non-renewable (e.g., land or rivers). As issues of scarcity are involved, they are rival in consumption. Demsetz (1964, p. 11) argues that "there is no such thing as a free scarce good", and, following his reasoning, a non-priced common good should not exist in the ideal world. However, common goods are communally owned resources, exacerbating the problem that damage done to these resources goes uncompensated as it is borne by others, especially by the wider society. With the absence of exclusive use rights, this externalization results in a person's (and firm's) individual tendency to overconsume communally owned resources, resulting in accelerated resource degradation as in the tragedy of the commons (see Hardin (1968)). Due to the initial allocation of property rights in the case of communally owned resources, negative externalities remain beyond the boundaries of the firm. Table 2 summarizes the compensation scheme for private, public, and common goods.

[insert Table 2 here]

While it is now widely accepted that the natural environment is a scarce resource, there are no property rights assigned to it. Hence, the natural environment is categorized as a common good, allowing parties to externalize environmental damage. It is crucial to note that while overconsumption of communally owned resources affects the present generation, it is even more detrimental to subsequent generations. However, claims of future generations are neglected in neo-institutional economics as "they have no living agent to place their claims on the market" (Demsetz, 1967, p. 355).

The analysis of the property rights concept of neo-institutional economics further contributes to our understanding of how market world attributes are conveyed in the fundamentals of economic accounting. In addition to assigning importance to property rights as market objects (see section 4.1), neo-institutional economists stress the importance of price mechanisms to facilitate direct bargaining between the parties. At first glance, a property rights

system that guides market actors' behaviour and determines who must pay whom compensation in case of infringement of rights appears in line with the ideal-type market order of worth based on notions of reciprocal profit through trade. In reality, however, markets are incomplete. Market failures materialize in the existence of externalities, attributable to a lack of an appropriate system of property rights (Coase, 1960; Miltenberger, 2018) and especially in the non-pricing of external effects. Demsetz (1964, p. 13) points to the "absence of markets in which 'appropriate' prices for measuring side effects can be revealed" and, as a result, "the market fails to provide us with incentives which will guide behavior to take account of the side effects". Elaborating on this shortcoming, Demsetz (1964, p. 12) stressed that externalities do not need to be outside the market and "can be taken into account by market transactions between the parties affected once the courts have established who has what right of action." With this in mind, we observe an illegitimate translation of the ideal-type market order worth in economics.

Another important aspect is the framing of the community of reference (common humanity). According to neo-institutional economics, acting to advance the 'good of everyone' must be understood as acting in the interest of the present generation. Under the existing economic system, it is not possible "to bring the full expected benefits and expected costs of future generations to bear on current users" (Demsetz, 1967, p. 355). Even though future generations might desire to enter into market transactions to pay the present generation a compensation to modify harmful actions (e.g., the present intensity of utilization of wealth), they have no living agent who could act as a broker to place their claims. Following the market logic which stresses self-centered market participants' desire for possession of market objects to maximize short-term profit, it seems irrational that any living agent would compensate others to reduce harm since they would gain nothing of value for their efforts. In the absence of a broker, the desires of the present generation remain center stage. Such a conceptualization excludes the green logic with its emphasis on sustainability *per se* from any consideration if property rights are absent. Table 3 summarizes attributes of the market order of worth and their manifestation in relevant aspects of neo-institutional economics.

[Insert Table 3]

Interestingly, Coase (1960) stresses that markets or firms are not always the best institutions to deal with externalities arising from collective issues. He argues that "there is no reason why, on occasion, such governmental administrative regulation should not lead to an improvement in economic efficiency. This would seem particularly likely when, as is normally

the case with the smoke nuisance, a large number of people are involved and in which therefore the costs of handling the problem through the market or the firm may be high” (Coase, 1960, p. 18). Instead of considering such government interventions, neo-liberal ideology successfully frames free markets as the only appropriate way to tackle environmental challenges (Andrew & Cortese, 2013).

The inability of economics to provide adequate solutions for internalizing externalities if these costs are linked to public or common goods is a direct consequence of Fisher’s conception of wealth, which requires ownership and appropriation for the allocation of property rights. Only if clear property rights are in place, can externalities be internalized through market transactions, otherwise, the absence of property rights bolsters market failures and negative externalities (Mildenberger, 2018). These limitations and barriers of neo-liberal economics to internalize certain externalities have been incorporated into traditional financial accounting. Even though economics has evolved and developed more sophisticated approaches to deal with environmental matters (e.g., Nordhaus, 2018), the conceptual foundation of contemporary accounting, despite its recent changes, is still stuck in the (ill-suited) economic thinking of the 1970s. As a result of this ideational cage, attempts to engage with environmental matters in accounting primarily focus on enhanced disclosure, as any depiction of externalities in the core reporting framework (i.e., the balance sheet) contradicts the conceptual foundations of financial reporting.

4.3 How property rights economics creates conceptual inaccessibility for a green order of worth in financial reporting

The explicit anchoring of the property rights approach manifests in the IASB’s definition of an asset as a “*right* that has the potential to produce economic benefits” that is controlled by the entity as a result of past events (IASB, 2018, par. 4.2, emphasis added). This definition bears resemblance to Fisher’s conception of wealth, property rights, and services, and mirrors neo-institutional economists’ emphasis on the need to control property rights attached to the underlying item. The IASB unambiguously states that an asset is a *right* and shall not be confused with the underlying (physical) item (*wealth*). The (present) rights secure the chance to obtain future economic benefits (*services*). Control links the economic resource to the entity and determines which items qualify for recognition (IASB, 2018, par. 4.19, 4.20). Complementary, a liability is defined as a “*present obligation* of the entity to transfer an economic resource as a result of past events” (IASB 2018, par. 4.2, emphasis added). Despite anchoring the rights and obligations approach in the definitions of assets and liabilities, the

entity's reporting scope was largely left unchanged. Barker and Mayer (2022, p. 13, fn. 12) emphasize that "the corporate structure of rights and obligations is a social construction, which has no parallel in nature", imposing conceptual obstacles for the internalization of negative environmental externalities in financial reporting. Here, two points are worth noting.

First, environmental liabilities remain beyond an entity's reporting scope unless it has a present obligation arising from a contract or legislation (legal obligation) or a constructive obligation arising from its voluntary customary practices or published policies that would result in recognizing environmental liabilities (IASB 2018, par. 4.31). Following this line of reasoning, the IASB's liability standard, IAS 37, determines that an entity must only recognize a liability related to environmental matters if another party owns a *present* claim against the entity resulting from a past event. *Future* claims against the entity that would give rise to an obligation are excluded from its financial accounts as rights and obligations are not established at the (present) reporting date. Inscribed in traditional economic thought, this assumption implies there is no liability for future expenses related to environmental issues as long as there is no counterparty holding present rights against the entity. This peculiarly narrow approach to account for liabilities means that expenses related to environmental matters (e.g., use/abuse of resources) are outside an entity's reporting scope (Deegan, 2013, p. 451).

Second, an entity must control an appropriated share of a resource to which a liability can be attached ('owning things' (Fisher, [1906] 1965)) to fall within an entity's reporting scope. If the entity has access to rights linked to an underlying resource that it does not control (i.e., non-exclusive-use rights), such rights must be kept outside the reporting scope as they do not comply with the definition of an asset under the contemporary framework. As such, contemporary asset definitions implicitly refer to neo-institutional economics, as only rights related to private goods can be fully controlled by the firm and thus qualify for recognition. This implies that environmental resources (e.g., air or water) do not qualify for recognition as they are not exclusively controlled by an entity.

Following the logics of economics, the IASB clarifies that only economic (i.e., scarce) resources are considered as assets by the reporting entity, deriving value from their potential to yield future benefits. If resources (and related rights) are available to all parties without significant cost, there is no scarcity, and the goods are consequently considered worth nothing from an accounting perspective. Hence, they do not qualify as assets and remain beyond the reporting scope (IASB, 2018, par. 4.9). While it is widely acknowledged that environmental resources (such as clean air) no longer exist in superabundance, traditional accounting fails to treat such resources as scarce, instead treating environmental resources as a public good, with

their consumption price set at zero. Accordingly, environmental resources and related rights and obligations stay beyond any reporting under the IASB's accounting framework.

All in all, contemporary accounting frameworks (e.g., as issued by the IASB) do not consider environmental externalities caused by firms as an event worth reporting, despite the harmful effects impinging on nature as well as current and future generations (Deegan, 2013, p. 453). An entity's reporting scope is limited to currently existing liabilities, and assets considered as valuable, for which property rights are assigned and controlled by the entity. In neglecting the scarcity of environmental resources and ignoring non-exclusive-use rights for reporting purposes, the conceptual basis of traditional accounting determines that rights and obligations related to environmental matters are typically beyond the scope of financial reporting.

Although accounting epitomises a practice in which different world views collide, our analysis demonstrates a conceptual inaccessibility of a green moral scheme in traditional accounting. Trapped in the ideational cage of neo-institutional economics, our contemporary reporting framework manifests market world attributes by focusing on (scarce) private goods and maximizing short-term profit. Instead of providing room for environmentalism, long-term analysis, and claims of future generations, the conceptual framework deliberately permits firms to externalize environmental harm, avoiding any negative impact on their short-term economic performance or position. Given these conceptual constraints, accounting regulators focused on creating a distinct silo – sustainability reporting. Disclosure reports juxtapose multiple rationalities and consider increasing awareness of a green order of worth in making transparent issues of concern that are not captured in traditional accounting reports. By creating two distinct silos, one that adapts to the market world (traditional accounting reports) and one that opens up to the green world (sustainability reporting), accounting regulators strive to create temporary stability through a legitimate agreement. However, enabling the co-existence of both orders of worth does not resolve tension between multiple orders of worth (Reinecke et al., 2017). As Boltanski & Thévenot (2006, p. 278) point out: “The beings gathered together in a compromise situation continue to belong to their world of origin”. Hence, a strategy that focuses on extended disclosure remains a fragile compromise as it fails to aim “at a common good that transcends the two different forms of worth in presence by including both of them” (Boltanski & Thévenot, 2006, p. 278).

Relative to this line of reasoning, efforts to put environmental liabilities on the balance sheet might not necessarily start by tinkering with our contemporary accounting framework.

Instead, more fundamental questions might come to the fore: What constitutes wealth? Who owns wealth? And how can we allocate property rights?

5. Reaching transcendence: Environmental wealth and the society at large

In this section, we elaborate on how accounting needs to change to integrate environmental damage into the core reporting framework. While Dillard and Vinnari (2019) suggest a framework to bolster a more pluralistic and democratically governed accounting system through responsibility networks, we seek to develop a conceptual foundation of financial reporting that serves as a vessel in which the legitimate claims of heterodox actors can manifest. In this endeavor, we focus on the orders of worth framework, especially the green logic, which acts as our guiding principle. Instead of following ill-suited and fragile hybrid strategies, we aim to transcend both market world and green world in financial accounting by laying the foundation for a reallocation of property rights. Drawing on Fisher's attributes of wealth – *materiality* and *owning objects* –, the following outline attempts to reimagine the conceptual foundations of accounting in order to bring elements of the green world into financial accounting. Building on our analysis on conceptual constraints for internalizing externalities in conventional accounting, we first develop an approach to establish a further type of wealth, i.e., environmental wealth. To take the particularities of environmental wealth into account, we begin by analyzing the material attributes of the ecosystem. We subsequently examine who might be considered the owner of environmental wealth to enable a re-allocation of property rights. We suggest that the society at large serves as a space in which diverse claims of the wider society might be presented and settled.

5.1 Material attributes of the ecosystem: Constructing environmental wealth

Wealth that relates to environmental matters should, as far as possible, reflect the complexity of the ecosphere. In contrast to other types of wealth distinguished by Fisher (such as land), the ecosystem is unique in the way it functions. The ecosystem indisputably has a physical substance and is thus a material object. But what are its material specificities? Arguably, any attempt to describe the ecosystem's characteristics in terms of economics falls short of grasping the essence of nature as a holistic system. Gray (1992, p. 402) argues that "economic reasoning only achieves its considerable power by grossly simplifying and reducing the world". To foster the internalization of environmental matters into conventional accounting, complexity must be condensed to a set of core principles.

The ecosystem is a priori useful as it constitutes the livelihood of both the human and non-human world. Its 'usefulness' differs from that of other goods in the business world as all parts of the ecosystem are complementary in both use and function. In this sense, its separate parts (such as fauna, flora, and the atmosphere) are distinct, but inextricably linked to each other. Human interventions often negatively affect the way the ecosystem functions, and any form of overconsumption causes lasting damage to the environment and erodes future generations' ability to use and access the gifts of nature. As Gray (1992, p. 417) outlines: "Every use of timber and timber products, clean air or water that is not replaced, every action involving energy based on fossil fuels, every product that produces waste which has to be physically disposed of, every personal or industrial action which removes habitat" leaves mankind potentially worse off. Furthermore, we must take the time lag between the present consumption of the natural environment and the resulting negative impacts on future generations into account (see for example Ricke & Caldeira, 2014 on the multigenerational effects of carbon emissions). If we consider such specific aspects of the ecosystem, we can start deliberating on the distinguishing features of an environmental wealth.

First and foremost, the ecosystem must be treated as a scarce resource. This means to acknowledge that rivalry in consumption exists. Second, time delays between consumption of the good and future costs arising from its consumption must be taken into consideration. Third, the ecosystem cannot be replaced by other goods as it forms the basis for mankind's existence. Fourth, human interventions not only result in the consumption of parts of environmental wealth, but may also (to a certain degree) lead to the replacement of parts of the ecosystem. An example for such a preservatory action is the decision of a paper manufacturer to plant trees in the rainforest to sustain or even increase environmental wealth, although with a significant time delay.

Treating the natural environment as a scarce resource acknowledges that the general good of humanity is advanced through sustainable conservation activities. The scope of environmental wealth is the global ecosystem in all its complexity. Environmental harm constitutes a state of deficiency. Actions are judged in the context of ecological balance and their long-term effects. The list of attributes is by no means exclusive. However, it helps us develop a notion of environmental wealth that can serve as an abstraction to translate features of a green order of worth into the language of economic accounting. For further analysis, we pursue these aspects by addressing the issue of who might be considered the owner of environmental wealth. Following a green, anthropocentric view, we contend that the most logical 'owner' is society at large, including mankind on a global scale.

5.2 Negotiating transcendence: The role of the society at large in the reallocation of property rights

In our current capitalist system, firms have free access to certain rights, such as the right to conduct business. In having such rights, a party can exert these rights without any restrictions, even though exercising one's property rights might be harmful to other firms, stakeholders, and wider society. Firms commonly "invoke the 'social license to operate' [...] to indicate that their activities are considered as legitimate in the eyes of society" (Demuijnck & Fasterling, 2016, p. 675). To date, unrestricted consumption of environmental wealth is considered legitimate as long as exercising these rights does not conflict with third-party rights. However, in assigning ownership of environmental wealth and allocating property rights to the global society at large, this conflict inevitably arises.

Let us consider the following situation: A firm inflicts harm on the global society at large by consuming environmental wealth through its business activities. We might consider restricting the firm's activities (e.g., by capping an entity's production) to avoid excessive harm to society at large. Limiting the firm's access to use environmental wealth would conflict with its right to conduct business at its discretion. Hence, constraining its rights would inflict harm on the firm. In dealing with such a problem of a reciprocal nature, we must clarify whether the firm can be allowed to harm the society at large or if society at large should be allowed to harm the firm.

As with the example of conflicting rights between a rancher and a farmer (see section 4.2), the following scenarios may arise. If the firm owns the initial property rights, it can enforce its right to do business, even if this action creates a negative externality. To limit the consumption of environmental wealth, society at large could offer the firm a payment, compensating the firm for reducing its present intensive use of environmental wealth. We now assume a second scenario in which society at large owns the initial property rights and thus has absolute authority over the right to use (or not to use) the environmental wealth. If a firm overconsumes environmental wealth, it would be held liable to pay compensation to society at large. The firm would have two options to internalize the externality. It can either reduce its consumption or pay society at large compensation. From the perspective of economics, both assignments of initial property rights would result in an efficient market solution. In dealing with such a problem of conflicting rights, Coase (1960) points to the importance of avoiding more serious harm. Acknowledging that the ecosystem constitutes the livelihood for mankind, only the second scenario in which the society at large owns the initial property rights seems adequate. Furthermore, only the second scenario (initial property rights are assigned to society at large)

provides the conceptual rationale for recognizing environmental obligations. To this end, society at large needs to be given specific characteristics and regulatory actions. The green order of worth framework provides some guidance to elaborate the key elements for society at large.⁵

The first aspect relates to the assignment of initial property rights. By recognizing society at large as the owner of environmental wealth, property rights schemes can be negotiated for the preservation of natural resources. In assigning initial property rights to the society at large, the green world becomes an inextricable part of the market world. In contrast to market-liberal proposals that merely suggest establishing property rights to solve issues surrounding the distribution of wealth (de Soto, 2004), assigning initial property rights to the society at large turns the present property rights hierarchy upside down. The rights of entities to conduct business at their own discretion become subordinated to the rights of global humanity. Business activities would not only be evaluated in the context of market prices and cost, but any depletion of environmental wealth (currently external to business transactions in traditional accounting) becomes part of business transactions as society at large would serve as the counterparty that holds present rights against the contracting parties. For example, society at large can parcel out components of environmental wealth. This component might reflect the ecosystem's 'carrying capacity' (Gray, 1992, p. 416) to maintain environmental wealth on an annual basis. Another possibility would be to allocate 'free' basic consumption for firms, reflecting the legitimate claim of entities to conduct business. On the one hand, if negative externalities caused by a firm's business activities do not exceed a certain basic consumption limit, the firm would be allowed to act free of charge. On the other hand, a firm's overconsumption of componentized environmental wealth would give rise to a claim against the firm by society at large. By the same token, any effort to preserve or create environmental wealth for future generations would result in an increase in the firm's share of environmental wealth. Thus, the assignment of initial property rights to the society at large draws the market and the green world together, as the state of deficiency in the green logic (environmental harm) would align with the state of deficiency of the market logic (loss of economic wealth).

The second aspect considers the endorsement of the society at large. Given the absence of courts to establish rights of action internationally, the institutionalization of a system of rights through regulatory bodies (e.g., states or agencies) is needed to guarantee the allocation of initial property rights to the society at large. Following the logic of neo-institutional economics, society at large would represent a supranational 'super-firm' (of a very specific kind), able to

⁵ We do not cover issues surrounding enforceability and democratic processes as they have been discussed elsewhere (Dillard & Vinnari, 2019).

influence the use of production factors by administrative decision (Coase, 1960, p. 17). In terms of neo-institutional economics, this might be the most economically efficient solution given the large number of parties involved worldwide (Coase, 1960 p. 18). As rights linked to the natural environment cannot be formally assigned to individuals, the society at large would serve as a supranational body responsible for managing the collective rights of mankind linked to environmental wealth. Regulatory bodies might also be involved in property rights allocation, serving as mediators on behalf of the society at large. In establishing a relationship between entities and society at large, the firm's boundaries are extended to take environmental effects into account.

The third aspect considers the distribution and reallocation of property rights. A notion of environmental wealth owned by the global society at large implies that property rights are allocated to a certain party, providing the conceptual foundation for recognition of negative externalities through market transactions.⁶ However, tension arises between the needs of the present generation and those of the future generation as environmental wealth and related rights and services are desired by both. The economic rationality of contemporary capitalism motivates today's generations to pursue unlimited consumption of natural resources (Gorz, 1989, p. 114), without considering the ability of future generations to consume a similar amount of wealth. In Fisher's terms, the current generation's intensity of desire (i.e., utility) to use environmental wealth neglects or underestimates future generations' (relatively) high intensity of desire to preserve this wealth in the present. Future generations have no present claim (or rights) to use environmental wealth in the future and, as a result, the claims of the present generation have an uneconomically large weight (Demsetz, 1967). Thus, future generations' needs are largely external to present market transactions. Against this backdrop, the global society at large could be established to balance these different interests and to consider the claims of future generations. Such an institution could be held responsible for ensuring that "the current generation takes from the planet no more than the maximum which leaves the planet and future generations no worse off" (Gray, 1992, p. 416). The global society at large would own the aggregate of the collective rights related to environmental wealth and its stream of services stretching into the future. In owning the aggregate of rights, society at large would control exclusive rights to use environmental wealth, shifting the classification of the ecosphere from a worthless good to a valuable 'collective' good, owned by a representative institution – global society. Deegan (2013, p. 456) argued that market-based solutions "appeared to be a

⁶ This notion of environmental wealth does not determine the further separation of environmental wealth and related property rights ex-ante into components. Neither does it prescribe the order of claims between the rights of society at large and existing individual property rights.

strange situation of using the very instrument that created the problem (the market) to then try to solve the problem.” However, our proposal establishes a very special kind of ‘market’. As society at large would own the entire bundle of initial property rights to consume global environmental wealth, the exchange of bundles of rights could only take place between the supranational body and firms with regulatory bodies acting as mediators. In this way, our proposal differs significantly from market-based solutions (such as the EU emissions trading system). Rather than establishing a market for private and transferable pollution rights, society at large can decree the acceptable level of consumption based on democratic processes. Our proposal does not consider a market between entities as this would only attach misleading market prices to the consumption of a collective good. Instead, all consumption of environmental wealth that exceeds a certain threshold must be recognized on the firm’s balance sheet. Fig. 2 depicts how we can envisage such a scheme.

[insert Fig. 2 here]

The fourth aspect centers on intergenerational justice. Society at large would be in charge of establishing a degree of intergenerational justice to balance the present generation’s right to use the environmental wealth in accordance with the claims of future generations, thereby acting as a broker between both time formations. Thus, any consumption that exceeds the ecosystem’s recoverable threshold would be reflected in a depletion of the environmental wealth for both future and current generations. In the case of overconsumption, *both* generations would be worse off. On an abstract level, this approach extends the notion of utilitarianism in economics by including the ethical aspect of solidarity (Gray, 1992, p. 409) in such a way that the present generation’s needs are balanced with those of future generations. In so doing, we propose the concept of a society at large as the owner of all environmental wealth as a means to instill this market-alien (deontological) value into the market- and price-centric logic of utilitarianism (Mill, [1857] 2001). Hence, it mediates between the legitimate claim of entities to conduct business activities without restrictions (thereby consuming environmental wealth) and the public interest of preserving the environmental wealth for future generations. To legitimate the abstraction of a global society at large, acceptance of its claims alongside democratic processes should be established.

Following our orders of worth framework, the society at large would link the object of the green world (nature) to the subject (global humanity). In acknowledging *all* interested constituents within society at large, the clash between the market order of worth and the

subordinated green order of worth can be negotiated in a way that goes beyond a compromise in which both worlds coexist. Negotiating transcendence can create a perpetual impetus for the translation of the green logic into the market realm. The market logic would merge with the aspirational goal to create sustainability. Thus, the concept of society at large as the owner of environmental wealth provides an accounting tool to more comprehensively include the green logic into financial reporting.

6. Concluding remarks

When accounting scholars discuss possible ways to account for environmental matters, they argue that our contemporary accounting regime is full of conceptual shortcomings that block any substantial and meaningful shift towards a more holistic form of accounting (CRAFiC, 2022; Milne, 1991; Milne & Gray, 2013; Owen et al., 1997). Deegan (2013, p. 450) laments that “[f]inancial accounting simply was not designed to incorporate considerations of the social and environmental impacts of organisations.” One goal of our paper is to revisit the foundations of economics to obtain a more fine-grained understanding of existing shortcomings of economic theory that entered the accounting realm. By first deconstructing and then reconstructing the concept and role of wealth and property rights in economic accounting (Fisher, [1906] 1965; Coase, 1960; Alchian, 1965; Demsetz, 1964, 1967), this paper proposes a possible solution to integrate environmental matters in financial reporting. Based on an analysis of economic theory with its specific approximation of the market world and its translation into traditional financial reporting, we develop the concept of environmental wealth owned by the society at large.

Our analysis demonstrates that some of the main conceptual obstacles to account for an entity’s environmental matters are caused by the adoption of Fisher’s work and the ideas of neo-institutional scholars in the conceptual foundation of accounting. Even though economics has moved on, with increasingly innovative concepts (e.g., Nordhaus, 2018), the conceptual foundation of financial accounting remains stuck in the thinking of the 1970s, in a conceptual cage that bolsters the fixation on more disclosures in contemporary standard-setting projects. Thus, our contemporary understanding of accounting as an entity-based and individualistic technique, seems to be too narrow in scope to help us preserve our common future.

By introducing the concept of an environmental wealth owned by society at large, we attempt to incorporate intergenerational solidarity in our market-based capitalistic world. This approach lays the conceptual foundation to put entities in control of their environmental rights and obligations, extending firms’ boundaries beyond the confines of traditional accounting. In

assigning initial property rights to the society at large, our proposal translates market-alien values (Thielemann, 2000) into economic accounting. This reflects the increasing awareness of environmental issues in our society by switching environmental goods from limitless and thus ‘worthless’ public goods into worthy ‘collective’ goods owned by common humanity. In this way, society at large can serve as both a broker between the claims of present and future generations and between the market and the green order of worth. At first glance, this concept might bear some resemblance to the EU’s carbon emission scheme, but it differs in certain aspects. In particular, the design of the carbon emission focuses on the aggregation of marketable externalities and gives companies a ‘buy-out’ from their individual responsibilities (c.f. Cook, 2009). In contrast, our conceptual approach reveals a company’s individual obligations and allows for a genuine recognition of environmental matters.

As Dillard and Vinnari (2019, p. 28) suggest: “We need to move beyond the untenable conceptualization of market accountability and develop alternative ways of conceptualizing accountability mechanisms and their application to social and environmental issues so as to hold power holders accountable for all of their actions, not just those that affect powerful constituencies or that can be represented through financial or consumer market transactions.” The dynamic exchange between all groups can lead to the incremental creation of a legitimate representation of worth as “over time, consensus around a higher common principle, agreement on forms of coordination and model tests can become established and institutionalized” (Reinecke et al., 2017, p. 55). The society at large could serve as a vessel for negotiating transcendence of multiplex orders of worth within financial reporting. As Reinecke et al. (2017, p. 55) have stressed: “Negotiating parties are likely to operate within a grey area between hybridity and transcendence, making transcendence a regulative ideal rather than a reality of dialogue.” Nevertheless, over time, negotiations might bring together the logics of the market and green world, helping to break down the silos within financial accounting (Unerman et al., 2018) and providing comprehensive integration of the green world.

It should be noted that our proposal does not break with the primary assumptions of economics, although we are fully aware of its shortcomings, especially when translated into the accounting context (Milne, 1991; Milne & Gray, 2013; Owen et al., 1997). However, we agree that accounting “needs to emerge out of some higher level objective” (Dillard & Vinnari, 2019, p. 35) to allow for significant changes. Rather than add another voice to the chorus of researchers that criticize the usefulness of economics in accounting, we hope our suggestions will facilitate and encourage debate on box-breaking solutions for the environmental crisis. Future research might elaborate on further conceptual obstacles for recognizing an entity’s

negative externalities. An investigation of which parts of the natural environment could be scoped in or scoped out within a reimagined form of financial reporting might be a plausible way forward. To inscribe green logics within more pluralistic financial accounting, it might be worth considering a revised conceptual framework that addresses the information needs of a diverse constituency.

Tables

Table 1

Schematic summary of selected orders of worth and their attributes.

(Adapted from Annisette & Richardson, 2011; Boltanski & Thévenot, 2006; Reinecke et al., 2017; Thévenot et al., 2000).

Common worlds	Market	Green
Common higher principle	Competition	Sustainability
State of worthiness	Desirable, valuable	Sustainable
Human dignity	Self-interest desire	Preservation
Subjects	Market participants (e.g., competitor, consumer, seller)	Environmentalists/inhabitants
Objects	Freely circulating market good or service	Nature
Relation of worth	Possession of goods desired by others	Pristine nature, healthy environment
Judgement/Evaluation	Price/cost, benefits	Ecological balance
Evidence	Monetary value	Long-term impact on ecological ecosystem
Time formation	Short-term	Future generations, intergenerational
Space formation	Global markets	Planet ecosystem
State of deficiency	Loss, poverty	Environmental harm

Table 2

(Non)internalization of externalities in neo-institutional economics.

Type of good	Compensation scheme	
Private good	Initial property rights allocated to <i>rancher</i> To avoid crop damage, the farmer must compensate rancher	Initial property rights allocated to <i>farmer</i> Rancher is held liable for crop damage and must compensate farmer
Public good	Initial property rights allocated to several parties (nonexclusive-use rights) No harm caused and no compensation needed in case of superabundance	
Common good	Initial property rights allocated to several parties (nonexclusive-use rights) Harm caused to all involved parties but no compensation scheme in place	

Table 3

Market order of worth and its manifestation in relevant aspects of Fisher's work and neo-institutional economics.

	Market world	Economics
Common higher principle	Competition	Maximization of the value of wealth
State of worthiness	Desirable, valuable	Desirable, valuable
Human dignity	Self-interest desire	Self-interest desire
Subjects	Market participants (e.g., competitor, consumer, seller)	Market participants (e.g., competitor, consumer, seller)
Objects	Freely circulating market good or service	Property rights attached to underlying wealth
Relation of worth	Possession of goods desired by others	Possession of property rights attached to underlying wealth
Judgement/Evaluation	Price/cost, benefits	Price/cost, benefits, physical measurement
Evidence	Monetary value	Value, quantity
Time formation	Short-term	Present generation
Space formation	Global markets	Markets of contracts (property rights)
State of deficiency	Loss, poverty	Lack of property rights/misallocation of property rights

Figures

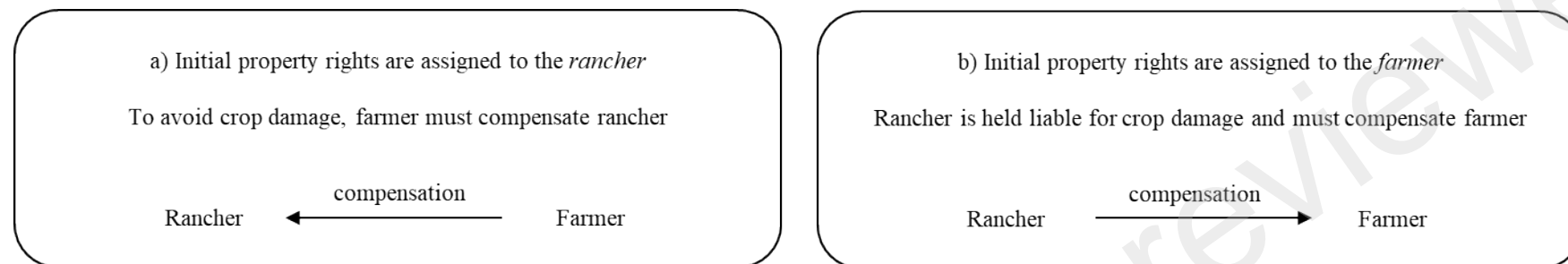


Fig. 1. Allocation of initial property rights and compensation schemes in neo-institutional economics.

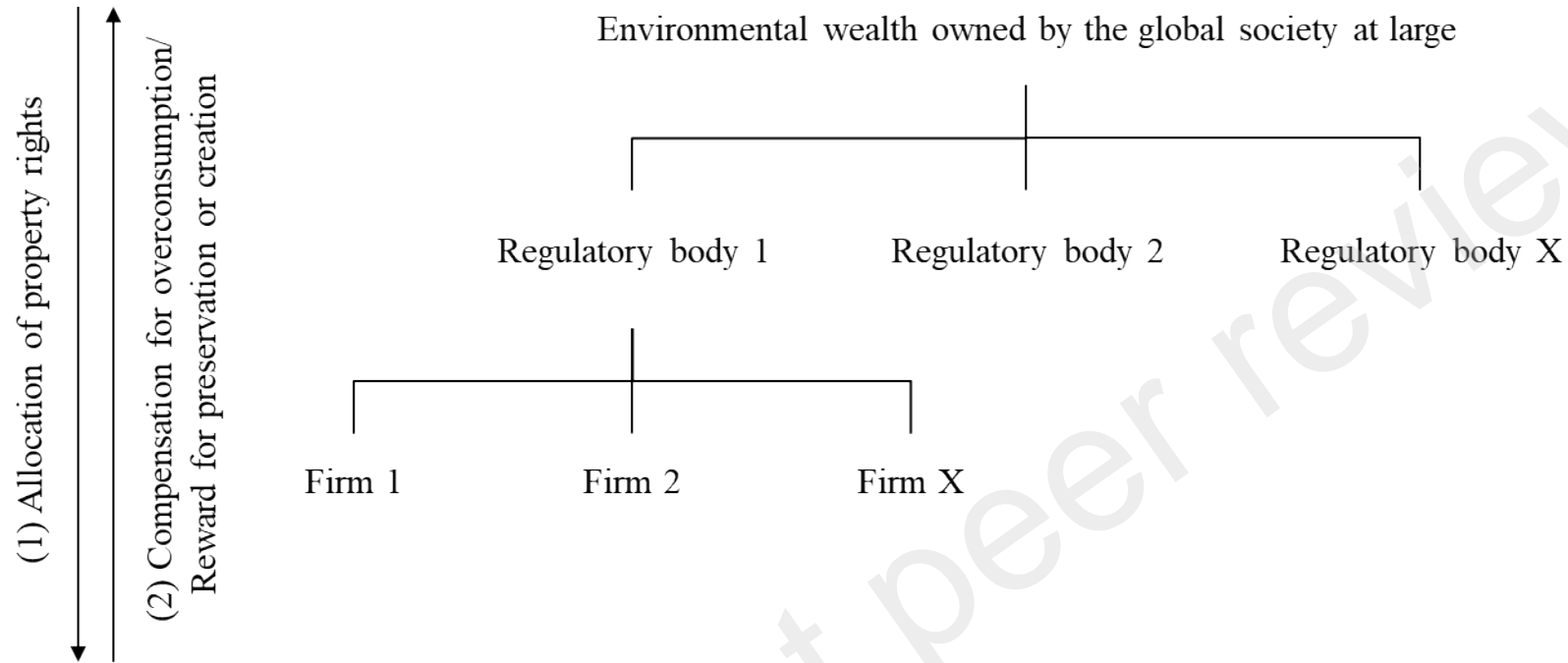


Fig. 2. The allocation and aggregation of environmental wealth.

(1) The society at large as the owner of global environmental wealth can appropriate parts of the environmental wealth and related property rights through a larger number of regulatory bodies. Regulatory bodies act as agents on behalf of the society at large to parcel out property rights to firms. (2) A firm's actions might consume, preserve, or create environmental wealth. This increase or decrease in environmental wealth is aggregated at the level of firms, regulatory bodies, and the society at large.

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Reimagining the Conceptual Foundation of Accounting: Environmental Wealth and the Society at Large

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