

Accounting in the Anthropocene: Transformations for Sustainability in Research and Organizations

DOCTORAL DISSERTATION - Reduced version Nuria Descalzo Ruiz, 2023

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This document contains the original front page, tables of contents, introduction, chapter IV and full bibliography present in the full version of the dissertation titled:

Accounting in the Anthropocene: Trasnformations for Sustainability in Research and Organizations.

The Introduction and Conclusions (chapter IV in the full version) contain the research questions, methods, theoretical approaches and main insights, results and conclusions obtained and disclosed in the doctoral thesis.

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Introduction - abstract

The Anthropocene cuts across our realities and the motivation of this doctoral dissertation. While the connotations that derive from this term are the subject of discussion, there is no doubt about the state of decline of the biosphere and the negative consequences that this has on human well-being. The concept of the Anthropocene comes to point out the dimension of the human impact on planetary dynamics, whose magnitude suggests that humanity is a geological agent that has transformed the morphology of the earth on a scale that transcends the classical understanding of environmental pollution (Rockstrom et al., 2023; Lewis and Maslin, 2015). Human agency is moving the planet away from the state of thermodynamic equilibrium that enabled the flourishing of complex human civilizations over the last 12,000 years (Diamond, 2010; Steffen et al., 2018). In a nutshell, the Anthropocene can endanger the ability of the biosphere to offer a safe space for humankind, as alerted by the latest scientific assessments (Ripple et al, 2017; IPCC 2022). The severity of this problem is further aggravated by increasing dynamics of inequality (Chancel et al., 2022) and emergent discussions about equity (Österblom, Wabnitz et al, 2020; Rockstrom et al., 2023).

The interest of this topic for accounting research might not be obvious at first sight: it requires a particular ontological perspective and understanding of the role of accounting in organizations and society. Social and environmental/sustainability accounting has studied the connections between accounting, organizations, society and the environment for over five decades (Laine et al., 2020; Bebbington, 2021; Larrinaga and Bebbington, 2021). This research is fundamentally built upon the realization of the performative effect that accounting systems have on the

functioning of organizations and ultimately society (Burchell et al., 1980). In line with these efforts, sustainability scientists have pointed out organizations' role in the declining state of the biosphere, characterizing them as keystone actors with disproportionate effects on ecosystem stability (Österblom et al., 2015; Folke et al., 2019).

Social and environmental/sustainability accounting has been characterized as a discipline rich in dissensus, which can play a positive role in creativity, as well as the importation of ideas from many disciplines (Parker, 2014). In the face of increased challenges in social and ecological spheres, accounting researchers have argued for interdisciplinarity and post-normal science (Bebbington and Larrinaga, 2014), new ontological approaches (Russel et al., 2017) and the decolonialization of accounting research and practice (Sauerbronn et al., 2021).

This thesis studies some of the implications that the Anthropocene has on accounting theory and practices, the role of organizations, and the mediating and potentially transformative role of accounting in that context. Each chapter focuses on different implications, theoretical perspectives and topics of interest to the theory and practice of accounting in the Anthropocene.

Chapter one explores the dynamics by which collective frames and identities are built in intellectual movements that seek to produce scientific change. This investigation focuses on Social and Environmental Accounting Research as a case study and, in particular, scrutinises the deliberative project undertaken in 2020 by a group of scholars aiming at articulating a socioecological perspective on accounting. The method of analysis consists of a contextual and reflexive analysis, based on participant observation and a focused analysis of the literature. The analysis is articulated around the propositions of the General Theory of Scientific/Intellectual Movements (Frickel and Gross, 2005). This study finds that the institutionalization of social and environmental accounting research as a research field resulted from a successful scientific/intellectual movement. However, this process of institutionalization implies that the movement loses a part of its original radical and contentious nature, creating new cyclical processes of grievance which may mobilise new intellectual responses. Chapter one argues that the socio-ecological accounting group emerged as a consequence of the grievance process derived from the abandonment of some of the radical, but still relevant ideas of the previous movement, incorporating new forms of knowledge that reflect the current time. It proposes that, in addition to success or failure, the theorisation of scientific/intellectual movements should consider the possibility of cyclical processes of grievance, originating from the incomplete institutionalisation of previous movements and mobilising new intellectual responses.

Chapter two studies the notion of stewardship as a boundary object and its implications for accounting in the Anthropocene. It does so following two strategies. On the one hand, it the literature conducts а review of on stewardship in accounting environmental/sustainability science literature; On the other hand, it analyses stewardship as a boundary object in a case study focusing on the analysis of a transdisciplinary engagement aiming at biosphere stewardship. While stewardship has a longstanding tradition in accounting, it has re-emerged during the past decade in attempts to build sustainability, resonating with efforts in other disciplines like sustainability science. The case studies the engagement of ten of the world's largest corporate actors from the seafood industry with scientists from different disciplines. The engagement consists of an in-person, high-level collaboration aimed at accelerating positive, science-based transformations towards sustainability across the industry focusing on pressing socio-ecological challenges. The mobilization of different disciplinary perspectives on stewardship and the roles it plays in the case for the construction of common goals shows that different actors engaging in cooperation elaborate divergent articulations of stewardship. The diversity of perspectives on stewardship results in tensions that are identified in the study, leading to the formulation of three avenues of exploration in accounting research concerning the normative ideal of stewardship, which proved to be strongly dependent on accounting, monitoring and reporting systems in the case study.

Chapter three adopts a decolonial theoretical lens for the analysis of corporate biosphere stewardship. As mentioned concerning the second chapter, stewardship is being mobilized by different academic disciplines to transform business motives and purposes, as well as the context in which corporations operate for biosphere resilience. Decolonial thinkers argue that, despite the end of formal administrative and military forms of colonisation, the hegemonic and dualistic rationality derived from the modern paradigm that enabled and supported those occupations remains embedded in our societies. They denominate this form of epistemic hegemony coloniality and argue that it still dominates how we articulate relationships between races, cultures, nations, and importantly between humans and nature. This chapter employs the decolonial Sociology of Absences and Emergences proposed by Santos (2018) to analyse the case study presented in chapter two, exploring how accounting and reporting practices relate to colonial rationalities. The case shows how the mobilization of the normative ideal of stewardship entails the abandonment of the linear vision of time, to substitute with an axiology of care. This constitutes a strong connection between stewardship thinking and decoloniality. The analysis shows that the new perspectives articulated by science around stewardship can challenge colonial structures and rationalities in the context of collaboration with businesses.

Nevertheless, the case points out that these decolonial narratives need to be formalized into commitments that are accounted for and monitored if they are to permeate corporate discourses and action.

Finally, chapter four synthesises the conclusions reached in the three studies presented in this dissertation and discusses the implications of these findings for the research and practice of accounting in the context of the Anthropocene.

Conclusions

The general motivation for this thesis and the research studies that have been presented is the acknowledgement of the declining state of the biosphere and the need to cultivate its resilience. The context in which these challenges are taking place is temporally and physically defined by the notion of the Anthropocene. The hypothesis underlying the three studies that integrate the thesis is that accounting and organizations have an effect on the Anthropocene, both in terms of positive and negative impacts on the biosphere, human well-being and justice. This concluding chapter provides a synthesis of the main insights derived from the research conducted in this dissertation and discusses its main implications for the domain of accounting research.

Chapter one studies the production of knowledge in the context of the Anthropocene. While the field of social and environmental accounting has focused on organizational impacts on society and the environment for five decades, there is a sense in academic discussions that the centre of attention of current research and praxis is not responding to the new challenges raised by the Anthropocene. This "grievance" motivated the creation of a collaborative initiative by a group of 18 scholars from the field aiming at developing the foundations for socio-ecologically-centred accounting research program. Through the study of the efforts of this particular group, chapter one explored the processes by which scientific change can be deliberately pursued. The Scientific/Intellectual Movements General Theory provided the framework for analysis, while the empirical material was gathered through the analysis of publications and participant observation, materialized in more than 60 hours of collective work. The analysis resulted in two main findings:

1) Social and Environmental Accounting Research (SEAR) is the result of a successful Scientific Intellectual Movement (SIM)

Historical origins are underlined as a relevant source of information for the analysis of SIMs. As SEAR constituted the common departure for the new proposals and discussions developed by the S-E group, analysing the emergence of SEAR as a field was a key input for the case study. This analysis showed that the process of emergence and institutionalization of SEAR followed the patterns and mobilized many of the resources described by SIMs theory. It was originally the outcome of a radical dissent with the nature of accounting research at the time; it had a political nature that problematized power relations in society and the consideration of the natural environment; and it encountered resistance to spread its ideas and particularly to publish them in some of the well-regarded journals. However, the creation of new journals and spaces to build capacity in this research program enabled its extension to new locations and increased the number of researchers. SEAR is nowadays recognized as a field of research and, following the insights provided by this analysis, chapter one argues that SEAR developed as the result of a SIM. As the field became normalized, the SIM extinguished.

The analysis of the case, the literature produced in SEAR and the nature of the discussions produced by the S-E group revealed that many of the more radical ideas proposed at the dawn of the movement did not survive the institutionalized version of the field. However, they continued to be brought up marginally by a part of the research community. These observations lead to the second finding.

2) Processes of normalization imply the abandonment of a part of the propositions of a SIM, leading to cyclical processes of intellectual grievance that can re-mobilise action.

S-E group participants reclaim some of the ideas about the role of ecology and critical approaches in accounting that were present in the emergence of SEAR but became marginalized as the field gained general recognition. With the benefit of perspective, S-E members have also incorporated new ideas that have flourished in science and that recognize the emergent implications of the Anthropocene. The field study reported in chapter one shows that, while a SIM might extinguish once it is generally accepted and normalized, some of the ideas that were discarded in this process and are still relevant can generate sufficient intellectual dissatisfaction to mobilize a second wave of collective action.

The findings of this study suggest that, while the end of a SIM might be theoretically prescribed, empirical analysis uncovers additional dynamics to the contemplated options of success or failure for the evolution of a SIM. In addition to the description of this new dynamic of grievance

and mobilization in the process of knowledge creation and deliberate scientific change, this study provided a comprehensive analysis of the emergence and evolution of the field from an intellectual lens focused on processes of scientific evolution, which might be of relevance in the context of the Anthropocene, where multiple challenges urge academic response and innovation.

The following chapter focuses on the concept of stewardship, which is also of relevance to the study reported in chapter three. These two chapters converge in a common context, as they analyse the same case study, focusing on different dimensions of the notion of stewardship and its relevance to accounting research and biosphere resilience in the Anthropocene, which constitutes the backbone of the dissertation.

Chapter two examines the multiple meanings that have been attributed to stewardship in the context of accounting research, aiming at building bridges with sustainability science as stewardship has become a normative ideal in both fields for pursuing sustainability. This aim is addressed through two strategies: the analysis of the literature on stewardship in the fields of accounting and sustainability/environmental science; and the analysis of the SeaBOS case study. As the notion of boundary objects originated to explain the processes by which cooperation is achieved in the absence of consensus in heterogeneous spaces, this notion was mobilised to guide the analysis of the meanings of stewardship and their reconciliation between the different spaces present in the literature and the case. The analysis shows that historically, stewardship had a moral attribution in the context of accounting which demanded a responsibility towards the well-being of society, a meaning that was gradually transformed and replaced by new concepts like accountability or corporate social responsibility. The analysis of the literature also reveals that the recent mobilization of stewardship in accounting research share similarities with the utilization in the environmental and sustainability science literatures. The analysis of the articulation of stewardship as a boundary object enabling the cooperation in SeaBOS revealed that, while SeaBOS members share a general commitment to stewardship, the more concrete application and customising of the object by different members depict more substantial differences. The different tailoring of stewardship identified in the study give rise to the following three propositions:

1) A new vision of materiality: current frameworks/standards of corporate sustainability reporting define the content of corporate reports by reference to the notion of materiality. The general understanding of materiality stresses the opinion of stakeholders about the company as a pivotal factor for the

content of sustainability reports. In addition to this, reporting is understood as a practice of accountability. The analysis of the literature on stewardship in accounting reveals how the foundations of accountability and stewardship are based on different sets of values and assumptions. In parallel, the analysis of SeaBOS showed that transparency is indispensable for the exercise and development of stewardship strategies but should be informed by science and respond to the needs of biosphere resilience and planetary boundaries. Therefore, chapter two proposes to further explore the requirements and redefinition of materiality needed for reporting biosphere stewardship efforts.

- 2) Reconsidering the notion of stakeholder: in connection to the previous finding, the definition of stakeholders has a substantial impact on corporate reporting under current international standards. However, such definition assumes that stakeholders have agency over the company, narrowing the potential recognition of many human and non-human actors as stakeholders. The analysis of stewardship in the accounting literature showed that one of the main differences between accountability and stewardship perspectives is in the definition of stakeholders, with stewardship including more diverse, intergenerational and nonhuman "stakeholders". The analysis of SeaBOS showed that the relationships with local communities and actors are not built bidirectional, but instead local communities are conceptualized as recipients of monetary aid, training, etc. These stakeholders are not considered in the corporate discourse as partners for the resolution of sustainability challenges, while the scientists' articulation of stewardship in this regard points to the need to engage with artisanal fishers, women, indigenous peoples, the elderly and next-generation activists in the process of transforming the narratives of the ocean. Broadening the notion of stakeholder demands specific attention to equity, as it is articulated as a functional driver for biosphere resilience, while current articulations of stakeholders do not include this dimension. Finally, stakeholder approaches based on a relationship of interest generate tensions with one of the defining elements of stewardship as agreed by both accounting and sustainability perspectives, which is the dimension of care. Therefore, stakeholder articulations need to be further developed to respond to the normative values and dimensions introduced by stewardship.
- 3) **New narratives in accounts for the Anthropocene:** while the analysis shows that the progress report collectively built by SeaBOS follows a different and innovative format, it shares with the companies' CSR reports the portrayal of only

positive actions and results, without discussing the points where performance should be improved or where ambitions are not up to science-based standards. The empirical analysis of SeaBOS showed examples of companies starting to be transparent in cases of low performance. The normative ideal of stewardship demands the dual recognition of structural unsustainability in current operations in production systems while adopting the ambition of transforming these operations. This is further strengthened by the encouragement of scientists who state that transparency in cases of low performance needs to be rewarded instead of punished. Departing from the observations that emerge in the case study, it is argued that modern narratives that only underline successes need to be overcome and substituted with new narratives that are informative of the dynamics that need to be changed in order to safeguard the resilience of the biosphere.

Finally, the use of the notion of boundary objects in the analysis showed that this concept can be productive in the context of the Anthropocene. The concept of boundary objects is directly related to the resolution of complex problems in the absence of consensus. These scenarios are likely to increase in the uncertain conditions of a biosphere in crisis, and therefore this conceptual tool can enable the analysis of dynamics by which different articulations can be reconciled for cooperation and sustainability in the Anthropocene.

The last research study in this dissertation presents a decolonial analysis of the conceptual and practical aspects of corporate biosphere stewardship. The insights derived from the analysis of SeaBOS employing the decolonial Sociology of Absences and Emergences are articulated into five propositions that aim at expanding the visibility of present human experiences produced by accounting mechanisms:

- 1) The role of science: ecological literacy has been recognized as a necessary element for addressing the interplay between accounting and nature. From a decolonial perspective, the value of scientific knowledge is recognized while it advocates for more dynamic understandings of reality, avoiding totalities and valuing alternative sources of knowledge. This perspective of science corresponds to the scientific position found in SeaBOS, which recommends the inclusion of local knowledge and traditional values into approaches to ecosystem management. The role of science raises the question (and challenge) of developing accounting technologies which can make an ecology of knowledge(s) visible.
- 2) **The axiology of care:** care is a key element in the theorization of stewardship and decoloniality. Central in sustainability accounting is the notion of development,

which is however questioned from both decolonial and ecological perspectives. Development entails a linear understanding of time and progress, while it stands on increased levels of material consumption. Substituting development with the axiology of care is a means of decolonializing accounting while acting in the present to produce concrete alternatives for a more sustainable future.

- 3) The need for equity and recognition: the empirical and decolonial analysis of SeaBOS shows that accounting plays a key role in producing visibilities and reproducing rationalities. While equity occupies a relevant dimension in the scientific articulation of stewardship, as it is not formalized into a traceable commitment, it becomes produced as in existent across corporate accounts. The ecology of recognition requires that differences are not only accounted for but made visible and recognized as equal.
- **4)** The global/local tension: the analysis of SeaBOS reveals that managing the global/local dimensions generates tensions. While ocean stewardship requires a global perspective, local experiences are equally relevant and usually end up *produced* as inexistent. However, local diversity is indispensable for resilience not only on ecological but on social terms, and therefore accounts should be aware of the need to preserve the wealth of human experience with the inclusion of local considerations.
- 5) The definition of value: finally, accounting for stewardship should be able to differentiate between different conceptualizations of value, expanding the notion of productivity to include social and ecological productivity. Such accounting would be able to distinguish productivity from extractivism, therefore mobilizing an ecology of productivity(ies). Decolonializing the notion of productivity would therefore enhance the value(s) of the biosphere.

I would like to end this dissertation by reiterating the very first lines that motivated it. Our lives are crossed by the changing conditions of the biosphere that we belong to. Some of us live in highly organized, complex societies where the connections to that biosphere (which lives within and outside of us) appear somewhat broken. However, enormous intellectual effort has been dedicated to proving that those connections are alive and relevant. This dissertation has attempted to build upon and recognize that legacy. The realization of the performative effect of accounting was a milestone in this sense, and the countless efforts of a big community of intellectuals have enlarged the awareness of the impacts that our actions and productions have on others and the planet.

The research conducted in this dissertation has done an effort towards interdisciplinarity and mixing of perspectives. The first research studied how different processes can enable conscious,

collective and deliberate evolution in the production of knowledge to further sustainability, introducing the General Theory of Scientific/Intellectual Movements to the literature of accounting for the first time. The documentation of this type of process can support further efforts by other communities and disciplines to engage in academic transformations in response to the challenges of the biosphere.

Then, a concept that has received increasing attention in the context of sustainability has been analysed from different theoretical perspectives: stewardship might define a normative path for accounting and sustainability in the Anthropocene. The proposals developed from the empirical analyses conducted provide an initial journey to study the implications of stewardship for accounting both in theory and practice. This effort aligns with the ambition of creating new motives and purposes for corporations in alignment with biosphere stewardship.

The conceptual tool of boundary objects offers a source of examples and inspiration for cooperation against complex problems in the absence of consensus. And finally, the inclusion of a decolonial epistemological perspective constitutes an acknowledgement that the formulation of potential futures must confront hegemonies and nurture from different sources of knowledge other than science. This dissertation is ultimately motivated by a strong belief and compromise with the ability to overcome disciplinary barriers and the active use of research and knowledge production for social purposes.

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