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# Environment as datascape: Enacting emission realities in corporate carbon accounting



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## ABSTRACT

Ecological modernist approaches to climate change are premised upon knowing carbon emissions. I ask how corporate environmental managers know and do carbon, i.e., shape the reality of emissions. I argue that for managers' practical purposes carbon exists as malleable data. Based on ethnographic fieldwork over a period of 20 months in a Fortune 50 multinational corporation, I show that managers materially-discursively arrange heterogeneous entities – databases, files, paper, words, numbers – in and between office spaces, enabling them to stage emission facts as stable and singular. Employing Annemarie Mol's work on multiplicity, I show that multiple enactments of carbon hang together not by an antecedent body (CO<sub>2</sub>) but through ongoing configurations of data practices. Disillusioning promissory economic discourses of 'internalisation', I demonstrate: Management is materially premised upon preventing purportedly internalised carbon realities from entering capitalist core processes. This undermines carbon economics' realist promises. Staging some carbon realities as in control is premised upon managers' ongoing, reflexive, partial and always situated configuration of, e.g., standards, formal meetings or digital data practices in which humans do carbon-as-data. Carbon practices are materially-discursively aligned, forming a configuration. This configuration effects carbon as a malleable and locally configurable space rather than as a closed fact. Reconstructing managers' practices as configuring carbon-as-dataspace, I argue, allows grasping adequately the contingency and constraints of managing carbon as a particular material-discursive form of environment. In conclusion I generalise the environmental management office as a space that can be configured to stage, beyond carbon, other global environments as well.

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## Introduction

Dominant environmental politics and theories like 'ecological modernisation' position companies as key actors in transformations towards sustainability – conjuring up the imaginary of ecologically sound economies (see [United Nations, 1992](#); [Huber, 2008](#); [Mol et al., 2014](#)). Many critics of such politics consider capitalist companies relevant – even if their critique implies that they cannot achieve 'sustainability' (see [Levy, 1997](#); [Luke, 2013](#)). What does it mean, if a company says it is greening itself? What is the environment they are working on? What is the reality, i.e., what is the nature the company relates to? I engage with these questions by studying carbon footprinting.

Within science, sustainable development is identified as challenged by changing climates ([Beg et al., 2002](#)); at the same time, ecological modernisation is imagined as a path to achieve sustainability ([Christoff, 1996](#)), and ecological modernisation helps 'solving' climate crises ([Bäckstrand and Lövbrand, 2006](#)). Ecological modernisation is a form of reform in which environmental problems and economic growth are reconciled ([Buttel, 2000](#)), greening capitalism ([Huber, 1988](#)). Within ecological modernisation, policy and theories of social change towards sustainability meet in 'environmental footprinting' ([Mol and Spaargaren, 2000](#)). Turning climate change, then, into an issue of accounting is not surprising. [Lovell and MacKenzie \(2011\)](#) retrace accounting professions imagining climate change. Carbon accounting establishes footprints, and based on this knowledge policy is made. Or so the story goes. Vis-à-vis [Lovell and MacKenzie's \(2011\)](#) account, that details accounting professions' climate *perspectives*, I investigate how accountants *do* carbon in material-semiotic techno-managerial practice.

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Drawing on ethnographic fieldwork in one of the 50 biggest companies, a 'Fortune 50' player, undertaken in 2008–2010, I reconstruct what the carbon emissions are that the company 'measures'. The effect of measuring emissions is not a representation of carbon 'out there'; but, for – what ethnomethodology would call – all the 'practical purposes' (Suchman, 2007) of carbon practitioners, the effect is carbon-as-data, existing in contingent material-semiotic practices (though, strategically, some of them would claim they relate to emissions 'out there'). It is the study of these practices – and of the material tools and things the practices engage – that can inform us *how* emissions exist *in* the company.

This introduction, first, foregrounds a key analytical move. Then I position how this move resonates with prior conversations in this journal and sketch the ethnographic study. Subsequently, I sketch the article's structure.

No company acts on its own. Rather, particular practitioners – called e.g., environmental 'managers' or 'accountants' – act on their objects (e.g., environmental entities), employing technologies and discourses. Depending on what these practitioners do, objects are, I will show, reconfigured. To substantiate this line of argument, I particularly draw on Mol's (2002) study of disease in a hospital. Following her, our studies should foreground practices that *do* something to or with entities, including objects and subjects. What practitioners do shapes entities and even brings these entities into being – such as a disease (she argues) or emissions (I show). In this approach, things are not antecedent to perceiving them but they are *enacted*. They come into being through acting. If practices enact things in particular ways they could also be enacted differently. This renders any enactment into an issue of politics of what is and could be: Ontological politics.

I link enacting things to datascares. Within actor-network theory, Latour (2004) engages with the enactment of reality by reworking the notion 'thing'. He thinks of things as assemblies of communities that decide what reality is. Etymologically, he retraces 'thing' to the *Thing*, the *Ding*, a 'quasi-judiciary assembly' (233). The assembly of all the forces and entities shapes the effect, the decision, the thing. Olwig (2002, 2005) takes us, etymologically and analytically, further by pointing out that assemblies also shape their land, i.e., scape the land; landscape emerges here as the effect of its Thing, the political body, that configures entities; '[t]he assembly, thus, can also be understood as forming environments' (Lippert, 2014b, 105). Complementarily, Tironi and Farías (2015) reconstruct parks as landscapes shaped by various meetings of differentially positioned actants. I use 'scape' to refer to the organisation, distribution, connection, patterning and configuring of enactments, to heterogeneously, unequally and differentially enacting things across various scales. The notion of scape, in other words, integrates an analytics that proceeds through ethnographic vignettes of enactments. My analysis proceeds towards analytics of datascares, explored in carbon-landscape enactments.

The article's thrust is: Environmental accounting practices are not mere technologies-of-representation but these practices co-configure how environments exist in the organisation. I, thus, analyse knowledge practices and their reality effects. This analysis builds on earlier work in Science and Technology Studies on the role of data infrastructures and memory practices (Bowker, 2005; Edwards, 2010) and on related work in geography: Whatmore (2006, 603) invites a 'shift in analytic focus from *discourse* to *practice*'. My analysis resonates with such a shift, as shared in *Geoforum*, especially in the issue edited by Bingham and Hinchliffe (2008). Part of this work is Asdal's (2008, 130) reconstruction of how numbers co-configure how natures are taken into account: 'Nature is not only made present and real through the instruments and materials of nature-parts and natural science, of politics and administration. Systems of accounting [...] also take part in these practices'. The present contribution to such analysis is to show

how environmental accounting is practiced in a place centrally integrated in the performance of capitalism.

I make present the 'centrality' to capitalism by sharing ethnographic accounts from the Fortune 50 player's sustainability unit. I call the company *Global Finance Quality* (GFQ).<sup>1</sup> GFQ has been one of the biggest capitalist players for many years – it manages itself 'successfully'. This allows studying how the environment is present in a place that is considered 'successful' in capitalist logic. GFQ operates financial services. That sector creates environmental impacts – in the company's logic by running offices (something 'all' companies do) and by way of financing other companies to conduct business (say, coal mining); the latter's impacts have been excluded from the financial player's environmental accounting. As a Fortune 50 player, what the company does are not idiosyncratically isolated activities but are part of global capitalist relations, including the world's biggest auditors, globally relevant ranking organisations (e.g., the *Dow Jones Sustainability Index*) and one of the world's biggest nature conservation NGOs. I take this setting as an apt inroad to a study of environment-in-practice within dominant forms of capitalism; although focusing on GFQ, implications beyond this particular company emerge (Lippert, 2014a).

My study focused on what carbon accountants do, which materials and tools they use, how they work in day-to-day practices. I followed environmental data across hierarchies and reconstructed corresponding data flows between organisational units, bookkeepers, databases, spreadsheets and team-meetings. Carbon accounting emerges as an avenue through which we can study the logics of how capitalism performs taking nature into account. 'Carbon' is not simply a name for molecules, but is deeply interwoven with technologies of accounting (MacKenzie, 2009; Lippert, 2012b). Analysing the practices of environmental accounting brackets the debate about whether market 'solutions' are good or bad (Lohmann, 2009). By studying the achievement of environmental realities through accounting, I complement recent debates about the market; studying accounting scrutinises the practico-foundational numbers, which are presupposed not just by the market but also any tax-based policy. These very numbers are imagined as well controllable entities in accounting and, correspondingly, as perfect candidates to control environmental impacts. Consider MacKenzie's (2009) account. While problematising conversion factors that translate various greenhouse gases into CO<sub>2</sub>e, he concludes in terms of political attitudes, asking simply to improve markets. Blok (2011, 457) problematises MacKenzie's (2009) take, missing studies of the material-semiotic *politics* within carbon. MacKenzie (2009) as well as Lovell and MacKenzie (2011) invest optimism in actors and devices to get the numbers right. Yet, learning from Asdal (2011) I note: Numbers may be weak, may not perform well. Therefore, I ask: How do numbers and data perform in environmental accounting? I find that agents of ecological modernisation (Lippert, 2010a) practice carbon-as-data. Emissions, in corporate practice, are data entities that are not only used internally for resource governance but also released into discourses of climate change, sustainability and carbon economics. While concerned with inclusions and exclusions in doing carbon-data, I concentrate on the patterning, i.e., scaping, of the realm in which carbon is brought into existence.

### Approaching carbon accounting

To report its carbon footprint to publics, GFQ had first to establish this very footprint. Corporate carbon footprinting belongs to a set of knowledge-making practices that equip organisations with (accounts of) their environmental realities, e.g., resource flows

<sup>1</sup> Names of actors inside and around the company have been rendered anonymous.

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