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Lippert, Ingmar

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Ingmar Lippert¹

Studying Reconfigurations of Discourse

Tracing the Stability and Materiality of ›Sustainability/ Carbon‹

Zusammenfassung: Die Stabilität von Diskursen ist nicht gegeben, sondern hergestellt. Sie wird erreicht durch die *Dispositiv*-Konfigurationen, also dem praktischen und andauernden ›assembling‹ von semiotischen und materiellen Entitäten. Der Artikel stellt eine *Assemblage* von Theorien, Methoden und Methodologien vor, die es erlauben nachzuverfolgen, wie heterogene Entitäten (re)(kon)figuriert werden, um das Performieren der Stabilität eines Diskurses zu erreichen. Anhand alltäglicher Büropraktiken, die den betrieblichen Nachhaltigkeits/*carbon*diskurs konfigurieren, wird nachgezeichnet, wie qualitative Datenanalyse, *Grounded Theory* sowie Ansätze der *Science and Technology Studies* verflochten werden können, um eine in den Daten begründete und generalisierbare Diskursethnographie zu ermöglichen.

Schlagworte: Methodenassemblage, Konfiguration, Methodologie, Dispositiv, Diskurs, Qualitative Datenanalyse, Akteur-Netzwerk Theorie, Nachhaltigkeit

Abstract: The stability of a discourse is not given but produced. It is achieved in the configuration of the *dispositif*. The paper approaches *dispositif* as a practical ongoing assembling of semiotic and material entities. The article presents an *assemblage* of theories, methods and methodologies that allow tracing how heterogeneous entities are (re)(con)figured to achieve performing a discourse's stability. Using mundane office practices that configure the corporate sustainability/*carbon* discourse as an example, the article spells out how qualitative data analysis, *grounded theory* and *Science and Technology Studies* approaches can be interwoven to pursue a grounded and generalisable ethnographic study of discourse.

Keywords: method assemblage, configuration, methodology, dispositif, discourse, qualitative data analysis, actor-network theory, sustainability

Stability in discourse is not given but produced. For a discourse to be stable many ›things‹ – material and semiotic – need to be in place: such as documents, humans, computers. With Foucault (1978; 1980, pp. 194–228) we may think of such an arrangement as a *dispositif* (cf. Keller 2008). In abstract, *dispositif* involves dynamic lines of force that struc-

1 This methodological project would not have been possible without Matthew Weinstein who supported me adapting TAMS to the needs of coding large amounts of data. I am grateful to Niklas Hartmann with whom I had numerous method-theory discussions and who provided valuable feedback on a draft of this paper, and to Catelijne Coopmans for her support in carving out the position of this text. My work has been supported with scholarships by the German National Academic Foundation and Hans-Böckler Foundation.

ture visibility and being (Bussolini 2010; Deleuze 1992). What is the concrete form? We learned to think *dispositif* as involving architecture or organs (e.g. Foucault 1978). Yet, only rarely we find explications of how to study the mundane material configuration and shaping of things, say in an office, that stabilises a discourse (but see Asdal 2011).

How can we operationalise studying the mundane and practical material-semiotic ground of a discourse? This paper reflects on a mix of methods and methodologies that allow tracing how discourses are reconfigured to achieve the discourse's stability. I illustrate these reflections with empirical material from an ethnography that traces how the discourse of sustainable development was translated into corporate carbon accounting practices and ›back‹ into sustainable development (Lippert 2013). With ›sustainability/carbon‹ I refer to a strategically vague discourse that makes it possible to enunciate carbon as sustainable, i.e. things like emission trading as promising ›economic‹, ›social‹, ›ecological‹ ›win-win-win‹ trajectories.² It is the production of such universal ›truths‹ that need explanation (Deleuze 1992, p. 162). The present paper shows the generative force of the particular assemblage of methods and methodology that I employed to trace the discourse empirically: This ›method assemblage‹ (Law 2004a) allows us to reconstruct how discourse is constantly (re)(con)figured in order to achieve stability. With this discussion I hope to contribute to Suchman's (2012) work of thinking configuration both as a socio-technical achievement of ordering and as method assemblage to study such material practices. Simultaneously, this paper attempts to illustrate and develop Keller's (2013) sketch of ›discourse ethnographies‹ in its relation to actor-network theory.

Method assemblage

In the field of Science and Technology Studies (STS), John Law uses the notion of method assemblage to rethink social scientific methods. Retracing Latour and Woolgar's (1986) study of laboratory practices he emphasises that the work scholars do is not simply pointing to real entities ›out-there‹, but much rather their achievement is to establish ›facts‹ as ›out-there‹; this work, of course, takes place in the laboratory. Key to understanding methods is that these are *practices* – not only lists of how to do good (social) research. Beyond explicit considerations of method and methodology, practical research is much more messy. Law (2004a) argues that if reality is messy and thus does not possess an antecedent singular order, then we should not be surprised if scientists' methods are similarly messy – as methods themselves are not outside reality; thus, methods themselves are messy, never completely in control. In order to stay in touch, scientists enlist a wide range of entities, texts, humans, nonhumans and all their relations. Law calls this a *hinterland*. In whatever ways we partially constrain our methods we still come to conclusions. Our assumptions prefigure the results. Here is the reflexive turn I offer: This paper sheds light

2 For a general Foucauldian discourse analysis of sustainable development, see Dingler (2003); for the specific case of corporate discourses of sustainability, see Tregidga/Kearins/Milne (2013). For an introduction to the range of meanings of carbon, see Lippert (2012b).

on my own hinterland work that enabled studying discourse. And I show how this very approach inscribes the assumptions, the particular method assemblage makes, into discursive reality as ›out-there‹.

Following this turn offers contributions to methodology in the wider field of social sciences that study discourse as well as more specifically to STS. Writing as an STS scholar about method could be misread as a form of poststructuralist indulgence in writing about the self that is always interwoven with analysis. Instead, I hope to show how integrating concerns developed in STS with concerns of qualitative social sciences can offer a) a richer engagement with method and methodology in the wider field of social sciences and b) a productive step in STS to open up how analysts can take part in generative conversations with data. The conceptual tool ›method assemblage‹ is particularly promising for this endeavour because it allows jointly discussing two analytical layers of analysis: Methods assemblages allow scholars to study; and these assemblages enact the objects under study. In research practice, however, these layers are deeply interwoven. Exploring the configurative powers of method(ology) across these distinctions, the subsequent analysis mixes two genres – post-constructivist discussions in STS and qualitative social science methodology. Both sides, however, may gain from engaging with these frictions rather than maintaining the symbolic separations between theory, method and methodology. Towards such openings, I offer my research practice as a method assemblage that is generative, performative and problematic.

Interweaving approaches

To position this method assemblage four conversations on method, methodology and theory are key: Ethnomethodology, Grounded Theory, Actor-Network Theory (ANT) and Feminist Technoscience Studies. In no way do I claim that all these ›are‹ mutually inclusive, harmonious or compatible. The claim this paper makes is that the assemblage, the situated set of practices of my engagement with these conversations, was and continues to constitute a generative engagement with the doing of discursive reality. That is to indicate: This paper sketches a method assemblage that is apt to generate grounded theories of how particular configurations of things and relations achieve a discourse's performance of stability.

Ethnomethodology asks a key question that is productive to study the doing of reality: How do members achieve to do whatever it is they do? Drawing on Garfinkel (1967) in general, with particular translations into STS by Button and Sharrock (1998) as well as by Suchman (2007), I was sensitised that the reality members experience, interact with and give accounts of is not simply given but is performed in particular situated action. I read the ethnomethodological critique of big theory as an invitation to theorise differently – to theorise grounded in the everyday doings of those who constitute society. With Grounded Theory (Glaser/Strauss 1967) I was motivated not to attempt developing a singular alternative big theory but, much rather, theorise bottom-up from the data. The result, then, is of course not *the* theory of that data but *a* theory (Glaser 2002, paragraph 26).

That theory, however, is not simply inspired *by* that data but rigorously grounded *in* comparative data analysis. Yet, as ›pure‹ ethnomethodological approaches and grounded theory studies are likely to be criticised for too empiricist or positivist engagement with data (Atkinson 1988; Clarke 2005) it seems relevant to rethink these approaches through ontologies that are open to recognising less conventional realities. Deleuze and Guattari's (1987) notion *rhizome* is helpful in this respect. It is a generative notion that makes us look not only for stable connections or local spaces but also for distributed, extended and heterogeneous connections, sudden change and breaks between all kinds of entities that constitute realities. A social science theoretical-methodical operationalisation of this term is offered by ANT (Law 2009). This approach provides a method-theory toolkit that helps to study the material and semiotic configurations of reality and has developed significant capacities to think about how doing data shapes scientific findings (Latour 1987; Law 2009; Verran 2010). Related, but partially different from this toolkit, are conversations forming Feminist Technoscience Studies that underline the impossibility for any innocent knowledge (Haraway 1988) and the possible material power of bodies that materialise reality and, therefore, may take actively part in shaping discursive inscriptions (Barad 2003). These conversations do not evade an engagement with patterned effects of societal relations such as capitalism; this results in a critical openness to the limits and the doing of subjects, bodies, technologies and markets.

I propose as a point of practical intersection between these fields a study that scrutinises how members achieve configuring semiotic and material entities with the effect of stabilising a discourse. That study should not simply go with a few vignettes that describe selected moments and theorise based on these. Much rather, the study would systematically compare ›large‹ amounts of data on members' material and semiotic practices. That data would be generated through various methods. In the next section I introduce and illustrate the methods and methodology that I have employed in my study. Subsequently I reassess the approach taken in terms of qualitative data analysis criteria and as a method assemblage. In conclusion, I propose that a method assemblage that carefully and systematically compares and attends to ongoing practices of (re)configurations and to their simultaneous and linked effects on making presences and absences is highly productive. It provides a well-grounded research approach that can locate and generatively generalise how a particular discourse is stabilised.

Methods and Methodology

My study revolved around a multinational company (pseudonymously called GFQ – Global Finance Quality). I studied the company's sustainability managers, especially its environmental accountants (although, note, the ›especially‹ was not a given of the study but a result). My open(ing) research question was simply: what do environmental managers do and how do they achieve it? I collected data in various forms. My main body of data was twofold: a) grounded in participant observation I produced a body of fieldnotes drawing on Emerson, Fretz and Shaw (1995); b) in the field, I collected artefacts from

members' everyday environments. In addition, I undertook some semistructured interviews in and around the field.

A note on research ethics seems relevant here. Members at the centre of my observations have been informed about my research (which they often framed as studying the ›culture‹ of environmental managers); while, officially, members could not evade my research gaze (their superiors had ›legitimised‹ my presence in their work environment), practically members could and did challenge the ethics of my research. At the outset, I had missed to negotiate research agreements with some; after a few weeks in the field, however, I had managed to secure individual research agreements with all key members. Their superior approved my research methods under the condition I render the company's and individuals' identities anonymous.

I coded the data across several layers of comparison while simultaneously developing a procedure that systematically and in a data-driven way narrowed down the focus of the analysis to a workable question that the analysis would address. After delimiting a set of observational and interview data to analyse I triangulated this data with textual artefacts from the field as well as with theoretical sensibilities.

Managing data and reducing complexity

The body of digitalised fieldnotes summed up to about 300 pages and I catalogued 281 artefacts in a relational note editor.³ I exported this layer of data into the qualitative data analysis tool TAMS and coded the data in two steps.⁴ First, after a temporally short introductory phase of fieldwork, I coded all the available data; this resulted in 435 codes (comparison 1). Following a clustering of the codes around workers' ›products‹ I selected six clusters (potential research emphases) and in the second phase I focussed subsequent data collection on the practices shaping the corresponding products.⁵ After this phase I recoded *all* data in a manner of grounded theory's open coding (Strauss/Corbin 1998) (comparison 2). I asked questions on members' practices, understandings, their terms and assumptions as well as what I found to be at stake in a situation and which actants I identified (drawing on Emerson/Fretz/Shaw 1995). I also coded all moments in which I reflected on the research process as such. To illustrate, codes of the form ›practice‹contesting standard‹ resulted.⁶ Eventually I came up with 1704 codes to account for the nuances in the data. I subsequently created sets of codes – each set then offered data (via the coded segments) on a question I derived from that data (e.g. ›how do members construct and calculate numbers/counts?‹; this can be considered a form of axial coding [cf. Strauss/

3 I used the proprietary software *Tinderbox* (see www.eastgate.com/Tinderbox/ [last accessed 8th May 2013]).

4 TAMS has been described by Warters (2005) and discussed by Weinstein (2006); see www.tamsys.sourceforge.net (last accessed 8th May 2013).

5 Products have been e.g. documents members were developing or events they prepared. This second fieldwork phase can be considered inspired by theoretical sampling (Strauss/Corbin 1998).

6 I used this particular code for practices in which members explicitly questioned a standard.

Corbin 1998, p. 127]; comparison 3). I grouped each code set with corresponding memos (produced while coding) into a theme (67 themes). From these themes I chose a limited number (10) for detailed analysis.

I framed these selected themes with an ethnomethodological STS question: how did members achieve to configure carbon emissions? The detailed analysis was grounded in three steps. First, I summarised all data that the theme pointed to (3,390 data points). Second, I reorganised that data in terms of members' explicit concerns and issues and emerging analytical dimensions from the data (comparison 4). This reorganisation resulted in a list of foci for subsequent analysis. Third, for each focus I identified a range of contrasting data points (comparison 5). In total, then, this approach resulted in eighty data points (field note segments) that I analysed in-depth: by way of comparing all instances within one focus (comparison 6) and by way of reanalysing some instances with respect to different foci (because some data 'spoke' to more than one focus). In the analysis of some situations (described in fieldnote segments) I came across relevant textual artefacts that I then partially triangulated with the fieldnote by using Keller's (2013, Chapter 5) questions as sensibilities.⁷

A further triangulation I applied on the selected data was to analyse the situations in relation to other authors' studies that analytically and theoretically showed some overlap with my analysis.⁸ While and after formulating my analysis I also validated my core understandings with members in the field.

Such a process may be formalised (see Figure 1).⁹ Along the lines of this idealised process it was possible to translate the amount of data collected in a systematic way into a small number of cases that were analysed in-depth and in relation to each other as well as in relation to members' artefacts. It should now be of interest to qualify by way of an illustration what this method assemblage did. Afterwards I turn to problematising the simplifications of the idealised model.

7 These questions led me towards analysing texts regarding their (sub)topics, their usage of categories, arguments, classifications, theories and thinking about the core elements of the texts and developing alternative wordings.

8 These have been primarily texts from ANT and Feminist Technoscience Studies; I have, however, also drawn more widely on Science and Technology Studies, e.g. readings on the performativity of economics, on calculation and qualification, on standardisation; and outside of STS I worked with texts from organization studies, critical management studies and environmental sociology. A brief illustration of such analysis is e.g. a paper that conceptualises carbon accounting as extended cognition (Lippert 2011).

9 A more specific outline of the process prescription is available online (for the final prescriptions see Lippert 2013, pp. 581–582, Figures A.22-23; for an earlier version of the prescription see p. 563, Figure A.6).

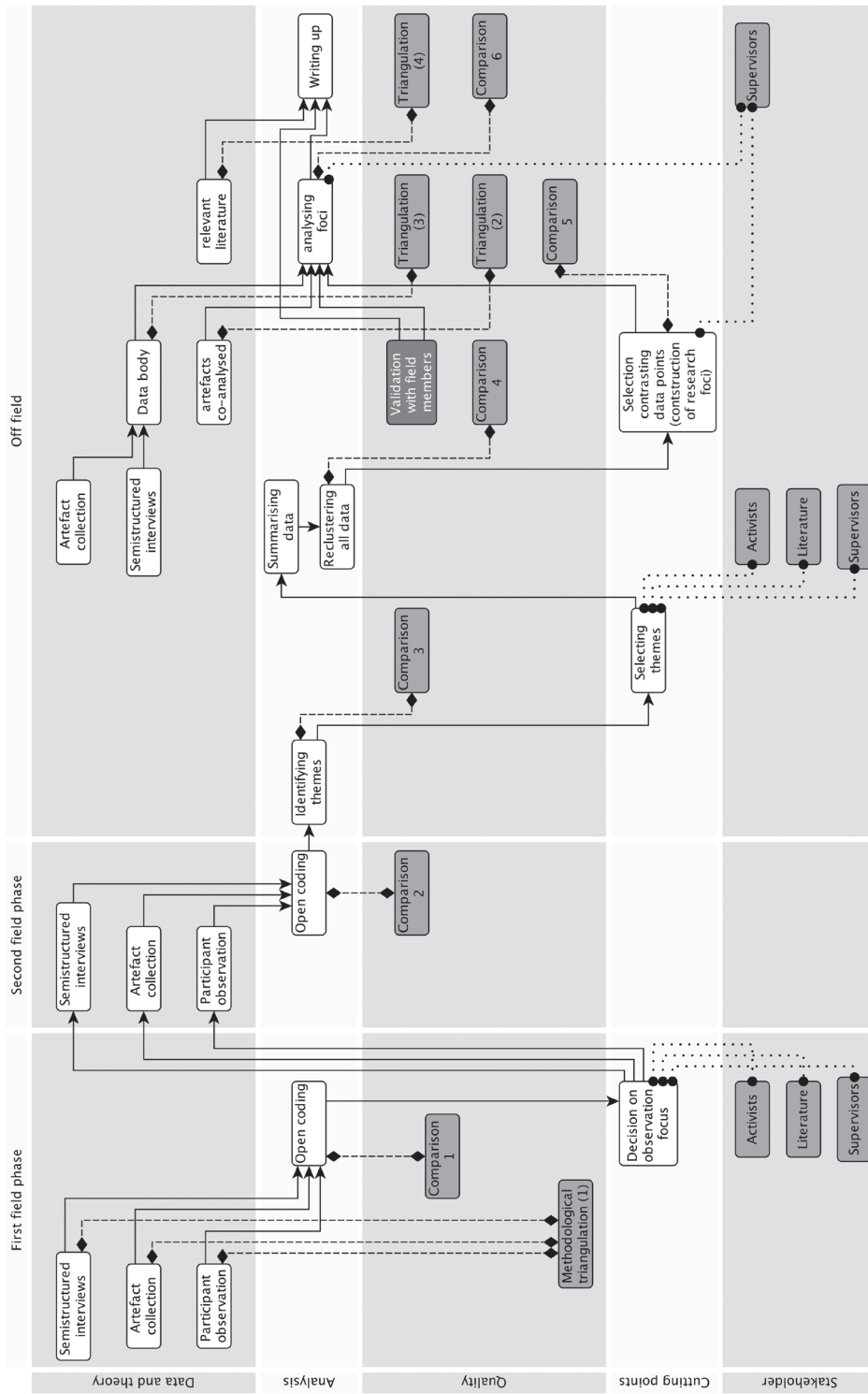


Figure 1.: An idealised and generalised view on the research process

Handling multiple discursive realities: how data matters but gender discrimination is made absent

During the first days of entering the field I was confronted and provided with a huge amount of data – I made observations on what people told me that they would expect of me, I received documents that I was supposed to ›read‹, I was asked to fill forms. I documented these experiences in detailed fieldnotes and collected corresponding artefacts. However, I did not analyse all of this data at once and completely.¹⁰ Instead, this data was analysed and reanalysed (as described above) much later. In my concluding study (Lippert 2013, pp. 121–123) I present, *inter alia*, a statement that my boss, Victoria, made during the first day's introduction. This is the ›context‹: the boss explained that sustainability management required the company to reduce their emissions and this required an accounting system. This accounting system required consumption facts, e.g. of distances travelled or electricity used. Victoria pointed out that the company headquarters' agents approached globally distributed facility managers and commanded ›give me your data!‹.

My reconstruction suggests that this translation from ›sustainable development‹ to data was a significant discursive move. This translation made the talk of ›sustainability‹ manageable. In the field, however, many further discussions took place in parallel – which I found to not matter so much for members. For instance the company had a gender equality and anti-discrimination training; every headquarters employee was obliged to complete such a training. However, in the corporate social responsibility team it was not practically ensured that members engaged with these; several did not attend the training; I learned: nobody cares. Even though this discursive reality was present in the sustainability discourse, it was primarily present as absent. Members rarely explicitly evoked ›gender‹ and ›anti-discrimination‹ to co-configure ›sustainable development‹.

In contrast, data was constantly made central to the discourse. A key means by which data was to be regulated and shaped was a prescriptive device that was distributed to members; and members were expected to work according to ›it‹. It was a powerpoint slide. I received a print copy on the first day; and soon also a digital version. ›It‹, however, was not singular. Not only did it exist in different versions, it also consisted of different slides. And these slides achieved the same movement of translations that I later found prevailing in the ›sustainability‹ conduct of the company: the discourse was translated across several steps into data practices. I found that the presentation's opening made links to the hegemonic sustainability discourse: it mobilised the *World Business Council of Sustainable Development* as much as the *United Nations* or the *OECD*. Subsequently, the presentation spelled out how the company's so-called environmental management system worked; it described the system's indicators that would render the environment

10 Without attempting to legitimise this in terms of an epistemological strategy it suffices to recognise for this case: for operational reasons I had to spend a considerable continuous time period in the field (working hours) at the outset of the combined ›work and research arrangement‹ with the company.

measurable and, at the end, it spelled out who would have to ›deliver‹ environmental data (pp. 123–142). (See below for how GFQ linked data back to sustainability.)

These two examples of discursive realities (sustainability and anti-discrimination) illustrate a likely more widespread phenomenon in ethnographic fieldwork: the field is full of discursive realities. I, as an analyst, did not feel able to trace all these realities, to unpack all their material-semiotic networks. However, studying members' day-to-day activities, what they spent money on, what they have been concerned about, highlighted some discourses as mattering over others. In this company, members of its sustainability and CSR unit (*as* members of this unit), did not perform gender and discrimination as an issue. Within the first phase of fieldwork I perceived it rarely and members did not explicitly interweave it with other discursive practices. The corresponding performative effect of my research approach was that I decided to not focus my analysis on gender. The method assemblage (precisely because it encompasses the grounded engagement with data) makes gender-as-absent in the discourse of sustainable development. The assemblage connects, thus, the analysis of the researcher and the field studied and makes practices of presenting and absenting visible – in front of your eyes. In contrast to the theme of ›gender‹, a range of practices took place and were actively coordinated that worked on the translations ›back‹ from environmental data to ›sustainability‹.

Giving voice to details: achieving data stability

Both in academic discourse on carbon accounting (Lohmann 2009; Schaltegger/Bennett/Burritt 2006) and within the company it is self-evident that carbon accounting is premised upon data. That is, the organisation is supposed to collect data on its environmentally relevant consumption in order to translate the consumption into carbon emissions. Where does this data come from? Rather than studying automated systems my study includes an analysis of carbon book-keepers' practices that their superiors called ›data collection‹.¹¹ Now precisely because data is treated, i.e. imagined and practically enrolled, as ›given‹ studying the sourcing of data is a promissory site to scrutinise how this discourse is stabilised. We could, simply, take the discourse's ›shared notions‹, like units and naturalised entities, for granted (e.g. Venturini 2012, p. 804). In contrast to this, the approach I have taken focuses on the ›given‹ and therewith questions the stability of the discourse's ›non-controversial‹ (ibid.) elements. Two examples indicate the range across which this method assemblage questions the achievement of the given as non-controversial. First I illustrate how environmental data is created and afterwards I retrace an analysis of how data is made non-controversial.

11 Automated systems would black-box the sourcing of that data. Such automated systems could be studied following the classic ANT analysis of measurement devices (Latour 1987) or drawing on Barad's work (2003); see MacKenzie (2009) for the case of the automated carbon emission measurement device.

My study does not question that consumption takes place. However, for the reality of consuming, say electricity, to exist as environmentally relevant that consumption has to be translated as such into the company. For the company, furthermore, not just *any* kind of translation would suffice. The sustainability managers wanted consumption to be translated into a manageable realm. Translation, of course, shifts the meaning, changes what that consumption is. Alongside the Actor-Network Theory dictum ›follow the actor‹ I studied the translators' work. I traced the presupposed flow of data from a subsidiary to the headquarters and recorded how a subordinate engineer-bookkeeper managed to bring into existence environmental data. In my account of their work I compare these translation practices in two ways: a) across different kinds of consumption (that is for all the key performance indicators that the company was interested in) and b) across different practices involved in data creation and stabilisation (including practices of classification, calculation and assurance seeking with superiors) (Lippert 2012a, 2013, Chapter 2).

To study these practices in detail I mapped all the human and nonhuman entities (in ANT jargon ›actants‹) that the bookkeeper needed to assemble in particular situations to bring environmental data into reality. The resulting maps need to be considered partial. As the actor-networks can be traced indefinitely (they have a fractal pattern [Strathern 1996]) I decided to map different situations in which data was ›done‹. Many partial maps were the result. Comparing different situations I found that while some actants occurred repeatedly as stable other actants were much more unstable and partially fell apart into several other actants.

Figure 2 shows a ›simple‹ case. This map illustrates the achievement of the bookkeeper's *relational* work. He, his superiors and other invisible workers had to create *all* these relations and secure *all* these entities to be in place in order for that situation's environmental data to emerge. I mapped the bookkeeper, Nick, as relating invoices that represented electricity consumption to environmental data and that could be presented to his superior (Simon). Nick's work in this case involved making sense of invoices. He copied a particular set of numbers from invoices and performed a calculation. The numbers he added up signified kilowatt-hours consumed. In this translation practice he read the invoices and judged their remaining text as *context* that did not matter. His work made some of the content of the invoices matter and made other content not matter.¹²

I consider these partial maps as *artefacts* of an analytic practice. For analysis, this is key: mapping-as-practice forces me to ask how particular entities are related and how both – the entities and the relations – are constituted. I reconstructed the map based on field note data. These maps visualise what relations are achieved or closely implied in a set of members' moves that are part of shaping a situation. A key advantage of the partial relational map over the linear writing of an analytic text is that the map reveals itself as never-complete and that it cannot do more than grasping what matters partially and indicating the complexity of a situation. These maps are analytically helpful because they

12 On matter and mattering see Law (2004b).

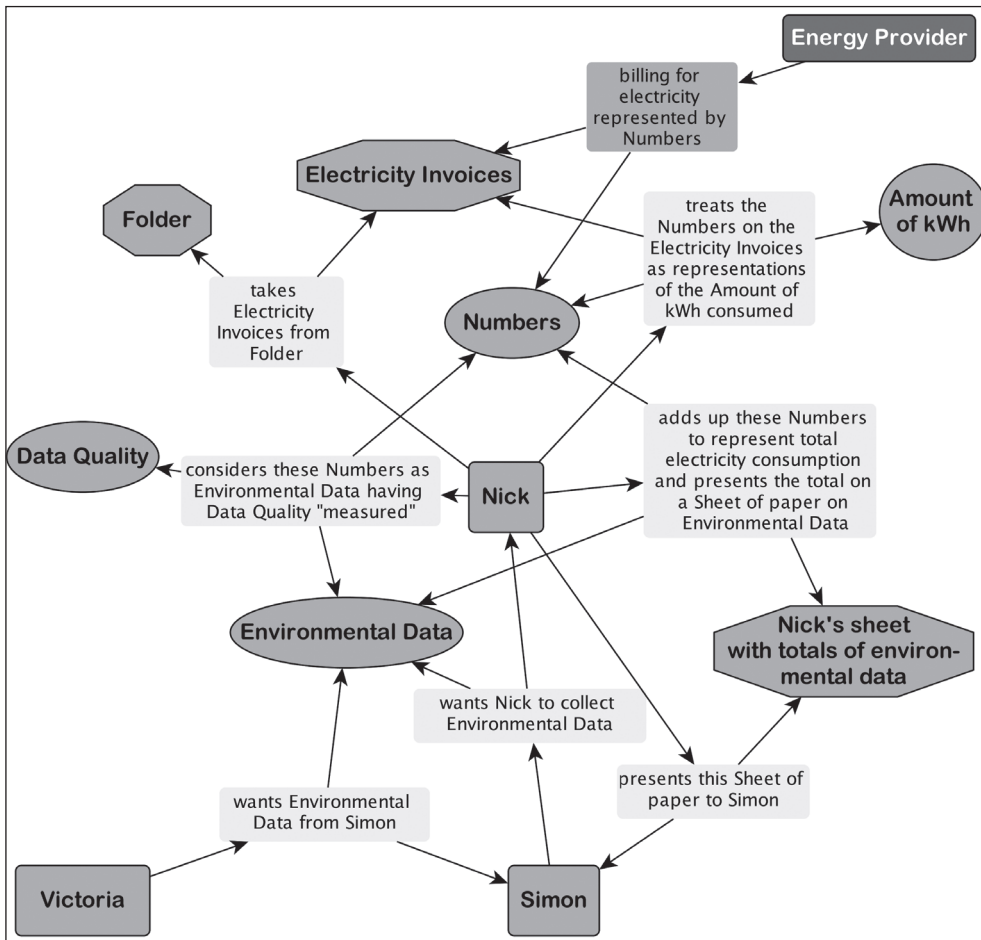


Figure 2: Map of translation from invoices to environmental data (from Lippert (2013, p. 73))

prompt the analyst to question how relations and entities exist. For my case we might ask: what happens when no invoices are present, or what is a kilowatt-hour? Analysing further situations helped to clarify such questions. I found creative work practices by the bookkeeper to make up for gaps in the network. Strauss (1985) calls this articulation work. This is work that is normally not visible in rationalisations of work processes (Star/Strauss 1999). In fact, my study of Nick's practices indicates that none of the environmental data was simply ›given‹ as the etymology of data implies. Much rather, data had to be made, to be achieved. Contrary to its etymology, data are facts (Lippert 2013, p. 118). The ›given‹ of revolving discourses, thus, could be otherwise; this renders data into a form of ontic/ontological politics (p. 84).

The map in Figure 2 above shows, thus, partially the underlying configuration of the data that would supposedly inform environmental ›decision-makers‹. The shape and content of such data co-constitutes the ground on which sustainability discourses thrive. This visit to Nick and his practices shows how precarious an effect environmental data is.

The study of these practices would suffice for well-grounded generalisations of the form ›if some environmental data in the company is precarious then the whole sustainability (data body) is tainted‹. However, even if we accept such generalisation (which the reader does not have to do) we should also ask whether corporate data practices themselves use practices that recognise, problematise or ›improve‹ data practices. Methodologically, this implies we also need to analyse how data is processed and made subject to organisational control practices. For that, figure yourself in a meeting at the centre of the carbon accountants and sustainability managers. The meeting discusses the status of data delivery by subsidiaries (Lippert 2013, pp. 142–168). Members recognised: quite some data was so precarious, it nearly fell apart. In that moment Victoria (the company's sustainability manager; depicted at the lower right of Figure 2) postulated: we have to know ›is it real?‹. This suggests a strong positivist approach. Yet, this approach was immediately questioned by a colleague, the head of the company's carbon accounting practices. He let the meeting know: ›Other collectors [have] alternative point[s] of view‹. By this he managed to secure data – for, after his statement, the data the managers would deal with was not positively read off nature but constructed by data collectors with unique perspectives.

More precisely, in his move he reconfigured the epistemological ground of carbon emissions. Victoria did not oppose his move; he achieved to redo the meeting's discourse as allowing for a relativist engagement with data. However, again, if we actually compare epistemological claims as well as epistemological practices we find a much more nuanced picture. To develop this picture, the method assemblage I ›employed‹ provided foci linking to observations, memos and artefacts that address, *inter alia*, translation of data, how members dealt with missing data, the making of data itself as well as the making sense of data. The approach allowed for non-coherent realities (such as co-existing positivist and relativist framings) to be given voice to. I asked what kind of order members achieved and was curious about their achievement as practices rather than evaluating whether their practices yielded some order as required by some societally organised standard. I identify ways by which members accommodated non-coherent realities and messy data bodies (Lippert 2013, Chapter 5).

Generalising practices as participating in doing society

Reflecting upon the approach, as far as it is sketched now, we must ask: what's the point, how does all this matter? That is, how does problematising data realities ›found‹ within the company matter, socially and discursively? I translated these concerns into an engagement with strategies of generalisation. Most significantly, my approach does not engineer a quantitative appendix that would attempt to generalise from the singular case to a population onto my analysis (but see Lippert 2013, pp. 227–230). Instead, my approach proceeds by studying the entities members enrolled to link their practices to various organisations and publics ›outside‹ of the company. This move allows considering how the practices within GFQ are *part* of distributed discursive agencies that stretch beyond the sustainability unit itself. With Winthereik and Verran (2012) this approach can be under-

stood as doing a part-whole generalisation. This means we continue the material-semiotic investigation of how practices co-constitute assemblages. It is within the whole assemblages that the semiotic and material data practices reported are part of and *do* some work, i.e. effect discursive realities. Four brief illustrations show the range across which the practices matter discursively.

A serene landscape and a fact The company produced a glossy sustainability report.

This is an established genre in CSR discourse. I analysed the way the company presented the emissions that their data practices had enacted in the sustainability report. This report has been distributed globally in offices of the company and targeted the company's distributed and diverse ›stakeholders‹. I understand this report as a key entity in translating the company's enactment of sustainability ›back‹ into wider discourses of sustainable development. Key in my analysis is an image of a serene landscape that has a text box overlay that states GFQ's emission facts. The particular translation effected the company's emissions as well known, in control and well on the way of being reconciled with ›nature‹ (Lippert 2013, pp. 204–219).

Informing market transactions Another way of making GFQ's emissions present in wider discourses was reporting ›facts‹ to rankings' and indices' organisations. In economic terms, such organisations ›serve‹ to shape the economic agents that the neoliberal economy presupposes: that is, rankings and indices are to create information symmetry. The company's data were emitted into the global digital realms of environmental and economic data – in which they still act and continue to reproduce the data reality on which ›global emissions‹ discourses are founded (pp. 256–279).

Certified emissions To support the friendly and trustful reading and copying of the company's data, they linked their emissions to various certificates that were relevant for both global civil society discourses of sustainability and to corporate-governmental discourses of corporate environmental governance. I traced how the company linked with corporate auditors (Big Four), global standard-setting agencies and a non-governmental organisation and I spelled out what these links did to the corporation's data practices. Studying what it means that statements are attached to well-known signifiers (›labels‹) within the respective discourses helps to spell out how the statements are stabilised (especially pp. 279–320).

Citing the ›Gold Standard‹ Reciprocal to the prior point, the citation of other organisations' labels, of course, also stabilises their discursive relevance. I studied how GFQ's practices link to emission trading and certified emission reduction organisations. In emission trading discourses a, literal, ›Gold Standard‹ organisation exists (assembling, *inter alia*, the German Government and the World Wide Fund for Nature [WWF]). I found GFQ had bought negative emissions (i.e. emission reduction certificates) that were certified with the Gold Standard from a broker.¹³ GFQ advertised its own environmental conduct *via* linking to the Gold Standard project that had produced these negative emissions. ›Unfortunately‹, the standardisation organisation did

13 Negative emissions can be added to a carbon footprint and, thus, reduce the footprint – at least on paper.

never affirm that they owned the project. I intervened; later the broker changed the wording: the claim was remodalised as simply implying that the project was running in harmony with the standard. Remodalising saved the citation. Whether the emission reduction project actually exists remains unknown; yet GFQ continues to reproduce references to the Gold Standard.

These summaries indicate that by tracing the actants that link practices we can scrutinise how discourses are shaped and reconfigured. To the point, in this case, we can identify how the figures have been assembled, reassembled *with* other figures as well as texts and we can see how figures have been assembled without a multitude of other figures and texts. Thus, presenting figures is about *con*-texting, *con*-figuring and redoing these as well as deleting some texts and figures, hence creating particular silences in discourse. Eventually, the discourse is redone in ways that makes many actants irretrievable (cf. Verran 2012, p. 68). ›Sustainable development‹ is done as consisting of coherent, certified, controlled facts. Most uncertainty indicators are deleted from the ›sustainable development‹ the company proposed in its interactions with other players, such as auditors, NGOs and in their publications.

The generalisation such a study can claim is premised upon studying how practices are part of assemblages and how they give shape to the latter. Qualifying the generalisability is related to qualifying the assemblages. In this view, discourses do not exist on some abstract plane but through particular materials and practices (such as a meeting, a document, a financial transaction). It follows that a universal generalisation will not be possible with this approach. Much rather, this approach lends itself to qualifications of the form: this particular discourse (in my case ›sustainable development‹) is co-enacted in several ways through the practices and materials studied (say carbon accounting practices in GFQ). The study reports, thus, the micro-worlds of members doing particular things – often in interaction with others – that they generalise as something called e.g. carbon or sustainability (cf. Verran 2001, p. 159).

Quality and method assemblage

I proceed to reflect upon the qualities of the research approach – in two steps. Briefly, I attend to the qualities of the research process in terms of ›classical‹ qualitative research quality indicators. Subsequently, I rework this discussion by way of rethinking and illustrating the research approach as a method assemblage that configures its results (i.e. the result that discourses' premises have to be constantly reconfigured to be available for the discourse).

My research approach involved using a variety of data types. It included artefacts, such as documents, which can be understood as ›natural‹ data (cf. Keller 2013, p. 86). Other data have been derived from observations and semistructured interviews. Following open, axial and selective coding techniques, I checked the validity of key theoretical considerations with members (cf. Strauss/Corbin 1998, p. 159). In addition to the data

analysed most in depth, I checked and rechecked how concepts and theories resonated with the data body overall and in particular with the field situations from which I had selectively analysed data. I ensured verifiability by way of discussing particular translations and my translation practices with peers. In sum, I used four triangulation techniques within this research process (methodological, studying data in relation to different data foci, comparing the analysis with further artefacts, and triangulating with studies that resonated partially with my emerging theory; see Figure 1) (cf. Flick 2007; Lippert 2013, pp. 48–56).

With Keller (2013, pp. 102–103) we might want to classify my approach as a ›discourse ethnography‹. He links to early ANT studies; and proposes that studies and accounts such as Latour's (1987) are helpful for ethnographies of discourse because they show well how discourses and technologies are translated into each other. Interestingly, in this context, Keller (2013) does not relate to later ANT studies that turn more reflexively to questions of performativity and also to questions of ontology.¹⁴

From early ANT I want to use the notion of ›traces‹ and ›networks‹ to rethink my research approach. Latour's (1987) work is very much about how scientists attempt to gather, translate and manage traces of phenomena ›out there‹. Qualitative social science's documents, ›natural data‹, audio and video files, fieldnotes are precisely such traces. The problem is, of course, how to ›get rid of them‹ (p. 233; original emphasis). If the researcher is confronted with too much data, abstractions have to be made, data has to be contained. Correspondingly, Grounded Theory is all about abstracting and identifying concepts, categories, questions that grasp large amounts of data as a way of reducing the data to manage. Much science, still, evokes the imaginary of representing entities or processes ›out there‹. Strathern (1996) provides a compelling argument about ANT scholars' agency in drawing the boundaries around the phenomena they are interested in. If a research approach attempts to trace networks of humans and non-humans, we cannot expect that the network stops on its own. There is no antecedent singular boundary of networks in the real world. Much rather, it is the analyst who has to cut the network. ›[A]nalysis, like interpretation, must have a point; it must be enacted as a stopping place‹ (p. 523). That is to say that the analyst must employ multiple orders to contain the traces (p. 530). Such orders can be analytical criteria; yet, what matters is orders of practice, i.e. the orders of practical and situated enactment – and these *may* be resonating with analytical orders.

Here is, then, where my research approach departs most clearly from qualitative social science ›proper‹: The orders I employed to find results do not stay hidden. This statement has to be torn apart. First, orders are not given but the analyst is doing the ordering. Note, order appears as a verb (Law 1994). Second, ›I‹ is present. For ›science‹ to perform out-there-ness the I, the modalities, need to be deleted (Law 2004a, p. 36). Third, employing can easily be misread as a form of strong control. Of course, the analyst is entangled in multiple commitments – to ›data‹, to peers, to the dinner date with a friend. The idea that the employer is in control is a myth. Fourth, results are not found. Much rather: ›out-there‹ is made (cf. pp. 31–32). My research approach makes the ›partial connections‹

14 This later strand of ANT is labelled material semiotics, ANT & After or post-ANT.

(Strathern 2004) between steps of translation visible. The report indexes precisely the practices of making. The reality presented as the outcome of a study is the effect of the analyst's practices and the materials they were entangled with. Fifth, for research to be ›proper‹ it needs to perform itself as being determined by routinised and standardised packages of methods and prescriptions. In this paper I do relate to corresponding standardised, and thus normative, discourses of qualitative discourse research. And I attempt to explicitly interfere in and, by that, contribute to commitments in discourse research. Making translation practices partially visible serves this attempt. Making everything visible, however, is impossible. I have to cut, to reduce complexity. The point in this approach is to make the reader pause and re-cognise the doing of reality, its fuzzy, fluid characteristics.

Law (2004a, p. 161) specifies method assemblages as practices of

»crafting or bundling of relations in three parts: (a) whatever is in-here or present (for instance a representation or an object); (b) whatever is absent but also manifest (that is, it can be seen, is described, is manifestly relevant to presence); and (c) whatever is absent but is Other because, while necessary to presence, it is also hidden, repressed or uninteresting.«

To make sense of this definition, let me recap the tracing in this paper. (a) The research approach I am outlining and reflecting upon here achieves products for the ›in-here‹ of research worlds – these products are citable products ›(Lippert 2011, 2012a, 2013)‹. (b) The products refer to an out-there, GFQ. I make GFQ present in these texts. The reader is clearly aware that I think of GFQ as being a ›real‹ company out-there. At the same time the reader may imagine themselves as visiting GFQ's worlds but they stay in their world. GFQ stays absent. (c) And in order to make GFQ present to the reader's mind (that is, against all the forces that make GFQ absent to the reader – not least the company's anonymous identity), I make many relations and materials absent from these publications. It cropped up before: say the dinner date that made me stop an investigation (or should I celebrate now my ›scholarly‹ habitus that made me arrive late for the dinner because I was too entangled in the study? [note the passive voice]).

Now, my texts, including the present one, do not attempt to make all the Other present – *all* the details that were co-constitutive of the method assemblage. For the ›all‹ is impossible (Law 2004a, p. 84); and attempting to capture all might turn the research outcomes away from reports that are useful for readers who are interested in, say, discourses of sustainable development and the performativity of carbon economics. I decisively did not want to produce excessive self-referential reflections of the self that is co-produced in the entanglement with what I call GFQ.¹⁵ Instead, the approach I followed made present the othering by way of providing the reader with materials to imagine the author as a real-worldly person entangled in many more relations than ever describable. By this, my

15 Anthropology provides us with a range of useful engagements with issues of writing for readers while negotiating writer/reader/subject relationship (e.g. Strathern 1987; Stoller 1994).

approach invites the reader's interest (but does not force these absent entanglements [that are indicated as present by allusions to dinner dates or comrades who made the study possible] upon the reader). Of course, this making present of the Other reproduces its status as Other. The defence of this practice is twofold. First, I am an interested author and analyst. As analyst of ›out-there‹ I am only partially interested in analysing myself – and I try to minimise the time spent for the latter. Resonating with this I expect that readers are actually interested more in GFQ than the analyst. Second, I write in an intertextual field and a political economy of academic writing. My text attempts to carefully find a position in this structured space.

We find, then, that the analysis necessarily foregrounds some realities over others – and thereby others the latter. The entities foregrounded, however, are not antecedent to analysis. Instead, they are crafted in the analysis as precisely such entities. In the analysis I conducted, I drew the boundaries around GFQ, individual people within that company, I enacted these as people and company, and I brought into presence ›products‹, sustainability, carbon. For the analysis to be, entities need to be delineated and related. Bundles of relations and entities are crafted, interwoven assembled. This is a major STS point: scientists assemble and engineer heterogeneous entities and relations (Law 1987). A concept that underlines the simultaneous naturalisation of the things related and of these relations is *figuration* (Suchman 2012, p. 49). For the purposes of this paper, figuration is a useful notion because it allows to address both: the black-boxing of entities and relations into, then, naturalised objects; and the method of studying how the assembling and naturalisation worked and what precisely was joined together in the figure. Thus, the notion underlines the multiple planes on which a text that addresses discourses as material-semiotic assembling has to operate. Along these lines the

»method assemblage of configuration could be understood as a device for articulating the relation between the ›insides‹ of a socio-technical system and its constitutive ›outsides‹, including all of those things that disappear in the system's figuration as an object.« (ibid. p. 55)

The research approach sketched in this paper may be read as a method assemblage of configuration in this sense: it helped to articulate how sustainability/carbon was brought into discursive presence by GFQ while rendering absent many qualifications of how carbon and sustainable development existed within the company's sustainability and carbon accounting machinery. Where Suchman (ibid. p. 58) positions this approach against other methods (defined by her as designed to draw and ›police boundaries‹), I wonder in how far methodology debate in, not exclusively, discourse research is able to cope with challenging established boundaries that, e.g., enabled ›the social‹ or for that matter ›a discourse‹ to exist at all.

Finally, I want to extend the notion figuration. I do so by way of proposing that this method assemblage is not only tracing and reconstructing (or should I say, configuring?) discourse configurations; in addition, I illustrate how this research approach *prefigures* its outcome, i.e. the effects. Three points should suffice.

First, if you revisit Figure 1, it becomes apparent, of course, that this graph is highly idealising the research process. The figure implies a linear straightforward but complicated (that's what makes it scientific!) process that proceeds over time. Such a graph can be easily problematised (e.g. Lippert 2013, pp. 320–343). Instead, consider Figure 3.



Figure 3: A schematic illustration of data practices that culminate in a singular strong narrative

Figure 3, in this context, should be read as proposing the flow from various data sources (left hand) to the crystallisation of a singular reality that becomes progressively certain (on the right hand side). In between, various detours and multiple pathways have been encountered on the way – not depicted in Figure 1 – and quite a few stories that could have told the reality of GFQ's sustainable emissions have been left untold for I did not follow these trajectories. I use Figure 3 to indicate the reality of messy data practices. Messy, however, does not mean bad. It does indicate the politics of data practices. This meaning corresponds to the original context in which this figure has been drawn – to schematically illustrate carbon data practices (see Lippert 2013, p. 486). Re-enrolling this graph metaphorically here constitutes a ›deliberate juxtaposition of contexts‹ to underline the way the method assemblage authors its effects – and ›to raise questions about it‹ (Strathern 1987, p. 266).

For this method assemblage it is key to not assume that the out-there is singular. Although I did find many entities and relations that were singular – I also found that how carbon existed was not singular at all. While the company performed itself as emitting singular emissions facts into global discourses of sustainable development, in fact it emitted multiple, partially competing, emission realities; and within the carbon accounting machinery many more multiple emission realities existed, were maintained, cultivated – ignored, merged or deleted. For I found these carbon realities non-coherent I also provide multiple accounts of these realities: in the form of different texts on the same case (e.g. Lippert 2012a and 2013, pp. 70–87) and by way of exhibiting multiple realities and the practices that enacted these in some of these texts (especially Lippert 2013, pp. 474–488). And my students in the Singaporean classroom enact yet other translations of GFQ's carbon realities (see Figure 4).

As the analyst has significant responsibility for the analysis it seems methodologically significant to not only analyse what members pack into their configurations but also what they make absent. This means to study the realities that discursive enactments imply and necessitate. While members may strategically or tactically hide some of these realities (e.g. involving data practices they recognise themselves as ›out of control‹) they

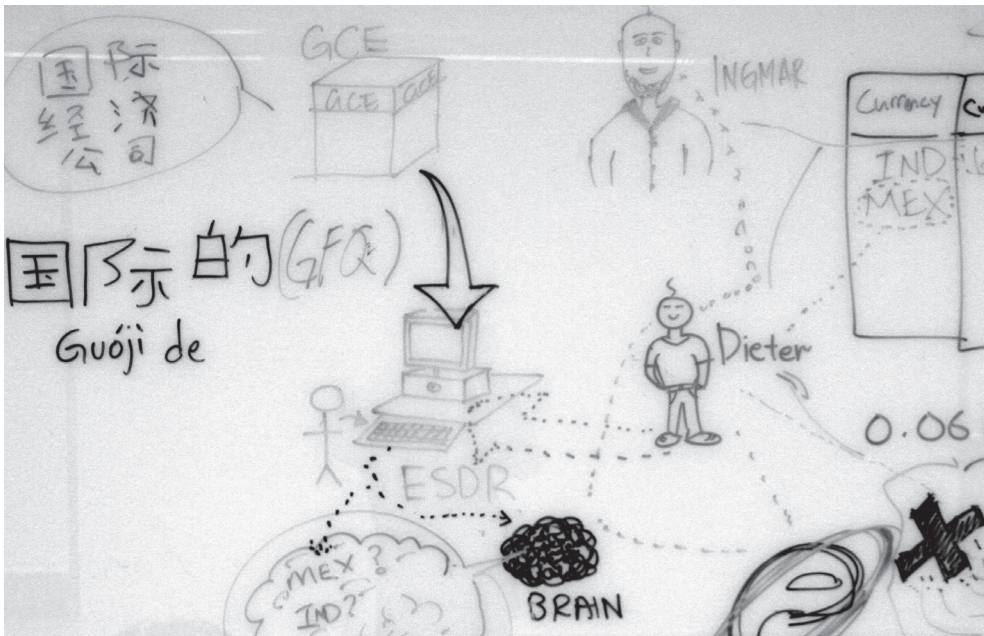


Figure 4: Artefact of students studying GFQ's data practices (here relating to Lippert 2013, pp. 457–473)

also partially impact and co-configure further, Other, realities – partially without noticing or without being concerned. Law (2012) calls these *collateral realities*. For the method assemblage I sketch here it is key to not simply reproduce the dominant discourse but also to show which collateral realities are involved in the doing of this dominant version. For the case of GFQ's carbon this meant I note(d) how their data practices actually interfered with discriminating gendered practices or colonial relations. These were realities that members drew on to enact the discourse of sustainable development. Their discourse silenced questions of colonialism. Take this example: GFQ's sustainability manager would sell their understandings of sustainability to their superiors with powerpoint slides. And these powerpoint slides were assembled by cheap IT labour thousands of kilometres off, in India. Such realities co-constitute the hinterland of carbon and of the sustainable development that GFQ configured.

Reflecting on this research approach, thus, yields that methods not only resonate but also prefigure their results. In short, not making ontological assumptions as part of one's methodology raises questions about the ontologies of entities and relations encountered in the field.

Conclusion: Grounding studies of discourses' ontological politics

This paper asks how a study can be operationalised that attempts to ethnographically attend to mundane entities, part of a *dispositif* that stabilise a discourse. I use the discourse of sustainable development and carbon management as an example and retrace how a study of the stabilisation of this discourse proceeded (the study employed here is Lippert 2013). Following this reflexive turn supports us in grounding methodological possibilities for studying discourse and it contributes to mutually integrating concerns from STS and qualitative social science. Drawing the research approach's traces together provides us with three key features:

Ongoing configuring It attends to members' continuing achievement of the ontic premises of discourses. By studying practice we learn about the assembling of entities, their naturalisation, their configuration and reconfiguration. Studying ongoing configuring practices opens the analyst's method assemblage to scrutinise how the foundation of a discourse is not given but constantly semiotically and materially made, re-made and changed with distinct effects that stabilise and change discourse.

Making presence/absence When studying the very foundational work through which discourses thrive we learn about the practical politics of how particular realities are made present and others made absent. It is ethically significant to voice the range of reality effects that are done in doing discourse. To position discourses it is relevant to show both, what the discourse is interfering with and which collateral effects it has as well as how the discourse is done at its very centre.

Grounded generalisations By way of studying everyday practices that are in the midst of a discourse we derive data (read, configure the analyst's data realities) analysable as reality-making that is part of the discourse. The following and reconstruction of assembling and (re)configuring practices allows generalising these practices as qualitatively shaping a whole discourse. The analysis is to use systematic comparison across the researcher's data in order to allow voicing grounded patterns in roles and agencies of the observed material-semiotic practices within the discourse.

The assemblage of these features and practices allows grounding social scientific reconstructions of discourse reconfigurations. We yield results that show how a discourse is not once emerging and then given but, much rather, how even the most non-controversial entities upon which the discourse relies may not be given at all but have to be continually achieved for the discourse to exist. The underlying ›given‹ of a reality, therefore, has to be constantly arranged, rearranged, i.e. done, in order to be available for discursive deployments. The order of discourse, thus, is deeply a question of doing ontic/ontological politics. The theoretical point here is that the foundation is not given but practiced (cf. Verran 2001). The methodological edge is that a study of the (re)configurations of a discourse's everyday foundation is a) possible and b) apt to understand the material and semiotic world-making power of discourse.

References

- Asdal, K. (2011): The office: The weakness of numbers and the production of non-authority. In: Accounting, Organizations and Society 36(1), pp. 1–9.
- Atkinson, P. (1988): Ethnomethodology: A critical review. In: Annual Review of Sociology 14, pp. 441–465.
- Barad, K. (2003): Posthumanist Performativity: Toward an Understanding of How Matter Comes to Matter. In: Signs: Journal of Women in Culture and Society 28(3), pp. 801–831.
- Bussolini, J. (2010): What is a Dispositive? In: Foucault Studies 10, pp. 85–107.
- Button, G./Sharrock, W. (1998): The Organizational Accountability of Technological Work. In: Social Studies of Science 28(1), pp. 73–102.
- Clarke, A.E. (2005): Situational analysis: Grounded Theory after the Postmodern Turn. London and Thousand Oakes: Sage.
- Deleuze, G. (1992): What is a *dispositif*? In: Armstrong, T.J. (ed.): Michel Foucault: Philosopher. New York: Harvester Wheatsheaf, pp. 159–168.
- Deleuze, G./Guattari, F. (1987): A Thousand Plateaus. Minneapolis: University of Minnesota Press.
- Dingler, J. (2003): Postmoderne und Nachhaltigkeit. Eine diskurstheoretische Analyse der sozialen Konstruktion von nachhaltiger Entwicklung. Hochschulschriften zur Nachhaltigkeit. München: ökom.
- Emerson, R.M./Fretz, R.I./Shaw, L.L. (1995): Writing Ethnographic Fieldnotes. Chicago and London: The University of Chicago Press.
- Flick, U. (2007): Managing Quality in Qualitative Research. Los Angeles and London: Sage.
- Foucault, M. (1978): The History of Sexuality. New York: Pantheon Books.
- Foucault, M. (1980): Power/Knowledge: Selected Interviews and other Writings, 1972 – 1977. Edited by C. Gordon. New York: Pantheon Books.
- Garfinkel, H. (1967): Studies in Ethnomethodology. Englewood Cliffs and New Jersey: Prentice-Hall.
- Glaser, B.G. (2002): Constructivist Grounded Theory? [47 Paragraphs] In: Forum: Qualitative Social Research 3(3). www.qualitativerecherche.net/index.php/fqs/article/view/825/1793 (Accessed 8th May 2013).
- Glaser, B.G./Strauss, A. (1967): The Discovery of Grounded Theory: Strategies for Qualitative Research. Chicago: Aldine Transaction.
- Haraway, D. (1988): Situated Knowledges: the Science Question in Feminism and the Privilege of Partial Perspective. In: Feminist Studies 14(3), pp. 575–599.
- Keller, R. (2008): Diskurse und Dispositive analysieren: Die Wissenssoziologische Diskursanalyse als Beitrag zu einer wissenschaftlichen Profilierung der Diskursforschung. In: Historical Social Research 33(1), pp. 73–107.
- Keller, R. (2013): Doing Discourse Research: An Introduction for Social Scientists. London and Thousand Oaks: Sage.
- Latour, B./Woolgar, S. (1986): Laboratory Life: The Construction of Scientific Facts. Princeton and New Jersey: Princeton University Press.
- Latour, B. (1987): Science in Action: How to Follow Scientists and Engineers Through Society. Cambridge: Harvard University Press.
- Law, J. (1987): Technology and Heterogeneous Engineering: The Case of Portuguese Expansion. In: Bijker, W.E./Hughes, T.P./Pinch, T.J. (eds.): The Social Construction of Technological Systems: New Directions in the Sociology and History of Technology. Cambridge: MIT Press, pp. 111–134.
- Law, J. (1994): Organizing modernity. Oxford: Blackwell.
- Law, J. (2004a): After Method: Mess in Social Science Research. London and New York: Routledge.
- Law, J. (2004b): Matter ing: Or How Might STS Contribute? Version of 28th June 2004. [www.heterogeneities.net/publications/Law2004Matter ing.pdf](http://www.heterogeneities.net/publications/Law2004Matter_ing.pdf) (accessed 8th May 2013).
- Law, J. (2009): Actor Network Theory and Material Semiotics. In: Turner, B.S. (ed.): The New Blackwell Companion to Social Theory. Chichester: Blackwell, pp. 141–158.

- Law, J. (2012): Collateral realities. In: Baert, P./Domínguez Rubio, F. (eds.): *The Politics of Knowledge*. London and New York: Routledge, pp. 156–178.
- Lippert, I. (2011): Extended Carbon Cognition as a Machine. In: *Computational Culture* 1(1). www.computationalculture.net/article/extended-carbon-cognition (Accessed 17th August 2013).
- Lippert, I. (2012a): Carbon Classified? Unpacking Heterogeneous Relations Inscribed Into Corporate Carbon Emissions. In: *Ephemera* 12(1/2), pp. 138–161.
- Lippert, I. (2012b): Carbon Dioxide. In: Zimring, C.A./Rathje, W.L. (eds.): *Encyclopedia of Consumption and Waste: The Social Science of Garbage*. Thousand Oaks and London: Sage, pp. 105–108.
- Lippert, I. (2013): *Enacting Environments: An Ethnography of the Digitalisation and Naturalisation of Emissions*. PhD thesis, Augsburg University, Philosophisch-Sozialwissenschaftliche Fakultät, www.nbn-resolving.de/urn:nbn:de:bvb:384-opus4-21997 (Accessed 8th May 2013).
- Lohmann, L. (2009): Toward a different debate in environmental accounting: The cases of carbon and cost–benefit. In: *Accounting, Organizations and Society* 34, pp. 499–534.
- MacKenzie, D. (2009): Making things the same: gases, emission rights and the politics of carbon markets. In: *Accounting, Organizations and Society* 34(3-4), pp. 440–455.
- Schaltegger, S./Bennett, M./Burritt, R. (2006): Sustainability Accounting and Reporting: Development, Linkages and Reflection. An Introduction. In: Schaltegger, S./Bennett, M./Burritt, R. (eds.): *Sustainability Accounting and Reporting*. Heidelberg: Springer, pp. 1–33.
- Star, S.L./Strauss, A. (1999): Layers of Silence, Arenas of Voice: The Ecology of Visible and Invisible Work. In: *Computer Supported Cooperative Work (CSCW)* 8(1), pp. 9–30.
- Stoller, P. (1994): Ethnographies as Texts/Ethnographers as Griots. In: *American Ethnologist* 21(2), pp. 353–366.
- Strathern, M. (1987): Out of Context: The Persuasive Fictions of Anthropology. In: *Current Anthropology* 28(3), pp. 251–281.
- Strathern, M. (1996): Cutting the Network. In: *The Journal of the Royal Anthropological Institute* 2(3), pp. 517–535.
- Strathern, M. (2004): *Partial Connections*. Walnut Creek: Altamira Press.
- Strauss, A. (1985): Work and the Division of Labor. In: *The Sociological Quarterly* 26(1), pp. 1–19.
- Strauss, A./Corbin, J. (1998): *Basics of Qualitative Research: Techniques and Procedures for Developing Grounded Theory*. 2nd Edition. London and Thousand Oakes: Sage.
- Suchman, L. (2007): *Human-machine Reconfigurations: Plans and Situated Action*. 2nd Edition. New York: Cambridge University Press.
- Suchman, L. (2012): Configuration: the Happening of the Social. In: Lury, C./Wakeford, N. (eds.): *Inventive Methods: the Happening of the Social*. London and New York: Routledge, pp. 48–60.
- Tregidga, H./Kearins, K./Milne, M. (2013): The Politics of Knowing Organizational Sustainable Development. In: *Organization & Environment* 26(1), pp. 102–129.
- Venturini, T. (2012): Building on Faults: how to Represent Controversies with Digital Methods. In: *Public Understanding of Science* 21(7), pp. 796–812.
- Verran, H. (2001): *Science and an African Logic*. Chicago and London: University of Chicago Press.
- Verran, H. (2010): The Educational Value of Explicit Noncoherence. In: Kritt, D./Winegar, L.T. (eds.): *Education and Technology: Critical Perspectives, Possible Futures*. Lanham and Maryland: Lexington Books, pp. 101–124.
- Verran, H. (2012): The changing lives of measures and values: from centre stage in the fading ›disciplinary‹ society to pervasive background instrument in the emergent ›control‹ society. In: *The Sociological Review* 59, pp. 60–72.
- Warters, B. (2005): Software Review: Review of TAMS Analyzer (Macintosh Version). In: *Field Methods* 17(3), pp. 321–328.
- Weinstein, M. (2006): TAMS Analyzer: Anthropology as Cultural Critique in a Digital Age. In: *Social Science Computer Review* 24(1), 68–77.

Winthereik, B.R./Verran, H. (2012): Ethnographic Stories as Generalizations that Intervene. In: Science Studies 25(1), pp. 37–51.

Anschrift:

Dr. Ingmar Lippert
IT University of Copenhagen
Technologies in Practice Research Group
Rued Langgaards Vej 7
2300 Copenhagen S
Denmark
ilip@itu.dk