

Phenomenography: Relational Investigations into Modes of Being-in-the-World

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Abstract

This paper introduces the notion of 'phenomenography'. Phenomenography is an ethnographic research practice that attempts to combine practice-theoretical approaches (praxiography) to investigations of human-environment-technology relations with phenomenological perspectives on knowing and experiencing these relations. It is rooted within relational anthropology (Beck, 2008). The paper introduces a set of basic premises guiding phenomenography before relating four short empirical sequences, the analyses of which suggest specific analytical sensitivities: mind, brain and body in social interaction; knowledge and experience in psychiatric treatment; reproductive technologies in shaping sociality and kinship; (digital) infrastructures' impact on ways of being-in-the-world. The paper concludes by defining phenomenography as a co-laborative research practice that aims to curate concepts jointly with research partners and that aims to provide a new form of reflexivity within anthropology.

Keywords: phenomenography, relational, practice theory, modes of being-in-the-world

Introducing Phenomenography

The study of 'humankind in all its aspects' is a difficult task. Ongoing debates within the American Anthropological Association about its statement of purpose, from which this phrase is taken, point to the many fault lines that run through anthropological terrain and that obstruct the passage to unifying approaches (most prominently perhaps Scheper-Hughes, 1995, and the ensuing debate): the separation of nature and culture the deepest and most suspiciously guarded among them. Yet it has also been pointed

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out that straightforward questions such as ‘How do people live in groups?’ are asked of anthropologists – biological and social/cultural alike – and that it is of little use to pretend that these are somehow not legitimate questions (Kuper and Marks, 2011). Productive answers to these questions can neither take holistic form nor can they insist on the primacy of any singular epistemology or ontologically primitive analytical unit. They need to navigate and speak to different thought styles, scientific practices and research fields. Answers will necessarily fall short of comprehensiveness and are likely to encounter strong resistance from many sides. It takes humble anthropological engines of discovery (Hacking, 2006) to find answers that are good to think with (Strathern, 2002).

This paper develops the notion of phenomenography as a contribution to such engines. The paper does not list Stefan Beck as a co-author, because it has been written after his death. Yet his thinking, his critical questioning, his relentless scepticism and his wit have shaped every sentence. So the ‘we’ in this paper refers to the authors and always includes Stefan Beck. And it is only fitting that we start our line of argument from one of his key concerns: phenopraxis, the constitution in practice of being-in-the-world. It marks an entry point into investigating how processes of social ordering unfold, i.e. how people live in groups within specific environments. And it is an attempt to bring into productive dialogue practice theoretical thinking and science and technology studies with phenomenological questions, all against the backdrop of a keen interest in materiality in action.

Stefan Beck never used the term phenomenography. Even the notion of phenopraxis (*Phänopraxie* in German) has not been published, but was only pondered within work-in-progress lab sessions in Berlin. Yet rather than reviewing what has been, we try to carry his thinking forward. By phenomenography we thus mean the ethnographic study of phenopraxis. Perhaps pheno-praxiography would be the more accurate term as it retains praxiography as the more established ethnographic study of socio-material practices (Mol, 2002). Yet we take our cue from ethnomethodologist Michael Lynch, who responded to the recent debates in science and technology studies about the ontological turn by arguing that rather than presupposing multiple ontologies, scholars should be concerned with studying how such onto-logies are produced. He referred to this approach as ‘ontography’ (Lynch, 2013). We much appreciate the humble ‘graphein’ in the face of the daunting ‘logos’. Analogously, we suggest phenomenography as the practice theoretical investigation into phenomena as they are being enacted, i.e. into modes of being-in-the-world.

We proceed to flesh out the notion of phenomenography in two steps. First, we briefly outline four basic premises of phenomenographic research. Second, we proceed in the main section of the paper to present four facets of phenomenographic concern

rooted within empirical material taken from recent and current projects conducted within our group and with Stefan Beck.

1. Thought Styles

‘What actually thinks within a person is not the individual himself but his social community. The source of his thinking is not within himself but is to be found in his social environment and in the very social atmosphere he ‘breathes.’ His mind is structured, and necessarily so, under the influence of this ever-present social environment, and he cannot think in any other way.’ (Fleck, 1935/1979, p. 47ff.)

This quote from the Polish physician and immunobiologist Ludwik Fleck decentres the individual subject as the origin of knowledge and the production of truth claims. Instead Fleck suggests that we think of knowledge production as a social process; one where individual thinking is constrained by a social collective trained in conducting lab work in a specific way, joined by a shared language, shared concepts and shared paths of argument and thought. Phenomenographic research rests on this understanding of scientific practice as enacted within collective thought styles.

2. Practice and Relations

Phenomenography is part of a relational anthropology (Beck, 2008). Relational anthropology focuses on the practices – epistemic and otherwise – within which nature and culture are hybridised in continuously changing configurations of sociality. Its basic unit of analysis are ‘relations between relations’ in practice (Beck, 2008, p. 197). It is a symmetrical form of organised scepticism: symmetrical in the sense that it doubts any simple methodical or epistemic reductionisms within the natural sciences, while at the same time asking the social and cultural sciences to re-engage with materiality and letting go of the notion of biology as the enemy of critical thought. (Tsing, 2000)

3. Reassembling the Social

Phenomenography does not centre on the self-evident individual of idealist philosophy, but rather concerns itself with always already partially connected ‘dividuals’ (Strathern, 1988) or thoroughly ‘socialised’ forms of practice within which individuality may be enacted. Yet while we endorse a Durkheimian understanding of sociality as a unit of analysis *sui generis* (Beck, 2013b), we also appreciate research in the science and technology studies and feminist critique over the last 20 years that has reassembled ‘the social’ as continuously co-produced from the entanglement of human and non-human agencies (Latour, 2005). Bodies, material artefacts, technologies and material environments are important sources of agency.

4. Ecologies of Expertise in the Contemporary

While heavily infused with thinking from science and technology studies, phenomenography is not about understanding the production of knowledge and truth claims for their own sake. Rather knowledge practices or ecologies of expertise are a central element of processes of social ordering and how knowledge and experience change modes of being-in-the-world and modes of being-done-in-the-world (Beck, 2012; Beck, Niewöhner *et al.*, 2012). Very much in line with an anthropology of the contemporary (Rabinow, 2004; Rabinow, Marcus *et al.*, 2008), the human and technical sciences, understood as forms of practice, play a central role in shaping the concrete sets of practices within which ‘humankind in all its aspects’ is being done. Phenomenography is thus a research practice aimed at producing reflexivity within the epistemic, social and material architectures of late modernities (Law, 1994; Boyer, 2015).

The following sections portray research from four very different contexts within which Stefan Beck was centrally involved. We present them here to illustrate four important facets of phenomenographic concern: the role of cognition and the brain in social practices, the role of knowledge and experience in shaping (disease) classifications, the role of technology in reconfiguring kinship and sociality, and the role of digital infrastructures in mediating social practices. This is, of course, by no means a comprehensive list. Yet all four contexts provide insights into current vectors of truth claims (Rabinow, Marcus *et al.*, 2008) and how they contribute to modes of being-in-the-world.

Neuroscience: Enculturing Brains – Enbraining Cultures

From fieldnotes taken during a joint project involving anthropologists and computational neuroscientists in Berlin:

It is one of these grey autumn days in Berlin. I am sitting in a laboratory-like room in front of a screen, wearing what can only be described as a wired bathing cap, a rubber thing with cables running from it, disappearing from my view. The screen soon begins to show two faces that explain to me some kind of path or route I will later have to trace on a paper map. Rather than being positioned side by side on the screen, the two faces are superimposed onto each other and so is the audio track. My two experimenter colleagues, who are sitting next door watching me through a window pane, instruct me that it is my task to focus only on one of the faces and the voice that goes with that face. Luckily it is a male and a female face. Still, the task is amazingly difficult. I realise just how difficult it is when one of the experimenters tells me to relax, as my tense neck muscles are distorting the signal that we are after in this pilot for an experiment: my electroencephalogram (EEG), i.e. the electric currents produced by my brain-at-work

trying to master a particular task. The point of this procedure is to find out whether my EEG (listener) relates to the face's EEG (speaker) recorded earlier when narrating the story. Hypothesising that speaker and listener coordinate with each other during communication, can we detect that process of coordination using EEG? The short answer is: Yes, we can. The coordination of neural activity between two individuals is directly linked to verbally communicated information (Kuhlen, Allefeld *et al.*, 2012).

What is the point of being part of developing and running such an experiment from a phenomenographic perspective? There are four aspects to an answer to this question:

1. The neurosciences have been expanding at an extraordinary pace, particularly driven by developments in technology, method and analysis. Functional magnetic resonance imaging (fMRI) and related analyses are key elements of current research. Ambitious projects around the globe set out to decipher the way human brains function. 'Watching the brain think' is one of the slogans explaining this type of research in the popular press. Social and cultural neuroscience is a subfield of these neurosciences. It is of interest to social and cultural anthropologists, because it considers humans to be animals that interact amongst each other in complex ways and that live in groups that share a set of key values, i.e. humans live in cultures and the fact that they do supposedly shapes their brain functionality in specific ways – and is shaped by it, too. Such truth claims about human group life are a matter of concern to anthropologists. They need to be examined critically to better understand the experimental systems, the genealogy of current concepts, the philosophical underpinnings of these concepts as well as the wider political economy of neuroscientific research (cf. Callard and Margulies, 2011; Hasler, 2012; Roepstorff, 2013). Of particular interest to social and cultural anthropology are the notions of 'the social' and 'culture' that operate within current experimental systems. Both tend to be brain-centric. They position the brain at the centre of an autonomous individual self that engages in rule-based interaction with other autonomous individuals. These brain-centric individuals live in cultures understood as value systems. Much of this brain-centred reduction of the complexity of actual human group life and social interaction is driven by the methodological individualism built into current experimental systems through the fMRI machinery that really only allows the investigation of individual brains working in immobilised bodies. Most neuroscientists are very aware of the limited ecological validity of many of their assumptions. They are pragmatic reductionists (Beck and Niewöhner, 2006). Yet relational anthropology shares with Foucault the concern that neuroscientists do something that neuroscience itself might not be entirely aware of. Critically observing and analysing the discursive and practical consequences of neuroscientific research for medical practice, changes in biopolitics and the notion of the self in late

- modern society is an important element of relational anthropology.
2. As the above experiment shows, relational anthropology attempts to produce a different kind of reflexivity to that of critical deconstruction. It tries to develop experimental paradigms, the findings of which act as a kind of reverse *Widerstandsavis* within the neurosciences (Fleck, 1935/1979). They are meant to counteract dominant brain-centric and individualist thought constraints. Three aspects are key: the role of the human body in coordinating social interaction (Beck, 2013a; Niewöhner and Beck, forthcoming), the social as an emergent phenomenon *sui generis* that enters into feedback loops with interacting individuals (Niewöhner, Kehl *et al.*, 2008), and the reassembled social that constitutes itself within specific material environments and with the use of material artefacts and technology (Latour, 2005). Enculturing brains within patterns of material-semiotic practice, is an agenda that is critical towards much of the mainstream thinking in the neurosciences (Roepstorff, Niewöhner *et al.*, 2010). Yet it is generative in its critique (Verran, 2013) trying to develop understandings of cognition as distributed and embodied that align better with current thinking in social and cultural anthropology. (Hutchins, 1995; Beck, 2013a)
 3. To any social anthropologist sitting still in front of a screen watching superimposed faces certainly marks a very specific form of 'social' interaction. Social neuroscience is a long way away from doing experiments in actual social situations, let alone within thick ethnographic contexts. It is not even clear whether they have any interest in getting there. Anthropology does not learn from the social neurosciences about the brain in social situations in a way that could be straightforwardly integrated into ethnographic analysis. Yet the experimental *Widerstandsavis* works symmetrically. Experimental work with the neurosciences challenges anthropological theorising: What is the role of perception, cognition and cooperation in human group life? Can an advanced cognitive anthropology interact productively with social anthropology? Why is social theory so disembodied and a-material (Beck and Niewöhner, 2006)? Current new materialisms are beginning to address this, but few even attempt to work with the knowledge that is produced by the disciplines that know much more than ethnographers about the material world and the human body (Knappett and Malafouris, 2008; Timmermans and Haas, 2008, but see also, Dolphijn and Tuin, 2012; Lock, 2015; Niewöhner, 2015a). Relational anthropology in this context does not mean buying into experimental findings and reifying complex and contingent socio-material phenomena. Rather it means thinking with experimental findings and challenging the social and cultural reductionism built into social anthropological comfort zones.

4. In such an approach, the experiment is not only a natural scientific method, but also an object of ethnographic study and a particular research aesthetic – one where materiality, technology and experimental systems are appreciated as good to think with (Roepstorff and Frith, 2012). Relational anthropology is thus an approach to social and cultural anthropology that collaborates with disciplines that do research about the human body and appreciates the productive confusions that emanate from it (Niewöhner, 2016).

A phenomenographic perspective onto and with the neurosciences thus aims to rematerialise social and cultural theory as a way of inducing new reflexivities into ethnographic research. It understands cognition as a distributed and embodied process inherent to shaping social interaction and inherently shaped by situated epistemic practices.

Psychiatry: Ways of Knowing, Ways of Experiencing

Our second facet of phenomenography takes us from controlled laboratory experiments with the brain into urban settings and psychiatric care. With partners from psychiatry, we have engaged in a collaborative research process over the last six years. The initial aim of the project was to enquire into the ‘production of chronicity in mental health care and research’. How is the classification ‘chronically mentally ill’ used in everyday psychiatric and bureaucratic practices and what are the respective effects, specifically for people classified as such? At first glance, the situations and phenomena we encountered during this research seem to be the very opposite of the ‘artificial’ experimental situation described above. Conducting fieldwork in mental hospitals and other institutional care settings and especially following patients outside the walls of institutions into their private lives meant dealing with unpredictable and often uncontrollable situations. Yet the two fields both hybridise nature and culture in their own ways. Our collaborators in the field of psychiatry use the label ‘social’ to define their position within (or rather on the edge of) mainstream psychiatry. The label ‘social psychiatry’ in the German medical setting describes a critical stance towards increasingly biomedical explanations within mental health research and treatment programmes. Put to the fore is an understanding of mental illness as systemic, comprising social relationships, environmental conditions and processes of adaption to a social milieu – with positive as well as negative consequences (Schmiedebach and Priebe, 2004; Dörner, 1995). Somatic mechanisms, specifically brain functions and pathologies, are certainly not seen as the main target for therapeutic interventions. From their perspective, chronicity, i.e. the long-term persistence of a set of symptoms and experiences, is co-produced by a complex set of factors, including, first and foremost, mental health care infrastructures, diagnostic and

treatment regimen with their labelling and looping effects and the challenges of urban living, including poverty and social exclusion. Being chronically mentally ill in a city is thus something that is not reducible to a brain dysfunction, but rather marks a very particular mode of being-in-the-world that is heavily shaped if not structured by medical knowledge, bureaucratic practices and requirements, and the entrainment of particular social routines within urban settings – a process we have elsewhere described as ‘niching’ (Bister, Klausner *et al.*, 2016). At the same time, however, most social psychiatrists share the view that phenomena such as acute psychotic states contain corporeal elements, i.e. are materially anchored somehow. Their particular form is not determined by or based on a material defect and it varies with treatment, social context etc. It might even be the case that psychosis is an entirely misleading category. Yet medication is routinely used to establish a situation where patients are able to enter into talk-based formats of interaction, showing that somatic interventions do have an effect and implying for most psychiatrists that psychiatric symptoms have corporeal components. For us, it is a phenomenographic question how the experience of being a psychiatric patient is situated within particular choreographies and wider infrastructures of care. (Klausner, 2015; Klausner, Bister *et al.*, 2015)

The particular social psychiatric perspective that we encountered is less grounded in universal standards, scientific evidence and best practice guidelines. Instead, it is described and enacted within clinical contexts as a form of expertise that is gained by practical experience or enskilment (Ingold, 2000) and very much situated in local ‘ecologies of expertise’ (Beck, 2015a) through practical engagement in social as well as environmental settings. This ‘experiential expertise’ was considered a key resource to meet the uncertainties of individual cases in clinical practice and to choreograph treatment trajectories with outmost flexibility.

What is of interest here from a phenomenographic perspective is how this ‘experiential expertise’ is legitimised and mobilised in mental health care, thereby producing specific practical consequences. Rather than understanding these processes in terms of ‘medicalisation’, i.e. non-medical life-worlds coming under the jurisdiction of a medical regime, the phenomenographic perspective, in a first step, differentiates ways of knowing and pursues their grounding in specific socio-material co(n)texts (Beck, 1997). In a second step, it asks how certain ‘thought styles and habits order (new) forms of sociality’ (Beck, 2010) – how psychiatric expertise transforms the being-in-the-world of people living with a diagnosis.

Experience in this context needs to be considered in two different ways. It not only serves as legitimation for the ‘doings and knowings’ of the social psychiatrist, but is also considered the core therapeutic object. A keyword in recently developed treatment programmes in social psychiatry is the notion of ‘expert-by-experience’: the patient

becoming an expert of his / her experience in the course of mental illness. Therefore, the patient is considered as a partner in the treatment process, centring on his / her individual illness experiences and his / her 'coping skills'. Treatment in this sense is about a patient learning to transform the uncontrollable and wearying experience of mental problems into a conscious experience, which then becomes accessible to rational reflection and skilful re-working. In the everyday therapeutic practices, this was pursued in a mode of collective inquiry (comprising the patient and the professional, as well as other patients, e.g. in group therapy sessions), where experiences were exchanged, probed and interpreted and thereby transformed into a more stable experience. Following the pragmatist John Dewey (1934), phenomenography problematises this process as the transformation of experience (in German: *Erlebnis*, as something someone lives through) into experience (in German: *Erfahrung*, as a reflective moment of 'closure') (Beck 2015a). In this process, 'having a psychiatric disorder' is slowly being transformed from a process of labelling to a way of being a person (Hacking, 2006) and into a specific way of being in the world. What at first glance appeared to be an analysis of the inventory of clinical expertise was slowly turned into a more general investigation of 'ways of experiencing': how the experts' know-how is legitimised as an experience-grounded and artful skill as opposed to simply a mechanistic application of diagnostic and therapeutic standards, and at the same time, how patients learn to express and reflect their experiences and transform them into something meaningful.

Experience from a phenomenographic perspective is thus never an authentic phenomenon that ethnographic work needs to pay particular attention to and even tries to empathically emulate. Rather 'experience multiple' is enacted as therapeutic tool and object carrying very specific meanings of mental illness, of the pathological in general, understandings of what it means to be a good 'patient' and choreographing ways of being-in-the-world as a mental health patient.

Two points follow from this:

Firstly, experience must be analysed as practice, as experiencing, constituted by and in situations. We argue in favour of addressing 'the interactive, ecological nature of experiences that are the outcome of a mutual, self-amplifying adaptation of actors and their natural, social, and cultural environments' (Beck, 2015a, p. 20). Experiencing then is performed in the collective inquiry of patients and therapists, in concrete spatial arrangements and daily routines, drawing from historically evolved therapeutic concepts, hospital infrastructures and embedded norms of 'good care'. This dissecting of experience into different modes of knowing and being-in-the-world has at the same time fundamental consequences for an anthropological framing of experience which is commonly assumed as universal to human beings (cf. Desjarlais 1994). Rather than taking 'the subjective experience' as the unit of analysis, the social

and material conditions and practicalities of experiencing move to the centre of phenomenographic analysis.

Secondly, analysing 'ways of experiencing' substantially merges being, doing and knowing. While in a phenomenological approach the experiencing subject (in its relations with the world) tends to assume central position, a combination of an ecological-anthropological version of practice theory with the phenomenological interest in 'being-in-the-world' enables phenomenography to address 'humankindness' as a process and as an empirical problem.

Reproductive Medicine: Techno-Science and Techno-Sociality

The partially connected 'dividual' is at the heart of much of current anthropology. This becomes most obvious in the new kinship studies investigating the effects of reproductive technologies on kinship and social life more generally (e.g., Strathern, 1992; Franklin, 1997; Edwards, Franklin *et al.*, 1999). Within a series of projects, within which Stefan Beck was centrally involved (e.g., Beck, Cil *et al.*, 2007; Knecht, Klotz *et al.*, 2011; Knecht, Klotz *et al.*, 2012), phenomenographic attention was turned to kinship as a classical domain of the social, as a form of social meshwork, as 'diffuse and enduring solidarity' (Schneider, 1968) and as such a key element in ordering the social: What happens to everyday solidarities when something as self-evident as biological kinship becomes questioned? And how is this domain stabilised – normalised – once again, during and after repro-technological interventions? How does scientific knowledge about genetics and reproductive technologies contribute to this? And how does one conceptualise a 'techno-sociality' were human life has literally been made on the lab-benches of a trans-nationalised medicine and where family life rests on notions of nature modelled on culture as practice (Rabinow, 1992)?

A phenomenographic perspective approaches kinship as a set of practices (e.g., Franklin and McKinnon, 2001) or 'structuring structure' (Bourdieu, 1996), instead of a hidden grammar of society (e.g. Beck, Hess *et al.*, 2007). It asks how patterns of 'doing kin' emerge, sustain themselves, develop structural properties or, to the contrary, vanish again. It thus turns a topographic interest in mapping structural givens, into a topological interest for the concrete and situated workings of the multiple looping effects between everyday (family) life as lived, technology and expertise, and a diverse set of formal and informal institutions and regulations.

Istanbul, Berlin and London harboured the field sites within this series of projects conducted by Stefan Beck. They all foregrounded analytically an inherent mobility: of people, professionals, artefacts, and concepts navigating an increasingly thick palimpsest of knowledge, experience and regulation (Beck, 2007, 2012b). Take the Turkish branch

of the US-American Johns Hopkins hospital in Istanbul as an example, where Turkish doctors trained in the United States were treating patients from all over the world after strict US standards for clinical practice, within a physical environment completely imported from the US; or mobile patients, dodging the strict regulatory constraints of national bioethics, being treated by German-Turkish doctors migrating back to Istanbul after life and medical school in Germany. Such mobility can only be sustained through the flexible and often pragmatic use of religious, scientific and regulatory concepts to make and stabilise familial solidarities after technologically assisted reproduction.

This key role of mobility in co-producing particular practices of regulation and lived experience underlines an aspect of conceptual importance to phenomenography and relational anthropology more generally. It demands a re-conceptualisation of biopolitics in times of ever-intensifying transnationalisation and globalisation. How does one come to terms with biopolitical phenomena, such as standardised clinic equipment travelling around the world to “make life” in standardised ways in highly different places? Stefan Beck pointed out how Foucault developed his notion of biopower on the basis of the European welfare state. Today, however, the relationship between state and citizenry is constantly shifting and it is domains such as biomedicine and reproductive technology within which these shifts are negotiated. In fact, ethnographically following these highly mobile ‘patients’, it becomes clear that territorially bound nation states are today but one element acting on processes of social ordering. Patients navigate regulatory and epistemic landscapes heavily shaped by a globally operating capitalism and a thoroughly economised medicine, and they adhere to, reproduce and alter highly individualised sets of normative assumptions and rules, defying in practice any straightforward understanding of the nation state, populations or a body politic. While the critique of commodification always looms large in this field of anthropological research, Beck was more interested in the meticulous ethnographic, or indeed phenomenographic, surveying of the degrees of freedom engendered by the co-constitutive shifts in regulatory, epistemic and experiential reproductive practices.

Technology in Practice: Mediating Ways of Being-in-the-World

Phenomenography is interested in better understanding how ways of being-in-the-world are being done in practice. As the previous section has demonstrated, phenomenographic sensitivities are attuned to the practices of partially connected (in)dividuals. Technologies and their developmental hinterland play a key role in these practices. Here, phenomenography reveals its allegiances with science and technology studies, new (relational) materialism and feminist critique (Haraway, 1988; Barad, 1999; Law and Mol, 2002; Pickering, 2010; Beck, Niewöhner *et al.*, 2012; Dolphijn and Tuin,

2012). Technology is never simply used or appropriated. Neither can it be sufficiently understood as material object inscribed symbolically with culture. Technological agency is an inherent part of material-semiotic practices.

In his last public lecture on digital practices in January 2015, Stefan Beck related the following fictitious story of his arrival by train that day to his audience:

‘I got on the train to come here. To do this legally, I operated the application “touch and travel” via the touchscreen of my smartphone in order to buy a ticket. Hence, the program sent the data of my GPS tracking to a central server. To calculate my travel route, the means of transportation and the appropriate fare, my data were compared to the ideal timetable. Interestingly, the same was done with the GPS data of the train, but its data were compared to the ideal timetable in order to measure the train’s divergence. Via another interface I was able to recall the ‘delay’ live through another application of my phone. Thus, I could send a text message to apologise in advance: “I am at Hesse memorial [Hessendenkmal; a tram stop between railway station and lecture hall].” (Beck, 2015c)

This simple example does not only show that everyday lives are always already technologically mediated. It tries to make the point just how deeply human practices are shaped by and embedded within digital infrastructures in often implicit ways. Practices are continuously being infrastructured (Niewöhner, 2015b). Trying to understand these digital infrastructures, research draws on yet further specialised technology; hence not only ways of travelling but also ways of knowing are technologically mediated. Instead of separating a ‘technological’ from a ‘social’ and trying to find meaning in matter between technological determinism and cultural pessimism, the relational and practice-theoretical perspective asks ethnographically how routinised practices are mediated through technology over the course of time. How can habitus, body techniques or local biologies be conceptualised as practiced within specific material environments including technological artefacts and their hinterland? The ethnographer needs to carefully follow the web of significant infrastructural relations, which have been socio-technically constructed and in which people are suspended and enmeshed, thereby producing an analytical thickness that is ‘not localized in the way that either Geertz or Latour thinks it is’ (see also Rabinow, Marcus *et al.*, 2008: 81; Beck, 2015a).

Phenomenography extends this thinking to include analytical sensitivities towards the human body and to material environments writ large. Here, phenomenography differs from others in anthropology who have suggested that the analysis of technology ought to be integrated into a wider understanding of material culture – including particularly mundane, everyday objects – to avoid an unwarranted a priori analytical primacy of the material (e.g. Hahn, 2015). The consistent focus on practices marks a somewhat different if perhaps complementary strategy to avoid such risks of fetishising

technology not through integration into the multitude of objects of the lifeworld, but through turning into an empirical question how relations of all kinds are forged through material-semiotic practices within specific environments.

In its most fundamental sense, this perspective also dissolves the implicitness of the corporeal and mindful human being as the inhabitant of an object-populated lifeworld. The human self does not end with its skin, but is being conceptualised as a dynamic product of or even vector within material environments including infrastructures and mundane objects (Bentley, 1941; Bateson, 1972). Human beings are never autonomous users of objects within detached surroundings. Bateson was perhaps the anthropologist who most clearly articulated his difficulties with attempts to distinguish *a priori* and categorically between self and environment without being able to observe how this division is produced.

'If you ask anybody about the localization and boundaries of the self, these confusions are immediately displayed. Or consider a blind man with a stick. Where does the blind man's self begin? At the tip of the stick? At the handle of the stick? Or at some point halfway up the stick? These questions are nonsense, because the stick is a pathway along which differences are transmitted under transformation, so that to draw a delimiting line across this pathway is to cut off a part of the systemic circuit which determines the blind man's locomotion.' (Bateson, 1972, p. 318)

The human self, as well as that self's experience as and knowledge and understanding of itself, is always constituted in socio-material environments and thus varies across situations: Human beings then are the effects of their substantial entanglements with their surrounding environments. Where cybernetic thinking conceptualised this entanglement systemically, Stefan Beck insisted on practice and process. In the lecture cited above, he continues, 'I am differently at Hesse memorial compared to Constable guard-house.' This grammatically dubious statement reveals a difference in the process of 'being' that is induced initially by a difference in infrastructure. Picture yourself on this tram ride from the railway station to the lecture hall where you are meant to give a plenary lecture. As your phone tells you in real-time how you are being delayed and that you are unlikely to make it. Your mind-set and experience of that ride will change with every update of your travel app on your mobile phone. You may respond to this by sending a text message to the host or you may make a call. The point is: the availability and operation of this infrastructure changes how you go about your day, how you experience a particular set of practices, but also how your body responds to a situation (stress, communication). Analysing this set of practices, it is not sufficient to operate with object, user and meaning. What about the affordances built into the travel app by software developers within their respective programming and marketing environments? What about the manifold looping effects between technology, body and self that may

bypass hermeneutic processes? What about the multiple ways of responding to this situation technically, socially and emotionally? What about the discursive, epistemic and political contexts of such situations?

Phenomenography is about carefully attempting an answer to these questions – and returns us to the opening statement: studying humankind in all its aspects. Phenomenography certainly does not consider all aspects of human existence. It provides an attempt to hybridise nature and culture in analyses of everyday practices by diffracting analyses of doing human-technology relations through analyses of knowing and experiencing human-technology relations (compare Ihde, 1979). It extends practice theory into questions of experience without giving primacy to authenticity or reifying human subjectivity. And it extends phenomenology by dissolving the human subject/self into a set of material-semiotic processes and relations; relations between body, technology and material/social/political/historical environment. Phenomenography thus contributes to a relational anthropology that asks how the human body, forms of subjectivity and ultimately humankind are constituted in practice and over time, and how these practices are shaped by knowledge and experience always conceptualised as relational phenomena.

Conclusions

We have provided brief insights into four research fields where phenomenographic attention creates a productive tension between practice theory and phenomenology, i.e. between doing and experiencing nature culture relations and their hybridisation. We conclude by insisting that phenomenography is a co-laborative research practice (Niewöhner, 2016) that engages in joint epistemic work with its research partners in the respective fields, e.g. social neuroscientists, psychiatrists, reproductive medicine practitioners or infrastructure and technology developers (see also Marcus, 2010). Co-laboration is necessitated by the degree and nature of expertise and institutionalised reflexivity in these research fields. Phenomenography risks having little to add to the natives' point of view unless engaging in jointly curating concepts that are good to think with (Rabinow, Marcus *et al.*, 2008). This form of co-laboration, studying sideways (Boyer and Hannerz, 2006) or modest witnessing (Sørensen, 2009) tries to induce new forms of reflexivity to anthropology and to the research fields by providing a protected space within which scholars can try other disciplines' and fields' ways of knowing and ways of being-in-the-world through scientific method. It applies phenomenographic attention self-reflexively to generatively irritate established thought styles and collectives and increase thought caprice.

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