Tracing analytic assemblages – doing doctoral research with actor-network theory

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Abstract

The practices of doctoral education are intricately entangled with technologies. This methodological paper examines the practical concerns involved in doing the analytic work in a networked learning setting with Actor-Network theory (ANT). It is a story about engaging with ANT as a companion in an ethnographic research project on teaching practices in Sweden during the Covid-19 pandemic. The empirical examples are pulled from online interviews in the pandemic outbreak and two ways of assembling the analytic practices of those interviews. On the premises that method and technology are non-neutral, the focus is on how the interviews are analysed and the modes of knowing that they form. For example, the paper examines how computer-assisted qualitative data analysis software acts on the analyses of the interviews and the knowledge patterns made possible and what signals are silenced. A second analytic assemblage is deployed that traces those signals. Based on the empirical examples of doing analyses, the paper discusses how analytic assemblages change and move research and the researcher in unpredictive and performative ways that troubles the expectations of a singularised doctoral journey.

Keywords

Actor-Network theory, analytic methods, tracing, NVivo 12, doctoral research

Introduction

In the story of doing doctoral research that I present in this paper, I am encouraged by Actor-Network Theory (ANT) scholar Law (2004, 2022) who over several decades has discussed the gap of moralising research methods on the one hand and the messier practical conducts of research method and analysis on the other. I think doctoral candidates are no strangers to this glitch. Careful step-by-step planning carries many promises but, we learn, can only go so far. It raises the question of whether it matters to doctoral education that research practices, including doctoral research, are non-linear, multiple, and sociomaterially distributed. In response to this question, calls have been made to re-think some conventions about doctoral education. For example, Taylor and Adams (2020) contest the singularised idea of 'a doctoral journey' with the nuance of journey*ings*. Similarly, Gravett (2021) unsettles the linear idea of the doctoral experience as one of departure and arrival by paying attention to acts of slowing down and affirming the many conflicting currents of thought in doctoral research. In Barnacle and Mewburn's (2010) networked account of the becoming of doctoral research(er), they centre on the often unnoticed mundane materiality, e.g. a lost lanyard, a book, and the fluxes of overlapping sites. These scholars have in common a concern for the mess and matters of doctoral research. I direct the same concern in this paper to the doings of analytic practices in my own work. I aim to examine this by foregrounding the computer-assisted qualitative data analysis software NVivo 12 in relation to the practicalities of doing qualitative research analysis.

In my doctoral research, I work with ANT to inform an ethnographic methodology with an upper secondary school in a small Swedish town. My thesis is a study of pedagogy in response to unexpected natureculture events. The empirical engagements with the teachers, their students, and the technologies started in May 2020, and I followed them to graduation in June 2021. This period was dominated by the practical encounters with the Covid-19 pandemic that challenged both the teaching and the research. However, in this methodological paper, I focus on the analytical challenges with an ANT approach that assumes a decentring of the human in research practices (e.g. Latour, 2005; Law, 2004). Exploring the analytic assemblages as devices for modes of knowing, is an opportunity to 'think hard about our relations with whatever it is we know, and ask how far the process of knowing it also brings it into being' (Law, 2004, p. 3). My questions are – how are analytic assemblages shaped and what knowledge and research positions do they shape?

Premises of an ANT approach to analysis

As a premise of this paper, I want to situate ANT as a specific relational ontological approach to doing research. ANT's approach to ontology, the matter of what is and what is becoming, is part of the 'ontological turn'/'material turn' in the social sciences and education research (see e.g. Bodén et al., 2019; Fenwick & Edwards, 2019; Gunnarsson & Bodén, 2021). This ontological turn deals with the decentring of the human in the practices of doing research, which has caught the interest of ANT researchers since its inception in Science and Technology studies (STS) in the early 1980s (see e.g. Latour, 2005). In the aim of decentring the social realm of the human, analytic attention can give room for matter as complexly entangled in livable more than human worlds; technology, nature, bodies and affect. However, this turn is not a return, or a reversal, to a materialism in which objects are subject to predictable causal forces and agencies. For ANT-scholars, objects, i.e. realities, are enacted of practices and cannot precede them. This means that an important premise is that what *is* cannot pre-exist its relations, it is performatively enacted of them. The performativity posits a relationally entangled and two-way movement so that worlds also enact practices that troubles both linearity and singularity. For the practices of doing research, of enacting methodologies and analyses, it suggests that research enacts realities rather than uncovers a reality that was already there passively waiting. An analytic assemblage can therefore be thought of as the assembling of practices to analyse signals and silences so that certain patterns are enacted. Analytic assemblages, at the same time, discern and amplify realities as modes of knowing them (Law, 2004, 2022).

In educational research, this ANT approach to research shares many premises with a post-qualitative approach to doing situated inquiry (Gunnarsson & Bodén, 2021; Jackson & Mazzei, 2012; MacLure, 2013; Mazzei, 2013). Post-qualitative inquiry is grounded on a feminist critique of the material-discursive binary that structures material realities as inaccessible beyond representations of language. I draw extensively on this scholarship in this methodological paper. For example, I appreciate MacLure's (2013) narration about 'relational thinking' to talk about doing research with an ANT-informed approach like mine. A relational thinking takes representation to be and establish a humanist premise, rather than decentring the human in relational research practices. Although legitimate, scholars of post-qualitative inquiry have argued that language has been too dominating and closed down other ways to account for educational research and limited the modes of knowing educational realities. However, the problem that presents to both ANT and post-qualitative inquiry is how to deal with a decentring of the researcher subjectivity while at the same time engaging the accountability of the researcher. In practice, becoming a doctoral researcher in a situated inquiry requires decentring without disengaging with the entangled analytic assemblage.

Ways of assembling analyses

Before moving into my examples of analytic assemblage, I want to give some context to the empirical work they come from. The Covid-19 pandemic outbreak and the restrictions during the first wave in 2020 meant I was unable to travel to the school for my ethnographic fieldwork. On deciding to work *with* the pandemic, not despite of it, I did a series of online interviews with six of the teachers in May 2020. The interviews were an approximation of ethnographic work and we focused on the practical doings of teaching during the pandemic outbreak and the mundane efforts needed to hold the everyday of school closure together and how any work-arounds were put in place. Thus, my focus was not on the teachers as individualised conveyers of human experience. The interviews initiated my relations with the school and unfolded into a longer-term empirical work on teaching and technology in emergency response. However, I am staying with the first online interviews in this paper. From the range of conventional research technology available to me, I did the interviews with Zoom and subsequently used NVivo 12 for transcribing, managing, and coding the interview data. Given that neither technology nor methods are non-neutral, which is an important assumption in ANT and my research, what effects did a technology like NVivo 12 have on the interview data and the possible knowledge(s) from it?

Analytic assemblage with NVivo 12

Supported by the specific configurations of NVivo 12, the initial coding I did was oriented at categorising themes of sameness. NVivo 12's computer software does this efficiently, which seems to give little room for any critical scrutiny. In a way, there is a representational thinking operating with NVivo 12 across the coded themes of sameness when the software aggregates the entries into generalizations of the data. For example, NVivo displayed to me that patterns in the coded data emerged, namely, on the difficulties with teaching to do with students not being visually (re)presented. Teachers were for example unsure of how to care for students' needs because they could not see the subtle signals for clarifications when the teaching took place in the Microsoft Teams platform. Did students understand the teacher's explanations? Who needed more help? For

similar reasons, the teachers struggled with examinations and assessment practices when they could not see the students in front of them in the same room. Were they cheating? 'Everyone' knew how easy students illicitly could use smartphones and chats etc. when taking the online tests. The pattern was repeated across every interview transcript and got a high percentage of coverage, which the NVivo software assisted with tracking.

This repeated theme of 'difficulties with out of sight teaching' was not a surprising outcome and I was uneasy with why I needed a qualitative analysis software like NVivo 12 to tell me so. Furthermore, I was frustrated at the overemphasis on difficulties because the interviews were also vibrant with tinkering and doings that were at the same time mundane and pressing in the specificities of the emergency response. In the patterns of sameness, there did not seem to be any room for knowing about the specificities or the irregular. The analysis seemed to work reductively so that the ambiguities and mess of the interviews were smoothed out, silenced, and relegated to some inaccessible background. As a mode of knowing, a quest for clarity was underway at the expense of ambiguity.

The analysis with NVivo also assembled the researcher in specific ways. Jackson and Mazzei (2012, p. 12) say about coded themes in qualitative research interviews that the coding takes the analyses away from data as it ends 'up' in macro generalizations. Importantly, the coding practices enact a distance between the researcher subjectivity and the research object. Consequently, that which is studied precedes in time and is external in space to the researcher, rather than being performatively enacted on the premises of a relational ontology, a relational thinking. Objectivity via disengaged distance renders an ethically problematic and 'invisible' researcher position from which it is difficult to be accountable for the research enactments. The convention in qualitative research on the issue of accountable objectivity is to deploy reflexivity from the researcher position. Post-qualitative scholarship has drawn attention to how research reflexivity relies on a subject centric epistemology that centres and amplifies the human, rather than a relational thinking (Gunnarsson & Bodén, 2021).

Knowledge contributions from interviews and NVivo 12 are no doubt possible and important. However, my argument in this paper is that the specific combination of interview data, NVivo 12, and the ANT-approach meant that the methodology, more specifically the analytic assemblage in my doctoral research, was at risk of contradicting itself. The ontological claim was to decentre the human and to privilege relations over representation. However, the effect of the analytic assemblage was heading in the opposite direction – it amplified teachers' voices as representational data. In other words, the methodology established the teacher subjectivity at the centre of all things, as 'voice', and asserted the unique human capability of representing and reflecting educational realities in separation from the central figure, as 'data'. The analytic assemblage with NVivo rendered the interview data as the mediator of truth between what was going on and how to know about it. It was regulated by a representational logic, rather than the ANT-informed relational thinking (MacLure, 2013).

This analytic assemblage was pulling my work to engage with voice, distance, discovery, and representation. More specifically, it was anthropocentric and did not decentre humanist and representational premises. It troubled the claims of exploring sociomaterial enactments of teaching and school closure that I aimed for. Being conflicted, I had reason to slow down and think more carefully about methodologies as world-making devices. The relational thinking asks of ANT-scholars to stay close to the studied practices, relations, and events in order to affirm, on the one hand, what may present as clear while, at the same time, embrace the ontological conditions of uncertainties, ambivalence, mess etc. There are other ways that analyses can assemble. I will now turn to the analytic method of tracing (Latour, 2005) by working with an empirical example from the interviews.

Analytic assemblage with tracing

The second instance of analytic assemblage involves a different set of materials and practices. Importantly, it includes a shift in the underpinning analytic question – from being geared at what was being said in the interviews to a performative focus on what the interviews were doing. I started to reconsider them as ethnographic events in an effort to decentre the interview method's discursive emphasis. In my work with the online interviews, I had taken notes that I could add as more material to the interview transcripts. My notes were on what had happened before, during and after the interviews; reactions, misunderstandings, technical mishaps, memories, etc. For the analysis, the notes added more relations and mess to the interview events, rather than reducing and clarifying what had been said.

Consider the following vignette, i.e. the narrative convention of ethnographic research, from one of the interviews. The teacher worked at the time from his empty classroom where he was sitting for our online interview.

> As the interview finished, and I turned the recording off thinking that the very informative interview was over, the teacher did something unexpected. He asked if I wanted a tour of his classroom. He then picked up his laptop with the web camera, turned it away from himself out into the room so that it was in my view, and scanned the space in a sweeping movement from one side to the next. The familiar view of an empty and abandoned classroom filled the screen. The space was uncanny. (May 2020)

The classroom was uncanny. The uncanniness was an affective response to the ambiguity of what is familiar, chairs-on-desks, and yet unfamiliar, in the middle of the day in the middle of the term, that speaks to spatial arrangements as something indeterminate. Up until that dense moment of confrontation the empty classroom had not been part of my research, merely rendered an abandoned and uninteresting container. The sudden turn of the camera and the lack of attention for the space enacted a cut that at the same time gave the room its spatial capacity to become agentic and affect me. The classroom was enacted of the entangled forces of space, time, and materiality. Its becoming was dependent on its momentary situated and traced relations to the Covid-19 pandemic, teaching, the movement of the camera, screen technology, and research interview.

It is the density of the unexpected virtual classroom tour event that makes it a relevant entry point for assembling an analysis with tracing. Tracing as an analytic method is not geared at discovering what is in waiting to be made sense of, contrary to my encounters with NVivo. It assumes an engaged researcher answerable to the research object and the enactment of analysis as a process of world-making. In the analytic assemblage of the classroom tour, both affect and ignorance are activated simultaneously to detect and amplify reality. Tracing is to make sensible, assemble and create links between the entities and sets of arrangements that enact educational realities. The analytic attention is on the momentary specificities of how human and non-human entities become influential in achieving and challenging more or less intelligible flows of practices. As a situated inquiry, the analytic assemblage has capacities to make a doctoral researcher visible and thereby accountable (Gunnarsson & Bodén, 2021; Moberg, 2018).

This analytic assemblage enacted aspects of reality that had escaped the representational logic of NVivo. For example, there was the materiality of space, an affective dimension, and uncanniness that has ambiguous and elusive qualities. These are signals and silences that escape the possibilities of representation. This analytic assemblage opened up for explorations of how pandemic pedagogies enact spaces for teaching and learning that are not disembodied and 'online' but spatially situated of bodies that are unequal before the Covid-19 pandemic. I started wondering about how the mundane teaching and technology practices made school 'attendable' for students during the school closure (see Mörtsell, 2022).

Concluding words

In this paper, I wanted to examine the practicalities of doing analytic work in doctoral research in a networked learning setting. When analyses assemble in different ways it is possible to trace the enactments of multiple modes of knowing and becoming of doctoral research. The analytic assemblage with NVivo privileged, that is it enacted and made possible, a representational thinking that asserted 'voice' as a reflection of truth and representation of essentialist subjectivity. It oriented the research at understanding and interpreting what the interview data meant, such as coding to uncover 'what is in it' (Jackson & Mazzei, 2012; Mazzei, 2013). This analytic assemblage enacts patterns of sameness that involve creating silences, which can be traced when the analysis is assembled in other ways. Materiality like software is part of the sociomaterial relations that shape those assemblages and the knowledge(s) made possible, including the researcher positions.

In line with Law (2004), it is not NVivo's status as standard for doctoral candidates doing qualitative data analysis that I want to interrogate. Rather, my interest is in the normativities that come attached to NVivo, such as the assumption that a pre-existing reality can be accurately represented in code if done properly. It also suggests that not properly following the rules inevitably leads to a failure to understand reality. When qualitative analysis software assist in assembling research, as a labour-saving device, which relations are made expendable or erased? These are arguments and questions that help articulate how analytic assemblages are modes of knowing, as Law (2004) suggests. It raises the question of how multiple modes of knowing relate to each other. And how do these analytic assemblages enact specific conditions for the doctoral research process?

I want to end on an affirmative note. The argument in this paper suggests that the analytic assemblage that involved computer-assisted qualitative data analysis software was 'wrong', given the approach, and needed to be put 'right'. However, an affirmative conclusion would be to say that the analytic assemblage with NVivo was not a wasted effort because it enacted a slowing down and reconsideration that triggered additional research practices. The practical doings acted on the analytic assemblage and made other modes of knowing and research realities possible that in turn have opened for new research questions.

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