When Methods Meet:
Socio-material approaches:
Actor-network theory and Karen Barad's diffractive methodology

Tara Fenwick (University of Stirling) and Sarah Doyle (University of Stirling), in conversation in Stirling, August 2016.

This 18-minute film captures a conversation between two people who undertake socio-material research in different ways, drawing on actor-network theory and the agential realism of Karen Barad. Tara Fenwick and Sarah Doyle both highlight the importance of researchers paying attention to the human and non-human elements that comprise particular phenomena, and the messy connections among people and things. Both draw on research projects that have attempted to understand phenomena that are continually evolving, and both are mindful of the ethical and practical implications of researchers' choices to focus on one aspect of a phenomenon over others. Socio-material approaches have lessons for professional practice in fields such as health and education.

Transcript of conversation:

SD: So Tara you have been writing about socio-material ideas and ways of doing research for a long time now. What do you think you would say that we mean when we are talking about researching in socio-material ways?

TF: It's seeing whatever we might think of as social elements, meaning, symbols, interactions, certain elements of culture, with what we think of as material elements which would be everything to do with bodies and settings and objects and technologies and all sorts of things. And the focus is on the relations, as these elements, as these heterogeneous things assemble and reassemble to produce whatever we see as reality.

So what we are interested in with research here is trying to be attuned to what John Law calls these relational semiotics, and perhaps emphasising a little more the material, because it's so often is dismissed or ignored or treated as background. So it's really trying to bring out what in these material assemblages is the material or the non-human, if we can use that word, element doing in that to produce what we see as reality.

I think a second thing though is it's a focus on describing, it's stories about how things come together. It's not trying to establish theory of why the world is the way it is, it's about how.

SD: I love the idea that these are focussing on social-material relations among things, so it's not really about particular social elements as discrete from particular material elements, but the focus in this kind of research is on the connections among them. It's a relational way of exploring aspects of the world or particular phenomena. And also this idea that this way of approaching phenomena really tries hard to avoid making a priori assumptions about whether the focus is something material or something social, but that holding of suspended belief if you like that helps focus and sustain attention on the relations among things.

The focus of my study was looking at how health care professionals learn in a particular case study of diabetes. And one of the ways that I approached it in order to sustain that kind of socio-material attention was through a particular technology, an insulin pump. Which you can see, this little digital device, that it is also connected to the human body via these sets of tubing, and also there is a needle underneath here. So although it's a digital device that you might think of as just a piece of mechanics, it actually works as an insulin pump in a kind of entangled way with the body as it infuses insulin. So I guess one of the ways that I approach this study methodologically if you like in terms of examining this was about following the insulin pump. And that helped sensitise me I would say to the way that this particular phenomenon of caring for diabetes materialised, drawing my attention to things that were more than just the human relations because I guess my default position was to think about the people in the research setting which is true for lots of social science researchers. But one of the things that happened early on in the study was that one of the nurses said diabetes is a different illness with an insulin pump. And this idea that diabetes materialises in different ways depending on some of the technologies and devices and tools that employed in caring for it. So that drew my attention to the insulin pump.

So it was an iterative thing I would say between the research methodology I selected and my engagement with the research setting, and being open to that.

TF: How did you know that the insulin pump was the right thing later to follow?

SD: I didn't not pay attention to other things, but it became so important, it became very evident that the kinds of work, the kinds of effects of the insulin pump were very particular as opposed to injection devices and injection pens. And that became very clear.

TF: it's a lovely example of the socio-technical embeddings and entanglements that we are trying to look for. Let me share a bit of a study that I did. We were interested in women's learning in garment factories. So a few things you can kind of notice there, there is materials everywhere. You can't talk about work in the garment factory without being overwhelmed not only by the visual materials, but what you don't see here is the dust that is everywhere, blue dust. And the clanging of the machines is horrifically loud. And we took sound tapes of this and when we presented the study we always played that sound so that people get a sense of this.

But what we are interested in is the women's learning, because as you can see from this picture, and this is a very typical example. Most of the women working there are really settled immigrants. And some had been there for thirty years and still didn't speak much English or were treated very much as marginalised people.

So the first thing you can see with this is in terms of the socio-technical, it is very much a woman machine assemblage. It's an actor together, it's producing these materials, but you

can't separate out the woman's hands and the machine's needles and the woman's foot pressing the accelerator.

What we found was just briefly in watching the assemblage is how for example the women balanced speed and safety. Because if you went too fast first of all you had injuries running over your fingers and so on, and then that was time away from your machine. So it was less pay. So if you did a mistake you had to rip it all out and that ripping time did not count in your salary. So it's finding the perfect balance of speed and efficiency and safety. There is a lot more to say about that, but the important thing I think we are getting at here is that for us an actor network theory approach is not about enumerating all the objects in the place. Or pointing out all the ways people are interacting with materials. That leads you to a so what, there are materials everywhere. It was about trying to find what are the most important material trajectories to follow here, to get at the questions you are most interested in? Which for us was the women's learning, and in the end it was about women learning solidarity and survival in this place.

SD: Cloth factory and garment workers is also something that Karen Barad has picked up in her reading of a particular study that was done by Leela Fernandes *(ref at back)* and she was looking at the way that union politics are part of the ordinary lives of workers in a factory. And what Brad was adding to that in her approach and thinking about socio-material entanglements was that she was recognising that the proximity of the machines actually supported really extensive social contact amongst workers which was at odds with management practices really, and focuses on individual workers. And so this idea that material conditions and social forces are entangled. So her point isn't really that sewing machines have intent, because that is clearly ridiculous. But that there are these flows of what she would call agential relations, actually I think her phrase is a turbulent river of agencies in the production and emergence of power relations.

TF: Yes, early ANT (Actor Network Theory) studies were very much about trying to find out how things are durable. How do these assemblages become stabilised and become durable in ways that produce centres of power. So on the sewing machine thing for example, one ANT kind of a question would be how is it that given all the destruction to the women and the fact that the management objectives aren't being achieved by the way things are set up by the factory we studied had been in place for a hundred years before it was finally shut down. What is it that is keeping these material arrangements and the arrangements of bodies and so on, what work is being done to hold these assemblages in a particular way?

Can you tell us a bit about what you see as some key concepts or views of the world that Barad would offer that are quite distinct for you?

SD: One of the really obvious ones is diffraction. And so she talks about diffraction as interference. So in terms of a device for thinking about research, both she and Donna Haraway talk about the difference between reflection and diffraction. And they contrast them and say that for example if you think about light and mirrors and I have a prop here, a compact disc. So if you think about a mirror, which reflects light, it reflects more or less the same elsewhere. And this is something that both Karen Barad and Donna Haraway talk about. But if you think about the behaviour of light and diffraction, what you can see here is that the CD is working as a diffractive apparatus and so when it diffracts the light rather than reflecting it, it is producing a pattern that makes visible the different characteristics of light. And so that's why you can see this rainbow of colours.

So diffraction for Karen Barad is a way of interfering. It's about creating patterns that show interference. And diffraction might tell us something about the nature of whatever is being

diffracted, so in this case it is light. So it might tell us something about the nature of light. Or it might tell us something about the nature of the diffraction apparatus. About the nature of the disc itself,

So in this understanding of a particular phenomenon there is no a priori previously decided distinction between subject and object for example. It's really to do with the process of the research.

TF: You have just finished a PhD study using this approach. What tips would you give to researchers about using a Barad approach?

On the ground, practicalities?

SD: One of the ways to approach it is through ethnographic methods. So things like participant observation and interviewing, and that kind of general hanging out that characterises ethnographic fieldwork or anthropological work.

These fit really nicely with socio-material approaches for research and for Barad because it gives an opportunity to attend to all the material discursive practices that are at play. When you are trying to focus on a particular phenomenon and it helps to sensitise you to the way that particular materials are also participating and creating particular effects.

TF: Absolutely, and I think we see that in ANT studies where they are early or late. A lot of use of this, being in situ and trying to track what is happening by observing, by speaking with the people, some people talk about finding a tracer if you like, a device, deciding once you've seen the interactions, so the insulin pump is really interesting, so I am going to focus on everything that people are doing with the insulin pump. Talk to them about it, you watch it in action, you look at the records of it, you look at all the paperwork around it.

So if we think about specific kinds of questions that of course is about data analysis, what kinds of questions you ask you data. Now you have talked before about diffraction which of course is the major approach that Barad is known for.

Can you tell us a bit more about what tips you would give a researcher who is using this approach to do their data analysis?

SD: Conventional ways I guess of analysing qualitative data might really cut and paste whole sections. So we would have a whole transcript and then you would be cutting sections and organising them in themes perhaps. Or maybe using computer assisted software in order to put things in different tables and different pages and different folders and so on. And for me, that really seemed as if it was betraying the underpinning concepts of entanglement. So this idea that things are indeterminately connected. And that it's not possible to tease all of these things apart.

And if I am looking at how social-material elements are connected and what the effects of those are, that splitting up all those bits of data seem to lose those threads of connection.

So for example, this is a short extract from field notes and having identified the different gatherings of areas of interest, rather than cutting and splitting up each section I was trying to keep it as a whole, but using different colours to colour in, rather than to cut out. So that here you can see I've got one colour which captures issues relating to human relations for example. I have got another colour that captures issues relating to technological practices. And a third colour that relates to issues around technological devices.

The advantage to me of doing it this way was that I found that the whole data set there was always available for analysis. So that I was aware that these distinctions for example between technological devices and technological practices, but I am also arguing that these are socio-technically entangled. So this is a very provisional separation if you like. It's not possible to separate an insulin pump from the insulin pump practices that surround it.

In my grappling with how to understand that, I might use these lights as a way of explaining what I am talking about. So these are really a nicely entangled set of Christmas lights as Christmas lights always are in my house at least. You can see how the phenomenon of Christmas lighting gets lost as soon as I cut this, the whole thing's going to go out. And if I take this somewhere else to look at and examine, it's not really going to give me a great or a particularly socio-material sense of what Christmas lighting is. Okay so we are not going to cut the lights apart. That's fine; we have decided not to do that. But we are going to try and disentangle this phenomenon that we have chosen to look at. Even if we have been really specific in the phenomenon that we have selected, and yet somehow we are still always in the middle of it and wrapped up in these entanglements because inevitably all of the selections that we make and the decisions that we make are part of the work that we are doing.

TF: You are caught constantly in a central contradiction. Something which is continually emerging which you are trying to nail down, let's face it we use nail terms like data, like analysis, like findings, this isn't unique to socio-material work this is true of all qualitative research.

But in socio-material work, you are caught between the immanent if you like yourself as part of it and constantly moving in different directions. While you are trying to record and translate it in to a symbolic form.

At the same time as a researcher, you are caught between your own views of what is going on, and informed by these kinds of questions of what are the material relations and how are things happening, with the people that you are with who have their own meanings. They can't help having meanings, and those keep threatening to impose themselves on the research. And there is a picture that I use a lot in my presentations; I have actually brought it here because I love this. This is, that is I think, what it feels like is very much about sticking, but being pulled between. And this research is about being messy; it's about being in-between on a number of fronts as I've just tried to pull out. But I'd like to hear you say a bit more about the ethics because I know for you this is a major issue around what Brad gives to you going forward in your own research and practice.

SD: I think it picks up on something that you were saying as well about the way that these kinds of approaches to research can open up a whole range of different points of intervention. So that you are not stuck with the same old ways of we can only intervene here and here. Socio-material approaches are very good at opening up what, well actually we could also intervene, here, here, here and here, in ways that we haven't thought. Or maybe we could combine interventions, and usually the most tricky problems need more than one intervention.

So that way of opening up a whole range of possibilities, does link really nicely to Brad and a key part of her approach is what she calls a tissue of ethicality, this idea that diffraction is a way of engaging in the world. So it's not just about seeing the world differently as if we can stand apart from it. But that actually it's about responsible participation. It's about direct engagement with the world. And that by selecting particular areas of focus or choosing to foreground something and not others, by identifying and taking forward particular points of

intervention and not others, that we are making ethical choices all the time, moment by moment, all the way through the research that we do. By creating possibilities for particular worlds and not others. And so that we are always, always engaged in ethical work.

TF: That applies for me, not just for the ways that research happens, we might apply that very much to supervising with doctoral students and other teaching activities. We might very much apply it to all forms of professional practice. That reminder of – not just a reminder, it's an obligation, to become much more attuned to how we are intervening every moment, to bring forward some possibilities and leave others aside. So then it raises issues about are you really attuning to all the possibilities? Or we can't to all of them, but to some of the key possibilities that we could intervene in at every moment of our practice whether it's as researchers, teacher, or in professional practice more broadly.

Contributors

Sarah Doyle and Tara Fenwick, Faculty of Social Sciences, University of Stirling.

References and further reading:

The following are recent contributions to the discussion of the methods, and they all contain bibliographies that provide suggestions for further reading.

K. Barad, *Meeting the Universe Half-way*. (Durham, NC: Duke University Press 2007)

R. Dolphin and I. van der Tuin (Eds), *New Materialism: Interviews and Cartographies,* (University of Michigan: Open Humanities Press 2013)

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D. Haraway, *Modest_Witness@Second_Millenium.Female_Man©_Meets_OncomouseTM: Feminism and Technoscience.* (New York and London: Routledge 1997)

A. Jackson and L. Mazzei, *Thinking with Theory in Qualitative Research: Viewing Data Across Multiple Perspectives.* (London and New York: Routledge 2012)

J. Law, *Actor network theory and material semiotics*. (2007) Version of 25th April 2007 available at
http://www.heterogeneities.net/publications/Law2007ANTandMaterialSemiotics.pdf (downloaded on 13 June 2016).

E. St. Pierre, A. Jackson & L. Mazzeie, 'New Empiricisms and New Materialisms: Conditions for New Enquiry'. *Cultural Studies-Critical Methodologies.* Vol. 16(2) (2016), pp.99-110.

Suggested questions for seminar discussion:

In your own research projects, what happens if you ask, "How does this phenomenon materialise?" What draws your attention in response to such a question?

What differences are there, if any, in focusing on how phenomena emerge rather than on how assemblages are stabilised or endure?

In what ways can researchers really accord equivalent attention to social and material dimensions of particular phenomena?