Reviewer’s report


Version: 3 Date: 11 March 2013

Reviewer: Trisha Greenhalgh

Reviewer’s report:

I’m happy with these revisions

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PREVIOUS REVIEW FOR THIS SUBMISSION (submitted 13 Dec 2012)


This is a most interesting paper by a very experienced team who are competent in qualitative research. It is methodologically sound and I’m sure should be published but I’d like them to work a bit more on the theoretical aspects as I think they could get far more out of the data than they currently have. My comments are below.

MAJOR POINT

I know about normalisation process theory and I know it’s a popular and empirically grounded way of looking at the adoption and implementation of technologies. But I do worry that the proponents of NPT are producing a growing stack of empirical papers where ‘theorising’ has become synonymous with ‘showing how the data fit NPT’. I think this paper, as it currently stands, is theoretically very inward-looking in that there are too many phrases like “framing this using the domains of NPT”. That would be fine if it was an MSc dissertation but with three professors of sociology on the author list, they can and should go beyond that aim! Indeed, I suggest that the paper as it stands is a good example of why NPT needs to enter into dialogue with other theoretical approaches rather than trying to stand alone. To borrow some terminology from EBM I’d say the theorisation currently has ‘internal validity’ but it lacks a measure of ‘external validity’ within social theory more generally.

I’ll give one example of what I mean from the findings section, and I will leave the authors to consider how the many other findings might be similarly theorised in a richer and more useful way. On page 8, they mention that the call handlers had initially been concerned about ‘de-skilling’ from the CDSS, but as it turned out, using the new system required them to develop a new set of skills, which included developing sophisticated tacit knowledge about the technology-in-use. Whilst the authors’ interpretation based on NPT – that the CDSS offered “the
opportunity to perform clinical identity” etc etc – is plausible, it reads as just one of many possible interpretations and – for me – begs the so-what question.

The issue of de-skilling of workers (or not) by ICTs has of course been widely covered in the organisational sociology literature. The early writing in that school drew on Marxist notions of automation of the means of production, and later work applied Foucauldian notions of power as played out in the workplace. But the key text here is I think Shoshana Zuboff’s ‘In the Age of the Smart Machine: The future of work and power’, now almost 25 years old (New York: Basic Books; 1988). Zuboff was one of the first researchers to demonstrate empirically that the computerisation of work requires the abstraction of work from its context, thereby changing the nature of that work. In her study of sawmills moving to computerised work processes, she found that the new technology could not capture the rich tacit knowledge that had developed within (and as part of) practice. These skills were practical, action-centred and tightly bound up with the context in which action took place – hence were difficult if not impossible to express in words or algorithms. Sawmill knowledge was embodied by the craftsperson (it involved a level of physical knowing such as using feel and taste to decide whether a vat of pulp was ‘ready’), and acquired by years of experience (rather like clinical knowledge, in fact). Such knowledge was produced and reproduced in action (again, like clinical knowledge).

But as well as replacing this hard-won, embodied knowledge about the physical process of paper production with computerised gauges and formal monitoring protocols, automation also introduced a new requirement for a different sort of tacit knowledge. In the sawmills example, Zubhoff showed that there was as much tacit knowledge needed to fiddle with the new gauges as there was to test a vat of paper pulp with one’s finger and taste buds. Thus, she demonstrated why the ‘deskilling’ argument was misplaced.

A comparable argument could be drawn about de-skilling by CDSS. And of course, much has been published on this topic since Zubhoff.

What I think is needed in this paper is to take the main findings in the data (of which the issue of ‘de-skilling’ is just one), and draw links with relevant sociological (and other) literature beyond NPT.

In the discussion, I would like the authors to be substantially more critical and reflexive about what NPT has failed to explain in their data instead of simply saying that they’ve successfully made much of the data fit this framework. NPT was useful for XYZ but it didn’t tell us PQR, type thing. And engage with the criticism that they may have been squeezing their data into a pre-existing set of categories – let’s see the defence of that.

MINOR POINTS

For a BMC audience I think you should justify the use of ethnography. My own paper on this is here http://www.ncbi.nlm.nih.gov/pubmed/21521535 but I would not be offended if a different methodological reference is used instead!
Again, since a BMC audience may be more familiar with more ‘objectivist’ explanatory models, is it worth citing something like Davis’ Technology Adoption Model (if only to say, in the next sentence, why sociological explanations are needed as well as these rather flat cognitive ones)? Not compulsory.

Page 9 “a broad range of potential dispositions”. I only know what this means because I’ve done ethnography in call centres myself. It’s part of the extraordinary internal jargon these places have developed to talk about a pragmatic combo of processing and auditing the calls. Needs explaining (but better, use a different word and don’t expect the reader to learn the jargon).

I look forward to seeing the revision.

Trish Greenhalgh

**Level of interest:** An article of importance in its field

**Quality of written English:** Acceptable

**Statistical review:** No, the manuscript does not need to be seen by a statistician.

**Declaration of competing interests:**

I declare I have no competing interests