



<http://www.dasts.dk/>

© Malte Ziewitz, DASTS

ISSN: 1904-4372

How to attend to screens?

Technology, ontology and
precarious enactments

Malte Ziewitz

DASTS er en faglig forening for STS i Danmark med det formål at stimulere kvaliteten, bredden og samarbejdet inden for dansk STS-forskning samt at markere dansk STS tydeligere i nationale og internationale sammenhænge.

How to attend to screens?

Technology, ontology and precarious enactments

Malte Ziewitz

In this paper, I explore the question of how to attend to screens. Starting from the puzzling observation that screens seem both ubiquitously present and conspicuously absent in everyday life, I find that existing studies tend to take the analytic status of screens for granted and juxtapose them with a human user to theorize the relationship between the two. In an attempt to avoid such dualisms, I turn to recent work in Science and Technology Studies (STS) and focus on how screens are being enacted in practice. However, exploring a strategy of enactment in the context of a recent ethnography of web-based patient feedback produces mixed results. Perhaps most importantly, the salience of objects is not given in enactment, but itself contingently accomplished—a process in which the role of the researcher is easily overlooked. The paper concludes that a call to attend to screens as ‘objects of interest’ may thus be better understood as an invitation to engage with people and things in situations in which the notion of ‘screens’ may (or may not) provide a useful heuristic for orienting inquiry.

The present-absent screen

Screens are hard to miss these days. In the various organizations I have worked with for my dissertation, there was at least one screen on every desk. In hospitals, GP practices, government departments, new media agencies and even the modest offices of a recently founded non-profit organization, people were using laptops, desktops, handhelds, projectors and mobile devices on a day-to-day basis. Touch screens, projection screens, computer screens and television screens were omnipresent and in constant use. And even as I am

writing this, I am staring into the 12-inch screen of an old Apple G4 Powerbook in a library with only five students but 16 screens at work, not counting iPhones, Blackberrys and other mobile devices.

However, even more striking than the presence of screens is their absence. At least in my day-to-day work, they are virtually never mentioned or talked about. Screens are taken for granted, ignored and looked through as if they did not exist. My research participants have not problematized them in conversations, e-mails or interviews. So far, I have not even used the word myself in a single chapter draft or thought about screens, displays or monitors in greater detail. It seems that screens are peculiar objects in that they are both present and absent—and thus a difficult horse to catch.

Against this backdrop, the present Special Issue poses an interesting problem. The Call for Papers asks us to attend to screens. While the title ‘Framing Screens: Knowledge, Interaction and Practice’ positions screens prominently as the focus of analysis, the accompanying paragraph further clarifies the challenge:

[S]creens are curious entities. They may stretch human interactions nearby to globally-distributed locations. They seem to multiply the world around us while simultaneously constructing very specific fields of vision. Thus, screens perform cuts between displayed worlds and human knowledge about the world. Screens also mediate human action in particular ways by actively participating in new visions that define and situate action. With their capacity to organize human attention elsewhere screens may enact viewer displacement, as viewers becomes screened off. Thus boundaries may shift between screens, the knowledges they present, the interactions they facilitate and the practices they engender. For these reasons, screens are objects of interest for contemporary social scientific research into

technologically mediated environments... (IT University of Copenhagen, 2010)

But what exactly is it to frame present-absent screens as ‘objects of interest’ for contemporary social scientific research? How can we take seriously an important and pervasive technology without unduly subjectifying or even fetishizing it? If every sentence we begin with the word ‘screens’ tends to be read as already attributing agency and invoking images of screens as neglected artifacts, is there a way to *do* screens differently? And even if we managed to do so, what would be gained or lost?

The goal of this paper is to make sense of the peculiar evasiveness of screens and explore the question of how we can attend to them. In doing so, I will first give a brief overview of attempts to theorize screens as mediators, extensions and placeholders and propose an alternative strategy that draws on recent work in Science and Technology Studies (STS) to ask whether and how screens are being enacted in practice. Drawing on my experience of becoming a moderator at a social enterprise for web-based patient feedback, I explore this strategy in three ethnographic stories and critically examine what is involved in attending to enactment.

Screen studies and ontological indifference

A search for relevant literatures on how screens might be usefully attended to turned out to be more difficult than expected. While there is considerable research on issues like computer-supported cooperative work (cf. Greif, 1988; Grudin, 1994; Stefik et al., 1987), electronic surveillance (cf. Luff, Heath, & Jirotko, 2000; Lyon, 2007; Neyland, 2006) or the internet (cf. Castells, 2001; Wellman & Haythornthwaite, 2002; Woolgar, 2002b), screens (and equally displays and monitors) are rarely attended to as objects of interest. Those studies that do focus on ‘screens’ mostly conceptualize them as material artifacts, which are then juxtaposed with human ‘users’. This is

most notable in fields that have made this duality their subject of inquiry, such as Human-Computer Interaction (HCI), but also sociological accounts of human-machine relations or film and media studies.¹ Usually, a boundary is drawn between the material and the social, which then allows the analyst to come up with various ways of theorizing the relationship (cf. Woolgar, 2002a). The following examples illustrate this play with dualities.

An often cited study of ‘screen work’ is Knorr Cetina & Bruegger’s (2002) analysis of the day-to-day work practices of foreign currency traders in a Swiss bank. The authors specifically attend to the relationships that emerge between traders and the ‘market on screen’. These relationships are called ‘post-social’ to emphasize

the intuition that individuals in some areas relate to (some) objects not only as ‘doers’ and ‘accomplishers’ of things within an agency framework but as experiencing, feeling, reflexive and remembering beings—as bearers of the sort of experiences we tend to reserve for the sphere of intersubjective relationships (Knorr Cetina & Bruegger, 2002, p. 163)

The screen thus becomes an ‘appresentational device that enhances and routinizes such relationships’, i.e. ‘the screen brings a geographically dispersed and invisible market close to participants, rendering it interactionally or response-present’ (Knorr Cetina & Bruegger, 2002, p. 163). In other words, the screen is conceptualized as material embodiment of the ‘market’ which affords a post-social relationship between itself and the user.

Similarly, Myers (2008) studies the work of crystallographers, who build complex, three-dimensional atomic-resolution models of proteins using interactive computer graphics technology. Myers is

¹ In film and media studies, there is actually a journal called *Screens* and a corresponding area called ‘screen studies’. For an overview, see Kuhn (2009).

especially interested in the 'body-work' involved in crystallographic modeling, 'the corporeal practices through which modelers learn the intricate structures of protein molecules' (Myers, 2008, p. 163). She observes what she calls 'embodied models' that are sculpted alongside digital renderings on screens. While screens are not her primary focus, Myers attends to screens as part of an arrangement of artifacts that are integrated into the bodily work of modeling: 'the interactive graphics workstation became a prosthetic extension of a physically engaged modeler into an interactive and so tangible world of graphic molecules' (2008, p. 177). Here, the dualism of user and screen is bridged by the trope of 'prosthesis' or 'extension'.

Another approach is offered by Bødker's (1995) discussion of the role of activity theory in studying artifacts in use. Bødker suggests that '[a]ctivity is usually mediated by one or more instruments and is directed towards a certain object' (p. 148). Artifacts therefore have a 'double character: they are objects in the world around us that we can reflect on, and they mediate our interaction with the world' (Bødker, 1995, p. 149). As Suchman (2000, p. 5) points out in her analysis of Bødker's argument, 'a common orientation to material artifacts as mediators of human activity is ... the strongest element that aligns ethnomethodology with activity theory'. Related tropes of mediation can be found in media and communications studies (cf. Livingstone, 2009; Lundby, 2009).

Screens as placeholders, extensions, mediators—already these few examples illustrate a variety of ways of conceptualizing the relationship between screens and users. While they pursue different theoretical and empirical interests, they share an assumption about the screen and the user as ontologically distinct objects. Screen and user are conceptualized as analytically separate entities, which consequently require some form of connection. This connection is not always described as strictly symmetrical. Tropes like 'mediation' or 'extension' favor the human component and tend to portray the screen as a tool or prosthesis for 'body-work'. Nor do they explicitly make a determinist argument. Perhaps most interestingly, while the

studies try to mitigate the boundaries between the material and the social, the non-human and the human, technology and society, they somewhat ironically reinforce this universal binary as the conceptual basis of their arguments. The 'objectivity' and 'agency' of screens, i.e. their material or conceptual quality as objects that exhibit certain capacities to mediate, relate or simulate, is taken as the analytic starting point. Empirical data is generated with this frame in mind and then variously used to prove or illustrate a claim about the object and a specific analytic model to explain it. As a result, the relationship envisioned between screen and user is necessarily constant and independent of the specific circumstances under which they are observed.

One way of capturing this dynamic (or rather: static), is to say that the abovementioned studies are "ontologically indifferent" (Woolgar and Neyland, forthcoming). That is, they take the existence and analytic status of screens for granted and use them as the foundation of their analyses. Rather than explaining my initial unease and confusion about screens, they explain it away and focus on theorizing the relations between 'screens' and other objects, which are then dissolved into sophisticated theoretical concepts. So are there alternative strategies that do not depend on claims of 'finding' categories like 'screens' in data? And even if it is not possible to avoid this paradox, can we at least make it productive for analysis?

Mundanizing screens and imaginaries of emergence

Scholars in STS have started to address these issues and develop alternative research strategies. As a starting point, it seems useful to recall work in science studies that mobilizes what Helen Verran called 'imaginaries of emergence' (Verran, 2001, p. 38). Actor-network approaches were arguably an early attempt to eschew technological determinism and focus on how heterogeneous social and technical entities were drawn into networks or assemblages (cf.

Callon, 1986a; Latour, 1991; Law, 1986). However, while opening up new forms of analysis by following and tracing human and non-human actants (Latour, 2005), the very status of these entities remained unclear. Especially early studies on the development of electric vehicles (Callon, 1986b), the pasteurization of France (Latour, 1993) or Portuguese vessels (Law, 1986) can be read as pursuing what has been described as 'distributed essentialism' (Woolgar, 2004, p. 344) that privileges powerful managers who draw together networks in an almost Machiavellian way (Star, 1991). In the wake of these studies, a flurry of work emerged that addressed the status of these entities more explicitly in the form of 'blank figures' (Hetherington & Lee, 2000), 'deferred contingency' (Rappert, 2001) or 'fluid technologies' (De Laet & Mol, 2000). All these contributions respond in one way or another to an important research-practical problem: if the entities that constitute networks are what they are by virtue of a momentous configuration of this network, how can such processes be usefully examined if conventions of 'analysis' require us to rethink and retell our observations in terms of models made up of objects and relations?

More recent attempts to get to grips with the analytic status of these entities that simultaneously constitute and are constituted by networks have been captured under the label 'material-semiotic' and the notion of an 'ontological politics' (cf. Law, 2007; Mol, 1999). An often cited study in this context is Annemarie Mol's ethnography of health services in a Dutch town (Mol, 2002). Drawing attention to the various ways in which atherosclerosis figures in everyday, mundane practices, Mol tells stories of how the disease is being *done* (and not just talked about) on different occasions, such as in the operating theatre during surgery, under the microscope in the laboratory and in conversations between doctors and patients in the consultation room. Combining an interest in practices and ontology, a key idea of this approach is captured in the notion of multiplicity:

If practices are foregrounded there is no longer a single passive object in the middle, waiting to be seen from the point of view of seemingly endless series of perspectives. Instead, objects come into being—and disappear—with the practices in which they are manipulated. And since the object of manipulation tends to differ from one practice to another, reality multiplies. (Mol, 2002, p. 5)

The idea here is thus that objects are *being enacted* in practice, i.e. 'in the act, and only then and there, something *is*—being enacted' (Mol, 2002, p. 33, emphasis in the original).

The trope of the 'object multiple' gives rise to another important question, namely how the practices in which objects are being enacted relate to one another. If realities are multiple, then they can be done differently. In other words, if 'reality is not destiny' (Law, 2008, p. 637), the question of how situated versions of an object relate in practice matters. This active mode of engaging in the shaping of realities, it is argued, embodies a style of politics, which champions interference and performance rather than deliberation or choice (Mol, 1999, p. 85). The challenge then is not so much an epistemological one of knowing the real, but an ontological one of doing the real in practice (but see Ashmore, 2005). Once the building blocks of reality are not assumed to be fix anymore, we enter the terrain of an ontological politics, which regards objects as multiple and contingently achieved.

My goal here is to critically examine the utility and implications of this strategy, which is better understood as a methodological rather than an analytical project. In contrast to earlier approaches often labeled as 'constructionist', this mode of doing research does not seek to explain how an object reaches its definitive *Gestalt* or essence as the result of everyday doings. Rather it tries to establish how they come about in practice. Sometimes called 'praxiographic' (Mol, 2002, p. 31), this research strategy involves telling stories

about to the practicalities of *doing* objects and using them as the basis for theoretical and philosophical insight. So what is involved in attending to screens by following enactments?

Three disconcerting stories and some doubts

In an attempt to critically examine what is involved in focusing on screens-in-practice, I turn to a recent ethnographic study of a UK-based social enterprise that aims to improve the National Health Service (NHS) by facilitating web-based patient feedback. With a team of nine, the organization operates a website that invites patients, relatives, carers and staff to publicly share their experience with the care they received. These 'postings' are then published and subscribing hospitals and Trusts notified. The declared goal of the organization is to use this public feedback as an incentive and opportunity for healthcare providers to improve their services and listen to the concerns of patients. As part of my ethnographic work, I spent four months with the team and trained as a moderator, editing incoming stories for publication on the site. Work in the organization is largely computer-mediated and, in fact, operates almost entirely 'through' screens. In this sense, the case provides a typical site and opportunity for exploring the practicalities of screens-in-practice. My first encounter with a screen took place on my first day in the office.

In order to help me learn the ins and outs of moderation, Helen², an experienced moderator, gives me a tutorial. I get a chair and take a seat next to her at her desk.

² The names and occasionally gender of all participants have been changed. Working as a moderator, I have experienced myself how emotionally challenging and politically complex the task can be, especially when particularly 'critical' postings are involved. Privacy and confidentiality have been taken very seriously during my time at the organization and often triggered long and engaged discussions in the team. Interestingly, writing about these activities replicates many of these issues.

Helen: Okay, so this is your screen. This is the mouse. And this is the keyboard. I assume you have used a computer before?

Me: No ... never in my life. What's it called again?

Helen: ((laughs)) Okay, okay, just wondering. You know, some of the people I talk to actually need this kind of introduction.

Me: No problem, just kidding. So, uhm, wait. Can you turn it a bit? ((pointing to the screen)) There are some weird reflections here.

Helen: Ah, okay... ((turns the screen slightly towards me)) Is that better?

Me: Perfect, thanks.

Looking at this note, the presence of screens seems obvious. When Helen formally introduces me to the screen as one of the essential tools in my workspace, I am confused at first. Surprised, I offer a somewhat ironic response to Helen's question, not quite sure whether it is a rhetorical or a serious one. My reaction indicates familiarity with the set-up as a long-time computer user. In that sense, the scene can be read as illustrating the extent to which I take the existence of screens for granted. It is a point so obvious to me that it seems funny to attend to it. In addition, I ask Helen whether she can turn the screen a bit. With the reflections of the overhead lights, it is hard for me to read the screen. Rather than moving a bit further along the desk myself, the screen appears as an object in need of adjustment. The tension is resolved when my field of vision registers with the screen's field of visibility. The screen appears as a component in a set-up of material devices I need to work in order to become a moderator.

So in a sense, this scene is all about screens. It even tells us something interesting about 'screens', one could argue, as an essential technology that is often taken for granted and needs to be configured as an element in the material arrangement of the workplace for me and it to work together. However, on second thought, that does not need to be the case. The 'screen' may be mentioned here in conversation, but it is surely not the 'screen' Helen is concerned with? Doesn't she also mention the keyboard and the mouse? And aren't these entities just employed as a literary figure of *pars pro toto*, enacting a computer system the workings of which will soon be explained to me in greater detail? And what actually is so special about adjusting the screen? Didn't I also need to move the mouse – and in fact the mouse pad! – across the table to be able to operate it? And now that I think about it, I also moved a pile of paper from the left hand side of the table and put it on the desk next to me to sit more comfortably. Sure, Helen turns the screen when I ask her to do so, but she also turns herself to look at me in disbelief, compassion or whatever other reaction my staged ignorance might have provoked?

In the next two hours, Helen guides me through the process of preparing incoming postings to 'go on the site'. I first need to log on to the so-called 'admin section' of the website, a password-protected area that gives me access to the inner workings of the system. Incoming postings are displayed here in a queue by their automatically assigned ID number, the date and time of submission, the username of the author and their title. It turns out that moderation is much more complex than I had expected. Rather than just looking for swearwords or spam, I am expected to take into account a variety of factors to make sure that postings comply with the editorial policy. The notes I took at the end of the day illustrate some of the complexities involved:

Two hours of moderation training with Helen, and my head is spinning. On the one hand, I am supposed to only edit a posting if absolutely necessary. 'It's about the pa-

tient experience after all', Helen says. On the other hand, I have to observe a lot of rules: take out names of staff in negative postings, but leave them in in positive ones, add an 'I believe' or 'in my opinion' here and there if it's not clear it's the author's opinion, make sure it's not just general 'political' NHS bashing, but also be aware of possible jigsaw identification [e.g. appointment dates and times that would suffice to identify a person]³, talk about groups of staff rather than individuals if there is likely to be only one (like 'the matron'), beware of medical vocabulary, tone down anything that might qualify as defamation since people might sue us and Trusts are more likely to respond to 'constructive' postings ('these are the best,' Helen says).

I also have to check the tagging [i.e. link the posting to the correct health service], edit the headline 'so that it's useful for other patients', and finally rate the 'criticality' of the posting on a scale of 0-5 so that it can be routed to the right people [i.e. the more serious, the more senior]. All very, very confusing. Plus, my neck feels stiff. (Fieldnotes II: 12)⁴

However, the confusion fades quickly, and so does the stiff neck. A dozen hours of assisted moderation later, I do not even have to think about my moderator password anymore and navigate across the various sections of the website with increasing confidence.

³ [Squared brackets] indicate notes and clarifications added later to the fieldnotes.

⁴ Fieldnotes have been organized chronologically in documents with numbered pages. For example, the notation 'Fieldnotes II: 12' refers to p. 12 of the second fieldnote document.

Again, one might wonder how this scene speaks to the issue of screens. In a sense, screens are present all the way through. One could even say that none of this would have been possible without screens. For example, I remember that whenever I had a question, I used to turn around to Helen and point out an element on the screen with my finger. I even found myself embracing or leaning on the screen regularly when I stood next to my desk. So this seems to support Suchman's (2000) and Myers' (2008) contention that screen work is fundamentally embodied, involving not just looking, but feeling, touching, moving, gripping and other forms of bodily 'prosthetic' contact.

At the same time, I certainly leaned on screens, but I also sat at and was supported by various desks to keep my balance, swirled around on office chairs and was in almost constant contact with the mouse. Also, while I was staring into screens as most office workers do these days, it seems far from clear what I was actually staring at. What part of this arrangement should still count as 'screen' and what was accomplished by the computer or the server, to which it was connected? What about the graphics card, the software and the mathematical models that go into producing electronic text and visuals by processing machine code into displays of language?

On a late Wednesday afternoon, Liz, another moderator, interrupts the busy silence in the office: 'Oooh, I can't believe it! Have you seen the response to this posting'. We look into our screens and see that a new reply has come in, submitted by a representative of a Trust in response to a posting from a couple of days earlier. The posting had already attracted some attention when it was initially submitted. In only a few paragraphs, a parent writes about their daughter, who was struggling with mental health issues and had taken her own life some years ago. The last paragraph reads:

In short: my daughter has taken her own life, and I think that severe communication problems at the Trust have

*contributed to this. She had suffered from depressive disorder for a long time. And in my view, the care they provided was not sufficient, but actually made things worse. We really, really miss her.*⁵

The posting was written in a very personal style and gives an overview of what allegedly went wrong during the treatment. Reading it in full, I can still sense the desperation and anger of a parent who has lost a loved one. In contrast, the response now waiting to be published alongside the posting strikes a rather different tone.

We realize that the death of a relative is a distressing experience. We try hard to support those affected and thoroughly investigate the circumstances of each death. If families are not satisfied with the care they received, they are entitled to seek the opinion of a third party. ... In terms of self-harming behavior, we can assure you that our numbers are below the national average.

*Liz is the first to express her frustration, followed by Helen, who has opened the response on her computer. With her eyes glued to the screen, she says: 'I don't believe it. IF FAMILIES ARE NOT SATISFIED WITH THE CARE THEY RECEIVED, THEY ARE ENTITLED TO SEEK THE OPINION OF A THIRD PARTY.'*⁶ *Hello? This family just lost their daughter!' And Helen, also focused on the posting, adds 'Oooh... that's a tough one.' As my colleagues, I am audibly and visibly engaged, frowning, commenting or breathing out heavily. We are collectively agonizing about the family and how they might feel about the respon-*

⁵ The passages are not literal quotes, but have been edited in consultation with the team to protect the anonymity of the people and organizations involved. In editing, I have tried to preserve the tonality and style of the original text as well as possible.

⁶ BLOCK CAPITALS denote participants' efforts at reported speech, that is, when they are mimicking or quoting the words of another person.

se. But we also agonize over the difficult situation for the Trust, who is likely to be anxious about the legal implications of a public statement.

Two days after the collective outcry, Liz is thinking about how best to handle the situation. Telling me about the various options, she is getting upset again—until Stuart, one of the directors, sitting at the desk across from Liz, interrupts.

Stuart: ((frowning)) Nah, Liz, don't overdo it. It sounds bad but actually we don't know what really happened. We just have the posting ((pointing to Liz' screen)) and in fact, we don't know what's the story behind all this. So let's not get too worked up. We simply don't know.

Liz: ((looking at her screen)) Okay, okay, you're right. It just seems so frustrating.

With hindsight, it is interesting to observe how absorbed we were by the story. It felt as if the suffering of the parent was re-enacted by virtue of an active and embodied reading of the text. Some of us seemed genuinely upset about the response, imagining what it might feel like for the person who had lost their loved one. Thus, for us moderators, the pain in this moment was not just 'on screen', but felt real and present. It came to life in our mundane practices of talking, gesturing and moving uncomfortably in our chairs. But, then again, screens were not attended to as the artifacts as which they had been introduced at the beginning of my tenure as a moderator. Rather, they simply did not 'matter' as separate objects. The only exception was Stuart's concern about us getting too 'worked up' in the discussion. Rather than joining the suffering in Liz' reading of the posting, he took a rather distanced view and highlights the indeterminacy of the situation. In raising doubts about the accuracy and completeness of the story, he reintroduced a different way of understanding the

situation. Since, as he argues, there is no way of finding out what 'really' happened, he cautions against overly emotional involvement and underscores his intervention by pointing at Liz' screen as the place where the posting appears as materialized text. Thus, by invoking the representational nature of the text, Stuart apparently managed to get Liz to step back for a moment and reconsider her involvement.

However, while this seems like a plausible interpretation that helps to understand how screens come about in practice, it is again not clear in what ways screens are specific in this situation. They might display the posting that caused all the trouble, but would it have made a difference if the posting had been printed out and distributed on a piece of paper? Would the scene still have told us something useful 'about' screens? It seems that it is much harder than expected to attend to screens as being enacted in practice.

Failed enactments and enacted failure

The stories, which I had initially believed to be good material for a praxiographic demonstration of the 'screen multiple', turned out to be much more ambiguous than expected. Trying to capture screens-in-practice, I managed to pin them down as material artifacts in need of adjustment, as integral parts of my moderator existence, as participants in the collective performance of suffering and as devices for interrupting this performance—but only momentarily. In fact, keeping these readings in place took considerable effort and was difficult to maintain on second thought. Specifically, it seemed all too easy to replace 'screens' with other objects like mice, mouse pads, keyboards and chairs without changing the stories significantly. Against this backdrop, it can be argued that my attempts at following enactments failed miserably. Rather than saying something interesting about screens as enacted in practice, it seems that all I accomplished was instilling further doubt about the currency of screens as 'objects of interest'.

One way of addressing this failure would be to frame it as a problem of appropriate methodology. For example, one could argue that my stories were just not suitable for an analysis of screens. Since the data has not been collected specifically for the purpose of attending to screens, it must be doomed—with or without following enactments. But how then to accommodate the observation that a seemingly innocent strategy of ‘following’ turns out to depend on ‘purposeful collection’? Wouldn’t the imposition of such criteria actually run against the very idea of enactment as happening in practice? A conventional view of methods would solve this paradox by establishing criteria and procedures for achieving adequacy or establishing the salience of objects. A famous example from ethnography textbooks is the distinction between emic and etic criteria (e.g. Hammersley & Atkinson, 2007, pp. 194-195). While emic criteria are those developed and maintained by members of the fieldsite, etic criteria are brought in from ‘outside’ and may include methodological principles or research questions (Neyland, 2007, pp. 82-83). Accordingly, a praxiography of screens would seem to favor emic criteria and try to understand whether screens figure prominently—or are *salient*—in the natives’ language and activities. But as my struggle with stories suggests, even this deceptively simple distinction can be difficult to operationalize in practice. Is it enough if Helen used the word ‘screen’ in our conversation with the added benefit that I can conveniently establish salience with a text search? Or is it about reading between the lines and establishing salience from the practices observed in any given context? It seems that my focus on enactment does not go well with imposing criteria.

Nevertheless, while it seems tempting to evade the problem by declaring it a failure to observe ‘good’ research practice, my attempts to attend to screens-in-practice can still be made productive. If anything, this is an opportunity to reflect on what is involved in putting the notion of enactment at the center of a research project—and how this relates to the initial question of how to attend to screens.

First of all, and perhaps most importantly, my experience of trying to attend to screens as enacted in practice points to an often overlooked actant in enactments: the researcher herself. Specifically, when I tried to engage with what initially seemed like a clear-cut object, the screen appeared strangely interchangeable with the consequence that it was hard to delineate it ‘as such’. Rendering screens as ‘perspicuous phenomena’ (Garfinkel, 1991) required considerable work and confidence, suggesting that also salience may be better viewed as an interactive accomplishment. This also suggests that while a focus on enactment may help avoid generalized *a priori* assumptions about screens, it still depends on another crucial claim—that of the salience of screens in the situations under study (cf. Lynch, 2008, p. 7). This salience, however, is far from unproblematic and tends to simultaneously, though not necessarily consciously, be enacted as a ‘collateral reality’ (Law, 2011). This became particularly clear in my telling of my ethnographic stories, which variously were all about screens and not about screens at all. And even in Mol’s accounts of atherosclerosis, this difficulty shines through occasionally. For example, when she describes an encounter with a pathology resident over a microscope in the laboratory, the resident remarks: ‘Look. Now there’s *your* atherosclerosis. That’s it. A thickening of the intima. That’s really what it is.’ (Mol, 2002, p. 30, emphasis added). In this case, the possessive pronoun *your* reminds us of the important role of the researcher in participating in enactment, which appears far from readily observable and story-able.

While this insight may not be breathtaking in itself, it seems useful to emphasize it here. Especially in view of the recent uptake of enactment as a concept and research strategy, the active role of the researcher in casting objects into stories tends to be ignored. As tempting as concepts like practice, ontology and multiplicity may seem as resources for inquiry, especially the notion of enactment can be easily misread. Specifically, it is easy to understand enactment as happening elsewhere, i.e. independently of one’s own doings. As my struggle with the present-absent screen suggests, en-

actment does not stop the moment it is 'captured' in field notes, dictaphones or interview transcripts. Rather, the idea of following enactments seems to be better understood as an invitation to actively engage in the very practices of storying we often claim to report (cf. Frank, 2010).

Against this backdrop, it is not surprising to observe how the absence and presence of screens was not just a concern that I brought to the stories, but that also figured in the day-to-day activities of my colleagues in the moderation team. For example, singling out the 'screen' as an object and thus rendering it salient enabled Stuart to remind us not to take the suicide posting at face value but use it as a resource to reconsider what is real and what is not. Similarly, it can be argued that my own efforts to capture screens enabled debates about what belongs to the real and how it can be studied. My focus may have been perceived as more 'rigorous' or 'analytical', but eventually my activities were not too different from Stuart's or Helen's. In both cases, screens opened up spaces for different modes of inquiry and cast doubt on what is taken for granted in each situation.

A final challenge that is posed by my experience concerns the focus on 'objects' that tends to be associated with a rhetoric of enactment and specifically the notion of multiplicity. Looking across my stories, it seems that enacting objects as multiple paradoxically depends on maintaining a form of 'essence' across enactments to preserve a common referent. However, it does not seem clear what exactly connects the screen as topicalized in my tutorial with Helen with the screens that partook in our suffering with the suicide posting other than your reading of my sequencing and use of the word 'screen' across scenes. The question here is therefore what to do when our accounts of practices cannot account for the possibility that they do not speak (or rather, cannot be made to speak) to the object in question.

All this suggests that the 'objects' of enactment may be better understood as heuristics that help us organize our observations and orient engagement. Similar to Henare, Holbraad and Wastell's pro-

posal to 'think through things' and regard concepts as heuristics in an ongoing process of conception (Henare, Holbraad, & Wastell, 2006), the call to attend to screens as 'objects of interest' may usefully be rendered as a call to actively engage in situations through a notion of screens. As a consequence, the object of enactment becomes an element like any other in this ongoing process of tinkering and story-telling—a process that may even lead away from the topic one initially set out to study. While this does not make the task of attending to screens any easier, it may help us understand their presence-absence as implicated in enactments that are neither found nor followed, but continue in your reading of my papers, articles and presentations.

Concluding remarks

So what is it to attend to screens? According to the Oxford English Dictionary, the verb 'attend' has at least a double meaning. It can denote 'to be present with someone or something', but also 'to take care or charge of something'. Both meanings resonate with the confusion I have dealt with in this paper. While the former points to the idea of presence-absence that marked the beginning of my journey, the latter surfaced only later in the process after some reflection.

Most importantly, it turned out that the question of how to attend to screens as 'objects of interest' is far from trivial. Trying to avoid the dualist undercurrents of current screen studies, I turned to recent work in STS to understand how screens are being enacted in practice. However, exploring this strategy of following enactments in the context of an ethnography of web-based patient feedback posed its own problems. Specifically, my attempt at locating the present-absent in the empirical failed in that my stories could not provide the necessary guidance. Attending to screens-in-practice also highlighted another often overlooked actant in enactment, namely myself as the ethnographer and analyst. The project I embarked on here was therefore not so much a matter of detached observation and

truthful reporting, but required hands-on engagement in specific situations. Since it is not possible to simply be guided by the data or look for salience or presence in one's stories, 'attending' to screens seems closer to the second meaning of the word as 'caring for' and 'taking charge of' screens without ever being able to control their presence nor their absence.

Overall, it seems that a focus on enactment does not go well with a focus on objects—even if conceptualized as multiple. The challenge of attending to screens as 'objects of interest' may thus be better understood as an invitation to engage in and interfere with ongoing enactments through the concept of 'screens'. Otherwise, one runs the risk of seeing screens everywhere and nowhere at all.

Acknowledgments

Many thanks to those who generously commented on earlier drafts, including Fadhila Mazanderani, Helene Ratner, Chris Sugden, Steve Woolgar, two anonymous reviewers, the editors of this Special Issue as well as the participants and organizers of the "Framing Screens" workshop at the IT University of Copenhagen. I am deeply indebted to my fieldwork partners for their ongoing patience, care and support.

References

- Ashmore, M. 2005: "The Life Inside/The Left-Hand Side" in *Social Studies of Science*, Vol. 35, No. 5, pp. 827-830.
- Bødker, S. 1995: "Applying activity theory to video analysis: How to make sense of video data in human-computer interaction" in B. A. Nardi (ed.): *Context and consciousness: activity theory and human-computer interaction*. Cambridge, MA: MIT Press. Pp. 147-174.
- Callon, M. 1986a: "Some elements of a sociology of translation" in J. Law (ed.): *Power, action and belief*. London: Routledge. Pp. 196-233.
- Callon, M. 1986b: "The sociology of an actor-network: The case of the electric vehicle" in M. Callon, J. Law & A. Rip (eds.): *Mapping the dynamics of science and technology*. London: Macmillan. Pp. 19-34.
- Castells, M. 2001: *The Internet Galaxy: Reflections on the Internet, Business, and Society*. Oxford: Oxford University Press.
- De Laet, M., & A. Mol 2000: "The Zimbabwe bush pump: Mechanics of a fluid technology" in *Social Studies of Science*, Vol. 30, No. 2, pp. 225-263.
- Frank, A. W. 2010: *Letting stories breathe: A socio-narratology*. Chicago, IL: University of Chicago Press.
- Garfinkel, H. 1991: "Respecification: Evidence for locally produced, naturally accountable phenomena of order, logic, reason, meaning, method, etc. in and as of the essential haecceity of immortal ordinary society (I). An announcement of studies" in G. Button (ed.): *Ethnomethodology and the human sciences*. Cambridge: Cambridge Univ Pr. Pp. 10-19.
- Greif, I. (ed.) 1988: *Computer-supported cooperative work: a book of readings*. San Mateo, CA: Morgan Kaufmann Pub.
- Grudin, J. 1994: "Computer-supported cooperative work: History and focus" in *Computer*, Vol. 27, No. 5, pp. 19-26.
- Hammersley, M., & P. Atkinson 2007: *Ethnography: Principles in practice* (2nd ed.). Abindon: Routledge.
- Henare, A., Holbraad, M., & S. Wastell (eds.) 2006: *Thinking through things: Theorising artefacts ethnographically*. London and New York: Routledge.
- Hetherington, K., & N. Lee 2000: "Social order and the blank figure" in *Environment and Planning D*, Vol. 18, No. 2, pp. 169-184.
- IT University of Copenhagen 2010: "Framing Screens: Knowledge, Interaction and Practice". Retrieved 1 December, 2010, from <http://www.itu.dk/en/Forskning/Phd-uddannelsen/PhD-Courses/PhD%20Courses%202010/Screens%20-%20organizers%20of%20knowledge%20and%20interaction.aspx>
- Knorr Cetina, K., & U. Bruegger 2002: "Traders' engagement with markets: A postsocial relationship" in *Theory, Culture & Society*, Vol. 19, No. 5-6, pp. 161-185.
- Kuhn, A. 2009: "Screen and screen theorizing today" in *Screen*, Vol. 50, No. 1, pp. 1-12.
- Latour, B. 1991: "Technology is society made durable" in J. Law (ed.): *A sociology of monsters: essays on power, technology and domination*. London: Routledge. Pp. 103-131.
- Latour, B. 1993: *The pasteurization of France* (A. Sheridan & J. Law, Trans.). Cambridge, MA: Harvard Univ Pr.
- Latour, B. 2005: *Reassembling the social: An introduction to actor-network-theory*. Oxford: Oxford University Press.
- Law, J. 1986: "On the methods of long-distance control: Vessels, navigation and the Portuguese route to India" in J. Law (ed.): *Power, action and belief: A new sociology of knowledge*. Henley: Routledge. Pp. 234-263.
- Law, J. 2007: Actor Network Theory and Material Semiotics. Retrieved 21 January 2011, from <http://www.heterogeneities.net/publ>
- Law, J. 2008: "On sociology and STS" in *The Sociological Review*, Vol. 56, No. 4, pp. 623-649.
- Law, J. 2011: "Collateral Realities" in F. D. Rubio & P. Baert (eds.): *The Politics of Knowledge, London: Routledge*. London: Routledge.

- Livingstone, S. 2009: "On the mediation of everything: ICA Presidential Address 2008" in *Journal of Communication*, Vol. 59, No. 1, pp. 1-18.
- Luff, P., Heath, C., & M. Jirotko 2000: "Surveying the scene: Technologies for everyday awareness and monitoring in control rooms" in *Interacting with Computers*, Vol. 13, No. 2, pp. 193-228.
- Lundby, K. (ed.) 2009: *Mediatization: concept, changes, consequences*. New York, NY: Peter Lang Pub Inc.
- Lynch, M. 2008: Ontography: Investigating the production of things, deflating ontology. Paper presented at the Oxford Ontologies Workshop.
- Lyon, D. 2007: "Surveillance, power and everyday life" in R. Mansell, C. Avgerou, D. Quah & R. Silverstone (eds.): *The Oxford Handbook of Information and Communication Technologies*. Oxford: Oxford University Press. Pp. 449-471.
- Mol, A. 1999: "Ontological politics. A word and some questions" in J. Law & J. Hassard (eds.): *Actor network theory and after*. Oxford and Malden: Blackwell. Pp. 75-89.
- Mol, A. 2002: *The body multiple: Ontology in medical practice*: Duke University Press.
- Myers, N. 2008: "Molecular embodiments and the body-work of modeling in protein crystallography" in *Social Studies of Science*, Vol. 38, No. 2, pp. 163-199.
- Neyland, D. 2006: *Privacy, Surveillance and Public Trust* London: Palgrave.
- Neyland, D. 2007: *Organizational ethnography*. London: Sage Publications.
- Rappert, B. 2001: "The distribution and resolution of the ambiguities of technology, or why Bobby can't spray" in *Social Studies of Science*, Vol. 31, No. 4, pp. 557-591.
- Star, S. L. 1991: "Power, technologies and the phenomenology of standards: On being allergic to onions" in J. Law (ed.), *A Sociology of Monsters*. London: Routledge. Pp. 27-57.
- Stefik, M., Foster, G., Bobrow, D. G., Kahn, K., Lanning, S., & L. Suchman 1987: "Beyond the chalkboard: Computer support for collaboration and problem solving in meetings" in *Communications of the ACM*, Vol. 30, No. 1, pp. 32-47.
- Suchman, L. 2000: "Embodied practices of engineering work" in *Mind, Culture, and Activity*, Vol. 7, No. 1, pp. 4 - 18.
- Verran, H. 2001: *Science and an African logic*. Chicago: University of Chicago Press.
- Wellman, B., & C. A. Haythornthwaite 2002: *The Internet in everyday life*. Oxford: Wiley-Blackwell.
- Woolgar, S. 2002a: "After word? - On some dynamics of duality interrogation: Or: Why bonfires are not enough" in *Theory Culture Society*, Vol. 19, No. 5-6, pp. 261-270.
- Woolgar, S. 2004: "What happened to provocation in science and technology studies?" in *History and technology*, Vol. 20, No. 4, pp. 339-349.
- Woolgar, S. (ed.) 2002b: *Virtual society?: Technology, cyberbole, reality*. Oxford: Oxford University Pr.
- Woolgar, S. & D. Neyland, forthcoming: *Mundane governance*. Oxford: Oxford University Press.

Biographical note

Malte Ziewitz is a doctoral candidate at the Institute for Science, Innovation and Society at the University of Oxford. Broadly based in science & technology studies, law and public policy, his research revolves around new and non-obvious modes of governance in digitally networked environments—the dynamics at work, the issues at stake, the design options at hand. In his doctoral project, he explores the practical politics of web-based review and rating schemes as a techno-scientific solution to public problems in healthcare and web search. He is currently heading the ESRC-funded 'How's My Feedback?' project, a collaborative design experiment to rethink and evaluate online feedback schemes.

Malte Ziewitz, Institute for Science, Innovation and Society, Saïd Business School, University of Oxford, Park End Street, Oxford OX1 1HP, United Kingdom, malte.ziewitz@sbs.ox.ac.uk.