

Impact and Counting

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I think my problem, and “our” problem, is how to have simultaneously an account of radical historical contingency for all knowledge claims and knowing subjects, a critical practice for recognizing our own “semiotic technologies” for making meanings, and a no-nonsense commitment to faithful accounts of a “real” world, one that can be partially shared and that is friendly to earthwide projects of finite freedom, adequate material abundance, modest meaning in suffering, and limited happiness.

Donna Haraway, 1998: 579

In the following, what I want to sketch out—far too lightly and still very roughly—are two spheres of life that I’ve found myself entangled in. My hope is that I might begin to convey how spheres like this—though certainly not just these two—weigh heavily on what I do, not just professionally, but how I struggle through and knit together a life, a life at work, a life with my partner and children, and a life in a London neighbourhood packed full of history and thriving with a vibrant bricolage of people and things. If anything, I suppose I want to use the invitation from Silvia, Marisa, Lucian, Hrönn and Carl as a chance to show that practice, for me, has come to be a deeply felt and continual struggling through. Let me be clear that my use of struggle here is not used to convey apathy or worse still cynicism, but refers to encounters with the kinds of trouble Haraway alludes to in her evocative phrase “staying with the trouble” (Haraway 2010). I see this struggling-through then as something that opens up the possibilities, as providing the capacities for responsibly imagining new worlds-in-the-making.

IMPACT

So let me start with what at first blush seems an entirely professional matter. Like many friends and colleagues, I find myself being asked, increasingly, to have impact. In corporate research and the academy alike, impact seems to be the new buzz word signalling a not unwarranted desire to have some tangible product from the often large sums of money invested in scientific research (Etzkowitz and Leydesdorf 2000; Lam 2010). The trouble is there’s an ambiguity to what exactly this impact is: like my contemporaries, I find myself asking questions about what it is, how we should achieve it, and how it should be communicated. These questions won’t I suspect go away. Here, though, I want to ponder on this ‘impact’ by thinking specifically about the organisational culture I work in, a corporate research environment that claims the ground of “fundamental” research, but at the same time is asking its research staff to come up with business changing ideas.

Impact then in Microsoft Research (MSR) is on the face of it understood to be about ideas that make a difference for

the business. Held up as exemplary are Microsoft products like Kinect and Hololens. These demonstrate how core research achievements—in machine learning, in both cases—can translate into high profile consumer products. Microsoft is looking to its research arm to sew the seeds for ‘game changers’, technologies with the potential to reignite the company’s position as a true innovator in the industry. Presumably, the real benchmark here is revenue, a measurement of how profitable research can be, but important too must be the view of Microsoft in the markets where there appears to be some deep questions being asked about whether the once leader of the software industry is capable of adjusting to what is, it seems, continually being heralded as a ‘new technological landscape’.

Naturally, this sometimes uneasy relationship between research and commercial enterprise has ebbed and waned for years (see, for example, Callon 1987). Since the beginning of Silicon Valley (and of course before), academicians emigrating into the worlds of the technology industry have no doubt struggled to reconcile what they see to be ‘pure’ research with commercial concerns. What interests me in this is how, exactly, science (and, more broadly, the organisation of knowing) come to be so bound up with very particular ideologies of capital and innovation. Invited are questions around how scientific innovation has come to look the way it does at Microsoft and, I expect, in many other high-tech organisations, world-wide.

As it happens, something has been underway at Microsoft over the last three or four years that has helped me to see just how corporate innovation is actively produced and how this is having a profound impact on what is expected of science and technology, and scientific research. To put it another way, through a number of organisational developments, I’ve become increasingly aware how scientific impact is being profoundly shaped by my organisation’s particular ideas of innovation, and how science and innovation aren’t just familiar bed-fellows but intertwined to the extent that they can only be understood as deeply enmeshed, ‘symbiotic’ even (Gross 2011).

Let me use one very concrete example to illustrate this. In the last couple of years something I, along with the group I work in (the [Human Experience & Design](#) group), have been asked to produce are *showables*. These dare I say ‘boundary objects’ are, as far as I understand it, intended to have a dual nature. On the one hand they should demonstrate a research contribution of some kind, the introduction or novel application of for instance a computer vision algorithm. On the other, they are meant to communicate com-

mercial potential. The goal is not to present a potential product *per se* but to come up with something that has a compelling narrative associated with it, a narrative that senior figures in the research wing of Microsoft and indeed colleagues in our business groups might find compelling and be able to talk about in concrete ways.

Now, of course, this seems a reasonable requirement and besides the term ‘showables’, perhaps, would be one familiar to the increasing number of scientists involved in industrial research (Etzkowitz and Leydesdorf 2000; Lam 2010). The point I want to make here though is that immediately we see how knowledge is materially organised in a particular way. The assumption is that scientific ideas can be, one, made material in some way and, two, weaved into stories that demonstrate application or utility. One might say this requirement is merely indicative of the essential differences between basic and applied research (or indeed academic vs. corporate research), but like Hoffman (2015) I see the issues to be more complex than this. First off, as I’ve said, MSR continues to pride itself as a corporate research organisation that sponsors what it calls “pure” or “basic” research. Taking this at face value, it seems knowledge and research are being figured here in a very particular way. Thus, rather than getting caught up in the complicated business of defending any essential qualities of scientific knowledge, whether it be applied or not, the thing I want to draw attention to is how knowledge is being treated and judged as something—literally a thing—that can sit within contemporary ideas of growth, capital and economic value. Critically, this knowledge is not separate from substance, but tightly enmeshed with it. The implication is not that there are two different matters at stake, but, on the contrary, that knowing and material production are understood as one and the same: scientific research is something that unproblematically combines or ‘collapses’ (Hoffman 2015) the two—this is precisely the kind of impact we are looking at.

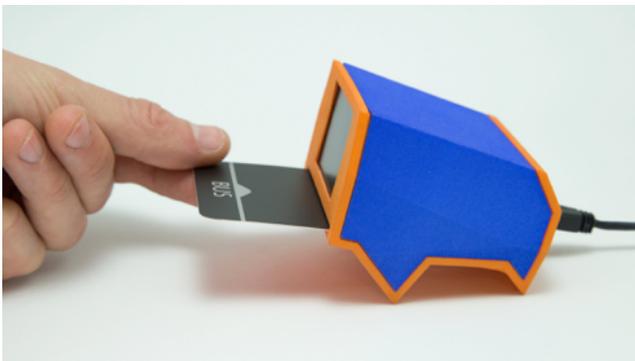


Figure 1. *Bullfrog*: a household voting device.

Illustrative of this thinking has been my management’s response to a small household voting device that we produced and deployed in relatively small numbers (approx. 40) in late 2014/early 2015. Called *Bullfrogs* (Fig. 1). These devices were built as part of an extended project examining the relationships between data and everyday/civic life (Taylor et al. 2014). They were intended to give households in a neighbourhood the opportunity to create their own ballots

and vote on local matters. The hope was that they might encourage new forms of participation and also lead to reflections on the production and distribution of data.

Putting to one side the results of this research, of relevance here is my management’s particular interest in how the *Bullfrogs* might stand as a product or showable of the wider and resource intensive project. As well as justifying the credibility of the project *vis-à-vis* related academic research, we were asked to detail the related commercial activities in the area and, specifically, to speculate on how we might deploy the *Bullfrogs* in much larger numbers in order to demonstrate that they offered a viable platform for civic participation. We were also encouraged to produce quantifiable evidence of the *Bullfrogs*’ efficacy as a local voting platform. In short, we were asked to produce precisely the kinds of data-centric results that the research was designed to examine, critically. By immediately orientating around a specific technology, i.e. the *Bullfrogs*, the research was concentrated on a material kind of impact that at once showed legitimate research concerns and an attention to (commercial) value and utility. Again, we see a kind of research being enacted that collapses particular ideas of innovation, knowledge and production.

Returning to my part in this collapsing of ideas, what I want to foreground is my own ambivalence. I want to be especially careful here not to simplify the positions or be unthinkingly critical of any transgressions towards a so called “academic capitalism” (Slaughter & Leslie 1997; Slaughter & Rhoades 2004). Indeed, it would be churlish of me to bemoan an imagined purity of a now defunct academic life as I sit in a comfortable corporate environment with the quiet 240Hz hum of computers and climate controls, and espressos on tap. The thing I want to draw attention to here is not that my employer shouldn’t be thinking about its revenue. Rather my interest is in my role in the production of things and how it might be used to expand the possibilities.

To put it in what feels like overly prosaic terms, I see that my research has come to be about how material things, whether they be called showables or something else, can be used to invite new/critical questions about how we live and and possibly, just possibly, offer small glimpses of better worlds. For me, research (and scientific research) has come to be about not just the pursuit of knowledge and the quest for technological innovations, but also a possibility for a deeper engagement with social life and how we might live our lives. I’m especially taken here by the language of the political philosopher [Roberto Unger](#) who talks of aiming for the “fuller possession of life” and an “expansion of our humanity”. Although vague, these phrases for me point towards capacities the technologies we research might have for “the “piecemeal and cumulative transformation of the structure of society” (Fidgen 2013).

To return briefly to our *Bullfrogs*, this perspective casts the impact of the small devices in different light. We might see them as ways to experiment with new and alternative participatory processes. In their use, they begin to raise questions about the modes through which collective participa-

tion is enacted and the unique difficulties that arise when social/public engagement is counted in such a way. The Bullfrogs don't offer up final solutions for local community voting, but invite wider questions about new participatory frameworks and how they might be built and refined to deepen collective engagements, to bring about an "expansion of our humanity". This resonates for me, personally, because of where my family and I live in London. As I'll discuss next, a great deal of London is being subject to a flattening force, where so much that is new and apparently representative of progress has a singular style or aesthetic. My own interest is thus in the capacities things have to enable difference, to allow for a heterogeneity in how we might all live together. The Bullfrogs in no way live up to this idea, but I see them as a way to begin engaging in it.

COUNTING

The second sphere of life I want to say something about revolves around counting. One way I have made sense of my work over the last 10 years at Microsoft has been to see it as a way of getting to grips with counting and in some ways coming to terms with being counted.¹ I could tell a few stories about numbers and counts, but let me say a bit about just one that has been important to me. Specifically, I'd like to think through a personal experiment of sorts, one in which I've sort to intermingle with the data flows of London's rental bikes and use my own counting methods to introduce, let us say, some trouble into the entanglements.

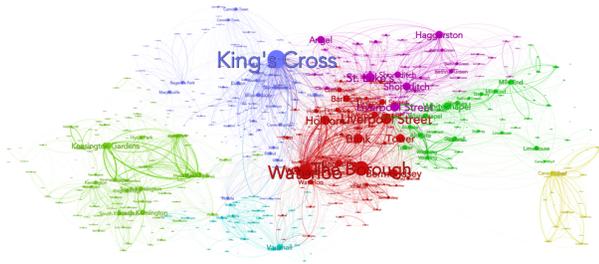


Figure 2. "Connected clusters" of bike docking stations by James Siddle.

I see there to be two broad ways in which the 'Boris bike' data (made 'freely available by the public authority, Transport for London) are being used. One is targeted at supporting the users of the system, providing them with, for example, live counts of bike availability for the roughly 700 docking stations across the city. You can download apps, for instance, that show the nearest docking stations and the number of bikes available to rent. The second common use of the data is to visualise the usage, picturing the popularity of docking stations and some indication of the frequency of journeys between them. The result is often a colourful map of nodes (docking stations) and lines of varying density between them (indicating journey frequency)(Fig. 2).

The first thing I want to say about these geospatial counts of bicycles will be of little surprise to us. These bikes and their data are bound intimately to a politics of the city. Yes, the Boris bikes were launched in 2010 by the controversial conservative mayor of London, Boris Johnson (hence their colloquial name), and yes, the system's status as a public-private partnership is often used as an exemplary case for partisanship on both sides of the public/private ownership debates.

Things go deeper than this though. Interweaved with the spatial configuration of the city and a specific set of economic, technical and computational modes, we find a geography emerging from the entanglements. Most obviously this is manifest in the free 30 minute window users have before they are charged on a per-minute basis for using the system. With about 95% of all journeys falling inside this count down, a cartogram of the city is produced that has some fairly well-defined regions and boundaries. These, more often than not, paint a picture of a patchworked city with hubs in the financial districts and dense spokes funnelled to the residential neighbourhoods that service them. Large areas to the East and South East are rendered invisible in these cycle-slash-data routes. So the network of nodes and connections, probably unsurprisingly, correspond to where wealth and prosperity are accumulating in the city.

At risk of oversimplifying things, what I want to say here then is that the multiple systems of counting and the material infrastructures through which the counts are produced do political work, but, and critical to my point, is they do a work that merely reminds us of what we all already know: To borrow Haraway's words, again, "Nothing", not even numbers, "come without their worlds" (1997)², and these worlds like the ones etched out of the bike's data maps recapitulate the kinds of differences we know too well.

Drawing heavily on scholars such as Kat Jungnickel (2013; 2014), my urge here has been to intervene, to find new entanglements that might provoke other ways in which difference might be done. So on one fine autumn day last October I took my first ride on a Boris Bike, on bike number 2175. My journey is between two docking stations that lie at the Eastern edge of the cycle scheme's cartography of routes and stops. The route, starting at a docking station on Aberfeldy Street leads me further East (about 5km beyond the rental bike scheme's eastern most docking station), through a series of neighbourhoods that, despite their proximity to the financial district, Canary Wharf, still feel a long way from London's ever increasing prosperity and cycles of gentrification. After riding North along the popular market street, Green Street, in Newham I come back on myself, heading due West along the Newham borough's Greenway, an embankment of greenery and concrete overlaying the 150 year old Northern Outfall Sewer, part of London's network of Victorian sewage systems. In total, my journey takes 45 minutes, starting at 16:45 and ending at 17:30. The

¹ A longer version of the following was presented at a small workshop in Luneburg, Germany titled: Transmissions and Entanglements.

² Maria Puig de la Bellacasa (2011; 2012) and her thoughts on care have been instrumental in my reading and re-reading of Haraway.

average journey time for the 74 rides that began at the same time, across the scheme, was 15 minutes. In the week preceding my journey 18 journeys began from Aberfeldy Street against a seven day total of 139,793 across the entire scheme.

My journey is then an intentional move to the edges of London's bike rental docking stations and the associated data trails of bike flows. Starting with the modes of counting that have successfully reminded us of what we already know, I've sought out something else. And to mess around with these counts further, my body is also instrumented with a range of off-the-shelf biosensors or self-monitoring systems, each purport to capture in some shape or form individual physiological or bodily phenomena, steps, heart rates, global position, a sequential visual memory.

Again, my aim here is to infuse something different into the mixture of seemingly familiar counts. Introducing peculiar juxtapositions and instabilities between counts, it is an attempt to surface other kinds of flows and connections that might just etch new topographies into the city. What I really want to do here is alter how we see life in the city, to transfigure what counts, in answer to Nigel Thrift's call:

"We need spaces that graft... We need spaces that don't line up. We need spaces that breathe different atmospheres. We need new slopes, strips, roads, tracks, ridges, plains, seas... We need room. This is meant as an effort to make room." (2014: 18)

Here, I want to leave as ill defined any ideas for how things could come to count. What I want to say though is that, what I've been struggling with is a sense of counting as an apparatus of transmission for how we might open up the possibilities for new relations. From my own experiment, the fluxes of rates, coordinates, 'steps', image sequences, and so on are open questions about how we might surface a mixture of worlds, ones in which the counts spiral off the map literally and figuratively, ones where we are not sure what might come to count.

CONCLUSIONS

Throughout my research career, I've found it hard not to waver and fret about the intensification and proliferation of information technologies and their infrastructures—in more than a few ways, they (and I) feel caught up with troubling economic, political and ideological commitments. My reflections on *impact* and *counting* have, I imagine, given some indication of where I stand on these matters. However, the response that comes to me most easily—of oversimplifying the problems, of slipping into crude binaries of analog versus digital, human versus technical, good versus bad—is precisely what I try to avoid. In thinking through things like *impact* and *counting*, and the ways they entangle in certain kinds of world making, what I've tried to convey is how, for me, a critical practice inevitably comes to be about making a difference and, dare I say, making things better. Yes, this is about a standpoint, "to cast our lot for some ways of life and not others" (Haraway 1997: 36), but it is also to "build meanings and bodies that have a chance for life" (Haraway 1998: 580). For me then, a critical praxis necessitates thriving in the-mess-that-always-defies-stable-

orderings, and from this responsibly knitting together the capacities for different and better kinds of worlds that I would want to live in.

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