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Track09: Speculation, Design, Public and Participatory Technoscience: Possibilities and Critical Perspectives

Designing Debate –
Speculative Design and Upstream Engagement

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1 Title Slide - Abstract

An aim of upstream engagement is for researchers and members of the public to discuss the potential implications of research before technologies appear on the market (Wilsdon & Willis, 2004). While some see these practices as driving democratic models of science and technology decision making (HM-Treasury, 2004), upstream talk has been criticised as a repackaged version of top-down science policy and of redeploying narratives of linear technology development (Wynne, 2006). In this paper I discuss some features of an engagement project called Material Beliefs, in relation to these issues. (Gaver , Kerridge, & Custead, 2007).

2 Neuroscope - what is speculative design for upstream engagement?

A core aim of Material Beliefs was to develop speculative designs as a form of engagement. For example, the Neuroscope allows a user to look on to a virtual culture of cells. The device is linked to an actual culture of neuronal cells in a lab, embodied on an electrode array, so as the user interacts with this device the real cells are stimulated, and the virtual model is updated, forming a loop between the home and the lab.

I focus on the ambition of projections of technology like this to perform a debate, providing three snapshots of public events; a café scientifique style discussion, a product design exhibition, and representations of the work in online forums.

3 title - Upstream engagement

4 upstream engagement - continuing forms of deficit

Commitments in the UK for scientists to do some form of public engagement are often traced back to Bodmer's report for the Royal Society in 1985, which offers a range of options for enriching public life through the transmission of scientific knowledge (RS, 1985). Such an approach has been characterized by Brian Wynne and others in STS as a deficit model, where the problems of science are linked to deficiencies in the knowledge of non-scientists.

> Better public understanding of science can be a major element in promoting national prosperity, in raising the quality of public and private decision-making and enriching the life of the individual. (RS, 1985)

The Science and Society report of 2000 calls for more mutual forms of dialogue, where the values and assessments of non-experts in some way taken into account (HOL, 2000). There is a call for scientific culture to be made accountable.

> Today's public expects not merely to know what is going on, but to be consulted; science is beginning to see the wisdom of this, and to move "out of the laboratory and into the community" to engage in dialogue aimed at mutual understanding. (HOL, 2000)

5 upstream engagement - upstream engagements

More recently the initial stages of research have become occasions for engagement, rather than after technologies become products or services that have tangible impacts.

> The project envisaged employing a social scientist to work in the nanoscience laboratory at the University of Cambridge exploring the social implications of nanotechnology, teaching scientists about the social and ethical aspects of nanotechnology, and supporting public engagement activities. (Doubleday, 2007)

Nanotechnology has been a thematic focus for these upstream modes. For example *Social Dimensions of Nanotechnology* was lead by a geographer in a lab. His interest here was the extent to which exchanges between expert and non-experts frame 'responsible development', though he is also skeptical of expectations that social science is in someway preparing society to 'accommodate new technology' (Doubleday, 2007)

6 title - speculative design

7 speculative design - from the academy to the exhibition

So how does speculative design relate to upstream engagement with science and technology? [**READ:**]

> Rather than writing papers and seeking conventional academic approval, they could exploit their privileged position to explore a subversive role for design as social critique… Design proposals could be used as a medium to stimulate discussion amongst the public, designers and industry.
> (Dunne & Raby, 2001, p. 65)

Expressed in this comment by Tony Dunne and Fiona Raby is a commitment to critical discussion about the technological products that surround us. There is a double move here, away from the production of new commodities - what Margolin paraphrases as "dazzling lamps, furniture and automobiles" (2002, p. 28) and also away from scholarly writing which is seen as elitist and conservative.

8 speculative design - the media and debate
Speculative design is self-consciously controversial in order to reach the public. Here James Auger is interviewed about the Audio Tooth Implant designed with Jimmy Loizeau:

> Initially we were honest about our motivations but it soon became clear that the press weren't too interested in technological debate so we changed our methodology and went down the surreptitious route; by suggesting that it was a real product and would be available on the market at some point in the near future they took the bait. We learnt the correct technical jargon to explain how the chip would operate and built the model resin tooth as a representational graphic. (Auger interviewed in Debatty, 2007)

This hypothetical object is presented as a product in order to get representations of the design out there, and this is seen here as a technique for driving a debate of the kind suggested by Dunne and Raby.

9 speculative design - Upstream engagement as an occasion for debate
By turning away from manufacturing and industry, speculative design is in search of territories in which to operate. Meanwhile, upstream engagement is in search of additional modes of practice to make good its promise.

In discussing their entanglement, the role for speculative design is not to somehow fix the upstream as a resource for scientific policy. Rather by looking at some micro-social aspects of the Material Beliefs project, I hope to show that through a sceptical consideration of upstream engagement, speculative design is able to consider what it means by design for debate.

10 title - Café Scientifique

11 Café Scientifique – Event
This is an image of an evening event at a venue called the Dana Centre in London. This cafe-scientifique format provides a setting where science and technology is discussed informally, and here you can see engineers and scientists with designers introducing topics and issues for discussion.

This is of course is a particular type of public, and I think Emily is talking more about this shortly. My interest here, is that not only the technical 'facts' are presented; potential social implications are introduced through design scenarios.

12 Café Scientifique – Chat
For example, one design dealt with a set of issues around biology and nutrition, and the politics of related technologies as they are represented by various groups like the transhumanists. The comment at the top is in response to Aubrey de Grey, who spoke about extending life:

> As a human race we're part of an ecosystem and so if we prolong life to the point where people can live indefinitely, then the population will rise and rise and eventually we'll run out of resources (participant interviewed in Beaver, Kerridge, & Pennington 2009)

So speculative designs can configure technology as something not yet settled, as subject to controversy and variety. Macnaghten offers an account of nanotechnology as a site for 'future politics':

> Given that the technology exists largely in terms of future-oriented promise rather than as material reality… lay technoscientific citizens could be produced through an innovative public engagement exercise, able to offer opinions, discuss the issues, and reflect on future politics and their contingencies. (Macnaghten, 2010)

It is this contingency, the social shaping of technology by groups with issues and individual values that becomes foregrounded through design's technological stories.

13 title - Product Design exhibition

14 Product Design exhibition – Nowhere/Now/Here
Prototypes from Material Beliefs have featured in design exhibitions; this image is from Nowhere/Now/Here at Gijon in northern Spain, a large group show focussing on contemporary product design. In this kind of venue speculative design takes a deliberative approach to technology and science into a product design territory, in contrast perhaps to work which predominately considers materiality, formal and semiotic qualities of designed objects.

15 Product Design exhibition – Silences
Such events help us think about what we mean by engagement and debate. As this quote suggests, who is having a debate, how can we know? Perhaps it's fairer to talk about these events as dissemination. Work is disseminated, and it clearly does something, but it's very tricky to make claims about it staging debates, at least in terms of formats where there is some form of exchange. So I'm just curious about finding a way of talking about what is happening here.

16 title - Online formats

17 Online formats –Carnivorous Domestic Entertainment Robots
These robots by Auger, Loizeau and Zivanovich trap and consume pests to generate their own power. Carnivorous Domestic Entertainment Robots make use of a microbial fuel cell, breaking down organic material into an electrical charge that is stored in a capacitor bank.

In addition to the physical prototypes for exhibition, images of the designs are accompanied with a description as a form of press release. Taking a controversial position, these representations spread quickly, syndicated on websites and blogs.

18 Online formats – Forums

While the initial design is itself a version of research at Bristol Robotics Lab, further versions are generated through critique, dependent on the values of the community and the format of the forum. These are product designers; issues include cost, feasibility, and impact on resources. These are blog responses, so comments are acerbic and extreme.

Mike Michael has written about the multiplication of versions of technology in such projects, which "Spiral out in many conceptual directions, raising questions about a multitude of indistinct issues surrounding science and technology"(Michael, 2009) . If we talk of creating debate, we could step back from an authoritative role, accept proliferation and indeterminacy and perhaps find strategies to provide an account of this.

19 title – Conclusion

20 Conclusion

Rather than bringing speculative design to 'fix' upstream engagement, I have suggested that we might apply a sceptical discussion of the upstream to our consideration of how speculative design performs debate.

Macnaghten puts forward a case for what he calls 'critical public engagement studies' where a curiosity about methods for characterising and demonstrating lay sensibilities and imaginations is an end in itself, rather then a precursor to the 'institutional governance of emerging technologies' (Macnaghten, 2010, p. 32).

Perhaps as speculative designers we might rethink our practices through such interventionist accounts of public engagement, and more broadly, perhaps STS offers opportunities to reconsider the way such practices can be discussed.

21 References

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