# STS C200, Week 10: Decentering STS

Orr Paradise

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## 1 The Zimbabwe Bush Pump / Marianne de Laet and Annemarie Mol

Laet and Mol write a love letter to the Zimbabwe bush pump. In their exploration of the object and its creator, the authors reexamine the characteristics of actors and networks. Primarily, the Zimbabwe bush pump is exemplary of a *fluid* object, whose strength is in its blurry boundaries. Its network has no obvious "builder"; this lack of "ownership" makes the network more robust.

What is the Zimbabwe bush pump? Rather, is it possible to draw a line around this object? The authors examine several approaches, each of which does not yield a definite answer.

One may think to define the Zimbabwe bush pump relative to other pumps. This approach fails because what distinguishes it from one category of pumps ties it to another, whereas a satisfactory definition would distinguish it from all categories simultaneously.

Next, one may try to identify the physical components from which the pump is formed: a cylinder that consists of a piston, a lever, etc. Indeed, this list of items, when composed correctly, form an object that allows water to be pumped. However, the pump would not be appealing were it not for the *kind* of water pumped – clean, healthy water. Obtaining clean water requires additional physical objects, such as a concrete apron, yet we certainly wouldn't think to say that the apron is a part of the pump (as a physical component).

In fact, the boundaries of the pump may include animate or abstract objects. The pump's designer (which we will examine later) explicitly states that community participation is an integral part of the pump's use. In that sense, the community lies within the pump's boundaries as well. Furthermore, the Zimbabwe bush pump is, crucially, *Zimbabwean*; it is one of few pumps manufactured in the country of its target use, and ties villages to the national identity. From this perspective, the boundaries of the pump contain an entire nation.

The authors then turn from fluid boundaries to an examination of the pump's fluid failure modes. Crucially, the pump is locally repairable, which means that it can be repaired from locally sourced or even improvised parts. The designer is quoted as "amazed at how well [it] functions without some of the parts" [8, p. 241].

As mentioned earlier, the pump is functioning correctly when it provides 'healthy' water. Conversely, if the water is not 'healthy', then the pump is deemed broken. But here too there is fluidity, since 'healthy' water is measured relative to an alternative: next to a faulty well pump, even a somewhat-faulty bush pump is deemed functional.

Finally, the authors direct their loving gaze towards the pump's designer figure, Peter Morgan. Following Latour, the authors look at the network behind the technology. Unlike Latour, their description will not be centered around a network-builder, a cunning and motivated strategist who ties other actors to their interest. Rather, the pump's developer actively avoided authorship and ownership, which helped it spread as an appropriate technology. The developer embodies a "dissolved self", who flows with his invention rather than directing its path or coercing the environment to accept it.[1]

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[1] On this note, I am reminded of Biagioli's description of Galileo's "abandonment" of his discovery of Jupiter's moon [2]. The motivations are quite different, but the phenomenon is the same.

The essay presents *fluidity* as a positive and relatively unique characteristic. But the essay is not critical – it does not compare, contrast or rank the Bush Pump against other pumps. Per the authors, a critical tone may not be possible in their version of actor-network theory: "How to be normative when there is no single, self-evident standpoint to speak from?" [8, p. 253]. This touches on our discussion last week, comparing Latour to, say, Hessen [5] and Merton [7] who clearly define desirable traits of science. Rather than presenting a clear normative position, the authors' are in a position of *loving* an object and being *moved by* it.

On a personal note, I found the voice adopted by the authors to be a refreshing one. It was passionate, yet not overly combative. The essay has merits as a theoretical piece that extends and modifies Latour's theory, as well as a concrete account of a technology.

## 2   Situated Knowledges / Donna Haraway

Let me start by saying that I think I lack the background needed to understand what Haraway is *really* saying in this essay. Instead, I will share some takeaways, under the disclaimer that I (perhaps forcibly) examine only points relevant to our STS readings, and likely fail to address other important ones.

Haraway carves out a path between (or around) realism and relativism. She invoked a familiar criticism of realism: realism fails to explain biases and power structures, for its science is an objective quest after truth and should not be affected by society. Relativism is (finally) criticized for its machismo; I recall our classroom discussions of the strong(!) programme, and Latour's militaristic playbook of how science is formed [6].

These criticisms are, I think, secondary to what follows from the main point of the paper: a focus on vision as a metaphor and sensory system. Both realism and relativism are accused of playing *god's trick*, speaking from an allegedly-neutral position that examines reality from nowhere. Realism speaks for the god of objectivity that denies earthly power structures, and relativism has the gaze of a transcendental god that "[is] nowhere while claiming to be everywhere equally" [4, p. 191].

In Haraway's framework there is always a viewer, and the partiality of their perspective is what promises "objective vision". Sadly, I cannot say I understand what is this "objective vision" (it is a *feminist*, not realist, objectivity – but what is that?), nor how it is obtained from partial perspectives.

Haraway encourages us to prefer the viewpoint of the subjugated, because they are more likely to be formed around a critical core of knowledge. I am not sure if I interpret this as a rejection of symmetry (i.e., an epistemological preference of certain knowledge), or as a methodological preference (i.e., the known focus of STS on controversy).

## 3   Race After Technology / Ruha Benjamin

This book studies the interplay of race and technology, with a focus on contemporary digital technologies. As with Section 2, I will try to avoid injustice to the book's important overall position and will instead highlight a few connections to our prior readings.

The book's starting point is the familiar warning against technology that is posed as "objective" and "scientific" but reinforces racism and other biases. Four features are identified as especially conducive to such position ('The New Jim Code'): such technology (a) appears to rise above human subjectivity, (b) is purportedly tailored to individuals and not groups, (c) claims to rank people according to merit and not prejudice, and (d) exists within a framework of forward-looking enterprise that promises social progress.

Benjamin's work connects well to that of Bijker and Pinch [3] in that she does not take for granted the 'problem' that a certain technology attempts to solve ("even just deciding what problem needs solving requires a host of judgments..." [1, p. 11]). She builds on this non-trivial 'problem' definition, concluding that "[t]oo often "inclusion" … assumes that those who have been excluded want to be part of a tech future envisioned by others." [1, p. 188]; that is, sometimes a 'problem' is defined by some and imposed onto others.

Chapter 2 uses the method of focusing on 'glitches' to reveal the structure of racism not just in technology, but in society as a whole. For example, given that AI is trained to imitate human behavior, the existence of racist AI implies racist structures in its training. This focus on 'glitches' can, perhaps, be seen as an incarnation of the focus on controversy in the study of scientific knowledge. Benjamin suggests that this method (of using 'glitches') works particularly well with inherently-political technology (cf. [9]).

Chapter 3 discusses 'scopic vulnerability', or how exposure can put the viewed object at risk (and technology disproportionality increases exposure for some). This might be a stretch, but I thought of Haraway's vision: both thinkers want the reader to acknowledge that a gaze exists, and that its orientation has important effects.

In chapter 4, Arvind Narayanand is quoted as saying that "[h]uman decision makers might be biased, but at least there's a *diversity* of biases...". This reminded me of the early-empiricist argument for the public witnessing of experiments, namely, that people are naturally corrupt (and so are their perspectives), but a multitude of witnesses may average-out people's individual corruptions.

## Questions and topics for discussions

- What is *feminist objectivity*?

- In Haraway's piece, knowledge itself is said to be an actor (*material-semiotic*). What does this mean?

## References

[1] Ruha Benjamin, Race After Technology: Abolitionist Tools for the New Jim Code, Polity, 2019.

[2] Mario Biagioli, Galileo the Emblem Maker, Isis, 1990, 81:230-258.

[3] Wiebe Bijker, Thomas Hughes, Trevor Pinch (eds.), The Social Construction of Technological Systems: New Directions in the Sociology and History of Technology, Cambridge, MA: MIT Press, 1987. Essays by Bijker-Pinch and Hughes (1-82).

[4] Donna Haraway, Situated Knowledges: The Science Question in Feminism and the Privilege of Partial Perspective, Feminist Studies, 1988, 14:575-599.

[5] Boris Hessen, The Social and Economic Roots of Newton's *Principia* [1931]. Reprinted in The Social and Economic Roots of the Scientific Revolution: texts by Boris Hessen and Henryk Grossmann. Edited by Gideon Freudenthal and Peter McLaughlin, Dordrecht: Springer, 2009, 41-101.

[6] Bruno Latour, Science in Action, Cambridge, MA: Harvard University Press, 1987.

[7] Robert K. Merton, The Normative Structure of Science[1942], in The Sociology of Science: Theoretical and Empirical Investigations, Chicago: University of Chicago Press, 1973.

[8] Marianne de Laet and Annemarie Mol, The Zimbabwe Bush Pump, Social Studies of Science, 2000, 30:225-263.

[9] Langdon Winner, Do Artifacts have Politics?, Daedalus, 1980, 109:121-136.