STS C200, Week 12: STS, Expertise, Public Discourse

Orr Paradise

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1 Impure Science

In *Impure Science*, Steven Epstein studies how a tangled web of social relations created a heterogeneous landscape of knowledge and science surrounding AIDS. The book is rich with examples and developments of ideas from the foundation of STS: obligatory passage points, Bourdieu's scientific capital, and symmetric analysis all have leading roles in the structure of arguments in the book—which made reading it particularly rewarding at the end of a busy semester.

The book is organized in two parts, each studying a different kind of AIDS-related knowledge: first the etiology of AIDS, and then its treatment. This will also be the main structure of my notes that follow.

Part one looks at the controversy that surrounds the establishment of the causal relationship between HIV and AIDS. Naturally, this requires Epstein to open the black box that encloses the statement "HIV causes AIDS". Epstein studies not only the contents of the box, but also the box itself: the controversial process of its initial closure, and subsequent (controversial) attempts at re-opening it.

These controversies are framed as a struggle of ownership of a fact and the right to fact-making. The initial HLTV/LAV dispute between Robert Gallo and Luc Montaigner is clearly such a struggle, that was "resolved" by an agreement that mandated joint ownership over discovery of the virus (renamed HIV).[1] Patent rights were shared following an agreement signed by presidents Reagan and Chirac.

One way or another, the scientific and political establishment declared that "the probable cause of AIDS has been found" (to quote then-Secretary of Health Margaret Heckler). Actors less aligned with the mainstream did not necessarily share this reality, with several "outsiders" (activists, patients, and some physicians) rejecting the claim, and decrying the "undemocratic" knowledge-making process. Indeed, this is a conflict between "insiders" and "outsiders" regarding who has the right to make and evaluate claims of knowledge.

The insider/outsider conflict takes an interesting turn when Peter Duesberg, who rejects the causal relationship of HIV and AIDS, enters the fray. Duesberg was a member of the National Academy of Sciences, inducted for his discovery of the first oncogene. While his research was virology-related, he was not a virologist per se—it's safe to say that his expertise was unrelated to AIDS. This placed him in a unique position, an outsider to insiders such as Gallo, but (initially) still an insider to most outsiders such as AIDS activists.

Epstein's description of Duesberg and his efforts are quite Latourian: he describes Duesberg's attempts to recruit allies (so as not to be "lonely"), mostly from non-mainstream media. Duesberg himself observed the peculiarity of his position [3, p. 114], in what can be paraphrased to say (in the language of Bourdieu): "I would have been better off pursuing a successive strategy rather than a subversive one." But Duesberg and his allies made use of their unique not-here-nor-there situation, with a tactical arsenal that ranged from "internal" medical arguments to "external" arguments about the methodology and politics of science. [3, p. 131-138].

[1] Gallo is presented in the light of a responsible owner of the fact, while Montaigner comes off as a dissenter who is displeased with the outcome of the ownership dispute. Ironically, twelve years after this book's publication, Montaigner was awarded the Nobel prize in medicine for the discovery of HIV, alongside Françoise Barré-Sinoussi—but not Gallo. Montaigner was "very sorry for Robert Gallo", following the announcement.[2]

Duesberg's bricolage caused his adversaries to redefine themselves and adopt surprising counter-strategies. For example, *Project Inform*, a grassroots organization of lay people seeking to create "mass-based expertise", cited Duesberg's credentials (or lack thereof) in an effort to de-legitimize his claims. We would expect such a strategy from actors closer to the scientific establishment, not ones that define themselves as outsiders.

The second half of the book looks at controversies surrounding the treatment of AIDS, and specifically combating HIV. The story of the treatment saga is the story of the complex relationship between AIDS activists and the scientific establishment (which includes academic researchers, federal regulators, and the National Institutes of Health).

A representative example is the activists' opposition of randomized clinical trials, or more specifically, against these being the only way for patients to access experimental drugs. In a combination of strategies that included head-on clashes, negotiations, and recruitment, activists succeeded in legitimizing "community trials", with the FDA unprecedentedly approving a drug based solely on data from community research [3, p. 217]. Epstein makes extensive use of actor-network theory in his analysis of this particular example, concluding that "[activists] had situated themselves as an 'obligatory passage point' on questions of trial methodology..." [3, p. 265].[2]

Throughout the treatment saga, we see a cross-pollination between activists and scientists: in one direction, activists recruit biostatisticians to their groups; in the other, activists learn the language of scientists so that they may join the scientific discussion (on scientists' terms!). This is a blurring of the boundaries between the "inside" and "outside" of science. Epstein views this as an example of "translation of capital" (in the sense of Bourdieu), but this has in fact been a theme in many of the STS readings we've encountered this semester (for example, [4, 1]).[3]

In my opinion, a crucial difference between the topics of the two parts of the book—the etiology of AIDS and its treatment—is that the conversation on etiology has reached closure, while we still do not have a cure for AIDS. I wish Epstein reflected on this key difference, explicitly stating the differences when studying related topics at different states of closure.

Let me conclude with some subjective thoughts on the book's presentation. As I said, this book made for a very rewarding read as it elegantly strung together several frameworks we've studied this semester. I've also learned a stylistic lesson from this book, an idea that made reading this book a particulary enjoyable (and addictive) experience.

Epstein taught me that not all black boxes must be opened. Consider the following description on the origin of AZT: "In the early 1960s, a researcher [...] decided to design a drug that would keep cancer cells from duplicating." [3, p. 192]. Surely, the process that led the researcher to choose this noble task is a complex one, entangled with politics, personal aspirations, material conditions, and so forth. Surely, Epstein knew this as well—yet he chose to keep this black box closed. This allows the reader to stay 'in the moment' and focus on the relevant details; indeed, when I read *Impure Science* I felt transported back in time, and I could feel the drama unfolding before me.[4]

2 Merchants of Doubt / Naomi Oreskes and Erik Conway [6]

Merchants of Doubt is a powerful account of several controversies that intersect science and politics. The authors identify a tight-knit group of actors that played instrumental roles in the development of knowledge surrounding seemingly unrelated areas, such as nuclear warfare, the harmful effects of smoking, and the origin of acid rain. Specifically, these actors destabilized certain facts to promote their (right-wing) political agenda.

[2] The term 'obligatory passage point' appears eight times in the body of the book!

[3] Epstein addresses (answers, implicitly?) a question I posed in my report from the second week, after reading Bourdieu: "Are all forms of capital It is easy to see that scientific capital translates to political, societal and even economical capital. But is the converse true?"

[4] On a personal note, I think that this technique was particularly effective on *me*, a reader in isolation due to a virus-induced pandemic.

Allow me to build a strawman, and suggest a view of this book as highlighting the inherent weakness in Popperian science. After all, this book shows how the pluralism inherent in a system of falsifiable claims was "hacked" by just a few infiltrators posing as experts. Similarly, one can interpret the merchants of doubt as using Merton's organized skepticism in bad faith to inhibit science that does not align with their political leanings.

I view things differently. To me, this is a cautionary tale about the blurry boundaries of science. The vulnerability that was exploited by the protagonists was not the scientific method for the creation of knowledge; rather, it was the fact that the boundaries of science are hard to define. Much like Duesberg in *Impure Science*, our actors were rattling scientific knowledge *from the outside*, by capitalizing on the fairness doctrine (or its remnants)—a feature of popular media, not peer review. We can imagine a technocratic society in which science has clear and impermeable boundaries, with knowledge claims flowing in one direction: from science to the public. In such a society, the views of a handful of retired physicists on the origin of acid rain would not have resulted in this book being written. If we've learned one thing this semester,[5] it is that we do not live in such a society...

Questions and topics for discussions

- Discuss any methodological differences that arise when studying facts that have reached closure (such as the connection between HIV and AIDS) compared to facts that have not reached closure (such as the treatment of AIDS). A good starting point would be a comparison of parts one and two of Epstein's *Impure Science*.

References

[1] 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).

[2] Jon Cohen, Martin Enserink, HIV, HPV Researchers Honored, But One Scientist Is Left Out[2008], Science. 322:149–328.

[3] Steven Epstein, Impure Science: AIDS, Activism, and the Politics of Knowledge, Berkeley: University of California Press, 1996.

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

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

[6] Naomi Oreskes and Erik Conway, Merchants of Doubt: How A Handful of Scientists Obscured the Truth on Issues from Tobacco Smoke to Global Warming, London, Bloomsbury Press, 2010.

[5] We have learned more than one thing this semester!