

Deconstructing the Deconstruction of Science in *Laboratory Life: The Construction of Scientific Facts*

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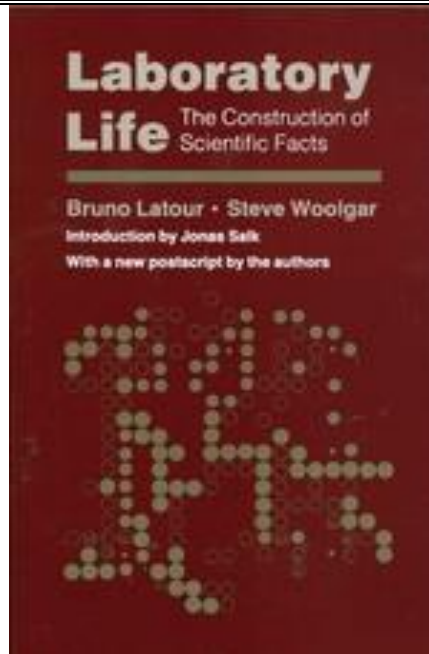
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Laboratory Life: The Construction of Scientific Facts

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The book *Laboratory Life: The Construction of Scientific Facts* (first published in 1979) as the title suggests is an effort to prove that the **content** of Science is also socially constructed. It can be seen as an addition to the postmodern ‘generalized skepticism with regard to scientific truth’ (Norris 457). The book deconstructs the idea that Scientists are talking about a ‘truth’ out there and that scientific truths are also a result of negotiations among scientists. I am trying in this paper to show the ‘aporias’, ‘slips’, ‘contradictions’, etc. in this book. I am just trying to show the inconsistencies in this book. I am trying to show how the book is

confusing in its methods and how it often uses the very scientific ‘methods’ and vocabulary that suits a ‘scientific’ investigation while trying to prove that ‘science’ is just another narrative.

The idea that science enjoys a special status with regard to ‘truth’ out there has been questioned repeatedly. As Newton says, antagonism to science springs not just from people of ‘spiritual beliefs’, but also from the ‘practitioners of the more recent and less developed social scientists’, who argue that the results of science have nothing to do with ‘Nature and the external world under investigation but are simply narratives, like myths and fairy tales, or the outcome of social agreements’ (2-3). There have been many responses from scientists and philosophers of science to this relativist and constructivist ideas of science (see Newton, Chalmers, Gribbins). I would not be looking at all these debates between the ‘constructivist’ and ‘realist’ approaches to science in this short paper, but only at the inconsistencies in one book, which in fact claims that even the content of science is not about reality. I think it is important that when we speak repeatedly of either the need for ‘scientific temper’ or the need to escape from the ‘hegemony’ of the science to seriously understand these debates about science, though this particular book was published long ago.

Let us begin with a brief introduction to the book in question. The book is based on the field research carried out by Latour for twenty-one months between October 1975 and August 1977 in the Roger Guillemin’s scientific laboratory at the Salk Institute for Biological Studies, San Diego, California. The researcher closely observed the processes at the laboratory and the interactions between the scientists, collected a lot of data and then analyzed it. The results came out in the form of the book written in collaboration with Steve Woolgar. The book as the authors accept adds to the strong program of sociology as envisioned by Bloor (Latour Bruno 107).

It is interesting to look at the introduction (skeptical) to the book written by Jonas Salk, the founder of the Salk Institute. As a virologist, Salk was instrumental in discovering the vaccine for polio, and naturally he would have ‘vested’ interests in not accepting the theory that instruments (that is the scientific instruments or as Latour calls them ‘inscription devices’) construct phenomena (Latour 64). Salk accepts the need for such an observational study of the scientists. As far as this book is concerned, Salk’s introduction is at the margins of the text and

text itself as Latour says in his postscript to second edition “.... [has] a life of its own. It is the reader who writes the text” (273). He is saying this not about a literary text, but about his own text that tries to **prove** that science is a social construct. Salk would not have meant for the views in his introduction to have a life of their own, and anyhow as Latour says it is old fashioned to look at the ‘intention’ of the author (273). Saying that this present work is different from other works on scientists, Salk says that the present work is an anthropological probe in to study of scientific culture. He calls the researcher ‘an inside outside observer’. Let us quote some of his words- ‘He has tried to observe scientists with the same cold and unblinking ways with which cells, or hormones, or chemical reactions are studied in this book the authors demonstrate what they call the social construction of science... I realized how a “scientific” study of science could be when viewed by an outsider who felt impelled to imitate the scientific approach he observed ... [the book] reminds of many scientific endeavors in which nothing stands in the way of an impartial inquiry...this kind of objective observation of an outsider...” (12-14). It is clear that Salk is looking at this work as an effort to ‘prove’ a reality that is ‘out there’ just as scientists try to prove something. This points to the problem that anyone who says that ‘all truths are relative’ has to address- what about his/her own statement? This is analogous as Newton observes to the Cretan shouting ‘All Cretans are liars’ (37). While arguing that scientific truths are social constructs, the authors of *Laboratory Life* often describe their own work in scientific language, as I will show later.

But first let me summarize the main arguments of the book. The authors think of themselves as anthropologists visiting a ‘tribe’. They are not visiting any ‘exotic tribe’ (17) but are visiting the ‘tribe’ of scientists. This is a kind of unusual anthropologist because here he is visiting someone not ‘below’ him in civilization as most western anthropologists do. Anthropologist studying a so-called primitive culture will have tools of study that his ‘subjects’ do not have, though his knowledge of the culture that he observes may be limited. Even then, as Newton says, “Few anthropologists would enter an alien milieu without any prior knowledge of that culture” (35). Latour and Woolgar however think of it as an advantage that they have no idea of the activities of the ‘tribe’ that they are studying. The analogy of the anthropologist and the tribe of scientists looks only superficially convincing. Latour and Woolgar certainly are not such outsiders to the scientific tribe as an anthropologist studying an ‘exotic’ culture.

But the analogy is consistently used throughout the book. They refer to their research as ‘the anthropology of science’ (27). Saying that they take the apparent superiority of scientists as insignificant, they add “This is similar to an anthropologist’s refusal to bow before the knowledge of a primitive sorcerer” (29). It seems here that they do accept that the anthropologist is above the ‘sorcerer’ and it is implied that the knowledge of the sorcerer is not something that needs to be bowed to. And do anthropologists really take the apparent superiority of the tribes they study as insignificant? They keep on extending the analogy when they say “Whereas other tribes believe in gods or complicated mythologies, the members of this tribe insist that their activity is in no way to be associated with beliefs, a culture or a mythology” (70). The questions that rise to mind when we read this are whether explanations of natural phenomena based on belief in god or mythology are the same as the explanations of the natural phenomena by scientists and whether the ‘strong program of sociology’ for the tribals like Latour and Woolgar is similar to the god or mythology of the ‘primitive’ tribes.

They take this analogy literally and say things like “The general mythology provides them with the tenet that the brain controls the endocrine system, and they share this with a large cultural group of neuroendocrinologists” (55). In other words, that the brain controls the endocrine system is not a matter of the reality of the physical world but only a matter of the mythology and scientists are only working within this mythology rather than with ‘facts’ about brain and cells. A further implication is that the claims of science about such things are on a par with any claims about the natural world made on the basis of ‘mythologies’. (Of course, Latour and Woolgar will say that they are using the word mythology in the sense in which, say, Barthes used the term, but as I have shown in the citations from their texts above, they have not used the word mythology in such sense.)

As the scope of this paper prevents me from discussing all the arguments in this book, let me now look at one important argument that they make about instruments and facts. They say, “the spectrum produced by a nuclear magnetic resonance (NMR) spectrometer ... would not exist but for the spectrometer. It is not simply that phenomena depend on certain material instrumentation; rather, the phenomena are thoroughly constituted by the material setting of the laboratory. The artificial reality, which participants describe in terms of an objective entity, has in fact been constructed by the use of inscription devices” (64). They are mainly talking

about in this book about neuroendocrinology; for the sake of simplification, I would provide an analogy. This is akin to saying that the planets of Jupiter are constructed by the telescope. In fact, there have been debates about trusting the ‘sophisticated’ instruments that scientists use. The argument is if you can see something only through a particular instrument, how you can think of this as a result of discovering of a fact ‘that is out there’ and not as a contribution of the instrument. The simple answer would be that Galileo would have shown how his telescope is trustworthy by first focussing it on a distant fort and asking people to check the dependence of the telescope and then asked them to trust the existence of the planets of Jupiter. I am simplifying the argument, but for a more nuanced discussion of the role of instruments and how instruments are used in science, see Chalmers 179-196.

The interesting thing about this book, however, is that the authors do use the terms that fit comfortably with ‘scientific methodology’ and often try to show how they are ‘objective’. They say they are ‘monitoring’ scientific activity in the lab (27). Look at some of these quotes from the book “the term anthropology is intended to denote the preliminary presentation of accumulated **empirical** (emphasis added) material” (28) and “it is necessary to show through **empirical** (emphasis added) investigation how such craft practices are organised into a systematic and tidied research report” (29). They also say “This, after all, is one of the basic principles of scientific enquiry. No matter how confused or absurd the circumstances and activities of his tribe might appear, the ideal observer retains his faith that some kind of a systematic, ordered account is attainable” (43). If science does have a belief, it is precisely that there are laws that govern seemingly random events. Does this mean that Latour and Woolgar are themselves following ‘scientific method’?

Throughout the book we see an effort to demonstrate the objectivity of the writers. The writing style tries to erase all ‘social factors’ that may have lead the authors to talk about the social construction of scientific truth. Often, they use statistics, tables and percentages to make a point (for example, 56 and 62). Which mythology depends on such strategies of persuasion? Certainly not the mythologies of ‘primitive tribes’.

They do accept that “Obviously, our own account cannot escape the conditions of its own construction” (252). They add, “In a fundamental sense, our own account is no more than fiction. But this does not make it inferior to the activity of laboratory members: they too were busy constructing accounts to be launched in the agonistic field and loaded with various sources of credibility in such a way that once convinced, others would incorporate them as givens, or

as matters of fact, in their own construction of reality” (257). This says that their account is also fiction, but their account is that science is fiction. It is quite mental gymnastics to reconcile the two parts of the above sentence.

Thus, Latour and Woolgar have tried to show the constructed nature of scientific facts. This they say is a constructivist position. It is entirely understandable that there are many ‘constructs’ in society and there is a need to reveal the constructedness of, for example, gender. It is also true that we do need to reflect upon the role of science in society and question the privilege it enjoys, if it really does. But to say that scientific ‘facts’ are on the same level as mythological facts cannot be proved. Though this book and the debates about it are old, I feel that there is always a need to revisit such debates to seriously engage with questions connected science. If we do not, we may as well go to a sorcerer of ‘primitive’ tribe to find solutions to our problems.

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