

12/2011

"We are interested in what happens when people disagree"



Simon Schaffer, University of Cambridge, is one of the architects of the profound changes the history of science has undergone in the past 30 years. His studies have contributed to understanding the processes by which consensus in scientific knowledge is reached and to prove that they involve aspects that go beyond strictly scientific circles. The book he wrote along with Steven Shapin, "Leviathan and the Air-Pump: Hobbes, Boyle and the Experimental Life" gave him international exposure and spread his new approach in the way of doing history of science, from the viewpoint of the Sociology of Scientific Knowledge. Professor Schaffer visited us on the occasion of the presentation of two seminars organised by CEHIC (Center for History of Science at UAB). UABDivulga took the opportunity to interview him and ask about this new approach that has renewed in depth the history of science as well as the understanding of scientific knowledge.

Simon Schaffer is professor of history and philosophy of science at the Department of History and Philosophy of Science at Cambridge University. Until recently he was editor of *The British Journal for the History of Science*. He has been a Fellow of Darwin College, at Cambridge, since 1985. He is co-author, along with Steven Shapin, of the 1985 book "Leviathan and the Air-Pump: Hobbes, Boyle, and the Experimental Life", an essential book for historians of science and which earned them the prestigious Erasmus Prize in 2005. The book has contributed to the major changes this discipline has experienced in recent decades. In addition to his work at Cambridge, he was a BBC presenter, in particular of the series "Light Fantastic", a series of four documentaries about light and the history of its study and knowledge, broadcast on BBC Four in 2004.

What is science?

This is one of the most fascinating questions for modern society. A quick way of defining science might be that it is reliable, shared, technical, knowledge about the world. But it is not that easy. The ways of understanding science are and have been very different through history.

Could you explain these changes in the ways of understanding science?

The major change has been around the boundaries of science: around the notion of internalism and externalism. To understand these concepts, here's an example: explaining what Newton did internally has often been taken to involve explaining what Newton did in terms of the resources of mathematics, philosophy, perhaps theology. But explaining what he did externally has been taken to involve explaining what he did in terms of the resources of politics and economics. It is not at all clear why theology has been judged "internal" to the sciences and economics "external" to the sciences. Definitions of the boundaries of the sciences therefore become profound historical problems.

Have there been more changes?

Yes. Now we are interested in objects and bodies as well as ideas and minds. To put it simply, we are interested in rebuilding history of science through or from those things previously forgotten or ignored: the agency of women, the role of institutions and the importance of objects. That's a big change, associated with feminist histories and with the study of material culture.

And finally, and quite the most interesting for me, we are less interested in older questions such as "who came first", but instead in explaining how and why people get to agree to accept a knowledge. Until relatively recently, controversy seemed embarrassing as a subject of study. And now it's seen to be very informative. We are interested in what happens when people disagree, since then their assumptions become much more visible.

What do you mean by that?

Here is a simple way to think about it: if the world were the same everywhere then the principal reason why people tell different stories about it would be personal idiosyncrasy and error. This is the philosophical view of empiricists such as John Locke. If the world is the same everywhere, then we always ought to agree about its contents and behaviour. And when we don't that's embarrassing.

But what if difference is intrinsic? In that case, one would expect disagreement, and what would need explanation would be agreement. The main change in history of science in my lifetime is that we have moved from explaining difference to explaining agreement.

And where does this change of approach come from?

In many ways it comes from sociology of science. Sociology tries to explain social order. So sociologists of science insist that order needs explanation - that it is not natural nor inevitable - and that solutions to the problem of knowledge, that is "how do I come to agree with you", are solutions to the problem of social order, that is "how do we get to live together". Sociology of science is, thus, an indispensable resource for understanding agreement.

What has this new perspective apported to the history of science?

Sociology of scientific knowledge offers a series of challenges and provocations to history of science. There is a valuable struggle in which different groups of scholars are constantly provoking each other with challenges, responses and debates.

Really? What kind of struggle?

One example: sociology of scientific knowledge claims that once a controversy was over it is extremely difficult to see how the controversy has been closed. What should be studied, they argue, is what they call "Science in Action", to take the opportunity of seeing the process by which the agreement is reached. That is a provocation to historians because we write about people who are dead and about controversies that are closed.

But it is exactly what Steven Shapin and yourself did in your book "Leviathan and the air pump" where you treat the controversy between Boyle and Hobbs about the concept of vacuum, science and experiment...

Of course! We were like schoolchildren in the playground: "I bet you can't climb that wall!" "Oh yes I can".

And is it worth such a fight?

I think that the function of the history of science is to make things that are familiar seem strange and things that are strange seem familiar. The aim is to consider material that we take for granted about how we go on, especially in the case of the sciences, and to make it look odd or strange so as to be able to examine the assumptions we are making that are invisible or apparently unremarkable. One way of achieving this end is to provoke. Provocation helps call up for examination material that we might take for granted and that would otherwise be unnoticed.

Do you think that history of science is a good way to popularize science?

I don't think history of science is especially good as a way of telling people how nature is. I do think it's extremely valuable if you want citizens to understand what scientists do.

And do you think there is something of what scientists do that lay people could not understand?

No. If you think for a moment about what Hollywood expects its audience to be able to follow, nothing that citizens need to understand about the workings of the sciences is as complicated as that. There is nothing to say on this topic that is as narratively complicated as "Matrix 3".

What can history of science offer to the society?

We face a number of crises in the modern world. These are crisis of authority, of trust. And without understanding how we got to where we are, we are very unlikely to make informed decisions. So one of the things that historians of science can offer the social world is a more reliable memory and resources to help citizens take part in the most urgent debates about planning the future. Historians of science study how processes to reach an accord work. As a great social scientist once said, "if you forget the past, you are condemned to repeat it".

Clara Florensa

Centre d'Història de la Ciència (CEHIC)

Àrea de Comunicació i Promoció

premsa.ciencia@uab.es

[View low-bandwidth version](#)