

Wiebe E. Bijker, Thomas P. Hughes and Trevor Pinch, eds:
The Social Construction of Technological Systems. 2nd edition.
MIT Press: Cambridge, MA, 2012. 425 pages.

**Sergio Sismondo: An Introduction to Science
 and Technology Studies. 2nd edition.**
Wiley-Blackwell: Chichester, West-Sussex, 2010. 244 pages.

The Social Construction of Technological Systems, first published in 1987 as a classic statement of the social construction of technology's (SCOT) research agenda, has been republished 25 years later, unchanged except for the addition of a new introduction and foreword. In this review of the new edition we consider the book's relevance as a STS teaching tool setting it alongside a recently published second edition of Sismondo's *An Introduction to Science and Technology Studies*, first published in 2004. The two texts both situate themselves as teaching tools in their introductions.

The first thing to say about these books is that they are very different types. The Bijker et al. is an edited collection of case studies that came out of a workshop that brought together scholars from different disciplines to think about technology in new ways. The Sismondo is a textbook that gives an overview that is organised around themes and approaches to STS, laying out the field as a whole. It is interesting when thinking about these books as teaching tools to think about the kind of literary technologies that they are and the way they enact a field. As technologies – textbooks and edited collections – these books do different work.

There is a way of putting these books in relationship with each other where their difference is a matter of positioning. It could be said that the books offer two different

views of the field of STS. The Bijker et al. book can be defined as a foundational book, a collection that set the agenda for much of what came next in STS, whereas Sismondo's text book presents a relatively well defined field, a map of the terrain, a view from above if you like. This way of thinking about the books and their relationship to the field of STS is reinforced by the changes that have been introduced in these second editions. Sismondo has reorganised the chapters to better reflect the key influences on the field as it stands today, and has revised his original view as influences become more apparent, and the field of STS grew. And the new edition of Bijker et al., with only a new introduction, looks back and reflects on how far we have come, the beginnings unchanged. The two books compliment each other and can be read together in this relationship: view from the beginning; view from today.

But this way of situating the books and their relationship to each other is perhaps a fairly simplistic view of the field of STS: the Bijker et al. text becomes one lineage. It incorporates a number of different lineages that converge. And this is very much the sense one gets when reading the preface to Sismondo's second edition where he discusses the changes that he has made to the text, for example, the merging of S&TS and STS, where the field is tamed and made

singular by the very organisation of themes and approaches. This is done in a way that suggests that the second edition offers an account of the field that is more true to the field's history, where history and the field are something we can gain a clearer and more true account as we are now further along the path of time.

Of course it is exactly this way of thinking about a field of study that is complexified in an STS perspective. There the very idea of knowledge as 'out there', as discoverable and on which over time we gain a better picture of, has been problematized.

Further, this simplistic way of thinking about these books and their relationship to each other also shifts somewhat when the books are opened up; when we attend to the texts in more detail. In elaborating on that we first reflect a little on our reaction to reading the Bijker text. The new edition's side by side introductions are interesting as a historical narrative. The inception of the field, the 'turn to technology', is imagined as a moment with Trevor Pinch, a sociologist of science, and Wiebe Bijker, a sociologist of technology clinking their champagne glasses, a beautiful romantic setting, marking the coming together of the two fields. We enjoyed this opportunity to look back to the workshop in Twente, Italy, when a group of young scholars gathered together to talk about exciting new ideas. We enjoyed the glimpse into a time when these scholars were young, enjoyed the voyeuristic opportunity offered by this introduction. The new introduction in the 25 year anniversary edition situates the Bijker et al. book as an important landmark in the field of STS, this is the work that 'commemoration' does. But we were also disconcerted by what we felt namely a tension between the work in the book, the case studies and what they are trying to achieve, and this new introductory narrative. In a field that has done so much to trouble the idea of the lone inventor, the

introduction offers an inception story that is all too romantic and in tension with these aims.

Perhaps the tension between a field that opens up identity, singularity, and foundations and an inception story that highlights a moment in time is inevitable and is to be expected, but the tension also highlights something important about 'the field' when thinking about teaching STS and the work that these technologies do in enacting that field. It is important that we remember that 'the field' of STS is heterogeneous. At the 2012 EASST/ 4S meeting in Copenhagen this was very apparent. Outside of our own familiar networks we found ourselves at sea in a vast landscape and we could not always identify familiar features in the terrain. In that situation it is good to have a map, one that identifies possible points of reference between where we are situated, and the rest of STS. In this respect Sismondo's textbook offers a good point of stabilisation, a point of reference, a good map of themes, while the Bijker et al. text is a good reference to the emerging struggles that specific research schools were grappling with in the early days. Sismondo offers a useful tool for navigating the way our own work relates to the large body of work that constitutes STS today.

It is important when using texts such as these to teach STS to encourage questions about what has been left out in these versions of 'the field'. We should encourage learners to be troubled by an origin story such as the one offered by Pinch and Bijker and wonder: what might have been invisible back in the late 1980s? And we may also be troubled by a textbook version that maps the terrain in a way that stabilises a field that is more messy than can easily be represented. Of course no text can be all things, and we are not criticising these texts for what they leave out, nevertheless we want to make the

point that when using these texts to teach STS, it is important to highlight the way texts are themselves situated.

This is important in relation to the kinds of stories that texts tell about what makes 'the field.' Whilst we are both currently situated in the North West of England as we write this review, one of us has travelled here from South America where 'the field' of STS has its own geographical skew. We think that it's important to highlight that in enacting 'the field' these texts are targeted to English speaking communities in the U.S. and Europe (Australia and New Zealand as well). When using these texts for teaching STS we think they should be situated in a course structure that allows some of these issues to be made visible. In this respect we think of the texts as artefacts for thinking about STS. We think that given the global diffusion of STS, the sheer heterogeneity of the field, we are troubled by the unnoticed Euro-American centrism of the assumption that texts like these constitute 'the canon' of the discipline.

Thinking more about the contents of the two books, we reflected on the difference in their styles. In his foreword Sismondo states that case studies are the 'bread and butter of STS' and he makes use of classic case studies to illustrate his points throughout his book. But he is clear that it is not enough to read the textbook alone, and he urges his readers to read the classic case studies he makes reference to alongside his text. One way of thinking about the use of case studies in the two texts is to think of the Bijker collection as case studies 'in the wild' and the Sismondo cases as catalogued in a museum. (The analogy will only work if we don't push it too far, but we use it to illustrate our point.) In the museum artefacts are taken out of their contexts and offered as part of a curated narrative. And as we have said, this is a useful way to get an overview, a sense of the issues that are important to

'the field.' It is a useful way to get a sense of a history of ideas. But as STS scholars, it is not enough to learn about STS in this way. The empirical focus of the work of STS, the way of thinking through and with case studies also needs to be nurtured. One could say that as students of STS it is important to develop a sensibility that we feel is not easily nurtured (perhaps impossible to nurture) through the textbook. To be scholars of STS we need to go out and get dirty, to leave the safety of the museum.

Reading the Bijker text in 2013 we are reminded that much of the vernacular that we take for granted as STS scholars was not available 25 years ago, the conceptual and methodological space from which we write today was not yet forged. And the introduction to the 'anniversary' text, by its very nature frames the case studies and locates them in a time and a place. In this respect the case studies are enacted as artefacts, and the introduction does museum work. In this viewing case we see a field in the making. But the museum analogy reminds us that artefacts displayed in museums have a relationship with colonial pursuits. The very making of a field, of a vernacular, is difficult to think in ways that are not frontier-like. The book as a whole, through its introduction, tends to pull the reader towards a field conquered. We were discomforted by this.

But putting this aside, what of the case studies themselves? Although 'of the past,' they still have life. What do we mean by this? When thinking about teaching STS we felt that case studies offer a way of seeing the author struggle with emerging concepts and ideas. And this is impossible to see in a textbook where the terrain is mapped, or closed off. Teaching with case studies helps students to develop a sensibility, an attention to detail, to the nuanced and to the specific. The case study is an approach to knowledge production that leaves visible

the relations of data and method which offer a critical approach to knowledge making that is difficult to impart through a textbook, but is visible in a good case study. The upshot of this is that science studies can't be learnt with just the conclusion of the debates. The relations between theory, method and data are very visible in the case study and these classic texts offer some signposting of the debates and struggles that have happened and as such, these debates are not closed off, they may offer new creative thoughts, take students in new directions, are not linear, and reveal an iterative process. Furthermore, case studies offer stories about the making of an idea, and as scholars we think our own case studies differently in relation to new calls, new collaborations, and the same must be said of old case studies. And this is part of their importance in teaching. But we recognise the museum can also be useful. It offers us a way of understanding the history

of things. But it is important to remember that this is a history curated.

When teaching STS, the case study in the wild, even case studies written 25 years ago, are still very useful and in fact we would go as far as saying necessary. The curated textbook has a role in orientation. But texts, whichever we use, need to be properly situated. Teaching STS through these books is a great opportunity for following the making of the field in action and for thinking about how it is enacted in location.

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