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The Science Fiction of Science Studies

“You never know how the past will turn out”

Cate Blanchett as Jude Quinn in “I’m not there”, directed by Todd Haynes, 2007.

In 2008, I organised two conference panels on the future of STS. The goal was to produce explicit futures as descriptions of novel societal forms in the context of STS. The papers given took us to worlds, where dragons loom large (Sha la Bare) or STS had to go underground (my own paper and Rainer Egloffs). They deal with worlds, where machines can archive literally everything (Heidi Gautschi) and where reproductive technologies enable the reproduction of humans with other species and things (Maren Klotz). The talks asked what the role of STS could be in such a world, how it operates and what its methodological and theoretical problems will be. By doing so, they attempted to give a give an explicit future to STS that is mostly absent. The goal of these texts was thus to provide futures for STS by actively researching and writing down those futures with the standard tools of the discipline, namely theories of how STS and science operates, data about their past, current and future operation and some imagination.

This text performs a legitimatory task.¹ I assess why such interventions into the future of STS can bring to STS. I first explain that we cannot perform our science without a future, but that this future remains mostly implicit. Second I look at two precursors to our undertaking, utopian Marxism and futurology and why they were not taken up in STS. Third I look at some arguments why STS is hesitant to develop explicit descriptions of the future. Last I explain why those arguments do not hold and develop a fourth symmetry principle that calls for equal treatment of past and future alike.

The implicit future in STS

If the task seems not entirely impossible, the question may arise, why so few people have tried to set about this tempting task.² One answer might be that, like other social sciences, STS has arrived at a point where it operates as normal science, constantly devouring every topic, present and past under its sharp analytical instruments. But by doing so, it seems that STS has lost a

sense of the future. This is not to say that STS has no future in a material sense. Something will happen tomorrow. Scholars write interesting books about it and attend conferences. Also, one could claim that to write a book or to give a talk is only possible, if one has a conception of the future, if only in the sense that an author hopes that her book will be read by a group of people that has to show some interest for the subject by the future time of reading. A less pessimistic view would even assume that the book shall make a difference in the future, after it has been read, by making the readers think or act differently. Furthermore, in many texts, specifically those written from a political angle and a background in critical theory, STS clearly attempts to bring about social change, which by definition takes place in the future. But apart from very broad hopes that the world could be less capitalist, less sexist or less racist (not that this would be a bad thing), it is not at all clear what kind of social change is meant and which society STS could or should envision. How will universities be organised? How will scientists work? What could be the future of scientific publications? Who will rule the scientific system? What are the themes, methods, theories, general assumptions of a future science? These are questions that are rarely posed and that the articles in this special issue seek to address.

Precursors of Thinking about the Future in STS-Related Fields, and Why They Were Not Taken Up

There is thus an implicit future of STS in every STS text. But one may wonder why these implicit futures are rarely spelled out. Is it because we all know them anyway? Is it because vague hopes for change are all we have – signalling that change in itself is sufficient? Is it a lack of imagination or methods to provide such a future?

A few thoughts shall explain this lack of a history, since the social sciences in general did not always lack a future. I would like to point to two legacies that are close to STS and that were both not taken up for good reasons, but unfortunately without providing an alternative: Marxism and Futurology.³

Karl Marx, who could be cited as one of the founders of technology studies, clearly understood the role of social science to be an integrated enterprise with regard to time. For him, to write an analysis of the present, the emerging capitalist society of the 19th century, meant to study the evolution and succession of different forms of society. Thus he had to understand how feudalism would develop into capitalism, but he equally asked how capitalism would transform into another society yet to come, socialism and communism. The analysis of the past was a clue to understand

the present and to promote a different track into the future. To promote a different track into the future implied to study the past in order to understand the mechanism of history. In the more recent past, the inception of STS proper was closely related to a Marxist understanding of society and its changeability into other, alternative forms. No later than with the collapse of the Berlin wall not only lost the world most socialist states but also the utopian Marxists lost their hopes. Marxism is now mostly a form of critique and method to analyse history without an explicit vision of the future. What survived from Marx are not his innovative methods but fights about the correct interpretation of his work.⁴

Marx' future has been supplanted in the 1960ies by an unloved cousin of STS, namely futurology. Futurology tried to forecast the future by applying the methods of modelling and quantitative exploration to societal developments.⁵ Futurology replaced Marx' theoretical mechanics of history with cybernetics and statistics. It replaced the Marxian revolutions with (non-) linear extrapolations. The end of industrial society and its belief in calculation, the related crisis of first order cybernetics and a general growing epistemological scepticism marked the crisis of futurology in the 1970ies. The problem of futurology was not its attempt to understand the future, but it's claim to being scientific, simply by assuming that quantification and extrapolation of past trends into the future will do the trick. Since the combined failure of Marxist historical mechanics and futurology, any belief in a mechanical understanding of historical development has been discredited. We cannot extrapolate from some previous state of history to the future. Unfortunately, the qualitative social sciences and STS have understood this largely as a call to refrain from understanding the future at all. The future became an object unworthy of study. We are left with some modelling and extrapolation mostly in the quantitative social sciences, such as economics and demographics, but none of these tries to model a future form and structure of society or changes in the semantics. Today, if a social theorist writes a book with the title "the future of society", his first sentence is "this book is not a work of futurology" (Outhwaite, 2006, vii).

To write about the future was left to science fiction, another enterprise with which STS has an uneasy relationship. It is in science fiction, where themes relevant to and taken from STS and other qualitative social sciences are taken up, rather than the other way round.⁶ And it was left to the natural sciences and engineering, whose very existence depends on quite explicit views of future societies. Or how else could an engineer try to invent a car that uses less fuels, a new device that projects videos in the air or a new machine to count votes, not to mention the attempt

to model and influence the global climate for the next several hundred years? STS has empirically documented and criticised such visions because of their technical determinism, but it rarely offers alternatives.⁷

Explaining the Lack of Futures in STS

To research the future necessarily implies to hypothesize, invent and create the data, events and structures of a future society. This creates a major obstacle for STS, because its idea of science is based on the assumption that data are not produced by the researcher but exist out there in the world.⁸ In postmodern times, anything has become a subject worthy of study, if only the data pre-exist. Paradoxically, the crisis of representation and the discourses on reflexivity have not led to a more explicit acknowledgment of the future and its dubious data, but rather an even more defensive hold on pre-existing data.⁹ If data pre-exist they are thought to be scientific because they are independent of the researcher and thus objective. Since other than in the natural sciences, STS – and the social sciences and humanities in general – shy away from experiments and the fabrication of data. The empirical analysis of laboratories and experiments has not led to thoughts about how these instruments can be used in qualitative social science. In STS, data have to be discovered, recorded, and interpreted, but not produced. Other than pre-existing data, *theoretical* terms may be invented, because the social sciences think of them not as fictitious, but scientific, because they are said to relate to present or past forms of society. What remains excluded, are any kinds of data or theoretical terms that relate to a future society.

This contemporary idea to see terms relating to the future as invented by the researcher and thus as fictitious as opposed to scientific was not always made that way. As Jill Lepore reminds us, in the 18th century Henry Fielding could reasonably claim that his novel “History of Tom Jones, a Foundling” was “true history” whereas historians wrote “fiction” (Lepore, 2008, 79). The idea that truth can only be seen in (existing) sources, but not in not (yet) existing sources, a.k.a fiction, is thus a relatively recent invention. The aim here is not to dispute the truth of past data, a task that STS itself has already grappled with more than enough fervour, *but to re-introduce the truth of imagination as a complimentary and legitimate source for knowledge*. This should not be mistaken as a claim that fictional histories produce the same truth as those relying on past data. Rather, it is a claim not to exclude a source of knowledge that might prove to be indispensable for the development of STS.

STS and the fabrication of data of the future

Apart from the fact that the exclusion of data of the future and of “fiction” as category from the social sciences and the humanities appear with their specific maturing, one could still argue that those data *should* be excluded because one cannot deal with them in a scientific manner. After all, these kinds of data are not “objective” but “subjective”. They are products of the researcher rather than products of the world, because by definition, the events that these could be data of, did not take place yet. These data then are assembled into a narration, thereby reducing the insurmountable complexity of the future to an order whose points of interests lie in the present. No witnesses for the data in histories of a future exist. And one could object that even if we could make meaningful statements about the *near* future, the far future will always be too complex to predict and interpret.

But such a criticism would return to a very definition of science that STS has always criticised. STS has shown that science always produces its data. Doing science always means to reduce the complexity of the world according to the needs and interests of present research. And even in the absence of gentlemanly witnesses it is possible to translate the results of an experiment to a reader. As regards to the impossibility to predict the far future, it might help to compare it with the practice of historians. For historians, an abundance of sources and the immediacy of the past does not equal better or truer understanding. Quite the contrary, an event has to date back at least one if not two generations to be a proper subject of research. Conversely, for historians, scarce, unreliable and very old sources do not invalidate objective statements about the past. Thus, the timespan between the time of writing and the events described, is not an indicator for the validity of research. In short, whatever reasons may seem to exclude researching the future from the field of STS, these reasons mirror the criticism of the social sciences and humanities that STS has itself criticised.

But even apart from the problem of the scientific status, the loss of futures for a discipline is problematic, because it leaves a discipline without an aim. Razak and Cole have said that the relationship between anthropology and futurology is like “two ships passing in the night” (Razak and Cole, 1995). The same can be said of STS. If we start here to formulate some timid explorations, we might at least get a glimpse of the other ship when we pass by and we might then orient our own course accordingly.

The Fourth Symmetry Principle: Being Impartial to Different Time Modes

STS has been particularly successful at disrupting taken for granted definitions of the social sciences by calling for a “symmetric” study of its objects. A precursor of STS, Karl Mannheim called for a symmetrical sociological interpretation of true and false beliefs, but he excluded the natural sciences (Mannheim, 1936). This was the first symmetry principle. David Bloor extended this symmetry principle to the natural sciences (Bloor, 1976). For Bloor, STS must remain impartial with regard to the truth of a statement or a theory under review, since it’s significance for the causality of events is independent of their truth-status. Bruno Latour has called for a third symmetry principle, whereby to remain impartial with regard to the fact whether the protagonists of a story are humans or non-humans. According to Latour, not only truth and false, but also nature and society have to be explained with the same means (Latour, 1993). Again, the claim is that the significance of the protagonists for the causality of events is independent of the theoretical definitions of the social sciences’ concept of action. Both of these latter claims to symmetry had a disrupting effect on STS and the social sciences and humanities in general, since they called into question the very basis of hitherto taken for granted assumptions and both of them enlarged the legitimate basis of research in STS. With Bloor’s second symmetry principle, suddenly true statements became objects of analysis and with Latour’s third symmetry principle, non-humans actors became legitimate objects of study, too.

This special issue asks therefore for a fourth symmetry principle, namely to treat the future and the past in a symmetric way. The fourth symmetry principle asks us to understand, that the scientific world under study is one that stretches both into the past and the future. We always work with our attention being equally rooted in both of these parts. And with every blink of an eye, the present that divides these two time modes is moved a bit into one direction. Instead of simply being ignorant about the future, the fourth symmetry principle asks to include it in the research we write, not simply as an optimistic or pessimistic last sentence of our books, but as a fully spelled out time-mode.

What do we gain from the fourth symmetry principle? Experimentalizing STS

We have to understand both the future and the past as being part of the universe that social science has to study, since they both inform the very present in which we do our research. This may require us to be theoretically more strict and adventurous than usual, and to enlarge our pool of legitimate data, but it may bring us something back that is indispensable for orientation in the

present: an idea where we want to go from here and maybe even more crucial, where we do *not* want to go. The many futures that we develop might very well soon become falsified. But even if they become falsified, they would only enjoy the fate of most theories in science. At least we would then know why they are falsified and we would be able to develop new, maybe better futures.

The fourth symmetry principle introduces the experiment as a machine to test different hypotheses about society into STS. The main reason why there are so few experiments in the social sciences is because they are too dangerous and difficult to perform.¹⁰ We cannot tinker with present society in a large scale and we cannot put large parts of a society in a lab. Also, one cannot tinker with past events, since they already took place.¹¹ But we can tinker with future society on a grand scale, as big as we wish. The risks of these experiments are minimal, we can control them fairly well and we do not need the approval of an IRB to do so. Furthermore, these experiments can be devised according to any rules we wish to apply and they are cheap and relatively easy to accomplish. If we do the experiments well, they can bring us a sense of action back with respect to those facts that are very likely to be different than those that we once could not imagine, but just happened a minute, a day or a year ago.

¹ The arguments presented here owe a great deal to similar legitimating texts in anthropology, a discipline with similar hesitation towards exploring the future, but a little bit more experience, see (Riner, 1991, Razak and Cole, 1995, Collins, 2008).

² For one of the few similar attempts as ours, see (Mulkay, 1989).

³ For further discussions on the histories of future thinking in the social sciences see: (Bell, 1997, Minois, 1996). For the history of future thinking in anthropology with similar arguments like those advanced here, see Collins (2008).

⁴ For a recent exception to the loss of utopian socialism, see the special issue of *Science & Society* (2002) and especially the article on innovation by David Kotz (2002).

⁵ For a history of futurology in the West see Schmidt-Gernig (2002). For a history of futurology in the Soviet Union see Rocca (1981).

⁶ See for example for the case of STS Chabot (2007). For anthropology see Collins (2008) and specifically the chapter on Chad Oliver, a University of Texas at Austin anthropologist and science-fiction writer.

⁷ See for example the recent panels on „Future Science, Present Fiction“, organised by Arie Rip, Marc Audetat and Colin Milburn and on „Bastard Texts: a renewed inquiry into the illicit textual affairs between technoscience, policy and literature“ organised by Stefanie Jenssen, Siv Froydis Berg & Frauke Nowak, both at the joint 4S/EASST- conference in Rotterdam in June 2008, or most of the talks at the conference „sciencefutures“ held at ETH Zürich in February 2008. Also see Brown (2000), Selin (2007), Wyatt (2004), Mulkay (1996).

⁸ For a similar criticism, see Latour’s call to a new scientificity for the social sciences by not refraining from interfering with the research object but by making the objects strike back (Latour, 2000).

⁹ See Collins (2008, 90) for a similar observation. Also see the reviews to the Mulkay text, printed at the end of his article (Mulkay, 1989).

¹⁰ The thesis of the „risk society“ included the claim, made more explicit by Wolfgang Krohn and Johannes Weyer, that many practices of science, such as pharmaceutical testing or the release of chemicals, amount to turning society itself into an experiment (Krohn and Weyer, 1988).

¹¹ But see the tradition of counterfactual history (Ferguson, 1997, Bunzl, 2004), a subdiscipline of history based on similar assumptions like those advanced here. For a critique of the assumptions of counterfactual histories, see Collins (2007).

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