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TECHNOSCIENCE, DEMOCRACY, AND HUMAN RIGHTS

René Gabriels

In a world in which the global and local are connected to each other in very different ways, it is not easy to understand the role technoscience plays. Wiebe Bijker has contributed greatly to a better understanding of technoscience. Perhaps the most important contribution is that he renewed the STS agenda with his strong plea for a democratization of technological culture. He rightly criticizes the fact that for a long time the STS agenda was hardly questioned "the normative and political issues related to the application of STS insights." With his advocacy of a politicization of STS Wiebe Bijker dissociates himself from mainstream STS. It would be nice if more scholars would follow in his footsteps. For that purpose, they should not only address issues like climate change, severe poverty or the infringement of privacy in cyberspace, but also enrich their intellectual toolbox to do justice to the relationships between technoscience, democracy and human rights.

The politicization of STS

One cannot understand the world without taking into account the role of technoscience. For instance, it is impossible to grasp globalization if one doesn't consider the impact of modern information and communication technologies. Wiebe Bijker argues convincingly that STS is not only important for understanding the role of technoscience, but also for developing democratic politics. The problem of mainstream STS is that it yields many interesting case-studies showing how technoscience de facto is socially constructed, but doesn't address sufficiently it's role with regard to political issues. In order to do this STS has to enlarge its conceptual toolbox. Some scholars, like Michael D. Gordin, Sheila Jasanoff and Bruno Latour, did that. However, the concepts they deliver are helpful to understand technoscience, but not to address its democratization adequately. The reason is that they don't elaborate that much on concepts like democracy, democratization, let alone human rights.

The radical proposal of Wiebe Bijker to politicize STS can contribute to the democratization of technoscience. In order to politicize STS it's good to bring once again the interpretive flexibility of observations and propositions to the attention. Because social constructivism focuses on this interpretive flexibility it can criticize the standard view of technoscience. Scientific facts are not found in nature, as the standard view suggests, but are the outcome of social constructions: scientists interpret what they observe and read differently and try to transform one of the possible interpretations into generally accepted knowledge. This is often a highly political process. For instance, before the idea that climate change was mainly caused by people became generally accepted knowledge there was a controversy among scientists between those who

supported this idea and those who refuted it. In order to politicize STS one has to consider that not only the subjects of research – scientists and engineers - have to deal with interpretive flexibility, but also STS scholars themselves. STS can also be politicized by showing that not only technoscience is value-laden, but also STS itself. For instance, the research on scientific advisory bodies done by Wiebe Bijker, Roland Ball and Ruud Hendriks is not value free, because they have an idea of how the democratization of scientific advice ought to be.

The standard view of technoscience leads necessarily to its depoliticization, because it doesn't recognize the interpretive flexibility of observations and propositions and that technoscience isn't value-free. STS creates space for its politicization if it would recognize that. The further politicization of STS can be done in at least two ways: procedural and substantive. Firstly, by asking the question how citizens who are affected by decisions around technoscience can influence the decision-making process. Which democratic procedures must be followed? Secondly, the question may be asked what standards must guide the reflection on ethical issues regarding technoscience. Are human rights a suitable candidate?

The democratization of technoscience

Because of the consequences of the application of scientific research (e.g. genetic engineering) may have, it makes sense to give citizens who might be affected a voice. Democracy means that citizens can influence political decisions that affect their quality of life. Therefore it is important that they have a say in the debate about the question whether the truth that scientists are trying to figure out is significant. Establishing the truth is significant if it serves the public interest. The scientific significance of research has to be determined by democratic procedures, because they give citizens the opportunity to figure out whether it serves the public interest. Philip Kitcher points out that democratic states are struggling with the problem of unidentifiable oppression. He is referring to the fact that citizens are often ignorant about the negative consequences that the actions of political leaders have for them and their (grand)children. Here one can think about the impact the lack of measures against climate change can have for future generations. To solve this problem, according to Kitcher, generating public knowledge is indispensable. When citizens use public knowledge based on scientific research they could participate in political debates in a well-informed way. Citizens would then be able to form a better judgment about whether a particular research proposal is significant and should be financed by the government.

The fear is that such a democratization of technoscience leads to stupid decisions, because citizens do not have enough knowledge to make correct judgments about complex issues. They would be ignorant regarding fundamental research, some social sciences and the humanities because they do not see the usefulness of it. Even though Kitcher acknowledges the problem of the tyranny of ignorance, he has not opted for an

expertocracy where only scientific experts determine the political direction. He argues that the ideal of a well-ordered technoscience is a solution to both the tyranny of ignorance and expertocracy. According to him, technoscience is well-ordered "when its specification of the problems to be pursued would be endorsed by an ideal conversation, embodying all human points of view, under conditions of mutual commitment" (Kitcher 2011, p. 106). The premise is that a good public opinion should precede the decision-making process in order to avoid the tyranny of ignorance.

The democratization of technoscience is not only about the voice of the citizen in setting the scientific agenda, but also about certifying research results as public knowledge. For this, research results should be sufficiently true and meaningful. Whether research results are sufficiently true is determined on the basis of scientific standards (methods, peer review, etc.) which are valid within a specific scientific community. Citizens can play a role in certifying research results as public knowledge, because the determination of whether they are meaningful is based on value judgments.

Academic capitalism and human rights

Science is value-laden because the choice what kind of research has to be done is normative and in the technological application of scientific knowledge values are at stake. Values are crucial in determining whether the truth that scientists try to figure out is significant. While science has the task to figure out the truth, it is the task of democracy to determine whether a certain truth is meaningful. In this way, besides an expert also a layperson has a voice within technoscience. Everyone has the status of a layperson when it comes to the question which values are important in assessing the significance of scientific research.

Technoscience doesn't have to be value-free, because one can have a rational discussion about cognitive claims (facts) as well as normative claims (values). People are able to discuss in a reasonable manner about the question whether specific value judgements are justified. Although most STS researchers recognize that technoscience is not value-free, they remain fixated on cognitive issues and avoid a rational discussion about normative claims. As long as they treat cognitive claims and normative claims asymmetrically, focus more on facts than on values, they are flawed positivists. If the criticism of STS shouldn't be limited to a critique of the standard view of technoscience, STS should leave the methodological nationalism behind, criticize academic capitalism and take human rights as normative standards seriously.

Since many problems STS focuses on have a transnational character, it is important to leave the methodological nationalism behind. Many STS scholars are guilty of methodological nationalism: technoscience is primarily investigated at the level of the nation-state, implying that relevant transnational phenomena are neglected. Doing research, these STS scholars have mostly the nation-state in their mind. Methodological

nationalism means that scientists identify the society with the territorially defined nation-state. Because globalization also affects technoscience, the methodological nationalism should be replaced with – as Ulrich Beck rightly argued - a methodological cosmopolitanism. The nation-state should not be the point of departure for research, but the world society. Technoscience should also be placed in the context of the world society, because it depends on communication networks that transcend the nation-state. The Dutch science policy, for instance, is not only a domestic issue, because it is partly the result of the growing influence of the European Union and McKinsey (Münch 2009).

Several researchers point out that business has gotten more and more grip on the academic world. They speak in terms of the commodification of academic research (Radder 2010). Although some benefit from this development it undermines the creation of public knowledge that serves the common interest. The democratization of technoscience is precisely systematically frustrated by the rise of academic capitalism (Cantwell & Kauppinen 2014). The term academic capitalism refers to the phenomenon that scientific knowledge has become a commodity which must be sold at the best possible price. That implies that some companies and researchers are triggered to ensure intellectual property rights at the expense of others. Many cases, especially in the field of medicines, show that that isn't in the interest of those who cannot afford some commodities.

Regarding the substance of the politicization of STS there is a lack of conceptual tools to address normative issues. These include the question which normative standards should be applied on a (trans)national level when it comes to the assessment of political decisions regarding scientific research and its technological application. Human rights can fulfil that role. On that basis, one could criticize intellectual property rights that are partly responsible for severe poverty. Severe poverty is a violation of socio-economic human rights (Pogge 2007). The politicization of STS includes more research on the impact that intellectual property rights have on technoscience and the normative question how STS scholars ought to relate to that. Human rights provide STS scholars with arguments to criticize expertocratic visions. The replacement of a democracy with an expertocracy would be a violation of civil and political human rights.

With his versatile research Wiebe Bijker shows how to address the democratization of technological culture. Thanks to him and some others STS is nowadays less ignorant with regard to normative and political issues. In order to do justice to his plea for a democratization of technological culture STS scholars must leave methodological nationalism behind, criticize academic capitalism and reflect on general ideas of human rights and democracy. Because of the global-local nexus STS continuously has to abstract from concrete cases and contextualize general ideas as human rights and democracy. In addition to that, STS has to discuss how technoscience is in the light of what can and must be done.

Suggestions for further reading

Cantwell, B., & Kauppinen, I. (Eds.). (2014). *Academic Capitalism in the Age of Globalization*. Baltimore: Johns Hopkins University Press.

Kitcher, P. (2011a). *Science in a Democratic Society*. New York: Prometheus Books.

Münch, R. (2009). *Globale Eliten, lokale Autoritäten. Bildung und Wissenschaft unter dem Regime von PISA, McKinsey & Co.* Frankfurt am Main: Suhrkamp.

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