



## Waves, Owls and Boundaries: How to Think About Science and Democracy in the 'Post-Truth'-Era?

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## REVIEW

## Waves, Owls and Boundaries: How to Think About Science and Democracy in the 'Post-Truth'-Era?

*Why Democracies Need Science*, by H. Collins and R. Evans, Cambridge, UK & Malden, MA: Polity Press, 2017, 194 pp., £50.00 (hardback), ISBN 9781509509607.

This is a crisis, a large crisis. In fact, if you've got a moment, it's a twelve-storey crisis with a magnificent entrance hall, carpeted throughout; twenty-four hour portorage and an enormous sign on the roof saying 'This is a Large Crisis'. (Rowan Aktinson in *Blackadder Goes Forth*, 1989, BBC Productions)

The selection of 'post-truth' as word of the year by Oxford dictionaries could be characterized as the apex of growing unease over a series of developments, including blatant lies and dishonesty in public debate, reports on 'fake news' and loss of trust in traditional media and experts. Although diagnoses might differ, the general perception amongst most commentators is that we are in a state of crisis. The 'post-truth' label functions as a catalyst sparking intense public and academic debates about the relation between science and democracy. In this current situation characterized by a general climate of scepticism towards experts, Science and Technology Studies (STS) finds itself in an ongoing discussion about some of its common themes: epistemic democratization; the co-development of political/normative and epistemic claims, and a critical attitude towards the norms and judgments embedded in seemingly neutral instruments of science and technology.

Some propose that STS is to blame for contributing to the current situation. Fuller (2016, 2017) argues that the post-truth world is the inevitable outcome of greater epistemic democracy for which STS is held primarily responsible. Others are more ambivalent in attributing to STS *causal* influence on the emergence of post-truth politics, but see clear resonances between the positions of STS scholars and anti-expert populists (Collins *et al.*, 2017). There have also been critical responses to this alleged linkage between STS and post-truth (Lynch, 2017; Sismondo, 2017b). Sismondo emphasizes that 'embracing epistemic democratization does not mean a wholesale cheapening of technoscientific knowledge' (2017a, p. 3).

It is in the midst of these somewhat overheated arguments that Harry Collins and Robert Evans' (2017) recent book *Why Democracies Need Science* can be situated. The authors' main concern is the role of science in society in a time when scientific values (which they describe in terms of science's 'formative aspirations,' see below) are being eroded. In this essay, I critically engage with three related aspects of the book: its general *starting premise*, the *problem construction* that follows from this and the *solution* the authors identify. I argue that, although the political and academic questions the post-truth debate provokes are highly relevant for STS and *Why Democracies Need Science* offers a particular pathway out, STS has many other contributions to make in explaining and helping us deal with 'post-truth'-challenges.

## A moral justification for science?

*Why Democracies Need Science* begins positioning science as a matter of moral choice, something they call ‘elective modernism.’ Historically, defences of science have been either epistemological (valuing science for its truth-claims) or utilitarian (‘valorization’ of knowledge and products). Collins and Evans instead defend the institution of science on *moral* grounds. They replace the philosophical notion of ‘logical rules’ of science with the more exception-tolerant sociological notion of science as a ‘form of life,’ recognizing the ‘value of science’ as an institution even if individual practitioners do not always adhere to these values. They understand the loaded notion of ‘value’ as a set of formative aspirations shared by most scientists, many of which build on classic notions from the philosophy and sociology of science (corroboration, Mertonian norms). The difference in the argument is that the ‘elective modernist’ *chooses* these values rather than tries to justify them.

The question is whether this generalized moral justification can ameliorate distrust in science and experts. Of course, almost no one will disagree with their starting point (preferring scientific knowledge over ignorance or lack of knowledge of the observable world). Although *particular constructions of scientific truth-claims* might be problematized in STS, for instance when truth-claims become reified in ways that silence relevant alternative forms of knowledge, such as biomedical knowledge downgrading ‘idiosyncratic’ illness experiences, one rarely hears the argument that science should be done away with altogether. Yet this focus on science *in the abstract* becomes problematic when we move to detailed investigations of the manifold mutual intertwinements of science, technology and industry, in which more nuanced and problematic accounts of science arise, often including structural oppression, categorization, exploitation and marginalization (Foucault, 1977; Bowker and Star, 2000; Epstein, 2008; Fisher, 2015).

For Collins and Evans, such problematic intertwinements would be examples of ‘extrinsic politics’ unduly influencing scientific practice, distinctive from the ‘intrinsic politics’ that have been revealed in the plethora of empirical studies of scientific practice in STS. In the broader ecological landscape of science, however, such a distinction may only hold under very particular circumstances. In the case of gravitational wave physics, which Collins has studied extensively, the intrinsic politics may have little effect on the ‘outside world,’ thus allowing a relatively easy separation. However, in many disciplines, internal discussions over the assumptions embedded within its models, the selection of appropriate methods and the legitimate interpretation of data are much more likely to produce ‘real-world’ effects, which can be oppressive, marginalizing or exploitative, especially in, say, medicine (when is someone at risk?) or in security (when is someone *a risk?*).

## The problem of extension

*Why Democracies Need Science* is also centred around a particular *problem construction* (the ‘problem of extension’). The authors argue that STS-critiques of the assumed neutral character of scientific knowledge often lead to arguments for more democratization of science and expertise, arguably leading to problems in determining suitable in- or exclusion mechanisms for ‘technical controversies.’ The choice of the loaded term ‘technical,’ which suggests another questionable distinction between a ‘technical’ and ‘political’ phase of controversies, is deliberate. While the authors recognize that a complete separation is often impossible in practice, they consider it an ideal to strive for.

Collins and Evans argue that mainstream STS (labelled with the contested term ‘Wave Two,’ see Collins and Evans, 2002) failed to deal with this problem of extension, precisely because of its alleged conflation of science and politics.

Although the authors provide a theoretically coherent framework for understanding expertise to help in public controversies about science and technology, their claim that Wave Two conflates science and politics is problematic. By arguing that Wave Two-studies describe ‘science as persuasion not truth-seeking’ (p. 151), Collins and Evans conclude that Wave Two analysts ‘generally [...] say it is all one inseparable mixture of science and politics’ (p. 163). Of course this is a position that hardly follows, even from studies working from an idiom of the co-production of science and politics (Jasanoff, 2004; Wehrens, 2014). Although this work criticizes the idea of essential demarcations between science and other domains such as politics, none of it concludes that there are therefore no distinctions whatsoever. It merely calls for concrete and detailed investigations into how these distinctions are drawn, by whom and for what purposes (see Bijker *et al.* 2009 for an example of how this ‘coordination work’ *enhances* rather than diminishes the authority of expertise).

### Redrawing boundaries

This problem construction also leads to the identification of a particular set of *solutions*, that all centre around mechanisms for re-establishing a firmer boundary between science and policy (such as the temporal distinction between a ‘technical’ and ‘political’ phase). An interesting example is the suggestion for a new institution for policy advice called ‘the Owls’ whose task it is to settle socio-technical controversies. Importantly, the scientists involved in this panel should not decide on the *truth* of a ‘technical’ debate, but on analysing the *nature and strength of the consensus* (the ‘consensus index’).

While the consensus index is a laudable effort to find a practical solution to the deliberate misrepresentation of scientific consensus, the approach is less well-suited for problems characterized by ambiguity and incommensurability. Investigating the *degree* of consensus assumes not only a commonly agreed upon issue to start from, but also agreement on what aspects of the controversy are ‘technical’ and what elements are considered to be ‘political.’ As many scholars in STS have noted, however, *what becomes defined* as technical and political aspects in the debate and how/by whom this definition is imposed is often precisely what is at stake as this ‘boundary work’ (Gieryn, 1999) of labelling something ‘technical’ depoliticizes and pre-empts issues from becoming further articulated (the politics of framing has also been pointed out in Wynne, 2003). The choice of who decides on the ‘degree of consensus’ (particularly how the question is framed) is of course a political one. The consensus index thus seems to displace the risk Collins and Evans are concerned with (that of ‘abusing’ scientific consensus or lack thereof) to the task of deciding *for what issue* exactly the degree of consensus needs to be investigated and whose definition of the issue counts.

### Conclusion: STS and post-truth

‘The current political climate makes empirically informed and scientific analyses of expertise and the form of life of science more important than ever’, Collins *et al.* (2017: p. 580) state. The question of how to preserve the things we value about science is highly relevant and should be top of the agenda of current STS-research. *Why Democracies Need Science* offers a particular pathway out of the post-truth

debate, based on a normative position and further advancement of the authors' theoretical framework. The book also provides analysts with a range of conceptual tools meriting broader debate.

Perhaps what is needed more in perceived moments of 'crisis,' however, is to pause and reflect. This is what Marres (2018) does in her provocatively titled contribution 'Why We Can't Have Our Facts Back.' She warns against a return to 'demarcationism' (as exemplified for instance by the many 'fact-checking' tools that aim to distinguish the validity of statements) because this recreates a problematic normative boundary between legitimate and illegitimate claims to knowledge. Such demarcationist tools work from a correspondence model of truth and view quality as an attribute of information itself, thereby neglecting the processual character of public knowledge claims in formation. As an alternative, Marres pleads for approaches that consider public facts as dynamic categories, whose robustness is always experimentally acquired as it is formulated and reformulated over time.

Another reflection is offered by Bijker (2017), who has recently argued that STS has always been both about the deconstruction of *and* the valuation of science. Although three decades of demonstrating the (socially) constructed character of science and technology, in order to make them more subject to democratic governance, has led some to push back in the other direction (arguing for the valuable character of scientific knowledge), Bijker claims: 'for many in STS, there is of course no contradiction: scientific knowledge is still socially constructed, and we spend our time on demonstrating that this social construction yields knowledge of a *particular* kind and special value' (2017, p. 319).

Jasanoff and Simmet's (2017) historically inspired analysis also helps to relativize our current sense of crisis. The authors criticize the term 'post-truth' for its implications of a romanticized past where things were supposedly radically different. Rather than arguing for a moral defence of science in general, they propose a discourse more attuned to asking how and for what purposes such stark binaries of good/bad, true/false and science/antiscience (and, perhaps equally, technical/political) were constructed in the first place.

The authors differ significantly in the tasks and research questions they imply for STS. Collins and Evans view 'post-truth' as an affirmation of a crisis in knowledge *and* STS. They view the task of the field primarily as one of demarcation (between different forms of expertise and between 'technical' and 'political' aspects in controversies). Marres, on the other hand, pleads for new approaches to evaluate and test the 'robustness' of claims and statements characterized by epistemic dynamism, as they circulate in public debates and become reformulated over time. Jasanoff and Simmet view the tasks of STS in probing how the co-production of knowledge and norms is shaped in various political contexts by asking who generated public facts, in response to which sets of concerns, and with what opportunities for deliberation and closure.

Reassuringly, the latter recall that moral panics about the status of knowledge in the public sphere are as old as knowledge itself. As such, we need not think about post-truth as an affirmation of crisis, neither in knowledge *per se* nor in STS as a field. If anything, the main agreement between these various authors is that STS is well-equipped to deal with the post-truth debate, even if they take significantly different roads.

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