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The Politics of Symmetry

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A little while ago, historian of science Nathaniel Comfort [wrote a piece](#) for *Nature* in which he gives an overview of historically shifting senses of identity—both human and personal—that have accompanied changes in scientific understanding of human biology. He argues that to a large extent these identities have been a product of scientism, which he defines as “the ideology that science is the only valid way to understand the world and solve social problems.” In other words, predominant thinking about what it means to be human has been reductionistic and grounded primarily or exclusively in biological science, which themselves have been historically reductionistic, even on the level of natural phenomena.

Nothing struck me as remotely controversial about this argument (and while not my area of research, I would estimate that it is well supported by other literature). My overall feeling about the piece was positive: this was a relatively gentle way of introducing the concept of scientism to a broader scientific audience, and it was a constructive move by *Nature* to publish it.

However, others did find the piece controversial and objectionable. The response of two prominent scholars stands out here, especially considering that their views on science could hardly be more different.

First, the one who made the bigger public splash: Steven Pinker. Pinker is essentially a caricature of scientism, or perhaps, someone with cartoon views of science, so his reaction was predictable. His persona offers a walking case-study to explore any number of STS concerns—about the socially-mediated authority of science, about scientific celebrityism, about myopic reductionism, about the political nature of pretenses to rationality and so on. He is the quintessential science warrior—so fervent about the cause that even a whiff of a lack of devout adoration of Science will spark angry denunciations. Anyone who dare question the rationality and objectivity of science (and by extension, his rationality and objectivity) deserves a public shaming. And to which Pinker [tried to subject Comfort](#)—bringing out his disciples to condemn the heretical non-believer (one of them calling him a “Po-mo Shaman”).

That a major public scientist could read the claim that perhaps we should rely on more than biological science in defining what it means to be a human being as an existential threat to scientific rationality amply demonstrates just how useful pieces like Comfort's are. But, from Pinker this was not so surprising.

Fashionable Anti-Scientism?

But Comfort also found criticism from a more surprising source: Steve Fuller.

In an (edited) letter to *Nature* (later [published in full](#)), Fuller argues that Comfort “misuses” history by recruiting to bolster his moralistic positions (Fuller 2019).

This recounts longstanding historiographical concerns about the “judgementalism of the present”: the moral status of the historical examples Comfort uses—IQ as a justification for

eugenics, genetics as a grounds for defining narrow ethnic or gender identities—are in the grand historical scheme of things, indeterminate, certainly not to be defined by the ethical concerns shaping Comfort's societal milieu.

Fuller also takes issue with Comfort's conceptions of scientism. Fuller claims that Comfort “offers a fashionable positioning of ‘scientism’ as the abuse of science in ways that obscures today’s concerns for ‘equity, inclusion and diversity.’” Further: “Comfort seems to want ‘scientism’ to mean whatever practices and policies that scientists have endorsed which have had adverse consequences for vulnerable groups in society.” In doing so, Comfort has violated a principle of symmetry: “What counts as ‘good’ and ‘bad’ [i.e. what is scientific] in scientific practice or science-based policies can be understood only in retrospect precisely because their causes are exactly of the same sort.”

But these are not the claims Comfort makes about scientism; Fuller has misread his arguments.

Comfort is not employing historical analysis to demonstrate that the particular episodes that he examines are (“objectively”) morally wrong. Rather, Comfort selects his examples—in vitro fertilization, immunology, microbiomics, neural technologies—precisely because of the moral ambiguity they entail. His argument is that moral conflicts are a crucial part of understanding how developments in biology lead to shifting interpretations of what it means to be human. In particular, scientism shapes these conflicts (precisely by pretending that they are “objective” scientific matters, not moral ones), and subsequently, conceptions of human identity.

Fuller appeals to a longstanding characteristic of symmetry: if some factors play an explanatory role for some outcome in the analysis (what counts as “good” science), then they should play a role for all actors. But there's no violation of this principle in Comfort's piece: values affect the practice, uptake, and influence of the biological sciences, always. Similarly, scientific thinking is recruited by actors with opposing moral commitments and differing conceptions of human identity. As Comfort says, “scientism cuts both ways.”

Fuller imagines the notion of scientism is being asymmetrically applied to particular conceptions of the human that Comfort finds morally problematic. It's not. Scientism is not problematic because of one or another conception of human identity. Rather, any notion of human identity that one pretends is “objectively” borne out by some scientific understanding is scientific, and hence, problematic. Scientism has limited the scope of thinking about human identities.

So Fuller is correct that Comfort seems to suggest that “perhaps history can help make sure that 'scientism' does not happen again”—when scientism is understood in these terms. Indeed, I would be so bold as to say that cautioning against scientism is a crucial normative contribution that STS can make (though we have obviously not been particularly successful in this regard). What I would add to Comfort's definition (though hardly originally) is that scientism is precisely the pretense to a value-free science, which we know does not exist.

Symmetry and Normativity

Comfort, for his part, has further [elaborated on these points](#). For me, this episode is more interesting as an opportunity to revisit some of the arguments Fuller has made about symmetry and other aspirations to methodological principles in STS.

Fuller's critique of Comfort regarding symmetry would make more sense if scientism were an actor category: if a conflict about conceptions of human identity emerged among historical actors and the resolution of that conflict resulted in accusations of scientism sticking (or not). But it's not. Comfort employs scientism as an analyst category.

This distinction is, of course, crucial for a fruitful methodological application of symmetry. The basic point of symmetry (and its conjugate principle, impartiality) is to help avoid explaining some case in the actors' terms. This is most easily achieved when applied to *specific knowledge claims* made by the actors under study. More carefully, this can also be extended to the categories and concepts actors use to produce and define those claims. But this has always created conceptual difficulties, namely because there is often actor-analyst overlap.

As sociological or historical analysts of science we employ all kinds of similar concepts as our actors: empirical accuracy, methodological soundness, inductive and deductive reasoning. Even "truth"! We are obviously not impartial to these concepts in some philosophical sense (or we might be, but that is a distinct position). When our actors say that some scientific theory was adopted because it was the most robust account of the evidence, we know exactly what this means. "Impartiality" has always overstated the methodological maneuver that we are trying to accomplish: to simultaneously accept that this kind of reasoning makes sense when we want to justify our own knowledge claims, but not as a sociological account of why scientists believe the things they do. It's a temporary and circumscribed suspension of belief.

Thus, for Fuller to suggest that "scientism is an observer effect" is to either confuse symmetry or go way beyond it.

First of all, it's a weak analogy, because scientism is the product of analysis, not measurement. But who's the observer? In this case, the historical analyst. In one regard, then, all that is being said here is that scientism isn't some intrinsic and obvious quality of some scientific episode. A judgement needs to be made about whether it's scientific or not. Further, as Fuller says, "As we move forward in history, those judgements will [might] change." That's quite a banal point: Maybe in the future historians will have different concepts to think about things and come to different conclusions. This applies to every single bit of historical or sociological analysis. This is not a reason to doubt any particular judgement.

Maybe the cases Comfort points to are not examples of scientism: maybe these actors were more aware of their moral assumptions, maybe they were less reductionistic than Comfort suggests, maybe they advocated more complex conceptions of human identity. Or maybe, scientism, as defined above, does not give a good account of why certain conceptions of

human identity emerged in particular times and places. In that case, one would have to offer an alternative analysis. Merely appealing to a thorough-going principle of symmetry doesn't do that.

The broader issue here is one of normative epistemology. Much has been said about whether or not any STS principle in particular, or constructionist analysis in general, should have any epistemological bearing on knowledge claims in the natural sciences. There are still camps in STS who say no. Symmetry, impartiality and other forms of relativistic stances are only methodological: STS is “epistemographical,” not epistemological (Dear 2001).

I'm inclined to agree with Fuller that STS has normative implications, for example, in affecting greater “[epistemic democracy](#)” (Fuller 2016). But here we should be very wary of imagining that STS methodological principles can be “universalised” to be employed as fodder in broader public knowledge disputes. Take Fuller's own “[post-truth tropes](#).”

If we imbue these with normative implication, what these tell us is that knowledge cannot be defined as the negative of these tropes. For example, take Fuller's third trope: “Consensus is not a natural state in science but one that requires manufacture and maintenance, the work of which is easily underestimated because most of it occurs offstage in the peer review process.” Thus, we cannot say that good scientific knowledge claims are those that have demonstrated a “natural” consensus. These tropes can be added to others that undermine traditional conceptions of science—as “objective,” non-political, individualistic, regulated by free-standing formal logics, etc. Similarly, it makes no normative sense to say that good knowledge is that which is free from politics.

But the crucial catch is that these tropes cannot tell us which *specific knowledge claims* we should or shouldn't accept. So, it is odd, that Fuller imagines that the post-truth world is somehow an “‘independent corroboration’ of the tropes’ validity,” and moreover, that the tropes are being “wielded effectively” by post-truth actors (Fuller 2017).

Groups like climate change “sceptics” or “deniers,” for example, do not in any serious way adopt the lessons of STS. They manifestly do not “apply the symmetry principle for themselves”; they rather engage in the most basic violation of symmetry. To the extent that they have employed ideas about the “social construction” of science, it has always been asymmetrically: as a means to dismiss specific knowledge claims made by their political opponents. They are not genuine social constructionists. Indeed, they are typically positivists—they hold their own claims to be verifiably true. They operate with an epistemology that is in direct contrast to Fuller's own post-truth tropes.

So contrary to Fuller's claim that STS scholars object to the misappropriation of STS ideas on “political, not methodological grounds,” the issue is very much methodological (Fuller 2017). The “undesirable elements” are not doing STS, unless Fuller thinks that STS shows that climate science has been politicised to perpetuate a globalist hoax, and that the objectively true explanation of climate change based on solar cycles has been artificially suppressed.

Universalised Symmetry?

Before moving on, I'll offer one brief contention about how symmetry might be fruitfully wedded to a normative epistemology.

Fuller argues that Naomi Oreskes is an example of someone who abandons the insight of trope number three in her work and instead makes the case for the “*natural* emergence of a scientific consensus and the *artificial* attempts to create scientific controversy.” I agree that Oreskes work is asymmetrical in her case studies (e.g. she does not give the same analytical treatment to those with opposing viewpoints in climate change debates), but her overall body of work clearly shows that she recognises a scientific consensus requires “manufacture and maintenance.”

The critical normative move she makes is not that the consensus on anthropogenic climate change is “natural,” but rather that it has been *manufactured well*, whereas climate contrarians push their claims in (consciously and intentionally) deceptive ways.

This conclusion is perfectly compatible with symmetrical analysis. Symmetrical analysis does not mean symmetrical conclusions. Otherwise, what's the point of doing the analysis? To say that “both sides” construct their claims? That both make alliances, that both use rhetoric, that engage in negotiations of power? As we know, that basic critique “ran out of steam” a long time ago.

Taking Fuller at his word that “intelligent design theorists are trying to play by the Darwinists’ rules,” the same cannot be said of climate change sceptics (2017). Analyses of climate change sceptics show that they employ qualitatively different tactics, logics, rhetoric, resources, etc. than mainstream climate scientists. They have different conceptions of expertise, and operate with different epistemologies. Most simply, you can make a straightforward case that many climate change sceptics deliberately mislead. This distinguishes them from mainstream scientists.

Moving out into the public realm is more complicated, but even there, you cannot make the argument that climate activists and climate contrarians are fundamentally engaged in the same kinds of maneuvers. Here we could easily add a fifth post-truth trope stemming from STS: all knowledge is political. Yes, but what matters are the details. All knowledge (and all science) is not political in the same way. Thus a specific danger of “universalising” symmetry is that it can create false equivalencies.

This brings us back to the importance of an actor-analyst distinction: it's conceivable that actor categories are such radically indeterminate “moveable feasts” that the same term, say, “expertise,” could come to define two entirely different sets of practices from the analyst's perspective. But if our own categories are so tautologous that we can't identify the differences, then maybe we need better concepts. Once in hand, leveraging STS to detect fundamental differences in knowledge-claiming practices is one potential route to normative STS (which has of course been taken up for quite a while now: e.g. Longino 2004).

Politics, Not Methodology?

Fuller's case against Comfort overlaps with his arguments against Sismondo, Oreskes, and others who fail to “walk the STS walk”: they denounce the appropriation of STS concepts by “undesirables,” but this objection is not grounded in methodological principle, but rather their “political correctness.” As I argued above, there is indeed a cogent methodological objection to be made—the “undesirables” are almost never doing symmetrical STS (or even asymmetrical STS).

Fuller is no doubt correct to assume that some of the values discussed in Comfort's piece also overlap with his own. And it seems to me that what Fuller is really asking for is greater reflexivity on behalf of Comfort—that he can make it clearer that he shares values with some of his actors. Should this kind of reflexivity constitute a principle in STS? This precise issue is of course what impartiality and symmetry tries to address. In Comfort's case, these shared values don't appear to bear on the conclusions he (actually) makes about scientism, because he grants these values no special explanatory power. Impartiality and symmetry has been exercised here: both “bad” and “good” values bear on historical conceptions of human identity. If you've done these successfully, what would an explicit statement of one's political position add? Is it something like a conflict of interest statement?

It should be reiterated here that this is yet another way that we share values with our actors! The STS principles of impartiality and symmetry were originally conceived of as analogous to the various principles that scientists try to abide by so as to not let their preconceptions affect their analyses.

There are a couple of ironies here. First, Fuller tries to frame his own critique of Comfort as methodological. But it seems that he is more bothered by Comfort's politics. This is why he hones in on Comfort's “fashionable positioning” that aligns him with concerns about “equity, inclusion, and diversity.” To say that these are “fashionable” is not to merely say that they are contemporary concerns. This term connotes a flimsiness and an opportunism, as well as a groupthink. Likewise as he defends against “politically correct STS.” If Fuller is really trying to make a methodological point, those terms are extraneous. He should just say that STS is politically ambivalent—that there is no intrinsic reason that STS should be aligned with one particular politics or another. But to call them “politically correct” is to take a knock at those politics—and if Fuller thinks this is an innocuous term, he should be a bit more reflexive, especially since the phrase is typically used to draw attention to the political nature of views you disagree with while hiding one's own.

In this regard, the other irony here is the very politics vs. methodology distinction that Fuller tries to impose. This can be read in the same way as Comfort's critique of scientism: we as STS scholars should know better than anyone that apolitical methodological soundness is just a pretense. Thus, what Fuller is really saying is that STS scholars should not pretend that they are making purely methodological arguments since they are always also political. Ditto. I would have rather seen Fuller take his own advice and be more explicit in laying out his views in political terms, not feigning a purely methodological critique. Practicing reflexivity, how might Fuller account for the political alliances talk of “political correctness” implies? Perhaps the most interesting discovery of this episode is the apparent political affinity Fuller shares with Steven Pinker against in rallying against “fashionable politics.”

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