The Science Wars.
What Happened to HPS?

What began as an obscure and esoteric debate among relatively few academics has burst into a notorious scandal. Challenges to traditional conceptions of science, which severely polarised philosophers, historians and sociologists, have erupted into acrimonious public disputes - the so-called 'Science Wars'.

On one side, proposing to displace traditional 'history and philosophy of science', are those in the 'social studies of science' who reject traditional views of scientific knowledge and its special status. These 'social constructivists' embrace a relativism which rejects evidence, logic and rational thought as the basis of scientific belief. Instead, the acceptance of theories is taken to be a matter of interests, power and other factors in a contingent, historical context. On such views, knowledge is not a representation of an external, objective reality, but merely consensus upon arbitrary convention. As the self-advertising grandiosely proclaims, "The foundations of modern thought are at stake here" (Pickering 1992).

On the other side, a scandalized reaction to social constructivism has gone beyond normal intellectual disagreement. US philosopher Larry Laudan (1990, p.x) characterized the "rampant relativism" as "the most prominent and pernicious manifestation of anti-intellectualism in our time". Australian David Stove (1991) wrote of these doctrines as so absurd, that they elude the force of all argument (1991, p. 31), "a stupid and discreditable business" whose authors are "beneath philosophical notice and unlikely to benefit from it". Stove described such ideas as an illustration of the "fatal affliction" and "corruption of thought" in which people say things which are bizarre and which even they must know to be false.

The book *Higher Superstition* by Paul Gross and Norman Levitt (1994) brought the polemics to wide popular attention, providing an exposé of social constructivism in various guises. They describe these ideas as "intellectual subversion" and "philosophical styrofoam" (1994, p. 98). Adding piquancy and even greater public attention was a sensation surrounding the 'Sokal Hoax': In 1996 the journal *Social Text* unwittingly published a spoof article written by the mathematical physicist Alan Sokal. The editors failed to notice that the article was a deliberate parody of pretentious scientific nonsense - largely quoted from leading constructivist authors.

To illustrate, leading social constructivists recently suggest that the belief that '2+2=4' is a mere "convention" which could always be otherwise (Barnes, Bloor & Henry, 1996, p. 154), and is only held because it is socially convenient, being "probably easier to organize" than some other "convention" such as, say, '2+2=5'. In 1897, the Indiana State Government considered a bill which would legislate the value of the mathematical constant pi (π) to be exactly 4; social constructivists could only object on the grounds that proponents of the bill didn't have a majority to pass it into law. For constructivists, the "truths" of arithmetic, like the claims of science itself, reflect a consensus dependent upon historical accidents of the social milieu. In other words, in a different social context, had Einstein lived in Australia, he might have theorized $E = mc^3$. The very contents of scientific theories are not descriptive of the world, but are "rhetorical accomplishments" by some community of discourse. Even scientific discovery is a matter of "interpretative practice," and "genius has no bearing on the pattern of discovery in science" (Brannigan, 1981, p. 50). Presumably, Einstein was just lucky to be in the right place at the right time.

Such claims were propounded by David Bloor (1976) in his *Knowledge and Social Imagery* - the celebrated manifesto of the influential Edinburgh Strong Programme in the sociology of scientific knowledge (SSK). Bloor declared that the astonishing propositions of the Programme were "beyond dispute" (1976, p.3). Indeed, in the second edition of

his landmark work, Bloor (1991) asserts in the preface that criticisms have not led him to change his views. Accordingly, he declares that his original text is unchanged except for "minor spelling and stylistic" corrections. In fact, however, the text is judiciously altered in significant ways clearly designed to avoid fatal criticisms of the entire Programme which had been made by philosophers such as Laudan (Slezak 199?). Though consistent with its own doctrines, this social construction of social constructivism would not be widely seen as a virtue.

Science Wars at UNSW

While making headlines in the *New York Review of Books* and other popular cultural magazines around the world, the Antipodean battle-front of the Science Wars has received little attention. In fact, the University of New South Wales has been a centre of constructivist-motivated reform, quietly effected over recent years with the transformation of the department formerly known as 'History and Philosophy of Science' (HPS). Signalled with a change of name to 'Science & Technology Studies' (STS), the reorientation has meant a shift from the heights of abstraction in epistemology and philosophy to pragmatic issues of technological controversies and social policy. Where students once looked at the stars each semester to appreciate Galileo, Newton and the Copernican revolution, they now visit the pollution of Botany Bay to consider the "social construction of the environment".

'Witchcraft, Oracles and Magic Among the ~~Azande~~ Academics'.

As a *façon de parler*, one might say Copernicus "removed the earth from the centre of the universe", but asserting this literally would be an attempt at humour or evidence of delusion. Nevertheless, it is just this sort of claim about the "negotiated" character of facts and/or objects for which the work of Latour and Woolgar (1979) has been acclaimed. Their *Laboratory Life* is another foundational constructivist work and a defining text in the genre of ethnography of science.

On the analogy of "anthropologist's refusal to bow before the knowledge of a primitive sorcerer" (19xx, p. 29), Latour and Woolgar reject the "apparent superiority of the members of our laboratory in technical matters" as "insignificant" and not "a necessary prerequisite for understanding scientists' work" (19xx, p. 29). This affectation of Evans-Pritchard among the Azande elevates incompetence and ignorance to a methodology and, predictably, Latour finds the activities in the laboratory completely incomprehensible. Undaunted, Latour takes this to be his deep insight: The activities of the laboratory consist in manufacturing meaningless marks, "traces, spots and points" with their "inscription devices". From this vantage point Einstein's scrawlings would be indiscriminable from random fly droppings and, not surprisingly, "the 'scientificity' of science has disappeared" (Latour 1983, p. 142). These are the grounds on which *Laboratory Life* claims that substances studied in the lab "did not exist" prior to operations on statements (19xx, p. 110, 121). Indeed, Latour and Woolgar tell us that their own work, just like all of science, has no determinate meaning (19xx p. 282). "It is the reader who writes the text" (19xx, p. 273). Revelling in paradox which paralyzes criticism, Woolgar (19xx) goes so far as to repudiate logic and consistency, since these are merely anachronistic, Enlightenment myths of a "coercive orthodoxy" (Woolgar 1988).

Revolt Against Reason: Truth as Power

Social constructivism is essentially Hegel's idea that "The state has, in general ... to make up its own mind concerning what is to be considered as objective truth." In an earlier generation, Karl Popper (1966) characterised the doctrine as a "revolt against reason" - a rejection of certain ideals of truth and rationality which, he bitterly denounced as "this despicable perversion of everything that is decent" (1966, p. 49).

For Latour and Woolgar, the very idea of "plausibility" of any work, including their own, is simply a matter of political redefinition of the field involving shift in the "balance of forces" and an “increasing number of people from who it extracts compliance” (1986, p. 285). By this criterion, a repressive totalitarian regime must count as a model of scientific success. Truth is not a matter of rational persuasion, but dependent on the *zeitgeist* or spirit of the age. This doctrine is exactly the view which Popper charges with helping to destroy the tradition of respecting the truth through “bombastic and mystifying cant”, the “magic of high-sounding words” and the “power of jargon”. Popper warns against such theories which are “full of logical mistakes and tricks, presented with pretentious impressiveness” (1966, p.??). He suggests that these doctrines “undermined and eventually lowered the traditional standards of intellectual responsibility and honesty”.

Cuttlefish ink and self-defence

Popper is not alone in his concerns. Recently, Christopher Norris (1992) writes of Baudrillard whom he locates in the “wider fashion for pragmatist, anti-foundationalist or consensus-based theories of knowledge” (1992, p. 16). Baudrillard applies a contextualist, inscriptionalist constructivism and concludes that the 1991 Gulf War didn’t happen. There is no reality behind the discourse concerning the Gulf War. History, like science, is a fictive construct. Norris writes of the “intellectual and political bankruptcy” of doctrines which lead to such conclusions.

In a famous essay, ‘Politics and the English Language’, George Orwell (1946) wrote about the “special connection between politics and the debasement of language”. He was concerned with language which gives “an appearance of solidity to pure wind” and which is “largely the defence of the indefensible”. Orwell speaks of writing which he says is “like a cuttlefish squirting out ink” preventing clear, critical thinking and, thereby, the capacity to see through ideological mystification.

Indeed, Chomsky (1969) has documented the extent to which elite culture of so-called ‘intellectuals’ aids in the mystification of important truths and performs a crucial propaganda function in the interests of privilege and power. In the face of such forces, he suggests that students need the kind of “intellectual self-defence” (1989, p. 251) which has always been the ideal of a liberal education. The bearing of social constructivist doctrines on these concerns is starkly brought out in Chomsky’s further remarks:

> It is the responsibility of intellectuals to speak the truth and to expose lies. This, at least, may seem enough of a truism to pass without comment. Not so, however. For the modern intellectual, it is not at all obvious ... (1969, p. 257)

Chomsky quotes Martin Heidegger who, in a pro-Hitler declaration, asserted “truth is the revelation of that which makes a people certain, clear and strong in its action and knowledge”. It seems for Heidegger it is only this kind of “truth” that one has a responsibility to speak - the “truth” which comes from power.

Affirmative Action?

Woolgar (1988) portrays the claims of science and the boundary between science and non-science as “rhetorical accomplishments.” Thus, for example, one cannot teach that Soviet Lysenkoism or Hitler’s racialism were perversions of scientific truth. Their success in winning consensus must count *ipso facto* as exemplary scientific achievement according to social constructivism. On such views there is no better reason to teach modern science than astrology or parapsychology. Indeed, leading constructivists Pinch (1993) and Ashmore (1993) defend discredited theories on the grounds of “justice” “in a rhetorically self-conscious effort to alter the grounds of consensus”. Their doctrine of “impartiality” has come to mean something like affirmative action for bullshit (in the technical sense of that philosophical term explicated by H. Frankfurt 1998).

Not least, fraud too "is to be seen as an attributed category" (1993 p. 368). In one case scientists are ridiculed by Pinch and Collins for their honesty and for failing to "re-appraise their understanding of scientific method." "[P]rovided they had been prepared to endorse the canonical model in public while operating in a rather different way in private, they could have maintained their position" (19xx). If we drop the jargon, their point is simply that truth is what you can get away with. Heidegger would be impressed.

On the constructivist view, a further "assumption" to be rejected is the curiously "persistent" view "that the objects of the natural world are real, objective and enjoy an independent pre-existence" (Woolgar, 1988). If made seriously outside the seminar room, such claims would be evidence of clinical derangement. The equanimity with which they are received by academics in the absence of serious argument is further evidence of the extent to which students need intellectual self defence against their teachers.

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