Right Thinking for Right Science?
On the Pitt-Collier Exchange Over the Purpose of STS
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The two separate essays by James Collier and I were originally planned to be a single work, jointly written between us. But as our collaboration evolved, our reactions to what Joseph Pitt wrote in November diverged. Since our original plan was to write together, my perspective remains more critical of Pitt than Collier, but my goal is to call attention to ideas that may have gone unnoticed in the heat of their exchange. As it happened, my task became to synthesize the two perspectives. Although I am not sure what such a synthesis would look like (having written this essay I still have no idea) I hope that I have written something that will show what can be learned from their conversation.

Two Visions of Truth

The conflict Collier and Pitt articulate in the Science and Technology Studies (STS) community is a conflict of ideals. Curiously, they conflict over the same ideal: truth. The conflict is constituted from their differences in how they each conceive the nature of that truth. Pitt perceives the conflict within STS starkly. There are those, the community he calls STS-1, who understand science as the only mode of human knowledge with self-correcting processes in its very structure. Those people work to instill similar methods of self-correction in the humanities, because such methods are the best path to discovering the truth. The STS-1 community fights against the relativistic tendencies of STS-2, thinkers influenced too heavily by post-modernism and Capital-T Theory. STS-2 thinkers, says Pitt, analyze all positions, even the scientific, as pursuing not the truth above all else, but partisan political goals. With all knowledge politically compromised, no account of the world or mode of building knowledge is better than any other. Evaluation is useless to rank a proliferation of incommensurable and incomparable differences. This is nihilism, belief in the worthlessness of any decision. To attack the universality of the scientific method is to attack truth itself, says Pitt. And truth must be defended.

The path to truth is the scientific method, according to Pitt, and the scholars of STS-1 are the safeguards of that method, while the scientists practice it. This is the method of self-correction, the design of research with objectivity and repeatability in mind, so that one's results can be checked, referenced, and confirmed or disconfirmed by the scientific community as a whole. This is Pitt's ideal: a community of researchers working with their self-correcting methods toward the truth about the world itself. The scientific realism he defends is built upon this ideal, and that ideal is required if science is to be defended from the relativistic attacks of post-modernist theory.

But relativism is not truly the only result of a critical attitude toward scientific practice. Collier's inquiry into the nature of science is based on a messier, but no less powerful, concept of truth: empirical truth. STS animated by an ideal of empirical truth is research

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into the institutions and practices of science that describe accurately what goes on in laboratories and research centres. Scientific research is expensive, and that expense results in pervasive bureaucracy, as scientists are often driven by the priorities of their corporate and government sponsors rather than pure idealism to discover truths. Truths are discovered, because scientific research still continues successfully. But scientific research is not purely neutral, instead being politically and corporately influenced.

Real scientists often compromise their ideals of pure research for the sake of being able to work at all. When that compromise is displayed, as in, for example, the landmark studies of Bruno Latour[1] and Steve Woolgar,[2] it can make one doubt the ideal of disinterested and self-correcting scientific research. The self-correction of the enterprise that Pitt takes as an ideal rarely happens, because few scientists have the spare time or the spare money to investigate the claims of others in the rigorous manner the ideal suggests. Ironically, it may be easier to develop self-correction methods for humanities fields, if only because our research is so much less expensive than the physical sciences. The mistake lies in taking compromise for absolute corruption, and taking the socially constructed to be unreal. [3]

The World Is Always More Complex than We First Assume

These mistakes can encourage a polemical attitude that can cause one to miss important nuances in ideas as they actually developed. Pitt begins the conversation in a polemic mode, taking for his historical predecessor Alan Sokal, and what I facetiously call the latter's act of intellectual terrorism in 1996. However effective his hoax may have been, it was still a deceit, a complete slap in the face to the norms of peer review and academic honesty. Sokal wrote a text he knew to be nonsense, misrepresented himself to the editors of *Social Text*, and publicly humiliated them when he unmasked himself to expose their mistake. He disregarded every moral norm upon which the humanities rely for their reputation as upstanding academic disciplines. Sokal's was a con game, and it was an exquisite one. It was as if the editors of *Social Text* were strolling through Paris one day, and were swindled by a well-spoken fellow on the street into buying the Eiffel Tower for the low cost of two thousand euros. Sokal was a cheat and a liar, but in the name of truth.

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[1] Bruno Latour, *Science in Action: How to Follow Engineers and Scientists Through Society* (Cambridge: Harvard University Press, 1987).

[2] Bruno Latour and Steve Woolgar, *Laboratory Life: The Social Construction of Scientific Facts* (Beverly Hills: Sage Publications, 1979).

[3] This is an important point that Ian Hacking makes in *The Social Construction of What?* The most frequent ways that social construction theory is oversimplified is with the presumption that when a phenomenon is discovered to be socially constructed, then it is therefore unreal. So if scientific institutions are socially constructed, they are unreal, or cannot genuinely access the real. Hacking, throughout this book, gives ample evidence of how laughable this oversimplification is.

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Pitt cites a story about Gottfried Leibniz, paralleling with Sokal's an apparent hoax that the inventor of calculus pulled off on an alchemy society as a young man. It gives credence to Sokal's activity to imagine his hoax as having such a pedigree. Yet a more careful look at the real events of history gives further evidence that the world is not so cleanly divided into right and wrong as Pitt suggests. Reading the story of Leibniz and the alchemists in 2012, it is clear to us who the true winner is. But in the 1600s, the boundaries of what we today call hard science and alchemical tartuffery were quite hazy, to the point of non-existence.

One of Leibniz's projects was what he called *characteristica universalis*, which Nikolay Milkov has cited as a historical forerunner to the universal symbolic logics of Gottlob Frege, Giuseppe Peano, and Bertrand Russell. The logic developed in the Cambridge philosophy department in the early twentieth century was an important influence in contemporary computer science. Much successful science and technology can trace its roots to Leibniz's *characteristica universalis* project. One of the resources Leibniz consulted for this work was the Kabbalah.[4] The seventeenth century was a time when mysticism, physics, experimental science, the occult, philosophy, theology, and logic were all part of one community of inquirers too diverse to give a single name. Modern empirical science only exists today thanks to a complex social evolution as diverse tendencies and directions grew in influence and disappeared.

We Are All Too Human

And yet, Sokal failed. He threw away every moral norm that keeps the humanities regulated, all that one could call the self-correcting methods of the humanities and social sciences. Yet for all that, science conversations today are not dominated by scientists themselves, but conservative media forces allied with corporate money who have a vested interest in, for example, denying climate change. Collier quotes Latour as an example of a supposed relativist who today stands against the relativization of science.

But Latour's words slip away from Collier's point. Having joined the polemic in defense of STS that studies science as it is truly, messily, practiced, Collier does not notice that Latour's words reflect his own regret at having caused widespread doubt that the ideal of science as the one path to truth ever survives its difficult practice. Latour asks, "Was I wrong to participate in the invention of this field we call science studies? Is it enough to say that *we did not really mean what we meant*?" [5]

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[4] Nikolay Milkov, "Leibniz's Project for Characteristica Universalis in Relation to the Early Analytic Philosophy," *Proceedings of the Eighth International Leibniz Congress* (Hannover, 2006): 609.

[5] Quoted in James H. Collier, "Normativity and Nostalgia: A Reply to Pitt," *The Social Epistemology Review and Reply Collective*, 29 January 2012, http://social-epistemology.com. My emphasis.

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Latour's work only showed that the practitioners of science were human. They tried their best in difficult circumstances, but were limited by the conditions of their times. They were as careful as possible, but could not always be as careful as was required, and they sometimes made mistakes. Pitt implies that science is only valid when it is believed in with the strength and zeal of a perfect ideal. If one shows that ideal to be impossible, then faith in science disappears. Showing the empirical truth of what scientists actually do, Collier's ideal of truth that motivates his approach to STS, has politically damaging effects. Science has lost its power to win over skeptics of widespread scientific conclusions, because the skeptics have evidence that the scientists are just as human as they are.

This is precisely the situation Sokal was afraid of, why he went to the lengths he did to discredit post-modernism-influenced scholars. Pitt quotes him: "Theorizing about 'the social construction of reality' won't help us find an effective cure for AIDS or devise strategies for preventing global warming. Nor can we combat false ideas in history, sociology, economics, and politics if we reject the notions of truth and falsity." [6] But here Pitt too is caught up in the polemics of his purpose. He proceeds to build grounds for discrediting what he calls STS-2, instead of seeing the political content of Sokal's motivations.

Sokal, in advocating for a view of science as a means to truth beyond the reach of political or corporate compromise, does so for a political goal. That goal is the alleviation of human suffering. He talks about devising ways to prevent or better deal with the ecological catastrophes of global climate change, and curing deadly diseases. This political goal of improving the lot of humanity is the purpose for his abandonment of all academic morality in defense of the belief in an ideal of disinterested, apolitical science and truth.

Conclusion: Freeing Thought From Polemics

Pitt misses the most intriguing element of his own essay: the political motivation of an idealized image of apolitical science. Collier also misses the most intriguing element of his own writing: merely showing the empirical fallibility of scientists and scientific institutions has had exactly the political ramifications that critics like Pitt and Sokal were afraid of. They have both ignored the social power of the concepts and discourses in which they work.

The reason why is because of their motivations in writing. Pitt wrote to delineate what he took to be good STS (the Sokal-inspired kind that reinforced the ideal of science as the disinterested pursuit of truth) from bad STS (the kind that allowed too many entry points

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[6] Joseph C. Pitt, "Standards in Science and Technology Studies," *The Social Epistemology Review and Reply Collective*, 23 November 2011, http://social-epistemology.com.

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for nihilistic relativism). This delineation made, it was the task of good STS to shut down bad STS. Collier, in response, wrote to defend warts-and-all empirical studies of scientists and scientific institutions from what he took to be poorly justified attacks. And Pitt did not justify his attacks well, because he focussed on his polemics against the styles of STS he did not like, and a polemic cannot justify itself on polemical grounds alone. But Collier focussed on point-by-point rebuttals and responses to Pitt's polemic, and missed the more profound implications of what they were both writing.

As thinkers, our ideas are effective when we understand their full implications, and all the possibilities for thinking that are enfolded within them. We can explicate the more complex, deeper understanding of our words and ideas when we leave the single-minded focus of our polemical motivations behind to understand the convergences within our divergences, and the productive power of our various lines of thought. Only in letting go of our polemical intentions can we begin to understand all that our ideas can do.

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