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## Science Can Do Better than Sokal: A Commentary on the So-called Science Wars

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**F**or some years I've been troubled by an apparent decline in the standards of rigor in certain precincts of the academic humanities. But I'm a mere physicist. If I find myself unable to make heads or tails of *jouissance* and *différance*, perhaps that just reflects my own inadequacy.

So, to test the prevailing intellectual standards, I decided to try a modest (though admittedly uncontrolled) experiment. Would a leading North American journal of cultural studies—whose editorial board collective includes such luminaries as Frederic Jameson and Andrew Ross—publish an article liberally salted with nonsense if a) it sounded good and b) it flattered the editors' ideological preconceptions?

The answer, unfortunately, is yes. Interested readers can find my article, "Transgressing the Boundaries: Toward a Transformative Hermeneutics of Quantum Gravity," in the Spring/Summer 1996 issues of *Social Text*. It appears in a special number of the magazine devoted to the "Science Wars." (Alan Sokal, "A Physicist Experiments with Cultural Studies," *Lingua Franca*, 1996, p. 62)

*With these words, Alan Sokal (a professor of physics at New York University) explains what motivated him to submit an article to cultural studies journal Social Text and, after it was accepted and published, reveal that it was a parody. Responses to Sokal's hoax appeared in mainstream newspapers and magazines as well as nearly every left-liberal and intellectual publication (e.g., The Nation, Village Voice, In These Times, Dissent, Times Literary Supplement [UK], and The New York Review of Books). Much of the dialogue, however, didn't really go*

anywhere, as both sides took a defensive posture. Sokal continued to show the "silliness" of the postmodern "Masters," especially their fuzzy thinking, and insist that the Science Wars, characterized as a fight picked by conservatives against postmodernists, feminists and left intellectuals, was not really a war because many of the scientists who were against postmodernism (he cited himself) were politically progressive. Social Text retaliated by pointing out Sokal's poor scholarship (for example, his errors in describing the members of Social Text's editorial board deconstructionists) and by trying to distinguish postmodern deconstruction from science studies. As for substantive issues, Sokal kept arguing for the existence of material reality; his critics for the acceptance that scientific laws are social constructions.

In the Spring of 1997, at a two-day conference on Postmodernism and the Social Sciences: Human Agency, Self and Culture, sponsored by the New School for Social Research in New York City, one of seven panel discussions was devoted to "Postmodern Ethics: What the Social Text Affair Does and Does Not Prove." Sokal presented a paper with this title; he was followed by three discussants: Linda Nicholson from SUNY Albany, Kenneth Gergen from Swarthmore College, and Fred Newman.

Newman's contribution was the following essay, in which he brings conceptions and arguments from the philosophy of language to bear on the Science Wars. He attempts to break through the terms of the debate to raise the issue that the critique made by postmodernism is more appropriately directed at the application of the scientific paradigm where it doesn't belong, and not at science. He calls for a coming together (a united front) of science and postmodernism.—L. H.

What does the *Social Text* affair prove? Well, “prove” is a touchy word in a dialogue so concerned with parody. But we can certainly speak of our subjective response to the whole business and, more generally, to the “science wars.” To me, the affair is a further indication of the extraordinary extent to which the science establishment has been threatened by the nearly three-decades-long offensive of postmodernism. To be sure, the current response of the science establishment is partially due to political/economic factors, i.e., the concern that opportunistic forces (usually identified as on the right) will use postmodernist, antiscientific analysis to support cutbacks for science dollars in an already shrinking education budget. No doubt. After all, politics may not be everything but everything is political. Pragmatically speaking, science has every reason to be up in arms. However, not surprisingly, science does not wish to make its case against postmodernism on vulgarly pragmatic grounds. Instead, it seeks to show the “truth” of the matter and to expose the absurdity of a good deal—the *essence*—of postmodernism.

Science has a strong position in this war. But science’s tactical difficulty—characteristic of any incumbent in these times—is that while it holds the office (and the franking privileges!) many do not trust the pompous, smug employment by science of its own criteria to debate the issue of science’s validity, just as many are cynical that the Democrats and Republicans—the two party monopoly—will ever legislate serious campaign reform. Science’s posture looks too self-serving. It looks too much like what the logical positivists (in defense of science) used to say about nineteenth-century Hegelian-style metaphysics, viz. it’s irrefutable. Or long before that, how the Church argued the case against Galileo—God is on our side.

Even though I am a strong supporter of science and its astounding accomplishments, am formally trained in philosophy of science (nowadays viewed by Professor Sokal and many other scientists in the “science wars” as potential allies), and I disagree with the obvious silliness of some postmodernism, and even with much of its serious work (I think it fails to go far enough), I too am extremely mistrustful of science’s self-defense. Indeed, to me Professor Sokal’s response does

more to illustrate postmodernism's proper concern than all or most of what the postmodernists have said or written. And why wouldn't it? Postmodernism is first and foremost a provocation.

First, let me make some rather obvious observations. The issue cannot be whether there are or aren't external objects, but what is meant by making such kinds of claims. Sokal's appeals to various forms of hand-waving realism are, in my opinion, philosophically empty. The world might have come first (i.e., before scientists) but, at least on some accounts, meaning didn't. Nor, for that matter, did truth. Nor language, etc. The claim that there is a book on the table may well be a proposition about one external object's location on another external object, but what this *aboutness* claim means—what correspondence and, therefore, truth, mean—still remains, according to many, to be discovered. Some contemporary philosophers (e.g., Rorty, 1982) consider this longtime philosophical issue worth abandoning. Others do not. Still, it is not only postmodernists but friends of science who consider this a fundamental issue of significance.

It seems to me that Sokal and other science defenders moving so quickly to this vulgarly "ontological" issue is a serious mistake, defensive and/or disingenuous. Scholasticism no more denied an external world than did modern science affirm it. The bizarre appeal to common sense denies, at least as I have come to understand it, the extraordinary discovery that was and is modern science, viz. a way of *describing*, *explaining* and *characterizing* what is going on in the physical world (using mathematical and empirically verifiable conceptions) which yields predictive and retrodictive accountings (explanations) of marvelous value.

Sokal's kind of defense seems to me, ironically, antiscientific. In his hurry to show science to be commonsensical and postmodernism to be absurd, he might well be throwing out the beautiful mathematical-empirical model baby with the realist-idealist bathwater. For, if you feel compelled to laugh off the possibility that science is, in a most important sense, a manmade myth, then you also throw out that it is one of the most useful myths ever created by our species. Therein lies its strength and, in my opinion, its progressivism. The strongest claim in support of

science is not that, together with its close historical companions, capitalism and modern technology, it *had* to prevail (It's simply how the world is!), but that it *did* prevail. Such, as I understand it, was Kuhn's (1962) proscience thesis in *The Structure of Scientific Revolutions*. Nowadays, Kuhn is hailed by many scientists in the war against post-modernism but not so, in my experience, back then when his book first appeared.

Back in the 1950s and 1960s when I was more a full-time philosopher of science, I did not notice too many physicists or, more generally, hard scientists attending very much or very seriously to the responsible and, in my opinion, insightful critique of science by philosophers of science. On the contrary, my experience was that philosophy of science was taken as anywhere from irrelevant to frivolous by the science establishment. Postmodernism, by contrast, has gotten the scientists' attention. For all the nonsense (identified by Sokol and others, e.g., Gross and Levitt, 1994; the authors in Gross, Levitt and Lewis, 1996)—indeed, perhaps in part because of the provocative nonsense—postmodernism has impacted to an extent that analytically oriented philosophers of science did not. More credit to them!

It was, after all, the quite respectable W. V. O. Quine, not some "postmodern nitwit," who wrote in his seminal essay "Two Dogmas of Empiricism":

As an empiricist I continue to think of the conceptual scheme of science as a tool, ultimately, for predicting future experience in the light of past experience. Physical objects are conceptually imported into the situation as convenient intermediaries—not by definition in terms of experience, but simply as irreducible posits comparable, epistemologically, to the gods of Homer. For my part I do, qua lay physicist, believe in physical objects and not in Homer's gods; and I consider it a scientific error to believe otherwise. But in point of epistemological footing the physical objects and the gods differ only in degree and not in kind. Both sorts of entities enter our conception only as cultural posits. The myth of physical objects is epistemologically superior to most in that it has proved more efficacious than other myths as a device for working a manageable structure into the flux of experience. (Quine, 1963, p.44)

A defense of science based on a denial of the claim that physical objects are not myths but reality is not, in my opinion, a defense of science at all, but a mistaken and misguided effort to turn science into some kind of secular religion or all-purpose paradigm of understanding. And that is precisely what some postmodernists (and I number myself among them) find so objectionable.

I am not suggesting that we should turn this most important debate (the so-called science wars) into a moral discussion about whether philosophers of science were properly treated back in the 1960s by a science establishment which now seeks them as allies in the battle against postmodernism. So what? Even if true it wouldn't be the first ethically questionable reconsideration of friends and foes. It is, however, worth mentioning because it exposes an unnecessarily defensive posture of contemporary science and thereby makes more difficult a new and progressive development which, in my opinion, could be actualized by a *coming together* of science and postmodernism.

The emergence of science, technology and capitalism in the 1600s and 1700s, as I understand it, was specific to deep-rooted conceptual (philosophical) military, navigational, economic and technological concerns. To be sure, there are serious disagreements among historians of science as to which factors contributed more or less. The point of general methodological agreement, however, is that science did not emerge as the consequence of a search for a new paradigm. Rather, the scientific paradigm emerged over many, many decades from the effectiveness of a loosely identified set of practical solutions to practical problems guided in varying ways and to varying degrees by mathematical and empirical *ways of looking* at the presenting problems and the physical contexts in which they appear. Surely it was not an effort to assure the existence of physical objects. Nor, indeed, was it an effort to create a new paradigm.

As Chomsky (in Horgan, 1996) so eloquently—as always—put the matter: The emergence of science as a paradigm of understanding is almost surely unexplainable using the scientific paradigm. And it is the *specificity* of science (technology and capitalism) and its ensuing emergence as a paradigm which must be kept in focus in our efforts to bring

peace to the science wars. For it is the extraordinary paradigm that emerged lawfully, if unfathomably, out of the historical specifics of the sixteenth, seventeenth and eighteenth centuries that is now being questioned here in the late twentieth century. Science need not and should not reject either its almost unbelievable practical accomplishment nor the emergence of the scientific paradigm. It can take credit for the former (its accomplishments) and probably has little or nothing to do with the latter (its emergence as a paradigm of understanding).

Here in the late twentieth century, presenting problems specific to this historical conceptual moment quite reasonably raise the question of whether the science paradigm has the capacity to generate good answers to these new questions. Social, psychological, political and economic questions of our day and the scientifically determined sub-models typically appealed to in order to answer them (sociology, psychology, political science and economics) seem to many sufficiently troublesome and unsuccessful as to justify a critique—not of science but of the applicability of the scientific paradigm.

Philosophers of science have played as bad a role in establishing the science paradigm and in insisting on its applicability to everything as anyone. No less brilliant philosophers than Carl Hempel (1965) and Donald Davidson (1980) urge that the causal, deductive model of explanation as it has paradigmatically emerged from the practical-critical specificity of hard science and technology must, to use Hempel's metaphor, "cover" the soft sciences and history. But when Hempel starts to put down on paper the covering laws "governing" Cortez's invasion of Mexico, we are forced to laugh in much the way many of us do in reading *DSM-IV*. The language and the language-game of history and psychology are not the mathematically and empirically shaped language game of physics. Unlike with physics, the infinitude of ordinary language descriptions of historical and psychological events and the virtual absence of *any* criteria of identity for different descriptions produces the giggles accompanying a reading of the clinical psychology manual.

The deductivist paradigm of knowing that has been thoroughly shaped by Aristotelian logic and, over the last several hundred years, by modern science may well have little or nothing to do with helping peo-

ple deal with their depression. This is hardly an attack on science. Indeed, science might prove helpful in dealing with the problem without the science paradigm playing any role at all. As one example, Lev Vygotsky's work (1978, 1987, 1993) seems to me a good example of science's great value in a cultural nonscientific approach (see Newman and Holzman, 1993, 1996, 1997).

What I am urging, in broad political terms, is a united front of postmodernism and science. Over the last hundred or so years the gross misapplication of the deductive paradigm to critical areas of human concern has contributed, in my opinion, much more to the problem than to the solution. Four of the most vulgar products of this kind of mistake are psychology, economics, political science and Marxism. Our world needs, among other things, a humane (unscientific) psychology; an economics not so plainly based on class biases; and a new progressive public philosophy. Perhaps a united front of progressive scientists and postmodernists could further stimulate work in these critical areas. A world in crisis demands such efforts. A fantasy? Perhaps. But not a parody.



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