A Physicist Experiments With Cultural Studies

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April 15, 1996

> The displacement of the idea that facts and evidence matter by the idea that everything boils down to subjective interests and perspectives is — second only to American political campaigns — the most prominent and pernicious manifestation of anti-intellectualism in our time.
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> — *Larry Laudan, Science and Relativism (1990)*

For some years I've been troubled by an apparent decline in the standards of intellectual rigor in certain precincts of the American academic humanities. But I'm a mere physicist: if I find myself unable to make head or tail 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 collective includes such luminaries as Fredric 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 issue of *Social Text*. It appears in a special number of the magazine devoted to the "Science Wars."

What's going on here? Could the editors *really* not have realized that my article was written as a parody?

In the first paragraph I deride "the dogma imposed by the long post-Enlightenment hegemony over the Western intellectual outlook":

> that there exists an external world, whose properties are independent of any individual human being and indeed of humanity as a whole; that these properties are encoded in "eternal" physical laws; and that human beings can obtain reliable, albeit imperfect and tentative, knowledge of these laws by hewing to the "objective" procedures and epistemological strictures prescribed by the (so-called) scientific method.

Is it now dogma in Cultural Studies that there exists no external world? Or that there exists an external world but science obtains no knowledge of it?

In the second paragraph I declare, without the slightest evidence or argument, that "physical 'reality' [note the scare quotes] ... is at bottom a social and linguistic construct." Not our *theories* of physical reality, mind you, but the reality itself. Fair enough: anyone who believes that the laws of physics are mere social conventions is invited to try transgressing those conventions from the windows of my apartment. (I live on the twenty-first floor.)

Throughout the article, I employ scientific and mathematical concepts in ways that few scientists or mathematicians could possibly take seriously. For example, I suggest that the "morphogenetic field" — a bizarre New Age idea due to Rupert Sheldrake — constitutes a cutting-edge theory of quantum gravity. This connection is pure invention; even Sheldrake makes no such claim. I assert that Lacan's psychoanalytic speculations have been confirmed by recent work in quantum field theory. Even nonscientist readers might well wonder what in heavens' name quantum field theory has to do with psychoanalysis; certainly my article gives no reasoned argument to support such a link.

Later in the article I propose that the axiom of equality in mathematical set theory is somehow analogous to the homonymous concept in feminist politics. In reality, all the axiom of equality states is that two sets are identical if and only if they have the same elements. Even readers without mathematical training might well be suspicious of the claim that the axiom of equality reflects set theory's "nineteenth-century liberal origins."

In sum, I intentionally wrote the article so that any competent physicist or mathematician (or undergraduate physics or math major) would realize that it is a spoof. Evidently the editors of *Social Text* felt comfortable publishing an article on quantum physics without bothering to consult anyone knowledgeable in the subject.

The fundamental silliness of my article lies, however, not in its numerous solecisms but in the dubiousness of its central thesis and of the "reasoning" adduced to support it. Basically, I claim that quantum gravity — the still-speculative theory of space and time on scales of a millionth of a billionth of a billionth of a billionth of a centimeter — has profound *political* implications (which, of course, are "progressive"). In support of this improbable proposition, I proceed as follows: First, I quote some controversial philosophical pronouncements of Heisenberg and Bohr, and assert (without argument) that quantum physics is profoundly consonant with "postmodernist epistemology." Next, I assemble a pastiche — Derrida and general relativity, Lacan and topology, Irigaray and quantum gravity — held together by vague rhetoric about "nonlinearity", "flux" and "interconnectedness." Finally, I jump (again without argument) to the assertion that "postmodern science" has abolished the concept of objective reality. Nowhere in all of this is there anything resembling a logical sequence of thought; one finds only citations of authority, plays on words, strained analogies, and bald assertions.

In its concluding passages, my article becomes especially egregious. Having abolished reality as a constraint on science, I go on to suggest (once again without argument) that science, in order to be "liberatory," must be subordinated to political strategies. I finish the article by observing that "a liberatory science cannot be complete without a profound revision of the canon of mathematics." We can see hints of an "emancipatory mathematics," I suggest, "in the multidimensional and nonlinear logic of fuzzy systems theory; but this approach is still heavily marked by its origins in the crisis of late-capitalist production relations." I add that "catastrophe theory, with its dialectical emphases on smoothness/discontinuity and metamorphosis/unfolding, will indubitably play a major role in the future mathematics; but much theoretical work remains to be done before this approach can become a concrete tool of progressive political praxis."

It's understandable that the editors of *Social Text* were unable to evaluate critically the technical aspects of my article (which is exactly why they should have consulted a scientist). What's more surprising is how readily they accepted my implication that the search for truth in science must be subordinated to a political agenda, and how oblivious they were to the article's overall illogic.

I SUGGEST THAT THE NEXT PARAGRAPH START IN LARGE TYPE — THIS IS A NATURAL TRANSITION.

Why did I do it? While my method was satirical, my motivation is utterly serious. What concerns me is the proliferation, not just of nonsense and sloppy thinking *per se*, but of a particular kind of nonsense and sloppy thinking: one that denies the existence of objective realities, or (when challenged) admits their existence but downplays their practical relevance. At its best, a journal like *Social Text* raises important questions that no scientist should ignore — questions, for example, about how corporate and government funding influence scientific work. Unfortunately, epistemic relativism does little to further the discussion of these matters.

In short, my concern over the spread of subjectivist thinking is both intellectual and political. Intellectually, the problem with such doctrines is that they are false (when not simply meaningless). There *is* a real world; its properties are *not* merely social constructions; facts and evidence *do* matter. What sane person would contend otherwise? And yet, much contemporary academic theorizing consists precisely of attempts to blur these obvious truths — the utter absurdity of it all being concealed through obscure and pretentious language.

Social Text's acceptance of my article exemplifies the intellectual arrogance of Theory — meaning postmodernist *literary* theory — carried to its logical extreme. No wonder they didn't bother to consult a physicist. If all is discourse and "text," then knowledge of the real world is superfluous; even physics becomes just another branch of Cultural Studies. If, moreover, all is rhetoric and "language games," then internal logical consistency is superfluous too: a patina of theoretical sophistication serves equally well. Incomprehensibility becomes a virtue; allusions, metaphors and puns substitute for evidence and logic. My own article is, if anything, an extremely *modest* example of this well-established genre.

Politically, I'm angered because most (though not all) of this silliness is emanating from the self-proclaimed Left. We're witnessing here a profound historical *volte-face*. For most of the past two centuries, the Left has been identified with science and against obscurantism; we have believed that rational thought and the fearless analysis of objective reality (both natural and social) are incisive tools for combating the mystifications promoted by the powerful — not to mention being desirable human ends in their own right. The recent turn of many "progressive" or "leftist" academic humanists and social scientists toward one or another form of epistemic relativism betrays this worthy heritage and undermines the already fragile prospects for progressive social critique. Theorizing about "the social construction of reality" won't help us find an effective treatment 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.

The results of my little experiment demonstrate, at the very least, that some fashionable sectors of the American academic Left have been getting intellectually lazy. The editors of *Social Text* liked my article because they liked its *conclusion*: that "the content and methodology of postmodern science provide powerful intellectual support for the progressive political project." They apparently felt no need to analyze the quality of the evidence, the cogency of the arguments, or even the relevance of the arguments to the purported conclusion.

Of course, I'm not oblivious to the ethical issues involved in my rather unorthodox experiment. Professional communities operate largely on trust; deception undercuts that trust. But it is important to understand exactly what I did. My article is a theoretical essay based entirely on publicly available sources, all of which I have meticulously footnoted. All works cited are real, and all quotations are rigorously accurate; none are invented. Now, it's true that the author doesn't believe his own argument. But why should that matter? The editors' duty as scholars is to judge the validity and interest of ideas, without regard for their provenance. (That is why many scholarly journals practice blind refereeing.) If the *Social Text* editors find my arguments convincing, then why should they be disconcerted simply because I don't? Or are they more deferent to the so-called "cultural authority of technoscience" than they would care to admit?

In the end, I resorted to parody for a simple pragmatic reason. The targets of my critique have by now become a self-perpetuating academic subculture that typically ignores (or disdains) reasoned criticism from the outside. In such a situation, a more direct demonstration of the subculture's intellectual standards was required. But how can one show that the emperor has no clothes? Satire is by far the best weapon; and the blow that can't be brushed off is the one that's self-inflicted. I offered the *Social Text* editors an opportunity to demonstrate their intellectual rigor. Did they meet the test? I don't think so.

I say this not in glee but in sadness. After all, I'm a leftist too (under the Sandinista government I taught mathematics at the National University of Nicaragua). On nearly all practical political issues — including many concerning science and technology — I'm on the same side as the *Social Text* editors. But I'm a leftist (and feminist) *because* of evidence and logic, not in spite of it. Why should the right wing be allowed to monopolize the intellectual high ground?

And why should self-indulgent nonsense — whatever its professed political orientation — be lauded as the height of scholarly achievement?

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SIDEBAR: EXCERPT FROM ARTICLE

Thus, general relativity forces upon us radically new and counterintuitive notions of space, time and causality; so it is not surprising that it has had a profound impact not only on the natural sciences but also on philosophy, literary criticism, and the human sciences. For example, in a celebrated symposium three decades ago on *Les Langages Critiques et les Sciences de l'Homme*, Jean Hyppolite raised an incisive question about Jacques Derrida's theory of structure and sign in scientific discourse ... Derrida's perceptive reply went to the heart of classical general relativity:

> The Einsteinian constant is not a constant, is not a center. It is the very concept of variability—it is, finally, the concept of the game. In other words, it is not the concept of some*thing*—of a center starting from which an observer could master the field—but the very concept of the game ...

In mathematical terms, Derrida's observation relates to the invariance of the Einstein field equation $G_{\mu\nu} = 8\pi G T_{\mu\nu}$ under nonlinear space-time diffeomorphisms (self-mappings of the space-time manifold which are infinitely differentiable but not necessarily analytic). The key point is that this invariance group "acts transitively": this means that any space-time point, if it exists at all, can be transformed into any other. In this way the infinite-dimensional invariance group erodes the distinction between observer and observed; the π of Euclid and the G of Newton, formerly thought to be constant and universal, are now perceived in their ineluctable historicity; and the putative observer becomes fatally de-centered, disconnected from any epistemic link to a space-time point that can no longer be defined by geometry alone.