

An Unphilosophical Argument¹

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Introduction: 1

What should the Sokal hoax be taken to show?
A postmodernist menace?

Boghossian versus the editors: 3

Are the editors of *Social Text* postmodernists?
An inescapable conclusion?
A scholarly submission?
Not noticing nonsense.
Why did the editors want to publish it?

Misreading Linda Nicholson: 11

A case of mistaken identity.
Not to deny something isn't to accept it.
Agnosticism suffices.
Do postmodernists go all the way?
Regimes of power.

The rhetoric of objectivity: 17

How transparent is it? 18

Is the historicity of pi ineluctable?
Fuzzy liberation.
Complex *number* theory?
A non-commuting operator?
I assumed he was making a joke that I didn't get.

Appendix: 24

Six added to itself twice?

Introduction

In "What the Sokal hoax ought to teach us,"² the philosopher, Paul Boghossian, likens the acceptance of Sokal's hoax article by the journal, *Social Text*, to a Nazi critique of "Jewish science."³ Boghossian's essay was reprinted in *A House Built on Sand*, a collection of essays devoted to "exposing postmodernist myths about science." But although the collection is prefaced by an eloquent statement of intention to provide a mechanism of scholarly self-control for an area badly in need of it, in "Reading and relativism" (34), after

¹ Updated March 15, 2004

² *Times Literary Supplement* 13 December 1996.

³ See "Why did the editors want to publish it?" below.

claiming that Sokal's contribution makes a mockery of this intention, I said that Boghossian's is "as shoddy as Sokal's," adding:

On a non-skeptical reading, Boghossian's chapter is clear and convincing. But, on a skeptical one, the reasoning is sloppy and the interpretation of the evidence lacks credibility. (Note 12: 60)

I offered evidence of this in "Reading and relativism" (50-53). Here I complete the job.

What should the hoax be taken to show? In the opening chapter of *A House Built on Sand* (11), Sokal downplayed the idea that there are any great lessons to be learned from the success of his hoax. He says,

*From the mere fact of publication of my parody, I think that not much can be deduced. It doesn't prove that the whole field of cultural studies, or the cultural studies of science—much less the sociology of science—is nonsense. Nor does it prove that the intellectual standards in these fields are generally lax. (This might be the case, but it would have to be established on other grounds.) It proves only that the editors of one rather marginal journal were derelict in their intellectual duty, by publishing an article on quantum theory that they admit they could not understand, without bothering to get an opinion from anyone knowledgeable in quantum physics, solely because it came from a "conveniently credentialed ally" (as *Social Text* coeditor Bruce Robbins later candidly admitted), flattered the editors' ideological preconceptions, and attacked their "enemies." (Italics added) ("What the *Social Text* affair does and does not prove")*

But in his own chapter, Boghossian strongly disagreed with this view,⁴ contending that the success of the hoax ought to teach us that postmodernism is engaged in a struggle, which is mainly political, not intellectual, to defeat "the rhetoric of objectivity" and replace it with an "ideologically motivated conception of knowledge."⁵ After a brief introduction, he writes:

Sokal's hoax is fast acquiring the status of a classic *succès de scandale*...But what exactly should it be taken to show? I believe it shows three important things. First, that dubiously coherent relativistic views about the concepts of truth and evidence have really gained wide acceptance in the contemporary academy, just as it has often seemed. Second, that this onset of relativism has had precisely the same sort of pernicious consequence for standards of scholarship and intellectual responsibility that one would expect it to have. Finally, that neither of the preceding two claims need reflect a particular political point of view, least of all a conservative one.⁶ (23)

Any doubt that Boghossian is talking about postmodernism is removed a few pages later, when the behavior of the editors of *Social Text* is portrayed as a manifestation of

the brushfire spread, in vast sectors of the humanities and social sciences, of the cluster of simpleminded relativistic views about the concepts of truth and evidence

⁴ For that matter, so did Sokal in his announcement of the hoax (*Lingua Franca* May/June 1996).

⁵ *A House Built on Sand*: 26 - 27.

⁶ I ignore Boghossian's brief discussion of the last claim but I hope to address it elsewhere.

that are commonly identified as “postmodernist.” These views license, and typically insist upon, the substitution of political and ideological criteria for the historically more familiar assessment in terms of truth, evidence and argument. (26)

A postmodernist menace? But how can a successful hoax of *one* issue of *one* journal show that certain “dubiously coherent relativistic views about the concepts of truth and evidence” have gained *wide* acceptance in the academy? Boghossian never addresses this question. He undertakes to prove only that the success of the hoax shows that these views were taken very seriously *by the editors of Social Text* and with “precisely the same sort of pernicious consequence for standards of scholarship and intellectual responsibility that one would expect.” Does Boghossian believe that some interesting, more general, conclusion would follow from confirming this expectation in this particular case? I don’t see how it could. Having said this, I now turn to his argument.

I see three claims. (1) The *Social Text* editors are postmodernists. (2) Considerations of logic, truth, evidence and even intelligibility had little to do with their decision to publish Sokal’s article. What mattered was to be able to show a reputable physicist “throwing the full weight of his authority behind their cause.” (3) Postmodernism licensed the editors to behave this way by denying the existence of objective truth or justification and, hence, the very idea of “getting it right.”

In what follows, I look closely at the evidence, or lack thereof, that Boghossian offers in support of these claims.⁷ Although it is straightforward to debunk his evidence that the editors are postmodernists and, hence, also his argument that the success of Sokal’s hoax demonstrates the pernicious influence of postmodern relativism, my target here is not this argument but Boghossian’s shoddy scholarship, which extends throughout this essay.

Boghossian versus the Editors

Are the editors of *Social Text* postmodernists? The co-editors of *Social Text*, Bruce Robbins and Andrew Ross, responded to Sokal’s revelation that his article was a hoax in an article entitled “Mystery Science Theater.”⁸ It appeared in the issue of *Lingua Franca* immediately following the one that carried Sokal’s announcement. Here are a few excerpts.

Sokal’s adventures in PostmodernLand were not really our cup of tea. Like other journals of our vintage that try to keep abreast of cultural studies, it has been many years since *Social Text* published direct contributions to the debate about postmodern theory, and his article would have been regarded as somewhat outdated if it had come from a humanist or a social scientist.

We share Sokal’s own concerns about obscurantism.... It is highly ironic that *Social Text* should now be associated with a kind of sectarian postmodernism that we have been at pains to discourage for many years.

⁷ And also a few related ones that he makes along the way.

⁸ *Lingua Franca*, July/August 1996.

At this point in time, we have a vestigial stake in these [postmodern, social constructionist or anti-foundational critiques of positivism], but much less of an interest than Sokal supposes. Like Gross and Levitt, he appears to have absorbed these critiques only at the level of caricatures and has been reissuing these caricatures in the form of otherworldly fanatics who deny the existence of facts, objective realities, and gravitational forces. We are sure Sokal knows that no such persons exist, and we have wondered why on earth he would want to promote this fiction.

Do these sound like the words of people who are engaged in a postmodernist struggle to defeat the rhetoric of objectivity? How does Boghossian parry such disclaimers? Remarkably, he ignores them. Even though his entire case is based upon his conviction that the editors of *Social Text* are postmodernists, he offers no support for this claim, not a single quote or reference. He does parrot Sokal's boast that the "postmodernist" style of the parody sounded good to the editors and, if this were true, it would indeed support his claim. But if what the editors say above is true, it did not sound good to them. Furthermore, in an unpublished interview that is available on the web,⁹ Bruce Robbins, addressed the boast directly, saying:

First of all, it didn't sound good. It sounded bad. Sokal seemed to be trying to speak to us, but not quite managing it.... You just can't have our kind of political commitment if you don't think some things are unmistakably real. So this article did not actually speak to our ideological presuppositions.¹⁰ ("An interview with Bruce Robbins" March 6, 1997)

Why then does Boghossian insist that the editors of *Social Text* are postmodernists? Indeed, why did he claim, in a letter to the *Times Literary Supplement* (10 January 1997), that something very like this is an "independently confirmable fact"? I quote:

What is much more plausible is that the editors of *Social Text* were simply not qualified to judge whether Sokal's essay merited discussion and that this fact didn't hinder them in the least. This peculiar behavior seems to be to call for special explanation, and I can think of nothing more compelling than to appeal to *the independently confirmable fact* that they have bought in on a set of misguided philosophical views that allow them to pooh-pooh the importance of reasonable argument, plausible evidence and factual correctness. There are, surely, less charitable explanations also available. (Italics added)

Boghossian does not seem to grasp that he must tell us *where* this alleged confirmation is, so that we can examine it ourselves and draw *our own* conclusions. Until he offers us something better than "Trust me," why should we give him, rather than the editors of *Social Text*, the benefit of the doubt about what *they* do and do not believe? Indeed, why would he want us to give him the benefit of the doubt? Finally, if the editors *were* postmodernists, how would it help their cause to deny it? This is one more question to which Boghossian owes us an answer.

⁹ <http://www.drizzle.com/~jwalsh/sokal/articles/rbbnstrv.html>

¹⁰ Compare this with Sokal's claim to have flattered the editors' ideological preconceptions.

An inescapable conclusion? Boghossian believes that the editors of *Social Text* were “sublimely indifferent” to the content of Sokal’s article; the attraction was solely that he was a mainstream physicist “throwing the full weight of his authority behind their cause.” However, he does not attempt to explain why, if this is so, they did not single out Sokal’s article for special mention—unlike, say, the editors of *Philosophy and Literature*, who treated their republication of Sokal’s “Afterword” (20: 1996) as a significant intellectual event.¹¹

As evidence of the editors’ alleged indifference to the content, Boghossian considers Sokal’s 105th footnote, which reads as follows:

Just as liberal feminists are frequently content with a minimal agenda of legal and social equality for woman and are “pro-choice,” so liberal (and even some socialist) mathematicians are often content to work within the hegemonic Zermelo-Fraenkel framework (which, reflecting its nineteenth-century origins, already incorporates the axiom of equality) supplemented only by the axiom of choice. But this framework is grossly insufficient for a liberatory mathematics, as was proven long ago by Cohen 1966. (Note 105)

Boghossian contends that even if the editors did not know enough about set theory to find this footnote hysterically funny, there must have been some parts of it that they recognized that they didn’t understand—for example, the comment about the political significance of Cohen’s theorem. In his view, their failure to ask for an explanation either of this remark or of “dozens of similar passages” shows that they just didn’t care. He writes:

“Since one could cite dozens of similar passages—Sokal goes out of his way to leave telltale clues to his true intent---the conclusion is inescapable that the editors of *Social Text* didn’t know what many of the sentences in Sokal’s essay actually meant; and that they just didn’t care.” (25)

Is the conclusion really inescapable? If the editors just didn’t care what many of the sentences in Sokal’s essay meant, they might have published it even if they had found most of it absurd—because they just didn’t care. In fact, by this logic, they might have published it even if they expected their readers to find most of it absurd—because they just didn’t care. Why is Boghossian’s “they just didn’t care” more likely than that they did care but, because Sokal is a professor of physics at a reputable university, they trusted him to get his mathematics and science right in an opinion piece about science and society for a journal of cultural studies? Boghossian does not even address this question. The notion of trust does not figure in his account. Nor does he mention that many, probably most, of these “similar passages” are scattered among Sokal’s one hundred and nine footnotes, most of which, according to the editors, he was asked to remove!

Having established an interest in Sokal's article, we did ask him informally to revise the piece. We requested him (a) to excise a good deal of the philosophical speculation and (b) to excise most of his footnotes. Sokal seemed resistant to any revisions, and indeed

¹¹ They prefaced it with an editorial entitled “Truth matters.” They also added a footnote to the article twitting the editors of *Social Text* for not publishing it.

insisted on retaining almost all of his footnotes and bibliographic apparatus on the grounds that his peers, in science, expected extensive documentation of this sort. (“Mystery Science Theater.”)

We asked him to remove some of the sillier quotations with which he had amply stocked his article. Obviously he refused, and in retrospect we can see why: he wanted to make us look silly by allowing him to publish these things as if we believed them. We didn't put ourselves behind these authorities or like his way of obsessively citing them. (“An interview with Bruce Robbins”)

Apparently the editors were interested in a shorter piece, consisting essentially of the body of the text with much of the philosophical speculation and some of the sillier quotations deleted. However, reading Boghossian, one would never guess that they might have been looking at Sokal's submission this way. He makes no attempt to reconcile his claims about the editors' behavior with their own explanations of it or to show that their explanations are untrue—not even their claim that they asked Sokal to remove most of the footnotes. And yet, if the only reason Sokal gave the editors for keeping his “armada” of footnotes is that his scientific peers expected it, this could have gone far to confirm the editors' suspicion that it was little more than a security blanket, the care of which they could safely leave to him. Thus, if what the editors say is true, for the sixty or so “similar passages” in footnotes, Boghossian's conclusion may indeed be inescapable yet not support his case.

A scholarly submission? After concluding that the editors “didn't know what many of the sentences in Sokal's essay actually meant” and “just didn't care,” Boghossian asks,

How could a group of scholars, editing what is supposed to be the leading journal in a given field, allow themselves such a sublime indifference to the content, truth and plausibility of a scholarly submission accepted for publication? (26)

This question is loaded with unwarranted assumptions. Contrary to what Boghossian implies, the editors of *Social Text* do not appear to have regarded Sokal's submission as scholarship. In fact, it doesn't even look like scholarship—his hundred and nine footnotes, two hundred and nine references, approximately forty-five quotations and who knows how many attempts to fake profundity notwithstanding. Indeed, it seems to have been primarily these trappings of scholarship that Sokal was asked to remove! The editors of this journal of political opinion and cultural analysis say that were interested in Sokal's essay as an earnest attempt by a physicist who is also a committed leftist “to seek some kind of affirmation from postmodern philosophy for developments in his field.”¹² But if this op-ed view of the matter is correct, then neither the truth nor even the plausibility of the views that Sokal expresses in his essay was necessarily a pre-condition for publishing it.^{13 14}

¹² “Mystery Science Theater.” See page 10 below.

¹³ Think, for example, of William Safire's political columns in the *N. Y. Times*.

¹⁴ Boghossian counters that even an opinion piece should be intelligible (26). Would he then condemn the eminent historian of science who once solicited a contribution from Niels Bohr to an issue of *Daedalus* and published it even though it was relatively unintelligible? He recalls that Bohr first asked him to try to make the article more “accessible,” which he did. But after Bohr read the proposed revisions, his instruction, which was followed, was to leave everything as it was! Would Boghossian have done otherwise?

Boghossian follows his question about the editors' alleged "sublime indifference" with a remark of which I can make no sense. He lifts a *tiny* fragment from the editors' *several page* explanation of their behavior, treats it as if it is their complete answer to his question and then complains about its *inadequacy*! Here is what I am talking about.

By way of explanation, coeditors Andrew Ross and Bruce Robbins have said that as "a non-refereed journal of political opinion and cultural analysis produced by an editorial collective...*Social Text* has always seen itself in the 'little magazine' tradition of the independent left as much as in the academic domain." *But it's hard to see this as an adequate explanation*; presumably, even a journal of political opinion should care whether what it publishes is intelligible. (26: Italics added)

Boghossian is quoting here from "Mystery Science Theater," which devotes *several more pages* to this matter. Did he not read it carefully enough to realize this?

Not noticing nonsense: Boghossian's "inescapable" conclusion that the editors "just didn't care" is based upon his conviction that there are many sentences that the editors knew they did not understand yet did not ask to have explained. But, in my view, the considerations raised above greatly weaken the force of this observation. Also, it is a general truth that a statement may be unobjectionable on a normal reading—i.e., when we go with the flow of a text—even though, when read carefully, it is seen to be problematical or even nonsense.¹⁵ If the editors treated Sokal's essay not as scholarship but as an opinion piece, trusting him to get his science, mathematics and footnotes (if he insisted on having them) right and not necessarily endorsing his claims, they had that much more reason to limit themselves to a normal reading of it.

However, this does not address the passages in Sokal's article that Boghossian and others regard as *transparent nonsense*, howlers that allegedly could not be missed even on a normal reading. Starting with Sokal in *Lingua Franca*, lovers of his parody have called our attention to passages that they believe to be transparent nonsense but to which the editors apparently raised no objection. They encourage us to assume that, unlike the editors, we would have noticed this nonsense *without anyone pointing it out to us*.¹⁶ But there is a large problem with this counterfactual assumption. If Sokal or anyone else wished to base a case against the editors on it, it first needed to be verified for a suitable group of people who were unaware that the article is a hoax. By failing to do this—whether from laziness or fear of failing—Sokal undermined the integrity of appeals to transparency.¹⁷

Boghossian says that he could cite "dozens of similar passages" but, in "How transparent is it?" below, I show that three of his favorite examples of transparent nonsense are indeed nonsense *but not for the reasons he thinks*. Furthermore, although I agree that Sokal's article is riddled with transparent nonsense, in my view, so are the chapters by Sokal and

¹⁵ For example, compare the normal and careful readings of the statements by Sokal and Weinberg that I "deconstruct" in "A non-commuting operator?" below.

¹⁶ Except perhaps if recognition of it requires special acquaintance with mathematics or physics.

¹⁷ As evidence that such controls are not merely a formality, see "I assumed he was making a joke that I didn't get," below.

Boghossian in *A House Built on Sand* and Steven Weinberg's essay "Sokal's hoax" in the *New York Review*.¹⁸ Why are we talking only about the journal, *Social Text*?

Why did the editors want to publish it? Boghossian believes that he knows.

The prospect of being able to display in their pages a natural scientist---a physicist, no less---throwing the full weight of his authority behind their cause was compelling enough for them to overlook the fact that they didn't have much of a clue to exactly what sort of support they were being offered. (26)

How can Boghossian know this? Was he a fly on the wall? I don't think so. It is crucial for his argument that "their cause" is postmodernism; yet, if the editors' own testimony about this is to be believed,¹⁹ they published Sokal's piece in spite of the 'postmodernism' not because of it. Here again is Bruce Robbins.

Social Text was hoaxed not because we like Sokal's jargon-filled references to postmodern authorities---in fact we asked him to cut them out---but because we thought he was a progressive scientist, a physicist who was willing to be publicly critical of scientific orthodoxies.... Overeager to welcome what we thought was a conveniently-credentialed ally, we let Sokal's article through. (Bruce Robbins, "Reality and social text," *In These Times*, July 8 1996.)

Robbins' remark that the editors wished to welcome Sokal—to encourage him in spite of their problems with much of what he had written—is consistent with their deciding to publish his article without making a big deal of it. By contrast, Boghossian's notion that they took him to be "throwing the full weight of his authority behind their cause" is not consistent with it. Also, according to Robbins, Sokal was believed to be an ally, not because of his postmodernism, but because of his commitment to progressive political causes and his willingness "to be publicly critical of scientific orthodoxies." If this is true, I suspect that it made him more than just an ally. For a physicist to break ranks with his colleagues by entering the science wars as a progressive social critic of scientific orthodoxies would be like a Republican official criticizing the Supreme Court for stopping the Florida recount.

Several years ago, I asked a few people who believed that *Social Text* had done wrong by publishing Sokal's article if it would have made a difference if had been written by Einstein or Weinberg. For Einstein, they all said that it would but, for Weinberg, they were unsure. But, if this is how people think, then it is not so clear that there was a *principled* objection to the publication of Sokal's article. I suspect that at least some of the criticism is rooted in a belief that the success of the hoax shows that the editors *must have been* derelict in their duty. But because all intellectual journals, even ones that are purely scholarly, depend on trust, they are vulnerable to mischief produced by violations of it. For this reason, I cannot help wondering whether some portion of what Robbins attributes to overeagerness on the

¹⁸ I do not wish to defend these charges here.

¹⁹ See "Are the editors of *Social Text* postmodernists?" (3-4)

part of him and his colleagues might more accurately be blamed on Sokal's abuse of their trust.²⁰

Here are some more statements by the editors.

Sharon Begley and Adam Rogers of *Newsweek* reminded readers of how respectable a pedigree arguments like Sokal's have within science itself. (Bruce Robbins, "On being hoaxed," *Tikkun*)

We often balance diverse editorial criteria when discussing the worth of submissions, whether they be works of fiction, interviews with sex workers, or essays about anticolonialism. ("Mystery Science Theater")

Not knowing the author or his work, we engaged in some speculation about his intentions, and concluded that the article was the earnest attempt of a professional scientist to seek some kind of affirmation from postmodern philosophy for developments in his field.... As the work of a natural scientist it was unusual, and, we thought, plausibly symptomatic of how someone like Sokal might approach the field of postmodern epistemology, i.e., awkwardly but assertively trying to capture the "feel" of the professional language of this field, while relying upon an armada of footnotes to ease his sense of vulnerability. In other words, we read it more as an act of good faith of the sort that might be worth encouraging than as a set of arguments with which we agreed. On those grounds, the editors considered it of interest to readers as a "document" of that time-honored tradition in which modern physicists have discovered harmonic resonances with their own reasoning in the field of philosophy and metaphysics.²¹ Consequently, the article met one of the several criteria for publication which *Social Text* recognizes. ("Mystery Science Theater.")

Co-editors Robbins and Ross continue:

Having established an interest in Sokal's article, we did ask him informally to revise the piece. We requested him (a) to excise a good deal of the philosophical speculation and (b) to excise most of his footnotes. Sokal seemed resistant to any revisions, and indeed insisted on retaining almost all of his footnotes and bibliographic apparatus on the grounds that his peers, in science, expected extensive documentation of this sort. Judging from his response, it was clear that his article would appear as is, or not at all. At this point, Sokal was designated as a "difficult, uncooperative author," a category well known to journal editors. We judged his article too much trouble to publish, not yet on the reject pile, perhaps of sufficient interest to readers if published in the company of related articles.... Sometime after this impasse was reached, the editors did indeed decide to assemble a special issue on the topic of science studies.... Here, we thought, was an appropriate and heterogeneous context in which Sokal's article might appear, providing a feasible solution to the editorial problem posed by his piece.... Our final decision to include him presumed that readers would see his article in the particular context of the Science Wars issue, as a contribution from someone unknown

²⁰ It may be objected that we can imagine someone writing Sokal's article and meaning every word of it, in which case there would be no violation of trust. But it takes even less imagination to see that if the article *Social Text* published had not been a hoax, I almost surely would not be writing this essay.

²¹ For some striking examples, see Mara Beller's "The Sokal hoax: at whom are we laughing?" *Physics Today* September 1996.

to the field whose views, however offbeat, might still be thought relevant to the debate. Since his article was not written for that special issue, and bears little resemblance, in tone or substance, to the commissioned articles, it was not slated to be included in the expanded book version of the issue. (“Mystery Science Theater”)

Here, finally, is Bruce Robbins again.

Social Text took Alan Sokal to be a physicist reporting to non-physicists about things that any physicist would know. We saw his article as an act of translation or popularization in which a physicist critical of physics was reporting to non-physicists about material that within physics itself was not controversial. In short, we took him for who he was claiming to be. Thus the idea did not even occur to us that we had to check his physics. We just assumed that any credentialed physicist would get that part right. Our doubts were about the quality of the translation. We thought he was misunderstanding us, his intended audience, and we asked him to remove some of the sillier quotations with which he had amply stocked his article. Obviously he refused, and in retrospect we can see why: he wanted to make us look silly by allowing him to publish these things as if we believed them. We didn't put ourselves behind these authorities or like his way of obsessively citing them. But we were willing enough to have a credentialed physicist express this sort of general idea. And we were willing to put up with the awkwardness of his prose. This, of course, turned out to be an awful embarrassment. (“An interview with Bruce Robbins”)

But Boghossian will have none of this. He says instead:

What Ross and Co. should have said, it seems to me, is that *Social Text* is a political magazine in a deeper and more radical sense: under appropriate circumstances, it is prepared to let agreement with its ideological orientation trump every other criterion for publication, including something as basic as sheer intelligibility. The prospect of being able to display in their pages a natural scientist---a physicist, no less---throwing the full weight of his authority behind their cause was compelling enough for them to overlook the fact that they didn't have much of a clue to exactly what sort of support they were being offered. And this, it seems to me, is what's at the heart of the issue raised by Sokal's hoax: not the mere existence of incompetence in the academy, but, rather that specific form of it that arises from allowing ideological criteria to displace standards of scholarship so completely that not even considerations of intelligibility are seen as relevant to an argument's acceptability. How, given the recent and sorry history of ideologically motivated conceptions of knowledge---Lysenkoism in Stalin's Soviet Union, for example, or Nazi critiques of “Jewish science”---could it again have become acceptable to behave in this way? (26)

It *seems* to him? We need evidence; we need argument. We don't need opinions or rhetoric. To say that “not even considerations of intelligibility are seen as relevant to an argument's acceptability” is good rhetoric. But it gains its force from a conflation of two different meanings of “accept.” To accept *an argument* is to believe it and, to believe it, one must find it intelligible. The editors of *Social Text* accepted *an article*, not an argument.

Boghossian asks how it could “again” have become acceptable for people to behave “in this way.” His answer, in brief, is that postmodernism made them do it. He begins:

These views²² license, and typically insist upon, the substitution of political and ideological criteria for the historically more familiar assessment in terms of truth, evidence, and argument. (26)

And he concludes:

It follows, given this standpoint [postmodernism], that the struggle against the rhetoric of objectivity isn't primarily an intellectual matter but a political one: the rhetoric needs to be defeated rather than just refuted. Against this backdrop, it becomes very easy to explain the behavior of the editors of *Social Text*.²³ (27)

In the next section, I debunk Boghossian's case for these exciting-looking claims.

Misreading Linda Nicholson

A case of mistaken identity: The feminist scholar, Linda Nicholson, is Boghossian's authority on postmodernism. Most of what he says about postmodernist views in this chapter is based upon what he thinks Nicholson is saying in a remark, in her editor's introduction to *Feminism/Postmodernism*, in which she contrasts postmodernism with historicism. Boghossian quotes the remark (26) and then restates it in his own words. It is the accuracy of the restatement that concerns me here. He begins:

Most philosophers accept the claim that there is no such thing as a totally disinterested inquirer, one who approaches his or her topic utterly devoid of any prior assumptions, values or biases. Postmodernism goes well beyond this historicist observation, as feminist scholar Linda Nicholson explains (without necessarily endorsing):

The traditional historicist claim that all inquiry is inevitably influenced by the values of the inquirer provides a very weak counter to the norm of objectivity.... [T]he more radical move in the postmodern turn was to claim that the very criteria demarcating the true and the false, as well as such related distinctions as science and myth or fact and superstition, were internal to the traditions of modernity and could not be legitimized outside of those traditions. Moreover, it was argued that the very development and use of such criteria, as well as their extension to ever wider domains, had to be described as representing the growth and development of "specific regimes of power."²⁴

Boghossian seems unaware that Nicholson *does* endorse the postmodernist views that she describes.²⁵ True, she does not endorse the views that *he mistakenly takes her to be*

²² The sentence immediately preceding this refers to "the cluster of simpleminded relativist view about the concepts of truth and evidence that commonly are identified as 'postmodernist.'"

²³ But didn't Sokal offer an ideological rationale for lying to the editors of *Social Text*—not only in his essay but also in his dealings with them? Wasn't his aim to help "defeat" the rhetoric of postmodernism within the academic left and replace it by the rhetoric of objectivity?

²⁴ Nicholson quoted by Boghossian (26). The ellipses are his.

²⁵ See, for example, the final quote in "Regimes of power" below and "Why postmodernism: Linda's story," in the introduction to *Social Postmodernism* (5), co-edited with Steven Seidman. Note also that in the first chapter of *Feminism/Postmodernism* (32), Nicholson and Nancy Fraser write, "By criticizing lingering essentialism in contemporary feminist theory, *we hope to encourage such theory to become more consistently*

describing. But this is a different point. If Boghossian had read her more carefully, he would have seen that the very person upon whom he relies for his characterization of postmodernism refutes it by her own scholarship! Does he believe that if Nicholson had been an editor of *Social Text*, her postmodernist views would have licensed and perhaps even required her to accept Sokal's article? Does he think she is engaged in a struggle that "isn't primarily an intellectual matter, but a political one" to defeat "the rhetoric of objectivity"? Given the respect that he shows her, I strongly doubt that the answer to either question is yes. But if they are not, this alone refutes Boghossian's claim about what the Sokal hoax ought to teach us.

Not to deny something isn't to accept it: Following Nicholson, Boghossian talks first about historicism.

As Nicholson sees it, historicism, however broadly understood, *doesn't entail that there is no such thing as objective truth*. To concede that no one ever believes something solely because it's true *is not to deny* that anything is objectively true. Furthermore, the concession that no inquirer or inquiry is fully bias free *doesn't entail that they can't be* more or less bias free or that their biases *can't be* more or less damaging. To concede that the truth is never the only thing that someone is tracking *isn't to deny* that some people or methods are better than others at staying on its track. Historicism *leaves intact*, then, *both* the claim that one's aim should be to arrive at conclusions that are objectively true and justified, independent of any particular perspective, *and* that science is the best idea anyone has had about how to satisfy it. (26-27 Italics added)

In spite of "As Nicholson sees it," there is nothing in her quoted remark that supports what Boghossian says about historicism. However, something he omitted (where the ellipsis is) does provide some support. So I will assume that he is relying on it too but neglected to tell the reader. It reads:

The response can be made that while values and culture might affect the choice of questions the scholar brings to her or his inquiry, they *cannot* affect the truth or falsity of the answers the scholar gives to such questions. This is because the criteria which determine the truth or falsity of such answers *are* themselves independent of the specific perspective of the inquirer. (Italics added)

Although this helps, there remains much in Boghossian's statement that does not seem to be based on Nicholson's—for example, his suggestion that some of us may be better than others at tracking the truth and his talk about the epistemic status of science. But even if Boghossian has taken some liberties, he and Nicholson agree that historicism *does not deny* that truth is perspective independent. Indeed, almost surely, they both would go further and say that historicism *accepts* it. But, for whatever reason, neither of them says so explicitly.²⁶ Thus, Nicholson's historicist *does not dispute* a response that "can be made" from the perspective of perspective independent truth but neither does she explicitly

postmodernist," adding, "This is not, however, to recommend merely any form of postmodernism. On the contrary, the version developed by Jean-François Lyotard offers a weak and inadequate conception of social criticism without philosophy." (Italics added.) I find it hard to imagine Boghossian distinguishing different forms of postmodernism, some good some not.

²⁶ Perhaps they take it for granted.

endorse it. As for Boghossian, the “then” in *his* last sentence above invites the reader to assume that his claim that historicism leaves the perspective independence of truth “intact” follows, at least loosely, from the “*isn’t to deny*”s in the sentences that precede it. But what follows from these “*isn’t to deny*”s is another “*isn’t to deny*,” which, in this case, is the observation that to be a historicist *isn’t to deny* that truth is perspective independent. This too fails to reveal whether the historicist *accepts* it. Thus, on these narrow readings, neither remark reveals unambiguously whether its author holds that historicism accepts that truth is perspective independent.

Agnosticism suffices: According to Boghossian, Nicholson claims that postmodernism needs to “go much further” than historicism. Here is what she says, followed by his reading of it.

But the more radical move in the postmodern turn was to claim that the very criteria demarcating the true and the false, as well as such related distinctions as science and myth or fact and superstition, were internal to the traditions of modernity and could not be legitimized outside of those traditions.

Postmodernism, in seeking to demote science from the privileged epistemic position it has come to occupy, and therefore to blur the distinction between it and “other ways of knowing”—myth and superstition, for example—needs to go much further than historicism, all the way to the denial that objective truth is a coherent aim that inquiry may have. (27)

Notice that Nicholson doesn’t talk about blurring distinctions. But from Boghossian’s perspective, to assert that the “criteria for demarcating” *such distinctions as science and myth or fact and superstition* are “internal to the traditions of modernity and could not be legitimized outside” them *is* to blur *these* distinctions. Nevertheless, his claim about how far postmodernism needs to go to achieve its alleged goal is false from *his own* perspective. I mean by this that, in order to be seen *by Boghossian* as demoting science from its privileged epistemic position and blurring the distinction between it and myth, it is not necessary to deny “that objective truth is a coherent aim that an inquiry may have.” It suffices merely to neither deny nor affirm that science *may* merit a privileged epistemic status. For the agnostic, this is not a question that needs to be answered. By contrast, for Boghossian, it already has been answered in the affirmative—which is why, from his perspective, agnosticism about the privileged epistemic status of science amounts to a demotion of it.²⁷

On the other hand, according to Boghossian, historicism does not demote science from its privileged epistemic status. Therefore his historicist must be a believer, not merely an agnostic. This leaves room for his postmodernist to be agnostic. But by talking about historicism wholly in terms of non-denial, Boghossian blurs the distinction between it and acceptance in a way that fools him into thinking that, because postmodernism goes beyond historicism, it also goes beyond non-denial—so that a postmodernist must be a denier. Does Boghossian always blur these distinctions? I don’t know. But if he does, it might go far

²⁷ Think how it would look to Boghossian if you abandoned your belief in the privileged status of science and became agnostic. In his eyes, it would seem that, in your eyes, science had lost its privileged status.

toward explaining why he believes that the editors of *Social Text* hold “dubiously coherent relativistic views about the concepts of truth and evidence.”²⁸

Does postmodernism go all the way? Even though postmodernism *does not need* to go “all the way to the denial that objective truth is a coherent aim that inquiry may have” in order to be seen by Boghossian as blurring the distinction between science and myth, it might do so *anyway*. What does Nicholson say about this? Is her postmodernist a denier or an agnostic? I claim that she is agnostic. However, on literal readings of “internal to” and “could not be” in the remark that Boghossian quotes, Nicholson’s “more radical move in the postmodern turn” is not merely non-acceptance but denial. So, if these literal readings are faithful to her intention, he did understand her correctly. I claim that they are not. My evidence is the following two statements from Nicholson’s introduction.

For Benhabib, the kind of postmodernism found within the writings of Lyotard is either relativist or inconsistent. (8)²⁹

On the grounds, therefore, of sharing common enemies, Yeatman sees an affinity between feminism and postmodernism. However, she also sees dangers for feminism in certain versions of postmodernism, dangers which she aligns with relativism. (14)

In each case, Nicholson is noting that someone believes or worries that *some particular formulation* of postmodernism entails “relativism,” by which she means here a denial of perspective independent truth or justification.³⁰ But it would make no sense for her to say this if “internal to” and “could not be” are supposed to be taken literally in the remark that Boghossian quotes. Because, if they are, her postmodernism *always* entails relativism.

Regimes of power: Finally, still allegedly following Nicholson, Boghossian explains how postmodernism made the editors of *Social Text* “do it.” He first quotes a remark of hers about “specific regimes of power.”

Moreover, it was argued that the very development and use of such criteria, as well as their extension to ever wider domains, had to be described as representing the growth and development of “specific regimes of power.”

Here is Boghossian’s reading of this, followed by the lesson he learns from it about why the editors of *Social Text* accepted Sokal’s article.

Indeed, according to postmodernism, the very development and use of the rhetoric of objectivity, far from embodying a serious metaphysics and epistemology of truth and evidence, represents a mere play for power, a way of silencing these “other ways of

²⁸ I assume that Boghossian does not think his views about truth and evidence are dubiously coherent, at least not in the way that he thinks *these* views are. In “Reading and relativism” (51-53), I debunk his attempts to refute ‘postmodern’ relativism about truth and about evidence.

²⁹ I have no idea if Benhabib’s claim about Lyotard’s version of postmodernism is justified. It would not surprise me if it is but it can be tricky to decide such a question.

³⁰ In “Reading and relativism” (note 15), I call this ‘bad’ relativism. Concerns about ‘good’ relativism (agnosticism) going ‘bad’ (turning into denial) are discussed briefly on (33-35, 45).

knowing.” It follows, given this standpoint, that the struggle against the rhetoric of objectivity isn’t primarily an intellectual matter but a political one: the rhetoric needs to be defeated rather than just refuted. Against this backdrop, it becomes very easy to explain the behavior of the editors of *Social Text*.

They begin similarly. Nicholson’s “Moreover, it was argued that the very development and use of such criteria” is restated as “Indeed, according to postmodernism, the very development and use of the rhetoric of objectivity.” In this context, Boghossian’s use of term, “the rhetoric of objectivity,” seems unobjectionable, especially since we know that it is merely a convenient paraphrase of Nicholson’s talk of criteria that demarcate between the true and the false, science and myth, and so on. Boghossian also follows Nicholson faithfully in contending that the development and use of “the rhetoric of objectivity” *represents something*. But he parts company with her on the crucial question of what it represents. Nicholson talks about the development and growth of “specific regimes of power,” where her use of scare quotes cautions us not to try to *guess* exactly what she means by this but to wait for her explanation. However, Boghossian seems to ignore the warning, taking Nicholson to mean “a mere play for power” and “a way of silencing ‘other ways of knowing’.” Is *this* a mere power play on Boghossian’s part? Or did he perhaps read ahead to learn precisely what Nicholson means but forgot to tell us that he did? Let’s see. She begins this way.

Postmodernists have focused on the growth of science and its widening influence over many spheres of life throughout modernity. They have claimed that in the name of “science,” authority has become exercised in a variety of ways: in the disciplines, the media, popular advice manuals, and so on. By pointing to the element of power in such modern practices, postmodernists have extended the field where power has traditionally been viewed as operating, for example, from the state and the economy to such domains as sexuality and mental health.

Behind such practices, the postmodern argument continues, is the backdrop of science and those criteria separating science from superstition and myth. Such criteria, while often little thought about by practicing natural and social scientists or by those who view their work as inspired by science, serve as the “taken-for-granted” support of all such activity. It is mostly modern philosophers who have attempted to give meaning to such distinctions, to articulate general principles of knowledge, that is, an epistemology. This attempted construction of theories of knowledge within modern philosophy has paralleled the attempted construction of well-established theories of other important modern ideals, such as justice and beauty.

Therefore, the postmodern critique has come to focus on philosophy and the very idea of a possible theory of knowledge, justice, or beauty. The claim is that the pursuit itself of such theories rests upon the modernist conception of a transcendent reason, a reason able to separate itself from the body and from historical time and place. Postmodernists describe modern ideals of science, justice, and art, as merely modern ideals carrying with them specific political agendas and ultimately unable to legitimize themselves as universals. Thus, postmodernists urge us to recognize the highest ideals of modernity in the West

as immanent to a specific historical time and geographical region and also associated with certain political baggage. Such baggage includes notions of the supremacy of the West, of the legitimacy of science to tell us how to use and view our bodies, and of the distinction between art and mass culture.

I see no support here for Boghossian's reading of Nicholson as saying that, according to postmodernism, the rhetoric of perspective-independence "represents a mere play for power, a way of silencing these 'other ways of knowing'." Furthermore, I see no way to reconcile this reading with the following statement by Nicholson about the distinction between reason and power.

What, though, about the argument that postmodernism reduces all discourse to rhetoric, that it allows no distinction between reason and power? Again, I believe that a carefully constructed postmodernism can deal with this problem. We can admit of the postmodern claim that conceptual distinctions, criteria of legitimation, cognitive procedural rules, and so forth are all political and therefore represent moves of power and also recognize that they represent a different type of power than is exhibited in, for example, physical violence or the threat of force. A postmodern feminism could thus both support certain procedural aspects of natural science or other reflexive criteria of validity claims, that is, "decision procedures to guide choices in theory, research, and politics," while also acknowledging such support as political and grounded in a particular cultural context.... The underlying thread of these remarks is that postmodernism must reject a description of itself as embodying a set of timeless ideals contrary to those of modernism; it must insist on being recognized as a set of viewpoints of a time, justifiable only within its own time.
(11)

Finally, I see nothing in the passages quoted here or anywhere else in Nicholson's essay, about a postmodernist "struggle" against "the rhetoric of objectivity" that is primarily political, not intellectual. Yet this or something very like it is crucial for the success of Boghossian's case about the pernicious consequences of the alleged postmodernism of the editors of *Social Text*. Recall his claim that, "against this backdrop, it becomes very easy to explain [their] behavior." But Nicholson portrays the postmodernist turn as an *intellectual* move in which power and influence is brought into focus and studied. And a postmodernist study of power and influence is still a study. It is scholarship, as a reading of Nicholson's essay makes abundantly clear.

The Rhetoric of Objectivity

Boghossian next considers an allegedly postmodernist statement by the anthropologist, Roger Anyon. His reading of it, which is debunked in "Reading and relativism" (50-51), is supported by two arguments, also debunked in "Reasoning about relativism" (51-53), that he seems to think refute relativism about truth and evidence. After completing them, Boghossian asks:

Is there perhaps a weaker thesis that, while being more defensible than these simpleminded relativisms, would nevertheless yield an antiobjectivist result?

Suppose there is not. There remains agnosticism: one may be neither an ‘objectivist’ nor ‘antiobjectivist.’ Does Boghossian believe that he knows an argument for perspective independence that should convince an agnostic? If he does, that is what he should be presenting here. After quoting Stanley Fish, he writes:

...It goes without saying that the vocabularies with which we seek to know the world are socially constructed and that they therefore reflect various contingent aspects of our capacities, limitations, and interests. But *it doesn't follow that those vocabularies are therefore incapable* of meeting the standards of adequacy relevant to the expression and discovery of objective truths. (29: Italics added)

True, it doesn't follow that they are incapable of meeting such standards but neither does it follow that they *are* capable of meeting them. So far, Boghossian's remarks do not go beyond agnosticism about objective truth and justification but now his rhetoric becomes affirmative. Here are some excerpts:

The game of baseball...reflects various contingent facts about us as physical and social creatures. “Strike” and “ball” are socially constructed concepts, if anything is. However, *once these concepts have been defined*---once the strike zone has been specified---*there are then perfectly objective facts about what counts as a strike and what counts as a ball.* (The fact that the umpire is the court of last appeal doesn't mean that he can't make mistakes.) (29 – 30: Italics added)

Realism is not committed to there being only one vocabulary in which objective truths might be expressed; all it's committed to is the weaker claim that *once a vocabulary is specified, it will then be an objective matter whether or not assertions couched in that vocabulary are true or false.* (30: Italics added)

The two italicized claims beg the crucial question. Yes, once these concepts have been defined, there are facts about what counts as a strike and what counts as a ball. This is just what it means to be defined. But the question is *whether* we can define them—or anything else—not merely so as to meet our own standards, no matter how strict, but in the metaphysical perspective independent sense that Boghossian is talking about.³¹ I assume that he believes that we can—otherwise, what is the point of his remark? But he gives us no reason to agree. For the case of baseball, it is a question of conceptually “carving up” reality in such a way that each event is either a pitch or it is not a pitch and each pitch is either a ball or a strike, all of this independent of our knowledge of which. Does Boghossian really think that he can carve up reality independent of us in such a way? How could we tell that he had succeeded? Finally, there is Wittgenstein. In “Reading and relativism” (45), I note,

³¹ My own discipline, mathematics, made an ambitious attempt to do this and then abandoned it. The remarkable precision achieved in the course of the attempt was retained but, because terms like ‘set’ could not be defined in Boghossian's sense, it was at the price of treating mathematics as a meaningless formal system.

Some philosophers seem to think that, at least in principle, vagueness can be removed by arbitrary stipulation. But Wittgenstein's view is that we cannot stipulate anything, not even the rule for adding one, although it often seems that we can. If this is right, the idea that we can say things about a reality independent of us runs into trouble—not with the idea of such a reality but because we are unable to endow our statements with meanings that can leave home and make it on their own.

Although Wittgenstein's rule following considerations are taken seriously in analytic philosophy, even by many philosophers who are not persuaded by them, Boghossian does not try to explain why he thinks they do not apply in this case. Does he think that stipulating a strike zone is easier than stipulating a rule for adding one?

How Transparent is it?

Near the beginning of his essay, Boghossian writes:

Sokal peppers his piece with as many smaller bits of transparent nonsense as could be made to fit on any given page. Some of these are of a purely scientific or mathematical nature—that the well-known geometrical constant pi is a variable; that complex number theory, which dates from the nineteenth century and is taught to schoolchildren, is a new and speculative branch of mathematical physics.... Others have to do with the alleged philosophical or political implications of basic science...that fuzzy logic is better suited to leftist political causes than classical logic... (24)

Similarly, in his reply to Steve Fuller in the *TLS* (10 January 1997) he says,

Has [Fuller] not read Sokal's essay, or even my brief summary of it? The essay contains literally dozens of claims that anyone with the least familiarity with their content would see right through, including *inter alia*: that the geometrical constant pi is a variable; that complex number theory, which dates from the nineteenth century and is taught to schoolchildren, is a new and speculative area of mathematical physics; that the axiom of choice in set theory is intimately related to the issue about freedom of choice in the abortion debate.

Of Boghossian's seven examples, he gets four right, the last one above and three that are not shown here. But, as I will show, the other three are mistaken. To make clear that it is not just Boghossian who is incompetent in these matters, I will also consider one in which Sokal and separately Weinberg give nonsensical explanations of why a remark about quantum gravity is transparent nonsense. Finally, I will contrast two reactions to a piece of transparent nonsense about arithmetic by the philosopher, John Searle, to suggest how Sokal's essay might appear to someone who does not know that it is a hoax and who trusts the competence and good faith of the author, a professor of physics at New York University.

If my reasoning is not always easy to follow, I invite the reader to consider taking this as evidence that reading Sokal's article is trickier than we have been led to believe. For one thing, because it is a hoax, Sokal's intended meaning has no privileged status.

Is the historicity of pi ineluctable? Boghossian would have us believe that the editors of *Social Text* encountered a claim very much like the following and did not gag on it.

The well-known geometric constant pi is a variable.

But what Sokal actually wrote is this.

The pi of Euclid and the G of Newton, formerly thought to be constant and universal, are now seen in their ineluctable historicity.³²

Does this say transparently that pi is a variable? Does it say anything transparently? Is it conceivable that the mathematical community would choose *this* way of delivering the incredible news that pi is, after all, a variable? If pi had been found not to be constant, everyone would have been talking about it well before it appeared in *Social Text*. But they were not. It therefore would have been crazy for the editors to suppose that Sokal was saying that pi is a variable. Also, if Sokal wanted to say *transparently* that pi and G “are now seen to be variables,” why did he instead say *obscurely* that they “are now seen in their ineluctable historicity”? It seems that he did not want to be transparent! He was, after all, pretending to be a postmodernist and “are now seen in their ineluctable historicity” might well have been his idea of postmodernist obfuscation. But, if so, how can we say that it transparently means *anything*, even in the context of the rest of the sentence?

This is the question that Boghossian needed to, but did not, address. True, the sentence starts off almost promising to tell us in no uncertain terms that the constancy of pi was a mistaken belief. But then, for whatever reason—a failure of nerve or perhaps because Sokal found the word “ineluctable” ineluctable—he opted instead for obscurity. My Merriam Webster dictionary tells me that to see pi in its ineluctable historicity is to see it in its unavoidable historical actuality. Is this the same as seeing it as a variable? I don't think so. And it certainly isn't *obviously* the same. It might mean, for example, that the ontology of mathematics—in particular, what *kind* of a thing pi is—is neither a historical nor a cultural constant, in the sense that it was different for different cultures at different times. Mathematics is now seen either as having no ontology (formalism) or everything is a set (whatever this may mean) or everything is a construction (whatever this may mean). But, however mathematics was conceived by the ancient Greeks or Isaac Newton or early nineteenth century mathematicians, it was not like any of these.³³

³² The passage from which this is taken is indeed nonsense but not in a way that bears on the matter at hand.

³³ It also might mean that each culture, with its own view about what passes for proof, has to decide anew if the ratio of the circumference of a circle to its diameter is the same for all circles. Bear in mind that, even in pure mathematics, we prove this only from some set of axioms. If one wishes to escape the apparent arbitrariness of axioms, one might try defining pi to be the function that assigns to each *physical* circle the ratio of its circumference to its diameter. But the general theory of relativity tells us that this pi *is* a variable.

Fuzzy liberation: According to Boghossian, the editors of *Social Text* also encountered something like the following assertion and did not, in effect, exclaim, “Professor Sokal, now you’ve gone too far!”

Fuzzy logic is better suited to leftist political causes than classical logic.

However, Sokal’s only statements about anything fuzzy are the italicized sentence in the quote below and a footnote that has nothing to do with the remark above.³⁴

The content of any science is profoundly constrained by the language within which its discourses are formulated; and mainstream Western physical science has, since Galileo, been formulated in the language of mathematics. But *whose* mathematics? The question is a fundamental one, for, as Aronowitz has observed, “neither logic nor mathematics escapes the ‘contamination’ of the social. And as feminist thinkers have repeatedly pointed out, in the present culture this contamination is overwhelmingly capitalist, patriarchal, and militaristic; “mathematics is portrayed as a woman whose nature desires to be the conquered Other.” Thus, a liberatory science cannot be complete without a profound revision of the canon of mathematics. As yet no such emancipatory mathematics exist, and we can only speculate upon its eventual content. *We can see hints of it 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. (Italics added in the sentence just above.)

Thus, Boghossian inflates obscure talk of seeing hints of a canon of mathematics for a liberatory science into an “in your face” assertion that one logic is better than another for leftist politics and then criticizes the editors of *Social Text* for letting this “transparent nonsense” pass! This is bad. Boghossian had an obligation to either show his readers the actual statement with which the editors were confronted or to back off.

Complex number theory? Boghossian also criticizes the editors for not ‘recognizing’ that complex number theory is not a branch of mathematical physics, much less a new one, but rather one of the most basic subjects of traditional, mainstream mathematics. The term ‘complex number theory’ appears in Sokal’s article in a remark by Robert Markley that he quotes and then in a learned-looking footnote that he appends to the remark. Here is Markley’s remark followed by the footnote.

Quantum physics, hadron bootstrap theory, complex number theory, and chaos theory share the basic assumption that reality cannot be described in linear terms, that nonlinear---and unsolvable---equations are the only means possible to describe a complex, chaotic, and non-deterministic reality. (Markley)

A minor quibble: It is not clear to me that complex number theory, which is a new and still quite speculative branch of mathematical physics, ought to be accorded the same

³⁴ Sokal footnotes this remark with a relatively uncontroversial statement about the commercial uses of fuzzy logic in Japan and elsewhere. “Fuzzy systems theory has been heavily developed by transnational corporations—first in Japan and later elsewhere—to solve practical problems of efficiency in labor-displacing automation.”

epistemological status as the three firmly established sciences cited by Markley.
(Sokal)

Complex *number* theory? Markley almost surely means complex *systems* theory or complexity theory. To see that Sokal agrees, notice that, when we make this change in his footnote, it becomes a first cousin to a true statement.³⁵ So, apparently, what we have here is a bit of mimicry at Markley's expense.³⁶ Is it transparent? Yes, in the sense that if one knows enough about the subjects mentioned in Markley's statement, the word "number" sticks out like a sore thumb. But was it transparent to Boghossian? No, it went right by him. His explanation of why the passage is transparent nonsense is based instead on his erroneous belief that a certain well known area of mathematics is called 'complex number theory' (in which case, the expression is not available for a new and somewhat speculative branch of mathematical physics). This is false. Look in mathematics texts or course listings; you will not find this expression. There is no area of mathematics that goes by this name.

True, if a philosopher or even a physicist were to use this expression, as Boghossian did, to refer to the area that goes by such names as 'complex *function* theory' and 'complex analysis,' a mathematician would understand what he is trying to say. But if a mathematician were to use it, other mathematicians would be puzzled. When I tested this on two of my colleagues, one immediately replied, "There is no such thing," and the other later confessed, "I assumed that you meant 'complex *function* theory.'" If Markley had misused "function" instead of "number," Boghossian could legitimately have milked the footnote for an extra laugh. But he didn't. Thus, once we recognize Sokal's mimicry, the joke is over. It is true that the editors of *Social Text* failed to get it. But so did Boghossian, who had the great advantage of knowing that the article was a parody.³⁷ Should we fault him for not consulting an expert? Perhaps he did. Perhaps he consulted Sokal, who also got it wrong.³⁸

A non-commuting operator? In mathematics, two operations are said *to commute* if reversing the order in which they are performed does not effect the result.³⁹ In "Some comments on the parody,"⁴⁰ Sokal says that the first major blooper in the section of the parody entitled "Quantum gravity: string, weave or morphogenetic field?" is:

When even the gravitational field--geometry incarnate--becomes a non-commuting (and hence nonlinear) operator....

³⁵ It is a stretch to call this new speculative area of science a branch of mathematical physics but people sometimes do.

³⁶ Sokal calls it "an ironic joke" at Markley's expense.

³⁷ And, initially, so did I because I didn't bother to read the footnoted text. Until I did, I took the joke to be that 'complex number theory' is a meaningless combination of two meaningful expressions, 'complex number' and 'number theory.'

³⁸ See *Fashionable Nonsense*: 266.

³⁹ As linear operators on the x, y plane, reflection about the x-axis and counterclockwise rotation about the origin by 90 degrees *do not commute* with each other. If we first reflect and then rotate, (1,0) goes to (0,1) but if we first rotate and then reflect, it goes to (0, -1).

⁴⁰ See *Fashionable Nonsense*: 263.

His exact words are:

The first major blooper in this section concerns the expression “noncommuting (and hence nonlinear).” In actual fact, quantum mechanics uses noncommuting operators that are perfectly *linear*. (“Some comments on the parody,” *Fashionable Nonsense*: 263)

But this explanation is itself a blooper. The line in the parody also is one but not for the reason he thinks. I will explain why in a moment but first here is Steven Weinberg making the same mistake plus a second one that Sokal just barely avoids.

Sokal refers to the gravitational field in this theory as “a noncommuting (and hence nonlinear) operator.” Here “hence” is ridiculous; “noncommuting” does not imply “nonlinear,” and in fact quantum mechanics deals with things that are both noncommuting and linear. (“Sokal’s hoax” *New York Review of Books* August 8, 1996: 11-15)

Reading Sokal and Weinberg, it may seem that if we delete “and hence nonlinear,” the nonsense will disappear. Let’s try it.

When even the gravitational field---geometry incarnate---becomes a non-commuting operator, how can...?

But there is no such thing as *a* noncommuting operator! This is the nonsense, whether or not Sokal intended it to be. When he says, “In actual fact, quantum mechanics uses noncommuting operators that are perfectly *linear*,” he means that quantum mechanics uses sets of *two or more* linear operators that do not all commute *with each other*, which is true but irrelevant. It is only Sokal’s blurring of singular and plural that makes it seem otherwise.

As for Weinberg, his first mistake is to fail to recognize that the “a” is nonsense. The “hence” merely adds insult to injury. Secondly, his remark that “quantum mechanics deals with things that are both noncommuting and linear” is, on its face, gibberish. There is no *thing* in quantum mechanics or anywhere else that is *both* noncommuting and linear. Linearity is a property of one operator. Noncommutativity is a property of a pair of them or, more generally, of a set of at least two. What Weinberg means is what Sokal means—quantum mechanics deals with sets of *two or more* linear operators that do not all commute *with each other*. Again, this is true but irrelevant for Sokal’s remark about the gravitational field becoming *a* non-commuting operator.

I assumed he was making a joke that I didn’t get. A few years ago, while surfing in John Searle’s *The Rediscovery of the Mind*, I noticed a bizarre blunder, the likes of which I had never seen.

Suppose that we have a computer that multiplies six times eight to get forty-eight. Now we ask, “How does it do it?” Well, the answer might be that it adds six to itself seven times. (*The Rediscovery of the Mind*: 213)

I quickly confirmed that if Searle had said “eight,” as the rest of humanity does, his argument would have proceeded without change.⁴¹ But he did not just say “seven” and continue as if nothing had happened. He tagged the remark with an endnote, the gist of which was that everyone is out of step except him.

People sometimes say that it would have to add six to itself *eight* times. But that is bad arithmetic. Six added to itself eight times is fifty-four because six added to itself zero times is still six. It is amazing how often this mistake is made. (238)

I burst out laughing, both at Searle’s simplistic analysis of this tricky piece of language and at his conceit that he had discovered a mistake in arithmetic, or at least in the use of an arithmetic expression, that the rest of us dummies had missed.⁴² Yet a colleague of mine, who is both a great mathematician and a great reader, read Searle’s book without noticing this. When I asked how he could have missed it, his excellent explanation was, “I assumed he was making a joke that I didn’t get.” Fair enough, but why were our takes on this so different? I believe it was because, in my opinion, Searle had already demonstrated that he was capable of such nonsense, whereas my colleague, who knew of him mainly as the author of several books that he admired, assumed that Searle was too intelligent a writer to mean what he *transparently* seemed to mean.

For me, the relevance of this anecdote for how the editors of *Social Text* may have read Sokal’s article is that, if one is in a sufficiently respectful frame of mind, “I assume this is a joke I don’t get” can cover a multitude of sins. This does not bear upon the charge of not requesting explanations.⁴³ But it does illustrate how easy it can be, if one trusts in the good sense of an author, to fail to acknowledge what one would otherwise take to be transparent nonsense. See also my discussion in “Reading and relativism” (36-38) of two readings—one forgiving, the other not—of an apparently nonsensical statement by Thomas Nagel about special relativity. So much depends upon the reader’s trust!

Appendix

Six added to itself twice? Had Searle been content to point out that his superficially plausible rule for ‘6 added to itself *n* times’ is inconsistent with the way we use it, it would have been a nice, maybe even thought provoking, observation. But for him to talk as if *he* knows that *we* mean to follow *this* rule and therefore have been using the expression incorrectly is just this side of delusional. Our use *is* in accord with a rule but it begins with $n = 3$, not $n = 0$. For 3 and up, ‘add 6 to itself *n* times’ is an informal paraphrase of ‘multiply 6 by *n*’ that serves to remind us that multiplication is repeated addition. But ‘add 6 to itself *twice*’ does not work as a paraphrase of ‘multiply 6 by 2.’ This is because the meaning of ‘add 6 to itself’ is not up for grabs and *it* is what we do *once* to multiply 6 by 2.

⁴¹ In fact, even better because it wouldn’t have been interrupted by this irrelevancy.

⁴² See the analysis in “Six added to itself twice?” in the appendix.

⁴³ But see “An inescapable conclusion?” above.

Finally, I have heard it suggested that Searle's talk about 'bad arithmetic' is meant to be a joke and that his serious point is that, even though his rule for 'add 6 to itself n times' is inconsistent with the way we use this expression, it is a *literal* reading of it. I don't believe it. The only literal reading I know for 'add 6 to itself three times' is $6 + 6 = 12$, $6 + 6 = 12$, $6 + 6 = 12$.⁴⁴ By contrast, following Searle's rule for this case means doing $6 + 6 = 12$, $12 + 6 = 18$, $18 + 6 = 24$. Here, we do add 6 three times but we add it *to itself* only once. How then can this pass for a literal reading of 'add 6 *to itself* three times'?

⁴⁴ Searle's note reminded one mathematician of the anecdote of a student who answers the question "Take 7 away from 93 as many times as you can, what is left?" with "I get 86 every time."