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Author(s): Gita Chadha

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Sokal's Hoax and Tensions in Scientific Left

Gita Chadha

Though apparently an attack on a specific genre of writing in the social sciences, i.e., the post-modernist one, the focus of Alan Sokal's hoax extends over the entire methodological debate in science, natural and social. It also extends over the entire range of science critiques that seek to reinterpret the canons of mainstream modern science. However, these critiques of science, it is argued here, cannot simply be pushed into the political left or right nor can they be interpreted as pro- or anti-science – which is what Sokal's position finally amounts to.

ALAN SOKAL, a professor of physics at New York University, submitted an article called 'Transgressing Boundaries: Towards a Transformative Hermeneutics of Quantum Gravity' to *Social Text*, a "leading North American journal of cultural studies" [Sokal 1996a]. As the title suggests, Sokal's article seeks to break the boundaries of physics and philosophy, allowing for an interdisciplinary approach. Sokal states clearly in this article that the starting points of his essay are "those features of the theory of quantum gravity which are relatively well-established (at least by the standards of conventional science) and his own attempt is to draw out their philosophical and political implications". Sokal proceeds, cautiously and tentatively, to discuss the outlines of a "liberatory post-modern science" [Sokal 1996a]. The article locates itself within the deep conceptual shifts that have occurred in science itself particularly due to the contributions of physicists like Heisenberg and Bohr, in studies in the history and philosophy of science that have challenged the canons of mainstream science reflected in the works of Thomas Kuhn, Paul Feyerabend, Stanley Aronowitz and David Bloor, and in feminist and post-structuralist critiques represented in the works of Caroline Merchant, Evelyn Fox Keller, Sandra Harding and Donna Haraway. After the article was published in the spring/summer 1996 issue of *Social Text* titled 'Science Wars', Sokal declared that the article was a hoax, a "physicists' experiment with cultural studies" aimed at testing if a journal like the *Social Text* "would publish an article liberally salted with nonsense if (a) it sounded good and (b) it flattered the editor's ideological preconceptions?" Sokal declares that his experiment, a modest and "admittedly

uncontrolled" one expresses his intellectual concerns over the "apparent decline in the standards of intellectual rigour in certain precincts of American academic humanities". Though Sokal's (1996b) declaration of the hoax was carried in the journal *Lingua Franca*, he submitted an afterword to *Social Text* in which he declares himself to be "an unabashed old leftist...and a stodgy old scientist" whose credibility as a true leftist is established by the fact that he "after all...taught mathematics at the National University of Nicaragua under the Sandinista government" [Sokal 1996c]. His other claim to being a true leftist is, of course, the noble political motives behind his above-mentioned hoax. While wanting to make "a small contribution toward a dialogue on the left between humanists and natural scientists", Sokal justifies this act by his political concerns over the historical *volte face* on the part of the new left that has led to a challenge (read 'betrayal') of the worthy heritage of the left which has always been "identified with science and against obscurantism", where "rational thought and the fearless analysis of objective reality (both natural and social) are incisive tools" for a progressive social critique. Specifying further, Sokal states that his hoax aims "to combat a currently fashionable post-modernist/post-structuralist/social constructivist discourse – and more generally a penchant for subjectivism" which he believes is inimical to the values of the left. In a clever footnote to this statement, Sokal confesses that though the subject matter of social sciences makes for "many special (and very difficult) methodological issues" in relation to objectivism, "the basic epistemology of inquiry ought to be roughly the same for the natural and social sciences". Even though

Sokal's hoax has been elevated subsequently to the level of a classic [Jay Rosen 1996] and has received extensive coverage in the western media, it has remained largely undebated in India.

While an article, which aims at purportedly developing ideas from science and extending them into post-modern philosophy does not disqualify itself by this very intention (in fact, it is considered welcome for a multidisciplinary approach) Sokal's article in *Social Text* does leap into unsubstantiated speculations, especially in the conclusions where he presents the urgency for developing an 'emancipatory mathematics'. Yet it needs to be pointed out that an article such as Sokal's is difficult to referee by the standards of any journal, strictly academic or otherwise. The fact of such an article, its merits and demerits are therefore open to debate and discussions only after its reception. The validity of an article in a field as young and still undefined as cultural studies need not be decided at the referee's table but at later stages in history. Tentatively formulated articles such as Sokal's might, in fact, play an important role in the development of ideas which are still speculative in nature.

Though apparently an attack on a specific genre of writing in the social sciences, i.e., the post-modernist one, Sokal's attack extends over the entire methodological debate in science, natural and social. Significantly, it also extends over the entire range of science critiques that seek to reinterpret the ontological, epistemological and methodological canons of traditional science (read mainstream modern science). I argue that these critiques of science can neither simply be pushed into the political left or right nor can they simply be interpreted to mean pro- or anti-science, which is what Sokal's position eventually amounts to. Moreover the debates surrounding subjectivity and objectivity in the methodology of science (social and natural), cannot be categorised as 'sense' or 'nonsense'. Sokal's aim of putting a check on the proliferations "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", only indicates a positivist bias towards the natural science and a lack of comprehension of the dimensions of the debate around subjectivism generated not only by the social sciences, but also within the physical sciences (for example, Heisenberg's interpretation of quantum mechanics which Sokal in his article uses as a substantiation of his argument and in

the afterword debunks it as a vulgarisation), which if heeded and heard, could provide important insights for the methodology of science. Consequently, Sokal's act and his position of a self-styled judge, has the potential of becoming, as feared by the editors of the *Social Text*, "an academic turf war between scientists and humanists/social scientists, with each trying to outsmart the other", rather than a way towards a dialogue.

More importantly, the entire political justification of the hoax, located on the side of the left, might backfire and lead to one more case of left eating the left. While the differences emerging between the orthodox Marxist position *vis-a-vis* science and rationality and the new leftist discourses are serious, a loosening of the ideological stranglehold of scientific rationality that grips the former will go a long way in developing sharper intellectual tools required for liberatory movements against the status quo. On the other hand, the problems in post-modernism with regard to developing valid theoretical justifications for progressive social movements need to be considerably sharpened in order to gain a critical edge over obscurantism. Only a serious and open dialogue between these streams of the left can lead to developing a constructive consensus. Hoaxes such as this do not pave the way for dialogue but simply lead to a further distance, in this case not only between the natural and social scientists but also between the old and the new, the 'orthodox' and the 'radical' left, making each more defensive than the other. While in their response to Sokal, the editors' collective of the *Social Text* sees it as "a non-refereed journal of political opinion and cultural analysis – in the 'little magazine' tradition of the independent left...with criteria and aims quite remote from a professional scientific journal", they also claim to have roots within "the Marxist project". Situating the *Social Text's* ideology and spirit, its founding member, Stanley Aronowitz, states that "we were appalled by the orthodox Marxist claim that culture had nothing to do with burning issues of economic justice and were equally opposed to a 'culturalist' deconstruction of reality in which all that mattered was language" [Aronowitz 1997]. Though the middle ground between economic and cultural determinism, sought by the new left might appear to be diminishing in the post-modernist discourses, one of the present editors of *Social Text*, Bruce Robbins, argues that the multi-cultural or post-modern left has been "part of a search for a common ethos – a centre, however imaginary – that will aid progressive social movements" [Robbins 1997]. It becomes difficult, therefore, to classify a journal like *Social*

Text. Though it appears to have moved from its roots in the new left into the post-modern positions, *Social Text* not only represents the tensions between these axes (rather than uncritically aligning with either) but also the difficulty in finding a resolution to the problems between them. It is within this framework that science has come under scrutiny. But sadly, a belief in the epistemological supremacy of science and the ethical supremacy of scientific communism, leads to a mindset in many, like Sokal, which when pushed into public forums, makes only for polemics rather than for dialogue. Such polemics, in the case of science propel it either towards objectivism or subjectivism. As scientist and feminist Evelyn Fox Keller (1989) points out "attempts to occupy a middle ground must contend not only with the conceptual difficulty of formulating such a position, but also with the peculiarity insistent pressures of a public forum urging toward one pole or the other". Sokal's attack on a fashionable post-modern academia, in its political earnestness, becomes precisely such a public forum, which leaves no space for a middle ground for a genuine dialogue within science and between science and progressive social movements.

Like most ardent old leftists, Sokal equates modern science with all the epistemic criticality and ethical neutrality that are presupposed by a Marxist progressive social critique, thus overlooking the times when scientific rationality has functioned as an adversary of these rather than as an ally. The feminist studies in science, which have been singled out for attack by Sokal, sharply expose this failing of science practice. Though the emphasis in feminist critiques of science is upon the debates around the ethics of science and the impact of technology on women, feminist theory introduced 'gender' (as opposed to 'sex'), as an analytical category, used not only to critically examine mainstream research in science but also to reconstruct the notion of 'Reason' itself. While feminists like Hilary Rose have argued for a more 'embodied notion of Reason' where 'head and hand' are better integrated, others like Keller have argued for a more 'self-reflexive reason'. With inputs from the developments in science studies, the history of science, philosophy and sociology of science, but also with one foot firmly in the feminist movements and the experience of discrimination in the real world, the feminist critiques of science argue that "modern science evolved out of a conceptual structuring of the world, e.g. of mind and nature – that incorporated particular and historically specific ideologies of gender" [Keller and Longino 1996]. Though it has

been possible to demonstrate an androcentric bias in the content of the 'softer' sciences like the biological or social sciences, the feminist critiques of science – by and large – do not thereby debunk the entire project of science. I will be citing the example of those feminists, ignored by Sokal, who are working to develop a critique of science, from within science. Though Sokal singles out Sandra Harding as a representative of the feminist critique of science, contributions of feminists like Fox Keller and Ruth Hubbard who are attempting to demonstrate an androcentric bias in science are bypassed. Sokal is misleading in the implicit equation that he makes between feminist critiques of science and post-modernism. It should be noted that the convergence between these two streams of thought is not only partial but also a recent development. Early works in feminism and science (i.e., both natural and social science) showed how, in the case of sociology, much of sociological research, its methods, conceptual structures and theories was built up within the male social universe even when women have actively participated in doing so [Smith 1996]. As a reaction, this led to new women-oriented research, but there also developed "a standpoint theory" whereby social institutions could be viewed from a woman's standpoint rather than from an exclusive male point of view. The existence of social facts were, in the process, not denied, but reconstituted. As Ruth Hubbard (1989), biologist and feminist, puts it "Every fact has a factor, a maker". On the other hand, Evelyn Fox Keller started from a critique of unfair employment practices, responsible for the under-representation of women in science, proceeded to a critique of androcentric bias in the content of biological sciences, with the aim of taking the feminist critique into the foundations of science. Though some feminists do argue for a standpoint perspective in natural science too and others argue for a 'feminist' science, Keller hopes not for a different or a feminine or a feminist science but argues that those elements of feminist criticism which seem to conflict with conventional conceptions of science may, in fact, carry a liberating potential for science by freeing it from canonical approaches and leading it towards more reflexivity. She states that "it could therefore benefit scientists to attend closely to feminist criticism" [Keller 1996]. Elaborating further, Keller believes that "a first step in extending the feminist critique to the foundations of scientific thought is to reconceptualise objectivity". She suggests that the objective effort of science – the quintessentially human effort to understand the world in rational terms – need not be abandoned but could

be refined. She states that “we need to add to the familiar methods of rational and empirical inquiry the additional process of critical self-reflection, attending to the features of the scientific project that belie its claim to universality”. While Fox Keller finds herself struggling with her training as a natural scientist and her political commitment to feminism leading to self-reflexive criticality, it is interesting to note that Sokal’s commitment to the leftist ideology and to natural science leads him to the canonical affirmation of both and to dub the feminist critiques as representations of ‘confused thinking’, i.e., thinking that cannot distinguish fact from fiction. While the theory-ladenness of facts and the context-dependence of observations are commonly asserted by feminists, the interesting question raised by feminists is how do facts get sorted out from fiction – by a fool-proof method or by the people using the method [Hubbard 1989]. Most importantly, feminist methodology has aimed at locating the subject and object in the same critical field of study ensuring self-reflexivity.

To suggest also, as Sokal does, that feminist criticisms “do not lead anywhere” and are, therefore, confused is like viewing them standing on one’s head. Feminist critiques are so rooted in the world, that most feminist forays into theory are determined by women’s lived experience or by feminist politics. Even a cursory look through works of feminists on androcentric bias in social or biological sciences will demonstrate the point. Though by itself this need not provide grounds for valid theory, it does lead to a wider base for knowledge systems, allowing for subjectivity and requiring a reformulation of the canonical notion of fact as ‘a reality out there’. On the other hand, the more abstract theoretical formulations in physics are neither rooted in nor lead to the world of experience – does that make these formulations (or all of physics) confused? Besides, to assert that such thinking does not lead to any constructive knowledge is absurd since the development of scientific knowledge, as suggested by Sokal, cannot be understood as a matter of adding more detail or theoretical sophistication to a stable base. This notion of a stable base keeps getting broken, as argued by Thomas Kuhn in his well known book *The Structure of Scientific Revolutions*, during times of scientific revolution when paradigms conflict and compete for supremacy.

Sokal’s attack on Harding in particular and feminism in general not only indicates the intellectual inability on his part to comprehend complex systems of thought but also the political need to suppress movements that counter or challenge the

model of natural science for itself and for society. Though Sokal pompously asserts that he does not need to save natural science from the attacks of literary criticism, it would do good to peep into the feminist critiques of science to see if there is anything after all to be learnt from them. Just as there is something to be learnt from the social sciences in general, which because of the complexity of the subject matter, could provide fresh insights into questions of methodology of science. The positivist model could then, very well be reversed, making the social sciences, and not the natural sciences, the model for scientific research.

The Sokal affair is particularly relevant to debates in the context of post-colonial India, because of the equation that it suggests between critiques of modern science and the political right. Though it is recognised that the cultural critics of science do not speak for the right and are “motivated by deeply egalitarian, radically democratic and staunchly anti-racist sentiments” [Nanda 1997], there are grey areas which demand attention. Coming down heavily on the links between science and culture, Mira Nanda fears that this has opened the door to so-called ‘ethno-science’, ‘Hindu science’, ‘Islamic science’, ‘third world science’, etc., where scientific rationality is subordinated to the cultural forms of life of different communities. While these fears are not unfounded, it is absolutely essential to locate the critiques of science, by the sharpening of intellectual tools, outside of reactionary nationalism and religious fundamentalism, while simultaneously making the crucial shift from the canonical notion of modern science to a more critical one. If the progressive critique of science and of society needs to be located on the side of the left, which as I believe it needs to be, then it becomes essential to search for fresh critical tools in hitherto marginalised knowledge systems while simultaneously reconstituting older ones like the rationality of modern science. When scientific facts, or the method of science help humanist and egalitarian values, they can offer a critical edge but when they fail to provide a basis for these, as they often do, then an alternate interpretative scheme is needed. Since scientific knowledge is open both to progressive and regressive

interpretations, the development of critical social movements become value based rather than value neutral. Social movements that model progress on science without having a critical approach to scientific knowledge itself end up taking an essentialist and canonical view of science. For instance, a movement like the people’s science movement, while demystifying science, does not always critically examine that aspect of science which allows it to ally with oppressive social forces. This not only limits progressive social movements but science too.

In conclusion, one is tempted to say that though Sokal’s experiment with cultural studies has evoked significant responses, the experiment, in itself, is highly subjective and ideological. In his attempt to parody cultural studies, Sokal ignores the political *raison d’être* of movements like feminism within which the science question is integrally related to larger concerns.

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