

Noretta Koertge, April 20, 2001

We're Not in Kansas Anymore!

Introduction: When Renat and I were preparing for this session we noticed the following irony: Although each of us is dubious about the fruitfulness of trying to explain the development of science in terms of the local sociopolitical scene, we each agreed that when it comes to understanding the development of philosophy of science in the last few decades, then the sorts of factors focused on by "new age" approaches to science studies actually play a major role!

Like Renat, what I am giving here are for the most part personal impressions. Like Renat (and Caesar before him!), I am dividing the territory to be covered into three parts. But first a couple of anecdotes just to establish that we are indeed not in Kansas anymore. Recently, Peter Ramberg, a former HPS Hoosier who did his thesis on the history of stereochemistry, wrote me from the Max Planck Institute in Germany. He was interviewing for a job at Truman State in Kirksville, Missouri that would require him to teach intro philosophy of science as well as history of science. Would I mind give him some suggestions for the syllabus he was drawing up?

I said I'd be delighted, and starting looking at my shelf of intro books, wondering if Alan Chalmer's book *What Is This Thing Called Science?* was still in print. That sounded about right for students at Truman whatever. When Peter wrote back, what he actually wanted were suggestions for a unit on feminist approaches to philosophy of science. He thought they might really want to see that on his syllabus. Evidently they did - and Peter got the job.

But not all of the US is suffused in the technicolor glow of over-the-rainbow land. When another HPS Hoosier on the job market this spring actually listed something about feminist perspectives on science in his placement dossier, I got a phone call from a prospective employer: what did that mean? Was our student really a serious analytic philosopher or some kind of --- well, what did it mean? I said this student had a reputation for being a bit contrary and let it go at that.

So while the wicked witch may not be welcome in Kirksville, she's still alive and well in Kalamazoo! Clearly when we generalize about what's happening in philosophy of science today we do so at our own risk.

Part I: Wherein Identity Politics Begat Women's Studies Which Begat Gender Studies Which Begat Feminist Epistemology

My focus today is on the influence of feminism. Part of that is in the interest of time and because it is what I was originally scheduled to speak about. But I also think it is the single most important influence on what is happening in philosophy of science today.

It's well known that the late 60's saw the rise of what came to be called "identity politics" - the attempt to analyze political issues and organize groups to act politically along the lines of race (Black Power), gender (Women's Liberation) and sexual orientation (Gay Liberation). What happened in the 70's was the establishment of various new "studies" programs in the university.

Women's Studies initiatives were enormously successful. [In 1994 there were over 600 undergraduate programs and several dozen at the graduate level.] Like Afro-American Studies programs and the less numerous Gay (later Queer) Studies courses, these initiatives had an explicit double agenda: they were to foster new directions in research and teaching but they were also to promote political activism. In WOST there was a popular slogan that appeared in official mission statements: **WOST is the academic arm of the Women's Movement.**

Thus issues of political expediency could legitimately be invoked at every stage: who should be hired (was a PhD necessary or could experience as an activist be equally relevant?); how should curriculum requirements be set (would interning at a battered women's shelter count for academic credit?); how should essay prizes be awarded (what if the writing was good but the woman seemed not to be an active feminist?)

The weight awarded to such political considerations varied greatly from

university to university and over time in a single university, but they could never be ruled irrelevant once and for all. The issue of whether a given academic decision should be shaped according to what was perceived as good for the movement was always a live one.

WOST programs and departments self-consciously set out to effect a revolution in scholarship as well. At the very first, people simply set out to study *women* - their lives, past and present, their biological, psychological, sociological development in various cultures, how they talk, think, worship, what have you. Here the emphasis was on filling in the gaps and noting how dominant narratives or theories or models would have to be changed if women were to be included. It was as a part of this research program that I was urged to develop a course on Women in Science.

But very quickly the focus shifted to gender - and the new mantra became “rcg”, the study of race, class and gender. Here is a good place to note the strong intellectual connection to social constructionism, for “gender” and “race” are excellent examples of how ideology enters into what John Searle calls “The Construction of Social Reality”. Some programs re-named themselves “Gender Studies” and their research came to include the study of the social construction of “maleness” (how males define themselves in part out of fear of being thought female) and “whiteness” (how part of white identity can be a sense of relief at not being like colored folk) - and how each of these constructions varies by class.

Since the majority of feminist scholars were trained in the humanities, they relied heavily on evidence from “texts” and - here is the connection to post-modernism - learned to read “silences” when there was no overt mention of rcg in their sources. Like Sherlock Holmes (was it in the Hound of the Baskervilles?), who found great significance in “the dog who failed to bark in the night”, they deconstructed references to race-gender-class when they were to be found and recorded absences when they were not .

The change of name from Gay Studies to Queer Studies also reflected the increasing influence of social constructionism and post-modernism. Sexual identity was no longer thought of as something to be discovered or affirmed.

Rather it was a construction and as such open to being re-molded and re-shaped in all sorts of mind-blowing ways. Talk of even the possibility of “gay genes” was now terribly retro. Instead one should think of “performing” one’s chosen sexual and gender preference - the poster children for Queer Studies were transgendered people.

These intellectual commonalities were reinforced by the shared political sensibilities of what came to be called the “cultural left”. Although there was still interest in take-back-the-night marches and direct political action, academics now claimed that writing papers on Lacan’s conception of the phallus or Foucault’s conception of power also qualified them to the honorific label of “cultural worker”.

But what does all of this have to do with philosophy of science? Early on WOST had developed models of “women’s ways of knowing” and theories of feminist pedagogy. Put in a nutshell, what these approaches tended to do was to positively affirm various stereotypes about female mentality and “valorize” them. Women supposedly responded well to non-competitive, cooperative learning situations with a “guide-by-the-side” instead of a “sage-on-the-stage”. They liked to learn experientially, not through abstract analysis. They wanted their knowledge to be concretely applicable and used for humane purposes.

But if such an account of female cognition is any ways close to being correct, we immediately see a strong clash between so-called women’s ways of knowing and at least the stereotyped account of a scientific approach. Feminists were quick to conclude that if more women were ever to take part in science, then science itself had to change. To quote an NSF report by Sue (?) Rossiter, science had to become more “female-friendly”. Less dissecting frogs and controlled experiments and more field work and science-for-the-people projects. [Note the tendency to speak of “women” instead of “gender”, but if pressed most authors would switch to gender talk in order to avoid the charge of “essentialism”.]

There developed a vast array of feminist critiques of science, many of them originating from people who had little knowledge of either science or its

history, sociology or philosophy. And their goal often appears to be to dismantle the authority of and support for science. But influential work was also done by people who had classical training in various branches of what we now call science studies and in these cases the authors often appeared to be wanting to understand science better and perhaps improve its efficiency, as well as promoting political goals.

II. Feminist Incursions Into Philosophy of Science; Resonances With Post-Kuhnian Concerns

As long as one focused on issues of *women* in science, there is no tradition within philosophy of science that would make it plausible that one would turn up anything of philosophical interest. The whole point of scientific method is to render personal characteristics of the scientist irrelevant. But when we switch to talk of *gender* and science, the picture immediately changes. In what is sometimes called the “historical” approach to philosophy of science (an approach which pays a great deal of attention to past - and present - scientific practice), there had been a lot of interest in documenting the role of what is loosely called “metaphysics” on the development of science. If pre-scientific conceptions of the nature of matter influence the development of chemistry and ideas about the cosmos influence astronomy, then even non-feminists should expect gender ideology to have an influence on the development of scientific accounts of reproduction in biology, theories about the relationship between males and females in anthropology, theories about the family in sociology, models of child development and in a myriad of other places in the social sciences.

And such cases were in fact easy to find - one favorite is Aristotle’s account of the passive female egg which supplied the inert matter and the active male which supplied the form. But it was not at all clear what moral should be drawn from such case studies. Philosophers of science from the historical school were interested in questions about discovery, pursuit, how long metaphysically based preconceptions continued to play a role as evidence was collected, questions about incommensurability between conceptual schemes, etc. And here the cases of apparent influence of ideas about gender seemed completely unremarkable.

Those who were specifically interested in gender for other reasons were hoping to draw other morals - that the influences of gender ideology was especially ubiquitous and especially powerful. But even in the history of reproduction that case was difficult to make. Just as conceptions of matter oscillated between atomistic and continuum theories and optics wrestled with wave vs. particle conceptions, so biologists flirted with accounts that gave the egg pride of place. Were we to say that ovular and epigenetic accounts flourished at a period when patriarchy had somehow lost its grip?

Nevertheless, there developed a kind of urban legend about gender and the history of reproduction that even found its way into *Newsweek*. It goes roughly like this: Positivism said that science was not influenced by ideology but feminists have revolutionized our understanding of how science works... For centuries scientists thought the egg was passive and it was the sperm who actively went courting and eventually penetrated the egg. But now [the implication being that this happened after the rise of feminism in the mid-twentieth century] scientists are realizing that the egg also has a say and actively envelopes the sperm of its choice.

But the most that such a feminist research program, no matter how successful, could show was that societal ideas about sex and gender have some sort of impact (we could argue about how much) on the scientific study of subject matter having to do with sex and gender (which admittedly covered a pretty wide domain). But what about physics? And chemistry, and geology? What could gender feminism possibly say about them?

Here some took a sort of Freudian approach to gender and found influences everywhere, as in Luce Irigaray's attempt to argue that the history of hydrodynamics was influenced, and impeded, by male scientists' fear of soft, yielding fluids and their fixation on models employing rigid bodies. Others plunked for a Steady State cosmology, thinking perhaps that the main appeal of the "Big Bang" theory was a Freudian one. The more interesting and sophisticated move was to see whether there might be something distinctively gendered about research methodology.

Since women are more apt to be female-gendered (and since there was already all of this early research on women worthies in science), one started looking for distinctive features of their overall approach. Some of the results were interesting additions to the history of science, but their philosophical significance was less clear. Barbara McClintock may indeed have had a “feeling for the organism” and good at imagining jumping genes, but Albert Einstein (who now turns out to be a right old chauvinist pig) had a “nose for problems” and relied on *Fingerspitzgefuehl* while visualizing rides on light rays. More histories of anti-reductionist and anti-mechanistic approaches to science, including so-called Romantic Science and *Naturphilosophie*, may indeed need to be written, but it’s pretty difficult to make the case that opposition to the “Death of Nature” was ever, or should now become, grounded on stereotypical female sensibilities and values.

Nevertheless, it is perhaps not an accident that at this historical moment there are more women than men hugging trees, sitting in trees, and dancing around trees in rituals centered on Mother Earth - ecofeminism presents an especially sharp critique of our industrial, consumer-driven society. This might be an nice example of what Sandra Harding calls “standpoint epistemology” - what you see, what you find important, how you understand the world, depends on your “standpoint”. And just as Hegel argued that sometimes slaves have a clearer picture of what’s really going on than masters do (we could also draw examples from the BBC series “Upstairs, Downstairs” featuring the servants in an Edwardian household), so, Harding argues, women and other oppressed groups have distinctive viewpoints to contribute to science.

Here again post-Kuhnians had a sort of blase reply: Well, we all know (following Kuhn) that disciplinary commitments (like metaphysics) influence science and that other perspectives may well play a role in the formative stages, but then as evidence piles up.... What are we to make of the case of Jane Goodall? It’s true that she exhibited exquisite patience in observing her chimpanzees. (Or was it doggedness, an attribute with other gender connotations?) And true, she did focus in on the roles of females and the nature of family relationships, thus perhaps reflecting her “standpoint” as a

woman.

But she also documented aggression and murder and cannibalism amongst her beloved chimps. Do these findings also reflect her “standpoint”? One might argue that women often have more to fear from violence than men in our society (unless, of course, one focuses in on life in high schools, the inner cities, fraternities, and prisons) or are at least more apt to find it worthy of study. Now it starting to look like the gendered standpoint spans almost every aspect of human (or primate) existence. But what about her empathy with her subjects and her intense commitment to saving their habitat? How can one look at her face on CNN and not see her gendered perspective shining through!

Don't get me wrong - to me, Jane Goodall is a saint - a much better role model than Mother Teresa - but how different is her standpoint from that of Jacques Cousteau, who also did naturalistic field work, observed all sorts of new behaviors of the great white shark, and formed the Cousteau Society to save the Oceans, all while exhibiting a typical Gallic chauvinist flair?

Longino refined some of Harding's standpoint approach, arguing that a free ranging debate that paid respectful attention to a plurality of viewpoints would certainly be of *epistemic* benefit to science (no matter how conservative our conception of scientific inquiry might be). But Longino went on to make the radical proposal that we should include the likely political repercussions of a scientific research program as a relevant factor in our internal evaluations of it. (This will sound all too familiar to Renat!)

Longino's defense of this proposal is very unclear because in the examples she discusses there are always claims about empirical flaws as well as charges of political infelicities. Sometimes she seems to develop a line of argument similar to what people used to say about simplicity - surely God would not allow the true picture of the universe to be so complex that we could not understand it. Perhaps God would also not design a universe that could be accurately described by sociobiology, or a world in which there were socially relevant kinds of genetic influences on intelligence, ability in mathematics or tendencies to commit violent crimes, or a brain whose

processes could be described with linear models. If one were to adopt such an article of faith, then just as people used to take simplicity as one indicator of truth, maybe we should now take political progressiveness as an indicator of empirical adequacy.

Or maybe Longino is simply reminding us of type II error - if a theory is likely to have bad social consequences we should be especially cautious in adopting it. And adding to that warning the point that sometimes even to raise a question that cannot be quickly answered can cause harm.

On the second interpretation, the one about the cost of error or uncertainty, Longino offers no challenge to traditional philosophy of science although she may add a useful emphasis on the context of application. But on the first interpretation, Longino is proposing that we add political values to the Kuhnian list of cognitive virtues and if that were accepted we would have a distinctively new account of scientific rationality (new at least in *this* historical period of what used to be called Anglo-American philosophy of science).

III. The Present Picture? Schizophrenia

So where do matters stand today with philosophy of science? The prevalent picture of science in the humanities is strongly influenced by feminist research, reinforced, of course, by the writings of post-modernists and social constructionists aspects of the situation I have not dwelt on here. As the story from Kirksville, Missouri nicely illustrates, today, students and faculty alike often expect a philosophy of science course to deal with feminist perspectives on science as well as critiques of technoscience. Textbooks today reflect that market. [Klee's new 1999 collection of readings devotes Part II to "Historicism and its Aftermath", where we find sections on Social Constructivism and Feminism. The second edition of Kourany's anthology [1998] not only begins with a section on the "Social Context in which Scientific Knowledge is Produced", but also integrates essays written from feminist and social constructivist perspectives into units on the traditional topics of the "Empirical Basis" and "Validation" of scientific knowledge. The plural in the title of McErlean's *Philosophies of Science* [2000] reminds us of postmodernist rhetoric

and literally half of that book is devoted to Cultural Critiques of Science, Narrative and Metaphor, and Feminist Dimensions.]

Here at the Editorial Offices of the *Journal of Philosophy of Science*, however, a quite different picture emerges. We get very few submissions that provide even the slightest indication of feminist commentaries on science, apart from the pronouns assigned to generic protagonists. (“Given such and such an outcome, how should Jones update her subjective probabilities?”) More than half of the ones that we do get are written by men. I often choose at least one woman to referee submissions having to do with feminist philosophy of science (a choice that can be justified by their research interests) and they almost all get rejected. So at the center of the profession the impact is minimal. Part of this may be the perpetuation of perceptions that Philosophy of Science is not the best place to send such articles even though Phil Kitcher made a concerted effort to attract submissions that “broke the mold” and I, too, have made some encouraging gestures. However, the PSA biennial meetings have had some sessions devoted to these issues but here again the competition is pretty stiff and the level of interest has not been high.

In our abstract Renat and I promised to some comparing and contrasting - I see one clear difference: In the USA the new directions are associated with the cultural left; in Russia, at least to some extent, they are affiliated with the cultural right. And there is one clear similarity: the new ideas “take” better when they can be smoothly incorporated into existing philosophical traditions.

But in the interests of time, I think we should now throw the floor open for discussion.