Saving the Phenomena and Saving Conventions

A Contribution to the Debate Over Feminist Epistemology

by Hannah Gay

L'article examine la nature des préjugés dans les sciences. Il utilise à titre d'exemple les préjugés basés sur le sexe et soutient que ces derniers changent avec le temps même s'ils ne peuvent pas être éliminés des sciences. Le changement survient non seulement grâce à des méthodes inhérentes aux sciences mais plus souvent par le biais de circonstances historiques.

Foreword

Maggie and I often debated the nature of male bias in the articulated theories of science. On this issue I was more sympathetic, than she was—though not totally—towards arguments for the social construction of science. I can still hear her saying, "but science isn't just a belief system; there is a real world out there and we know something about it." Roughly speaking, her view was that scientific theories aim to be descriptive and that up to a point they are. Biased science certainly exists, but it is bad science and is based on poor method, incorrect data or faulty inference. And the reason for this, aside from the simple one of ignorance, is a social blindness that is not fundamental and could be educated away. As to method, Maggie was especially opposed to reductionist tendencies in science, something she often voiced in print. (See Box, p. 110)

While we both agreed that science has empirical content it is my view that bias is fundamental and unavoidable and that it is only recognizable, if at all, sometime after the fact. The problem is to determine where the empirical content of any given scientific claim ends and where the conventional (or constructed) content begins. I believe this can only be done from some distance in time, and even then only up to a point. While we are mostly blind to current bias, and are unable to avoid it, we can often detect it in the past. It is possible for historians to demonstrate where gender or other biases entered earlier scientific constructions and to analyze how this bias was incorporated into scientific beliefs. Alas, we cannot learn from history how to avoid cultural bias; but we can learn to acknowledge its existence and to recognize that complete objectivity is elusive. What we also learn from history is that it is in the political arena, as well as in the strictly scientific one, that changes in belief and attitude are won. It is this latter point which this article is intended to illustrate. While Maggie aimed to change science from within, this article illustrates how science is also changed by outside forces.

I miss our discussions of this and of other issues. Maggie's fine intelligence, her wide ranging knowledge and her sharp political sensibility resulted in so many illuminating observations. This article, sadly, is an extension of a truncated dialogue. There are of course many other people discussing these very same issues. Our dialogue was part of a greater discourse to which this article is a small contribution.

Bias in scientific theory: some philosophical issues

How should outsiders respond rationally to a productive area of science for which they have deep misgivings of an empirical, moral, or methodological nature? For me one such area is human sociobiology and its use to define male and female natures. Obviously, outsiders cannot join directly in the scientific debates but the history of sociobiological theory holds some lessons on the political aspects of scientific change. We can learn something about how to engage, in a general way, in scientific debates that disturb us.

In her book, *The Science Question in Feminism*, Sandra Harding classifies and describes three approaches to feminist epistemology. Her more recent book *Whose Science? Whose Knowledge: Thinking from Women's Lives*, expands on the problem of

women's knowledge in interesting ways. What Harding labels feminist empiricism is roughly the position that I ascribed to Maggie in the above foreword. It entails the view that sexist bias can be eliminated by doing science 'properly.' (Needless to say, Maggie's views on what was proper were radical). In other words, by pointing out androcentric views for what they are, by education, by clear-sightedness and new research procedures, one can arrive at a gender neutral point of view. But can bias be eliminated? Is it not rather the case that bias can only be replaced? Harding identifies a second epistemological position, namely, the feminist standpoint. Those holding this view (see Hartsock) do take the position that bias is not eliminable. Women, simply because they are women, will see the world differently, and what is needed is science from this feminist standpoint. The idea of a standpoint is nothing new. Marx wrote of a "proletarian standpoint" and the idea of a feminist standpoint is in the same tradition, namely that for social and historical reasons—not for biological ones—people develop group identities and thus view the world from a particular standpoint. And these different views will be at best only partially commensurable. Up to a point, Maggie agreed with this, but, she viewed it as a historical situation which could, with political change, dissolve into gender neutrality.

According to Harding, it has further been argued that the viewpoint of the subjugated in society is morally preferable to that of those holding power. There are two obvious problems with this. Firstly, if beliefs from the feminist standpoint became standard they might no longer be so morally preferable except to those who hold some essentialist view of woman's nature and its superiority to man's. Secondly, it would seem impossible to identify any one feminist standpoint. It is this latter point that, according to Harding, is at the heart of postmodern feminism. Here a non-centred view of things is upheld—especially that there can be no single feminist view of nature and of things within it.

Postmodernism is now fashionable, especially in the university where ideas of progress or of universal truth are often dismissed as misguided at best or pernicious at worst. But, while the dimensions of tolerance and democracy in the postmodern position are morally attractive, there are dangers in denying the ideal of a universal truth, if for no other reason than that there is also something morally uplifting in the ideal of the disinterested pursuit of a truth that we can all share. Further, there is the historical fact that the scientific method has been a singularly successful cognitive tool for women and men from many different cultures. Why, after all, do people wish to pursue science so avidly? Why are women so keen to share in the scientific enterprise? Our view of the world needs to include some recognition of this universal quality of science, namely its apparent universal usefulness as a cognitive tool. On this point Maggie was quite right.

One of the dangers in postmodernist thinking, common also to the standpoint position, is that difference is elevated over sameness, and can thus, despite the profession of a live-and-let-live philosophy, lead to arguments for, and the acceptance of, discriminatory treatment. The argument by Sears in the Equal Employment Opportunity Commission v. Sears Roebuck and Co. United States civil action case is a case in point. By arguing that women are by nature less competitive and less materialist, Sears persuaded the court that women were excluding themselves from management positions and that the company was not guilty of workplace discrimination. (See MacKinnon, 223)

Gail Geltner, "Women and Technologies"
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Darwin and sexual selection: some case notes

Any epistemology must also be descriptive of what happens when scientific theories are accepted. I have chosen a historical example from sociobiology because, in my view, it illustrates rather well why women are distrustful of traditional science.

Darwin, in his *Descent of Man*, argued that much human behaviour is adaptive and has thus been selected. To natural selection Darwin added sexual selection which includes the idea of mate choice. Darwin argued that animals, including humans, choose mates in an attempt to maximize the welfare of their offspring. It was this mechanism that Darwin believed was responsible for the existence of what

he called secondary sexual characteristics, that is characteristics not directly linked to reproduction. He had no direct evidence for this, but it was a plausible theory. Female animals, he believed, have discriminatory powers and select those males that have access to the best resources, who will be able to feed and care for the young or help create the best conditions for them more generally. This theory has certain consequences. Males become the engine of evolution by sexual selection, it is in them that new variations are being selected. Thus one should expect greater variation in anatomy and behaviours in male animals than in females.

One of many consequences of this theory was, "the chief distinction in intellectual powers of the two sexes...shown by man's attaining to a higher eminence in whatever he takes up than can women...poetry, painting, sculpture, music (composition and performance), history, science and philosophy."[1] (Darwin, 558) But, in English Victorian society men and women both exercised mate choice. Darwin made two *ad hoc* assumptions, namely that men owe their "greater powers" to their ancient progenitors when female mate selection was the rule, and that the selected traits are passed on only to male offspring. To explain the latter, further *ad hoc* theories were introduced.

Darwin set a precedent here which has been much copied by sociobiologists. For example, Barash has claimed that the propensity for rape in our species evolved in the primitive hominid environment where such a strategy may have led to reproductive success. (Kitcher, 187)

Philosophical responses to the above historical material: some conclusions

What can be said about this historical example? While some philosophers view the use of the *ad hoc* as methodologically corrupt, it is not invariably so. *Ad hoc* theories can be useful and suggestive and it is worth examining why scientists use them. In Darwin's case the most plausible explanation seems to be that he wanted to give a naturalistic account of what he saw as marked behavioural differences between men and women, but the Victorian male and female environments did not seem sufficiently different to account for the behaviours in terms of natural selection. He thus turned to sexual selection and to mate choice. The observed 'fact' that men in Darwin's time often chose their mates contradicted his theory and so he made the *ad hoc* postulation of different choice behaviour in the distant past.

There seems little doubt that Darwin's choice of data was informed by 19th century cultural conventions. Scientists today are still interested in giving evolutionary explanations for secondary sexual differences, the data they select and the way in which data is stated is now very different. Interesting questions are whether it is any less biased and how will it look to future historians.

Do we make progress? Are the theories of today less free of bias? Firstly, Darwin's ideas are still very fecund. The idea of sexual selection is very suggestive; indeed, so suggestive, that it might be claimed that behavioural ecology is an open ended research project. Since there are behavioural differences among human beings and since we seem to have an unhealthy compulsion to focus especially on gender differences, Darwin's theory can easily be made to satisfy the epistemic requirement of consistency with data. Some basic gender differences likely do exist, but there is great variety within the human species—among and between men and women. The best way to determine what women can or can't do is empirically. There are more worthwhile scientific projects than the exploration of gender difference and I am suspicious of the motivation of those who fund or engage in it.

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In Darwin's day the data on male and female behaviours seemed clear enough. It is no longer acceptable, but the theory has been saved by the selection of data which is acceptable today. It's not a case of saving the appearances. Rather, what we see in this instance is a case of selecting new appearances to save the theory. For example, Darwin's claims about male superiority in artistic and intellectual fields would hardly be considered acceptable today. Indeed, his data here and elsewhere seems quaint—a sure sign that it is no longer taken seriously. So, why do we still need human behavioural ecology or sociobiology? Why is the theory being saved? Surely it is to rationalize those differences that seem important to some people today.

Are the gender differences discussed today more soundly based empirically than were Darwin's? Have we gone beyond Victorian bias or have we simply replaced it with something else? These issues have been interestingly discussed by Philip Kitcher. He claims that the dispute over sociobiology is a dispute over evidence, and a strict feminist empiricist would agree. For Kitcher the "issue reduces to a question about truth pure and simple," (8) namely, how good is the evidence. Yet, while it is necessary for the progress of science, and for obvious political reasons, that theories be attacked in this way, we should be equally aware of the non-empirical factors in a theory's persuasiveness. It is surely not just a matter of "truth pure and simple."

While reading Kitcher's book, I was struck by the many instances in which he suggested plausible alternative explanations for data used by sociobiologists to support their theories. The lesson that he drew from this is that the existence of alternative explanations throws doubt on the truth of any one. The conclusion that I would draw, however, is that it is really a matter of convention which explanation is seen as the most persuasive since they all satisfy the basic epistemic criterion of science, namely they have some data in support of them.

The feminist empiricist position fails us in that it directs our attention solely to data. Theories believed to show bias are attacked by meticulous examination of the data available, the demonstration of its falsity or inadequacy, the demonstration of inconsistency, the discovery of

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errors in statistical analyses, etc. While this kind of analysis is essential to science it will not easily, on its own, topple an over-arching theory as fecund as sociobiology. Indeed the historical rejection of Darwin's own data did not get rid of his theory, nor should it have.

Sociobiology is especially non-vulnerable because as a research programme it is well established, and many of its theoretical claims are interesting and do have explanatory power. They are also ideologically buttressed from outside science. As we have seen, the fact that Darwin's evidence no longer seems plausible is not important. When the data to be explained is a highly complex set of human behaviour, there will always be some behaviour that can be made consistent with some theoretical claims which in turn are consistent with the larger theory. This is what was implied by my claim that sociobiology was likely an open ended research programme.

Above, I claimed that Darwin's evidence no longer seems plausible; I did not claim that it was false. What I meant was that it was no longer plausible as support for his theory. Falsity is not the only reason for dismissing evidence. After all, it is still the case that there are many more successful male artists, scientists, musicians, and philosophers. Nor, alas, is it the case that people have stopped seeking biological explanations for this fact: brain size, hormone, and other theories exist alongside sociobiological ones. But, since women are becoming more and more successful in these fields, historical/sociological explanations for why they did not succeed in the past are becoming more plausible than naturalistic ones. Sociobiology has had to move to other data to make its point. Let us consider in a little more detail why this is so.

There seems little doubt that the women's movement has, over many decades, helped fashion the discourse on sex difference and has helped remove old biases. This has led to changes in social convention, which is why some of Darwin's writing seems almost comic. Could he really have believed all that? Change in cultural conventions has led to change in the conventions of scientific discourse. In the case of the science of human behaviour, changing social conventions has had as much to do with its evolution as has anything internal to science. Just as we can now recognize that Darwin had to resort to *ad hoc* claims in order to save certain Victorian conventions, ones that his theory could ill afford to be inconsistent with, so it is likely that future historians will be able to see how today's scientists need to make their theories consistent with contemporary bias. It is of course much easier to see this, even *post hoc,* in a human science. Theories in physics and chemistry are likely to be consistent with social conventions more generally, and not need the kind of tell-tale *ad hoc* adjustments that Darwin's theory did. In their critiques of these sciences feminists need, as Maggie did so well, to focus more on research priorities (which are far from desirable) and methods, and on whether these meet the needs of women, than on the ideological content of the theories themselves.

In the case I have described, it would appear that changes within a science were affected to a high degree by historical circumstance, specifically by female emancipation. This is not to say that contemporary sociobiology is not still a threat to women. In my view it is. However, if this case carries a more general lesson, it is that political activity outside science can be a highly effective agent for change in scientific knowledge, especially in the biological and human sciences. We don't need to accept the scientists' version of truth if it seriously conflicts with our views of what we are and of what is, and what is not, possible for us.

The Darwin example, and by extension human sociobiology more generally, is problematic for the strict empiricist. One could take the view, as many have, that all the ad hocery was simply bad science. One can, as many have, construct an ideal normative empiricist epistemology which excludes the *ad hoc*. But such an epistemology would lack descriptive power and would classify Darwin as non-scientific. It would not be useful.

We need to focus more generally on the problem of consistency. What, historically, have scientists done in this regard to have made science so successful? What seems fairly obvious is that scientific theories must be consistent with observation. This, it would appear, is the most basic epistemic requirement and one that has been long recognized. But what this means exactly, what consistency between theory and observation is, has been a subject of interest to philosophers for hundreds of years. It remains a problem. Twentieth century philosophers have complicated things even further by questioning whether observation can ever be free of theory. Postmodernists would claim that it cannot and that this in part justifies the non-centred approach. It would appear that the Darwin example could support this position. Darwin's male upper-class British Victorian standpoint so clouded his vi-

sion that his observations were not (and could not be) free from theoretical preconceptions. Another approach, however, would be to say that in the strata of Victorian society observed by Darwin, men and women were then roughly as he described them, and his only mistake was a theoretical one, namely one of viewing Victorian upper class behaviour as universal, of failing to realize that things could change, or be different elsewhere. But this theoretical mistake surely was the consequence of a Victorian standpoint. In the relativistic, post-modern late twentieth century, such a mistake would be less likely. We are more likely to go to the other extreme—"we see it this way but *they* can't possibly do so." We deny the possibility of universal experience. Surely this, also, is a mistake.

Perhaps we need to pay more attention to the problems of consistency as they apply to theory-theory, rather than to theory-observation, relationships. For a scientific theory to be convincing it must save more than just the appearances. It must also save a standpoint and all the important theoretical baggage that goes along with that. I happen to believe this and for this reason am sympathetic to the idea of a socially constructed reality. But this is an idea that must be modified.

In my view, it is unfortunate that the philosophical position explored earlier this century by Henri Poincaré[2], a philosophy that retained the observation-theory distinction while recognizing the importance of convention, became sidelined and did not significantly develop. His model fell outside the major fashions of this century. It doesn't satisfy those who want to see science's aim as strictly objective and scientific theories as strictly true or false descriptions of reality. It doesn't satisfy those who want to collapse the theory-observation distinction. It doesn't satisfy those who see scientific theories as merely instrumental (doing nothing more than saving appearances). And it doesn't satisfy those who see science only as social construct.

Perhaps there can be no universally agreed upon observations (though I personally doubt this) but surely there is much intersubjective agreement on a vast number. There is much that women and men of varying backgrounds can agree on. Feminist philosophers should not turn their backs on this. We need to make sense of it. There is, as Poincaré claimed, a distinction between what is intersubjectively agreed on as observation, and theory. We can all agree that there were fewer (though they were not as rare as Darwin imagined) female than male composers up to the age of Victoria without agreeing why this was so. With today's historical perspective we can see where Darwin incorporated bias into his theory on this topic. He had, though unconsciously, to save other theories; namely theories subsumed by his more general Victorian standpoint. Without them any new theory would not carry conviction for him, or for those he wished to persuade. Similarly, today's claims of gender difference will carry conviction only if consistent with culturally dominant theoretical views. Cultural conventions cannot be set aside from science. But, as Poincaré realized, they can be changed. Women will not change science in their favour without changing the socio-cultural climate more generally.

A model of a Poincarean variety will allow for pluralism more generally at the theoretical level while not denying the possibility of broad consensus on some issues. It also saves the morally uplifting idea that we all seek the truth, a universal truth. It leaves as separate the question of whether such a goal is achievable. In some areas of physics or chemistry we may all believe, possibly incorrectly, that we have reached truth, that somehow a pluralistic cross-cultural consistency has been reached. Further, when consensus is not reached, we need not sit back in a state of pluralistic post-modern tolerance, though often that will be the appropriate mode of behaviour. Nor are we obliged to do science—we have political options. For the strictly postmodern thinker this variety of options, scientific and political, would not be available, at least not without self-contradiction. The feminist empiricist, too, has fewer options than the conventionalist since, for her, political action shouldn't count for much in science except at the level of problem choice, etc.

Scientific belief is a complex of empirical observation and social convention. Only later, and then never completely, can one begin to see where, for any given theory, empirical content ends and convention begins. If this were more widely accepted, scientists would, by implication, be more modest in their scientific claims than they tend to be today. This should be especially so in the human sciences. At the same time we would have a model that could explain the viability, and indeed vigour, of the scientific enterprise. It would also give women another direction in fighting scientific claims that seem intuitively false and/or dangerous. When theories are seen clearly as being consistent both with observation and other theories, and that these other theories include social convention, then it should become obvious that disagreeable science can legitimately be countered not solely on scientists' terms as currently construed.

Hannah Gay is a faculty member in the History Department at Simon Fraser University. Her research, in areas of 19th and early 20th century science, focuses on how scientific ideas are accepted and rejected. She worked with Maggie and others in the late 1960s Vancouver Women's Caucus and enjoyed a long friendship with Maggie stemming from that time.

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[1]This is the book in which Darwin articulated his sexual selection and mate choice theories.

[2]Poincaré's works (listed below) were very influential earlier this century. Logical empiricists took much from them but the idea of theory as convention or metaphor, as Poincaré often put it, was never worked through by those wishing to save the empirical dimension of science. Instead his idea was the jumping off point for the total collapse of the theory-observation distinction. This started early. As Poincaré wrote of this student Edouard Le Roy, "Ce qu'il avait de plus paradoxical dans la thèse de M. LeRoy, c'était cette affirmation que le savant crée le fait." (1912, 221)

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