

Feminist Science and Participatory Democracy

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Introduction

A male philosophy colleague of mine portrays the history of philosophy as the history of epistemology and regards political philosophy as peripheral. Disguised androcentrism? Another colleague admonishes me for not sticking to purely epistemological issues in a philosophy of science course and for straying out of the legitimate philosophical domains into the politics of science. Disguised political bias? An administrator rejects a course proposal on utopian thinking because it does not have sufficient intellectual content. Disguised anti-radical?

Are these isolated views related to feminism? Are androcentricism, epistemological hegemony in political theory, and anti-utopianism related? In this paper I examine the interface between these views by analyzing the attempt by some feminists to envision a feminist science by constructing a feminist epistemology. After evaluating the problems with this project (for example, that a focus on epistemology can place feminists in an androcentric trap), an alternative vision of a participatory politics and epistemology is outlined. This intellectually respectable utopian version of a feminist standpoint challenges androcentrism in science by placing political theory and politics at the center of philosophical concerns, contrary to my colleagues' wishes.

A Future Feminist Science

What would a feminist science look like? Would it look very similar to what scientists do now except for having more females involved in the enterprise? Would a feminist science examine a different set of problems than those currently in vogue? Would a feminist science radically transform the way scientists explain, predict, and experiment?

Elizabeth Fee rejects the feasibility of imagining a feminist science. We can expect a sexist society to develop a sexist science, equally we can expect a feminist society to develop a feminist science. For us to imagine a feminist science in a sexist society is rather like asking a medieval peasant to imagine the theory of genetics or the

production of a space capsule; our images are, at best, likely to be sketchy and unsubstantial (Fee, 1981, p. 22).

Contrary to Fee's example, the stakes for a feminist science do not include the skill of predicting a specific theory or forecasting the development of a technology. At stake are the broad outlines of how science should be epistemologically and politically structured. Nor does the utopian project necessitate as wide a time gap as between the medieval period and today. The future is much closer at hand.

Certainly, imagining a future feminist science is no easy task. Nevertheless, the enormity of the project should not deter the imaginative faculties. The imaginative project provides a long-needed perspective for evaluating our current scientific state of affairs. This critical perspective is not the only one, nor does it have to be a static and unchanging one. Imagining where we are going helps us judge where we are. Since future-thinking occupies no prominent political place in our culture, our images are woefully inadequate. Developing more substantial images constitutes the challenge. Utopian thinking can have a liberating effect (see Goodwin and Taylor, 1984 for an excellent defense of this).

Also, contrary to Fee, the actual or imaginative construction of a feminist society is not a pre-condition for imagining a feminist science. Science and society are much more intricately related. Imagining a feminist science is not divorced from societal concerns. By imagining a feminist science we are imagining aspects of a feminist society. There is no single one-way connection going from society to science. Science does not neatly follow on the coattails of society. Scientific developments can reflect, mystify, hide, and foretell social changes. Given the dominance of science in our culture the utopian science project is an integral part of the struggle for a feminist society. So, need to collectively map out what a feminist science would look like.

Standpoint Epistemologies

From what standpoint can we envision a feminist science? For many feminists, epistemology provides the framework for constructing a feminist science (Harding, 1986), even though some (Flax 1986 as noted in Harding 1986) contend that there is no one feminist epistemology. This (these) standpoint epistemology (epistemologies) is (are) completely different from the empiricist-based epistemology supporting current gender-biased science.

Hilary Rose portrays one of these standpoint epistemologies.

A feminist epistemology derived from women's labour in the world must represent a more complete materialism, a truer knowledge. It transcends dichotomies, insists on the scientific validity of the subjective, on the need to unite cognitive and affective domains; it emphasises holism, harmony, and complexity rather than reductionism, domination, and linearity (Rose, 1986, p. 72).

Constructing an epistemology along these lines is a challenging and noble task. But it just may be the wrong, or at least, a misleading, task. Epistemology, as I will try to show, is the wrong standpoint to emphasize for it devalues the political dimension.

Treating epistemology as the fulcrum point is a well-executed political ploy in both philosophy and science (see Gunnell, 1986). Almost every history of modern philosophy takes epistemological questions as primary and political ones as peripheral. Although the epistemological turn is evident in modern philosophy, this history is distorting. For example, Wittgenstein's *Tractatus* is only misleadingly interpreted from an epistemological framework which ignores the cultural, political, and ethical context out of which the work grew and through which we can provide a more plausible reading (Janik and Toulmin, 1973).

Likewise most philosophers view science primarily in epistemological terms. Science only secondarily has a politics or even a history. One way this epistemological hegemony serves as a political ploy is that it diverts attention away from other, particularly political, questions. If science as a means of attaining knowledge is kept in the foreground, then science as a means of organizing power for men remains hidden in the background. A preoccupation with epistemological questions does not prevent political questions from being asked, but it makes asking them less likely. Within the epistemological domain political questions are taken less seriously than others. Even "admitting to political interests makes the arguments less objective, and thus less valid" (Birke, 1986, p. 158) when viewed through epistemological eyes.

Before considering an alternative political standpoint it is important to note what I am not saying. I am not saying that epistemology is irrelevant. To the contrary, as I will try to show in the next section, political standpoints are entangled with epistemological ones. What I am arguing against is the primacy of any epistemological standpoint. Nor am I saying that feminist standpoint epistemologies are not political (Harding 1986, p. 194). My worry is that they are not political enough. Indeed, Enlightenment epistemological, as Harding (1986) calls them, underpinnings of science are a problem but not simply because of their specific epistemological claims, however objectionable they are. It is also because our Enlightenment legacy takes the primacy of the epistemological framework as sacrosanct.

To engage in epistemological combat by arguing, as Rose does, for the validity of the subject, for the inclusion of the affective, etc., is to fight androcentrism on male turf, the epistemology battleground. As Ruth (1981, p. 49) notes epistemology is legitimating god of philosophy.

Standpoint Politics

Instead of carrying out the debate primarily in epistemological terms I propose replacing the epistemological dimension. Within the political arena participatory democratic theory serves as a natural ally for feminism.

Both oppose domination and advocate empowerment.

Feminists have designed noble and, at times, frustrating experiments in participatory democracy, but these experiments have not been only a product of contemporary feminists' efforts. Throughout women's her-story participatory forms have been employed. Other standpoint politics for feminism are very important, but participatory politics, even though often ignored by others, occupies a special place.

Yet, participatory theorists ignore their common ground with feminists. Ignoring experiments in participation by women is no easy feat for participatory theorists. Somehow they manage to do just that. Even Carole Pateman (1983) laments the omission in an earlier work, which has become a classic in participatory theory (1970). Two of the most recent works on participatory theory (Barber 1984, Green 1985) hardly even mention feminism to say nothing of participation by women.

Assuming a reconciliation between participating theory and feminism, what does this have to do with feminist science? The question is difficult to answer if science is primarily viewed in an epistemological and only secondarily in a political framework. Raising any political questions seems inappropriate with epistemology at the helm. However, if science is primarily seen as a means of organizing power, then the project of democratizing science is more appropriately targeted.

The most obviously political feature of science is its institutional structure. The way science has historically developed as an institution is one way power has been organized in science. With a relatively small percentage of GNP expenditure on science prior to World War II there was little governmental interference in science. Now the influence of science, radically changing the power dynamics of science, is enormous (Dickson, 1984). For example, scientists now directly influence governmental policy decisions in their roles as consultants.

The clash between this elite institutional structure and participatory democracy could not be more dramatic. Rose and Rose (1976, p. 33) estimate that "some 200-300 key decision-makers—primarily scientists—constitute the inner elite out of a total scientific work force of some two million". Even if that figure is exaggerated, participatory theorists would flip that power dynamic on its head so that the 1,999,700 or so workforce controlled more of the power-base. The challenge to participatory theory is not only to find means of control for the workforce but also for society. Decisions about science are now largely made by the scientists themselves with little outside policing. Only a few controversies pass before the public eye. The only controversy ever brought to the public by the scientists themselves was recombinant DNA and that was done very reluctantly and in a very orchestrated manner. Hiding from public scrutiny is completely contrary to participatory theory. The task awaiting participatory theorists is how to bring science into the open.

Defenders of the scientific status quo have two inconsistent ways of

retreating away from a political clash with participatory theory. First of all, they can argue that regardless of the non-democratic institutional character of science, it yields remarkable results. In fact, given the high degree of specialization needed to do science, it is because of its non-democratic structure that science is so successful.

The response is two-pronged. The remarkable success attributed to science is certainly debatable. For example, much of the success attributed to medicine is more justly laid at the feet of the changing sanitation or other environmental as well as social conditions (Inglis, 1981). Medicine's assault, past and current, on women is well-documented (Ehrenreich and English 1979; Lewin and Olesen, 1985). Secondly, even if we applaud science for its advances, it is difficult to see how those advances are primarily due to the non-democratic character of science. Let us even grant that. A perfectly justifiable project for participatory theorists, then, is to envision ways in which those same advances could have been democratically obtained.

Instead of relying on the importance of the institutional structure defenders of science can reverse themselves and claim that the institutional structure is not essential for doing science. So, the second move is to sever the tie between the institutional framework of science and the particular epistemology upon which science relies. Whenever problems are detected in the institutional framework, science retreats to the safe ground of epistemology and methodology. From this vantage point, scientific methodology is portrayed as the unique (and relatively exclusive) way of advancing knowledge.

Responding to this we see that the attempt to isolate scientific methodology has been a failure (Feyerabend, 1975). It is not even clear what has been isolated. For there is no one accepted description of scientific methodology. Even if the methodological canons of science were isolatable, they would still show the taint of institutional structure. For example, science is thought to differ from other epistemologies because of its use of controlled experimentation. Yet, the preponderance of controlled over clinical studies in science is due, in part, to the funding structure and not to some epistemological dictates. The accounting methods for funding require easily quantifiable results readily attained through controlled experimentation.

The inability to sever the tie between the institutional structure and the epistemology of science opens doors for the standpoint politics of democratizing. Showing the effects of democratizing science's institutional framework on its methodology now becomes an easier task. This task is taken up in the next section.

Feminist Science From A Participatory Standpoint

Imagining a feminist science is not as difficult as it might seem. The difficulty comes in mapping out the means for bringing about the future. The standpoint politics of participatory democracy and feminism provides

the lens for focusing on the future.

Through this lens we can imagine all aspects and all levels of scientific decision-making bearing the stamp of feminist participatory practice. Meetings, whether at the laboratory or at the professional organizational level, are facilitated and not led in an authoritarian manner. The goal of meetings is not to inform others of the direction decided by a few but rather to work towards consensus in determining that direction. These and other devices of, what I call, the procedural sense of participatory political theory impact on scientific epistemology. In each of the social sciences a number of research strategies vie for hegemony. Some of the research strategies offer sharply contrasting epistemologies. A raging battle in the social sciences constantly brews over the legitimacy of quantitative statistical studies against more qualitative interpretative ones using participant observers. Participatory theory provides one framework for trying to resolve these conflicts. I would argue, for example, that in linguistics a research strategy emphasizing the centrality of sociolinguistic investigations into sexist language more fully meets the demands of participatory theory to overcome domination than does a research strategy which gives central place to syntactical concerns.

It is not difficult to predict a flurry of objections cast against this proposal to democratize science. Basically, there are two sets of objectives: those at least answerable in the framework of participatory procedures and those challenging that framework. In the first set, we find challenges to the practicality and to the political nature of the proposal.

Every version of participatory theory confronts the charge of impracticality. The objection relies on various factors: (1) not enough time for participatory decision-making; (2) too many people included in the decision process; and (3) too many complex issues addressed. None of these present insuperable obstacles. The time spent in bureaucracy could be better spent in democracy. Another catchy way of putting that is that time could be found if the will to find it was there. Next, decentralizing the institutional structure of science would partially remedy the too-many-people problem. Furthermore, participatory practice does not involve all people making each and every petty decision (See Jones, 1957, for a discussion of this practice in ancient Athenian democracy). The choice of a research strategy is a major policy decision that could be practically made by all those involved. Finally, the complexity claim is diversionary. The degree of expertise needed to make an institutional decision is far less than that needed to make specific claims. I do not need to be an authority on lasers in order to make an informed judgment about the wisdom of science pursuing Star Wars research.

A less prominent but more sophisticated objection attacks standpoint politics. Accordingly, standpoint epistemologies, with their attempts to portray one standpoint as the best justified, are problematic enough (see Harding 1986 for an excellent summary of this). A standpoint politics is

even worse since it pretends to have the political truth. Epistemological absolutism is troublesome; political absolutism is disastrous.

The objection is well-taken, but it misses the mark when aimed at participatory democracy. Because of its non-authoritarian foundation participatory democracy is one of the few political theories which is not vulnerable to objections cast against authoritarianism: Secondly, the objection assumes that science is not already politicized and that certain decisions are made, without recourse to politics, on purely epistemological grounds. A more plausible description is that political factors are constantly impinging on epistemological decisions. A research strategy is not adopted solely on the grounds of the strength of the epistemological arguments. Power-plays among academics play more of a role than most of us are willing to admit.

Also, adopting participatory procedures does not mean casting aside epistemological standards or concerns. These practices simply broaden the base for considering epistemological and other concerns. Later I shall try to demonstrate the political and epistemological interactions. In the meantime, even if the epistemological assumptions of participatory theory remain hidden I prefer a standpoint politics with a tacit epistemology to a standpoint epistemology with a tacit politics. The reason is that the politics of the latter are much more difficult to combat because of their hidden nature.

The other set of objections is more formidable because the replies are more radical and therefore less readily accepted. Two of the objections within this set are :

- (1) What if researchers decide participatorily upon a sexist (or some other loathesome) research strategy?
- (2) Feminist challenges to scientific epistemology are much more fundamental than choosing between already competing research strategies.

To answer the first we need to make a major change in the procedural version of participatory democracy. Participatory democracy is not simply formal and procedural. The substantive goals of overcoming domination and developing empowerment lie at the very heart of the participatory program. So, the question, who participates?, is not merely a procedural one. It is not only the scientific workforce which should participate in decision-making. Those who are dominated and oppressed in the society ought to have a primary voice, especially in research which involves them. Armed with this normative substantive principle any research strategy promoting domination is unacceptable. I would then agree with the authors of *Not in Our Genes* (1985) that biological determinism constitutes an objectionable approach.

Expanding the domain of participants also helps us address the second objection by linking participatory politics to feminist epistemologies. Smith (1979) proposes a standpoint epistemology whereby "The authority of the inquirer [is put] on the same epistemological plane as the authority of the

subjects of inquiry" (Harding, 1986, p. 157). In studying midwives, the midwife's interpretation of her experience should be given some weight relative to the researcher's interpretation. It is easy to see how giving the subject of an inquiry participatory status facilitates this epistemological move. If the midwife participates in decisions over research strategy and design, then her interpretative experiences gain even more credence.

Another illustration is more indirect but shows the direction this analysis takes. As noted before the most important ones who need to participate in the scientific decision-making are those most affected by the proposed research. In many cases these are beings "without voice": the young, some differently abled, future generations, and non-human animals. Minimally, those without voice should participate through representatives among those with voice. For example, those who speak solely for animals should have a controlling voice on animal experimentation review committees.

Birke sees this political-epistemological connection arising out of the animal experimentation issue:

...feminist science has to avoid methods that continue such forms of oppression in other spheres—which, at least to some contemporary feminist authors, must include the ways in which animals are presently exploited in laboratories (and elsewhere). A feminist science, then, would have to look for more cooperative, and generally non-invasive, ways of understanding nature (Birke 1986, p. 150).

Thus, we see that the politics of animal experimentation is tied to epistemological concerns. Non-invasive ways of working with animals in science generally would mean more field and clinical as opposed to controlled experimental studies. Although the connection is not automatic, these, in turn, are more conducive to adopting non-reductionistic, holistic, etc. approaches to science which are exactly the types of characteristics listed by Rose (1986) as components of a feminist epistemology.

Unlike implementing the more reform-oriented participatory procedures, the more substantive version of participatory theory needs a feminist society in order to be put into practice, for the latter version directly challenges the power base of science. To that extent Fee is correct: a future feminist science goes hand-in-hand with a future feminist society. However, imagining a feminist participatory science does not require a full-fledged feminist society in place. The challenge is to find the means to both those ends.

Showing these political-epistemological connections should allay the fears of Keller (1982), and Birke (1986) that a political standpoint politics is liable to fall prey to a danger. Keller describes this danger as residing ...in viewing science as a social product; science then dissolves into ideology and objectivity loses all intrinsic meaning. In the resulting cultural relativism, any emancipatory function of modern science is negated, and the arbitration of truth recedes into the political domain. Against this background, the temptation arises for

feminists to abandon their claim for representation in scientific culture and in its place, to invite a return to purely "female" subjectivity, leaving rationality and objectivity in the male domain, dismissed as products of a purely male consciousness. (Keller, 1982, p. 593).

Participatory political theory carries with it an epistemology that does not completely abandon science and objectivity. However, there is another side to this claim which has been one of the themes of this paper. Over-emphasizing epistemology to the detriment of politics can trap feminists in a male political domain, disguised as an epistemological one. The issue is not simply the epistemological aspects of non-reductionism and holism but rather the political components of those epistemologies as well. Reductionism is not simply a successful epistemological means for providing explanations and predictions. Rather it is also a way of structuring science into highly specialized political units which are very readily dominated by males who have the political advantage in the society at large. A holism that fails to integrate a political critique of reductionism is doomed. Participatory theory challenges both the politics and the epistemology of androcentric science.

Conclusion

Three standpoints have been examined ; (1) utopian, (2) epistemological, (3) political. As an evaluative standpoint utopian thinking is not only defensible, it is very necessary. If we do not envision any aspect of a better society, then we are in deep trouble. Developing this vision largely within an epistemological context, however, distorts past, present, and future. Arguing on an epistemological plane lends feminism a certain form of legitimacy, but it is a form that is politically molded by a current power structure. Questions of knowledge are inextricably intertwined with questions of power. The epistemology of science is part of the politics of science, contrary to the wishes of my colleagues. Whatever shape the feminist vision of science takes, it must be, first and foremost, a political vision. Participatory theory provides a means of directly confronting the politics and epistemology of androcentric science. Participatory theory will not cure all sexist ills, but at least it asks some of the right questions. □

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1. Even using the word 'utopia' reflects a political bias. Utopia means "no place." I prefer the less derogatory 'eutopia', meaning "best place." (See Simon 1986).

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