

- . 2002. *The Fate of Knowledge*. Princeton: Princeton University Press.
- Martin, Emily. 1991. "The Egg and the Sperm." *Signs: Journal of Women in Culture and Society* 16 (3): 485–501.
- McMullin, Ernan. 1983. "Values in Science." In *PSA 1982*, vol. 2., ed. Peter D. Asquith and Thomas Nickles. East Lansing, MI: Philosophy of Science Association.
- Oyama, Susan. 2000. *The Ontogeny of Information*. Durham, NC: Duke University Press.
- Quine, Willard V. O., and Joseph Ullian. 1978. *The Web of Belief*. New York: Random House.
- Sen, Gita, and Caren Grown. 1987. *Development, Crises and Alternative Visions: Third World Women's Perspectives*. NY: Monthly Review Press.
- Sperling, Susan. 1991. "Baboons with Briefcases: Feminism, Functionalism and Sociobiology in the Evolution of Primate Gender." *Signs: Journal of Women in Culture and Society* 17 (1): 1–27.
- van Fraassen, Bas. 1980. *The Scientific Image*. Oxford: Oxford University Press.
- Zihlmann, Adrienne. 1978. "Women in Evolution, Pt. II." *Signs: Journal of Women in Culture and Society* 4 (1): 4–20.1.



## REPLACING THE IDEAL OF VALUE-FREE SCIENCE

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THE IDEAL OF VALUE-FREE SCIENCE HAS ENJOYED a long and distinguished career. Some see it already flourishing in ancient times with the Platonic separation of the theoretical and the practical and the privileging of the theoretical. Most, however, see it emerging with the rise of modern science in the seventeenth century and the idea that nature is merely matter in motion, devoid of qualities such as good and evil. They see it as well in the seventeenth-century idea that the study of nature is distorted by ethical concerns in much the way Bacon claimed such study is distorted by the various idols he described. The ideal of value-free science is seen flourishing again in the eighteenth century with Hume's separation of "ought" from "is," and in the nineteenth century with the push toward academic specialization and the emphasis on the increasingly technical specialties and subspecialties of science as impartial resources for the solution of social problems. And the ideal of value-free science is seen flourishing once again in the twentieth century, with the many historical and philosophical and sometimes even sociological accounts of science in which social values either play no role at all or at least no very helpful role (for more details of this history, see Proctor 1991).

But all that is past. The ideal of value-free science, many now say, has finally retired from the scene, largely due to advice provided by the history, sociology, and philosophy of science. Historical scholarship, for example, has suggested that the work of even the greatest scientists—even scientists like Boyle, Darwin, and Freud, and even, perhaps, the great Newton and Einstein themselves—was shaped by social values (see, for example, Bernal 1971; Merchant 1980; Elkana 1982; Shapin and Schaffer 1985; Gilman 1993; Ruse 1999; Potter 2001). If our conception of science, including our conception of objective science, is to be true to actual science, it can hardly ignore such science as this. Sociological research, in addition, has suggested that such value-informed science is all but inevitable. Indeed, any scientific contribution, we have been told, is a product of a particular time and place, of a particular social and cultural location, of particular interests and values; a “view from nowhere,” from a psychological and sociological vantage point, is simply naive (see, for example, Knorr-Cetina 1981; Knorr-Cetina and Mulkey 1983; Latour 1987). The ideal of value-free science, in short, seems unlikely ever to be fulfilled—at least seems unlikely to be a viable ideal, useful for actual science. Philosophical analysis, finally, has gone one step further. It has challenged the very distinction between social values and the scientific—the distinction between, for example, social values and economists’ data about poverty, or sociologists’ and psychologists’ measures of domestic abuse, or archaeologists’ accounts of human evolution and human flourishing, or medical researchers’ criteria of health and disease (see, for example, Putnam 2002; Dupré 2007). The ideal of value-free science, in short, according to this line of reasoning, may ultimately be incoherent. The history, sociology, and philosophy of science, then, have done much to bring about the retirement of the ideal of value-free science. What they have not made especially clear is what should now take its place. This is the task of the present investigation.

### The Old Ideal’s Job Description

Well, what was its place, what roles did the ideal of value-free science play, at least in recent times? Consider, for example, the interdisciplinary area of feminist science studies, one of the main instigators of the retirement of the ideal of value-free science. Feminists who do science or who reflect on science, including feminist historians, sociologists, and philosophers of science, have been engaged for years with the question of social values in science. They have exposed sexist and androcentric values operating in such fields as medical research, biology, psychology, sociology, anthropology, economics, political science, and

sometimes even physics and chemistry (see, for some examples, Keller 1985, 1992; Hubbard 1990; di Leonardo 1991; Fausto-Sterling 1992; Kramarae and Spender 1992; Rosser 1994; Spanier 1995; and Nelson 1996a, 1996b). And they have exposed other sorts of values operating in science as well—heterosexist values and racist values and capitalist values, for example (see Haraway 1989 and Harding 1993, 1998). What’s more, feminist scientists have allowed feminist values to shape important aspects of their research—from research questions and assumptions to concepts and hypotheses and even methods of data collection and modes of theory evaluation. And feminist philosophers and historians of science have cheered these feminist scientists on (see, for example, Schiebinger 1999 and Creager, Lunbeck, and Schiebinger 2001, as well as the work of Helen Longino, especially her 1990 and her classic 1987).

A politically hopeful way to understand this scene was originally provided by the ideal of value-free science.<sup>1</sup> Value-free science, remember, was an *ideal*, not a straightforward description of science. It specified what science ought to be like if it were to serve up genuine knowledge. The ideal of value-free science, therefore, was not obviously challenged by feminists’ exposure of androcentric and sexist values in science as well as heterosexist and racist values. On the contrary, the ideal of value-free science provided a rationale for what took place—for the way feminist scientists judged sexist and racist science to be bad science and the ways they sought to rid science of such sexism and racism. Indeed, many feminist scientists who exposed sexist and racist values in science sought traditional scientific remedies. They took to task mainstream scientists for failing to abide by accepted standards of concept formation and experimental design and interpretation of data and the like (see, for example, Bleier 1984; Hubbard 1990; Fausto-Sterling 1992). If only such standards were rigorously followed, they suggested, the problem of sexism and racism in science would be, at the very least, much reduced. Other feminist scientists explored new ways of screening out the offending values once and for all—new methodologies that would reform the science (e.g., Eichler 1980, 1988) or new pedagogies that would reform the scientists (e.g., Rosser 1986, 1990, 1995, and 1997). Even some of the scientists who consciously shaped their research in accordance with feminist values pursued such approaches. For example, they treated the function of feminist values in their research as purely motivational and not really a part of that research. Or they treated feminist values not as an alternative to sexist values but as a new kind of methodological control to prevent the entry of sexist values into their research. “We have come to look at feminist critique

as we would any other experimental control,” one widely quoted group of scientists said. “Feminist critique asks if there may be some assumptions that we haven’t checked concerning gender bias. In this way feminist critique should be part of normative science. Like any control, it seeks to provide critical rigor, and to ignore this critique is to ignore a possible source of error” (The Biology and Gender Study Group 1988, 61–62; cf. Eichler 1980, 118: “Feminist science is non-sexist” science). For all these scientists, then, the ideal of value-free science could have, and sometimes did, provide an explicit rationale for their various responses to both feminist and sexist science. At the same time, the ideal of value-free science provided hope that all could be made right—that science would be able, finally, to provide objective information about women and, in the process, expose and remove society’s prejudice against women, not simply reinforce and perpetuate it.

In feminist science studies, then, the ideal of value-free science played both an epistemic role and a political role—suggested both a way to achieve objective knowledge and a way to achieve social reform. And, of course, the two roles were connected, for the epistemic role was to make possible the political role, objective knowledge was to make possible social reform. With the retirement of the ideal of value-free science, what new ideal can now play these roles?

### Helen Longino’s Candidate for the Job

An especially promising candidate—and one groomed with the challenges of the feminist science studies terrain clearly in view—is a candidate put forward by Helen Longino (2002; see also 1990). According to Longino, no scientific method, however rigorous and however rigorously applied, can be guaranteed to screen out the various values and interests that scientists from their different social locations bring to their research. To be sure, scientists’ values and interests can and do determine which questions they investigate and which they ignore, can and do motivate the background assumptions they accept and those they reject, can and do influence the observational or experimental data they select to study and the way they interpret those data, and so forth. The ideal appropriate for science, then, is not the ideal of value-free science, > Longino argues, but the “social value management” ideal of science (2002, 50). According to this ideal, all social values should be welcomed into science—indeed, encouraged—and all social values, and the science they engender, should be subjected to criticism. So there is a kind of neutrality here, akin to the old ideal of value-free science. The only restrictions, in fact, have to do with the

social organization of scientific communities. These communities, Longino insists, will have to have first, public venues for criticism; second, publicly recognized standards by reference to which such criticism can be made; third, “uptake” of such criticism (that is, the criticism will have to be taken seriously and responded to); and fourth, “tempered equality” of intellectual authority among all parties to the debate, among whom “all relevant perspectives are represented” (2002, 131). The output of a scientific community can constitute “knowledge,” in short, even if that output is inspired and informed by social values, if the community meets these four conditions and the output conforms sufficiently to its objects to enable the members of the community to carry out their projects with respect to those objects.

So much for preliminaries. What credentials does Longino’s candidate offer for the position now vacated by the ideal of value-free science? In her recent book, *The Fate of Knowledge*, Longino does much to exhibit these credentials. She shows her candidate informed by some of the most important findings of historical/sociological research. She shows her candidate informed, as well, by the enduring insights of epistemological reflection. At the same time, she shows her candidate able to integrate all these findings and insights into a coherent account of science, an account free of the confusions that have frequently accompanied them. Longino thereby suggests that her candidate is unsullied by the historical, sociological, and philosophical disclosures that brought about the retirement of the old ideal of value-free science. Perhaps most important, however, Longino implies that her candidate exemplifies just what we have been looking for to replace that ideal, just what we mean by terms such as “knowledge” and “objectivity.” Granted, this last accolade somewhat strains credulity. After all, all of us, before Longino wrote, thought we had some handle on the meaning of these terms, but doubtless most of us had no handle on what Longino describes—tempered equality and public venues and uptake and the rest—not even a preanalytic, prearticulated version of what she describes.<sup>3</sup> No matter. If Longino’s candidate is most comfortable in the dress of traditional analytic philosophy, then it is in the dress of traditional analytic philosophy that we shall conduct its interview.

### The Interview of Longino’s Candidate

On, then, to the imaginary tale, de rigueur in traditional epistemology. But this time the tale is not about some solitary epistemic agent named Smith, his lucky happenstances, and his (usually unsuccessful) claims to knowledge, as in days

of old, but about a scientific *community* named Smith—or rather, named PETERS, that is, the Privileged, Exclusive, Talented, Elite, Royal Society. PETERS is made up of a subset of the privileged and talented of society *S* but PETERS is also a very elite society, very exclusive. It excludes all those, albeit sometimes talented persons, who fall into various unfavored classes (the non-privileged, the underprivileged). And PETERS has power—it is, after all, a royal society. So PETERS, knowing where its bread is buttered and also sharing in the perspectives of the butterers, pursues a particular kind of cognitive enterprise, one that serves its particular needs and interests. PETERS, of course, is a scientific society, concerned with understanding the world and interacting with it successfully. But PETERS is also a privileged, exclusive, talented, elite, royal scientific society, and that leaves a definite mark on the parts of the world it seeks to understand and the ways it seeks to interact with them. So, for example, PETERS investigates physical and chemical questions related to its concern with war-making and military preeminence, PETERS investigates biological and psychological questions related to its concern with the maladies that afflict the privileged and the reasons they are superior nonetheless, PETERS investigates archaeological questions related to its concern with the routes by which the privileged have achieved their superior state of development, and so forth. And PETERS's concepts and theories and models and methods and standards and values reflect these concerns, these privilegecentric and privilegistic goals.

Our question is: Would PETERS, over time, produce *knowledge* for its members? We can imagine that PETERS regularly holds conferences and publishes journals in which all its members are encouraged to participate and in which all are treated equally. We can imagine that in these venues prolonged and frequently heated critical exchanges take place, exchanges that pay scrupulous attention to shared standards. We can imagine that follow-up exchanges regularly take place, as well. And we can imagine that the intellectual products that emerge from all of this activity conform well enough to their subject matters to enable PETERS to pursue its (privilegecentric and privilegistic) projects to its (or rather, its members') satisfaction. We can even imagine that, after some time, PETERS invites, even encourages, members of the underprivileged classes—at least their talented members—to join its ranks, master its methods and standards and values and concepts and models and theories, and contribute to its (privilegecentric and privilegistic) projects; we can even imagine that PETERS encourages these underprivileged ones to develop “alternative points

of view” that can serve as a “source of criticism and new perspectives” (Longino 2002, 132) so that finally “all relevant perspectives are represented” (Longino 2002, 131) in PETERS's exchanges, that is to say, all perspectives relevant to the satisfaction of PETERS's privilegecentric and privilegistic goals. Would PETERS now be producing *knowledge* for its members? It would seem that Longino's candidate must answer “yes,” though it should answer “no.” And, would that knowledge—if it is knowledge—be free of privilegecentric and privilegistic prejudices, and thereby a suitable springboard from which to bring about social reform in society *S* rather than a reinforcement of those same prejudices? It would seem that we must answer “no.”

“Stop the interview,” I hear you saying. “It's unfair! It's rigged! Longino's candidate is getting pushed in a direction it does not want to go. When Longino says that in order for a scientific community's critical interactions to generate knowledge ‘all relevant perspectives’ must be represented, she does not only mean all perspectives that might serve that community's goals; she means all perspectives that might relate in any way at all to those goals, that is to say, all perspectives that might support them, or clarify them, or develop them, or add to them, or revise them, or replace them, and so forth. ‘Such criticism,’ she says, ‘may originate from an indeterminate number of points of view, none of which may be excluded from the community's interactions without cognitive impairment’ (2002, 133).”

Okay. Start the interview again. Imagine once again that PETERS finally encourages members of the underprivileged classes to join its ranks and develop alternative points of view, *all relevant* alternative points of view, that can serve as sources of criticism and new perspectives. Would PETERS now be producing knowledge for its members? And, would that knowledge, if it is knowledge, be free of privilegecentric and privilegistic prejudices, and thereby a suitable springboard from which to bring about social reform in society *S*? We cannot now say simply that PETERS's cognitive output would have to serve its original privilegecentric and privilegistic goals and thereby serve the status quo in society *S*, for over time PETERS's cognitive output might evolve in all sorts of ways as a result of the critical discourse occurring in it. The underprivileged ones in PETERS, though trained in its privilegecentric and privilegistic research traditions, might come to have the wherewithal to develop alternatives to some of those traditions, perhaps aided by changes over time in PETERS or in PETERS's science or in PETERS's surrounding society *S*. The underprivileged ones in PE-

PETERS might even succeed over time in building significant support for some of these alternatives, might even succeed in crystallizing new research traditions around some of them that parallel in many ways the older traditions, might even bring about the replacement of some of the older traditions. Women, after all, originally largely excluded from Western science and then, when included, trained in its androcentric and sexist research traditions, still came to have the wherewithal to develop alternatives to some of those traditions, aided by the sheer numbers of women—the “critical mass” of women—in some research areas, and aided by the women’s movement in society at large as well as by changes in other academic fields. Women even succeeded over time in building support for some of these alternatives, even succeeded in crystallizing new feminist research programs around some of them to compete with the older programs, even succeeded in replacing some of the older programs. The underprivileged ones in PETERS, though trained in its privilegcentric and privilegist research traditions, then, *might* come to have the wherewithal to replace them. But then again, they might not. They might not have egalitarian political movements in society *S* to aid them, they might have political backlash instead; they might be stymied by available mathematical resources or instrumental technologies or preferred modes of analysis; they might be affected by funding cutbacks or staffing problems or family needs. Certainly women in science have been thwarted by such factors as these, and certainly women in science have met with far less than unbridled success in trying to rid science of sexism and androcentrism.

So what is the upshot? If what PETERS produces is *knowledge* for its members according to Longino’s candidate, this knowledge need not be free of privilegcentric and privilegist prejudices,<sup>3</sup> and it need not be a suitable springboard from which to bring about social reform in society *S*. If Longino’s candidate fulfills the epistemic role of the ideal of value-free science, in short, it still may not fulfill the political role.<sup>4</sup> Well, so what? Had the ideal of value-free science been acceptable, it would have provided a way to rid science of sexist and racist values and the like, and thereby promote social equality. But the ideal of value-free science was *not* acceptable. So why should its successor have actually to do what it, itself, merely promised but could not actually do? Why, in short, should the successor of the ideal of value-free science have to play a political role along with an epistemic role? Then again, if we excuse the successor of the ideal of value-free science from playing its predecessor’s political role, we not only lose scientific knowledge as an ally in the fight for social justice, we set

scientific knowledge up as part of the problem—part of what reinforces and perpetuates prejudice rather than exposes and removes it. Is there a better way to go?

### A Second Candidate Steps Forward

There is another candidate for the position now vacated by the ideal of value-free science—a less sophisticated candidate, by far, than Longino’s, but with a certain down-to-earth, homespun charm. It can be called the “ideal of socially responsible science.” Rather than strive to exclude all social values from science, as the ideal of value-free science directs scientists to do, or to include all social values in science but subject them all to criticism, as Longino’s social value management ideal of science directs scientists to do, the ideal of socially responsible science directs scientists to include only specific social values in science, namely the ones that meet the needs of society. This is the kind of ideal to which many feminist scientists now subscribe, for of course one of the most important needs of society—of both men and women—is justice, and equality between men and women is one aspect of that justice. Thus you find feminist scientists now explicitly shaping their research in accordance with egalitarian social values.

Consider, for example, a new psychological research program described by Carolyn West, concerned with the problem of domestic violence in the United States (West 2002, 2004). The aim of this program is complex: to articulate the similarities in intimate partner violence within the black and white communities of the United States without negating the experiences of black women, and simultaneously to highlight the differences within the black and white communities without perpetuating the stereotype that black Americans are inherently more violent than other ethnic groups. This aim requires charting a new course for research. For example, it requires broadening the definition of partner violence to include psychological, emotional, verbal, and sexual abuse as well as physical abuse. It also requires changing the ways violence is measured—from merely counting violent acts and measuring their severity (which focuses on discrete *male* behaviors) to taking into account the contexts, motives, and outcomes of the violent acts (which focuses on *female* experiences) using a combination of qualitative and quantitative research methods, including listening to the voices of battered women. All this dramatically transforms the picture of racial similarities and differences drawn from past research—the picture according to which, for example, black women, when compared to their white

what if this is in Longino?

counterparts, are significantly more likely to sustain and inflict aggression, especially aggression involving weapons and culminating in hospitalization. The new research program involves other changes as well: for example, a revision of measurement scales to reflect more than the experiences of white European Americans, taken as the norm; and investigations of within-group differences in the black and white communities to determine whether what appear to be racial differences are not simply socioeconomic differences instead. And the program involves integrating participants into every stage of the research process, from planning to implementing, interpreting, and disseminating results, in order to reduce one-sided research interpretations. The result is the kind of research that both motivates social reform and helps to bring it about.

The ideal of socially responsible science makes research such as West's a model of what science should be like. It applauds funding initiatives that prioritize such research and modes of scientific appraisal and scientific community organization that value it and help to bring it about. This ideal, therefore, seems able to fulfill the political role of the ideal of value-free science. But is it able to fulfill the political role by safeguarding science as a genuine source of knowledge—as the ideal of value-free science aspired to do—or is it able to fulfill the political role by sacrificing science as a genuine source of knowledge? In short, is the ideal of socially responsible science able to fulfill the epistemic role as well as the political role of the ideal of value-free science? This is the question we need to have answered if we are to determine whether the ideal of socially responsible science can fill the position now vacated by the ideal of value-free science. How does the candidate respond? We can begin our interview right here.

### The Interview of the Second Candidate

Silence. . . . No answer. . . . Can the candidate be nervous? How else to explain the silence? After all, isn't there an answer to our question already at hand? The idea that politicizing science automatically contaminates it—automatically sacrifices it as a source of genuine knowledge—has already been dealt with. Philosophical naturalists have persuasively argued that social values need not compromise the objectivity of science any more than do other features of scientific communities such as competitiveness, deference to authority, or the desire for credit for one's accomplishments (see, for example, Solomon 2001). What does or does not compromise the objectivity of science, naturalists argue, is an empirical question to be settled by a close examination of scientific prac-

tice rather than by an a priori pronouncement regarding the proper conduct of inquiry or the proper composition of scientific communities. Some philosophical naturalists—feminist naturalists—have even argued that social values, as a matter of empirical fact, can be *aids* in the acquisition of objective knowledge—that when these values are allowed to influence science (for example, by motivating particular lines of research or the maintenance of particular social structures) that science can actually be more developed and more empirically adequate than before (see, for example, Antony 1993, 1995; Wylie and Nelson 1998; Campbell 2001; Anderson 1995, 2004). And when we reflect on the effects of feminism in science during the last three decades—the wide-ranging critiques of traditional science in such fields as psychology, sociology, economics, political science, archaeology, anthropology, biology, and medical research, and the new research directions and research results forged in the wake of those critiques—when we reflect on the effects of feminism in science during the last three decades, the arguments of the feminist naturalists seem especially convincing. Egalitarian social values in these cases have seemed to yield better rather than worse science, more objective rather than contaminated science (see Schiebinger 1999 and Creager, Lunbeck, and Schiebinger 2001 for the kinds of wide-ranging changes in science that have occurred due to feminism). Haven't feminist naturalists, then, already provided an answer to our question regarding the epistemic credentials of the ideal of socially responsible science?

But our candidate sees no answer here. Indeed, the above suggestions, interesting and important though they be, are simply too weak to be helpful. After all, the strongest answer to our question that follows from the above is that the ideal of socially responsible science *may* be able to fulfill the epistemic role as well as the political role of the ideal of value-free science. Feminist naturalists certainly cannot now assure us that all the social values recommended by the ideal of socially responsible science will always aid the acquisition of knowledge in all the diverse areas of science. The empirical evidence to support such an assurance is just not there. Even with regard to the so-called “feminist contributions to science” over the last three decades, feminist naturalists would be hard pressed to show that the progress made was in every case the effect of feminist social values rather than other factors. Alison Wylie, for example, has presented survey evidence to show that it was women archaeologists' standpoint as women, not their feminist values (which half the time they denied having), that brought about the dramatic changes in archaeology that began in the late 1980s (Wylie 1997).<sup>5</sup> And Sarah Hrdy only speculates that feminist

values were involved in the fundamental rethinking of sexual selection theory that occurred in primatology beginning in the 1970s (Hrdy 1986). And the Biology and Gender Study Group only claims that the eye-opening studies that led to new models of fertilization and sex determination in the 1980s “can be viewed as feminist-influenced critiques of cell and molecular biology”: “It should be noted that the views expressed in this essay may or may not be those of the scientists whose work we have reviewed. It is our contention that these research programs are inherently critical of a masculinist assumption with these respective fields. This does not mean that the research was consciously done with this in mind” (The Biology and Gender Study Group 1988, 68, 74n5). And so on.

Of course, if feminist naturalists define “good” social values in science as those that aid the acquisition of objective knowledge, those that are epistemically fruitful—as at least some feminist naturalists seem inclined to do (see Antony 1993 and Campbell 2001)—then the above suggestions are far from weak. For then the ideal of socially responsible science, in allowing only good social values into science, would be allowing only those social values that aid the acquisition of objective knowledge, and would thereby fulfill the epistemic role of the old ideal of value-free science. But this solution has problems of its own. After all, it treats egalitarian social values as merely causally relevant “social factors” or “social biases,” on a par with other factors such as competitiveness or the desire for credit or other values such as sexism or racism. All these become possible aids to the acquisition of objective knowledge, and all must be empirically tested to see whether they are. Any of them will do, we are led to infer, if only they can prove their mettle in scientific research.<sup>6</sup> So if, for example, a close comparative study of German medical science before, during, and after the Third Reich discloses that Nazi social values produced the best scientific results, the most abundant and most empirically successful science, then Nazi social values would be good values and should therefore be welcomed into science. Or if such a study discloses that Nazi social values produced a science just as successful as the others, but no better, then it should be a matter of complete indifference whether Nazi social values or the other sciences’ values should find their way into science, since none of the values would be justified over the others. And this is remarkable given that one of the main factors that brought about the success of Nazi medical science was the *absence* in it of good social values—for example, the absence (sanctioned by Nazi social values) of moral constraints on human experimentation.

This is not to say that the epistemic success (or failure) of a scientific re-

search project tells us nothing about the justifiability of the social values that guide it. But what it tells us must take into account a great many other factors besides that outcome—for example, which scientists were involved in the project, the level of their talents and training, and the conceptual and material and social resources at their disposal. Factors such as these help to explain the failure of research guided by arguably good social values (such as some of the egalitarian social values guiding Lysenko) and also help to explain the success of research guided by arguably bad social values (such as the racist social values guiding the Nazis). But, of course, moral and legal principles, as well, are relevant to the assessment of the social values that guide scientific research—think of the respect for individual autonomy and self-determination and the Hippocratic Oath’s admonition that physicians should “abstain from all intentional wrong-doing and harm” that informed the response to Nazi medical research in the Nuremberg Doctors’ Trial and the Nuremberg Code on human experimentation that followed (Katz 1996). And these moral and legal principles, in turn, are themselves informed by factual considerations, including the factual considerations that result from scientific inquiry. What all this shows is that the assessment of the social values that guide a scientific research project, whatever the epistemic outcome of that project, is a complex, multifaceted undertaking. But this still leaves our question concerning the epistemic consequences of these social values in science. What answer can our candidate provide?

Consider, again, Carolyn West’s research program. What effects do its egalitarian social values have on it? Do they compromise the objectivity of the knowledge it provides? First, what are these values? They seem to be: “women deserve to live without fear of violence from domestic partners,” and “black women deserve the same opportunities as white women to live in such partnerships.” These values are well justified both in and out of feminist theory; they should be uncontroversial. Second, what role do these values play in the program? It will be recalled that West makes it a central part of her aim not to perpetuate the stereotype that black Americans are inherently more violent than other ethnic groups. The reason is that this stereotype in people’s minds—in the minds of researchers and politicians and service providers, for example—makes it more likely that black women’s needs related to domestic violence will be treated less seriously than white women’s needs, or even ignored altogether. After all, if violence is perceived as inevitable, as somehow innate or unique to the black culture, intervention efforts are more likely to be perceived as futile. In short, if black women deserve the same opportunities as

white women to live in domestic partnerships free of violence—West’s egalitarian social value—then the stereotype connecting blacks and violence must not be perpetuated. This means that West’s research program as far as empirically possible must highlight the similarities in domestic violence within the black and white communities and seek to explain whatever dissimilarities appear within these communities in terms of social differences such as racism and poverty.<sup>7</sup> But none of this must obscure in any way black women’s experiences, since to do so would again be to shortchange black women’s needs, and hence fail to provide black women the same opportunities as white women to live in partnerships free of violence. The result, as we have seen, is a dramatic change in research questions; concepts (like the concept of “partner violence” itself); measurement scales and techniques; methods of subject selection; strategies of data collection, analysis, and interpretation; and even methods of publishing and disseminating results.

The upshot: West’s research program is controlled through and through by sound egalitarian social values. But it is equally controlled through and through by sound epistemic values. Though the science here is thoroughly politicized, in short, it is not at the expense of its mission to provide genuine knowledge. And this should not be the least bit surprising. After all, research such as West’s cannot fulfill its social objectives, cannot effect improvements for battered women in both the black and white communities, unless it does fulfill its epistemic objectives, unless it does get a firm handle on the reality it means to reform. But this means that research such as West’s, with its two kinds of interrelated objectives, social and epistemic, shaped by two kinds of values, social and epistemic, should be judged by two kinds of standards, not one—by moral/political standards as well as by epistemic standards. Such research should be found wanting if it fails sound epistemic requirements. But it should also be found wanting if it is shaped by unacceptable social values. How else can science take its rightful place in the forefront of social change?

#### Where You Take Over the Interview

Has the candidate successfully answered our question?

“Not at all,” you exclaim, voice rising. “The answer given is too quick. Indeed, the answer given makes it look as though the epistemic objectives and the social objectives of a research program such as West’s can never conflict, so that the social objectives, or the social values that lie behind them, can never contaminate the knowledge produced. But this is far too optimistic. After all,

what if the stereotype that black Americans are inherently more violent than other ethnic groups were true?<sup>8</sup> The egalitarian-value-directed research program described would never allow this truth to be discovered, and the ideal of socially responsible science would never allow any less egalitarian research program to be pursued—say, one that straightforwardly investigated the truth of the stereotype by searching for cultural factors associated with violence, cultural factors that differ from one ethnic group to another. So in this case social objectives and epistemic objectives would clearly conflict, and the ideal of socially responsible science would sacrifice the epistemic objectives for the sake of the social. This means that the ideal of socially responsible science cannot be relied on to fulfill the epistemic role as well as the political role of the ideal of value-free science.”

“Not so,” comes the candidate’s reply. (This candidate is not about to concede defeat!) “If the stereotype connecting blacks and violence were true, that truth *could* be discovered with West’s program. All the program requires, remember, is that dissimilarities in domestic violence within the black and white communities be explained, *as far as empirically possible*, in terms of social differences such as racism and poverty. The program does not guarantee that any of these explanations will be successful. Indeed, if the stereotype connecting blacks and violence were true, all of these explanations at best would have limited success (depending on whether they also were true), and that would provide (indirect) support for the stereotype. And since a central aim of the program is to make black women’s experiences with domestic violence as visible as white women’s experiences, the dissimilarities between the two would be made visible as well—just those dissimilarities whose failure to be socially explained would count in favor of the stereotype. So neither the ideal of socially responsible science, nor West’s particular research program sanctioned by that ideal, makes knowledge unreachable. Nor do they ‘contaminate’ the knowledge produced. They simply channel science’s search for knowledge in some directions and away from others in response to the needs we present as a society.”<sup>9</sup>

“But the ‘channeling’ runs very deep!” you retort, irritation in your voice. “It affects not only research questions, but also, as we have seen, such aspects of research as concepts, measurement scales and techniques; methods of subject selection; strategies of data collection, analysis, and interpretation; and even methods of publishing and disseminating results. It may even affect other central aspects of the research process such as consideration of the consequences of error and setting acceptable levels of risk (see, for example, Douglas 2000). So



the ideal of socially responsible science and the research programs it sanctions may not make knowledge unreachable, nor contaminate the knowledge produced. But they surely slow down the production of knowledge if the channeling is in the wrong direction. If the stereotype connecting blacks and violence were true, for example, the fastest way to discover that truth would doubtless be to investigate the stereotype directly. Not knowing whether the stereotype is true, however, the most plausible way to proceed would be to pursue multiple research programs—the stereotype-focused research program as well as West's egalitarian-value-directed research program, for example. Not only would this be the most efficient way to proceed, but it would also provide valuable comparative assessments of programs in addition to the direct empirical assessments available to each individual program. It would also provide the most thorough assessments, since one program might generate data relevant to another that the other had no access to itself, data with which it nevertheless has to deal. Pursuing multiple research programs would also make more likely the discovery of multiple causal factors and a more complex understanding of the subject at hand. Limiting science to 'socially responsible' research, by contrast, places unnecessary obstacles in the way of science's search for truth."

"That's not true!" gasps the candidate. "Socially responsible research, of course, cannot be guaranteed to produce truth. But neither can socially irresponsible research. Nor can socially responsible research—or socially irresponsible research—be guaranteed to be efficient in its search for truth, or more efficient than the other. We simply cannot say, a priori, what kind of research will produce the best results. If the stereotype connecting blacks and violence were true, for example, would scientists more likely discover that truth, or discover it more quickly or easily, if they explored all plausible ways in which blacks could be inherently disposed to violence, or would they more likely, or more quickly or easily, discover that truth if they explored all plausible social factors that could explain the dissimilarities in violence within the black and white communities? If it be said that the former 'direct' approach would obviously be better, it must be noted that many in the black community would not cooperate with that approach whereas they would cooperate with the latter, socially responsible approach (see West 2002 and 2004 for the 'culture of silence' that has surrounded the problem of domestic violence in the black community, the reasons for it, and the methods that have proven valuable to overcome it). That lack of cooperation would have a profound effect on 'efficiency.' It must also be noted that the latter, socially responsible approach, no less than the other, could

make use of multiple research programs, with all the benefits those bestow. So the comparison would not have to be between (as you seemed to suggest) West's program plus the stereotype-focused research program on the one side versus West's program alone on the other. The socially responsible (second) side of the comparison could include, in addition to West's program, any number of other socially responsible alternative or complementary research programs. And, of course, it would matter what all these various research programs were like, which scientists were pursuing them, how much funding they had at their disposal, what background knowledge and conceptual and technological resources they could draw on, etc., etc. The upshot is that you simply cannot assume that limiting science to socially responsible research will slow science down in its search for truth."

"But what if it did?" the candidate continues. "What if the efficiency of research were compromised by the restrictions imposed by the ideal of socially responsible science? What grounds are there for saying that these restrictions would then constitute 'unnecessary obstacles in the way of science's search for truth' when these restrictions—the social values like West's egalitarian values imposed by the ideal of socially responsible science—would be justified? Everyone concedes that the value of efficiency in research has its limits, that there are other values, including other social values, that are more important. It might be far more efficient for searching out the truth, for example, if scientists simply ignored the risks to human subjects or society or the environment posed by various lines of research and ethics committees and publishers and funders and the public at large allowed them to do so. But acting in this way would be unconscionable despite the epistemic efficiency it might offer. The ideal of socially responsible science simply extends these constraints already recognized as appropriate for science. In so doing it does not sacrifice science as a genuine source of knowledge, but merely acknowledges that science has other goals and other responsibilities besides its epistemic ones. Thus, it might be more efficient for searching out the truth about domestic violence in the black community if scientists pursued any research they pleased—for example, the stereotype-focused research program in addition to West's approach—irrespective of its effects on the black community. But acting in this way would again be unconscionable. After all, the stereotype-focused research program begins with a characterization of blacks born of prejudice, with no consistent empirical backing, and dignifies it by making it the subject of scientific research. It thereby suggests that the characterization has some plausibility (if it had none,

why would scientists bother to investigate it?). And so, the stereotype-focused research program helps to keep the stereotype alive, paradoxically even while it may be accumulating evidence against that stereotype, and as one result (there are others) decreases the likelihood that black women will receive the help they deserve to combat domestic violence. West's program, in contrast, does none of this—is explicitly designed to do just the opposite—even though it also, indirectly, investigates the stereotype. The difference is that West's program aims to help the black community with the knowledge it gathers, and is in an excellent position to do just that. The stereotype-focused research program seems aimed to do just the opposite, and is in an excellent position to do just that. Small wonder that West has received an award from the black community for the work she is doing—the Outstanding Researcher Award from the Institute on Domestic Violence in the African American Community—whereas it is safe to say that the stereotype-focused research program would meet with a very different response.”

#### Where You Come to a Decision

Is it now clear that the ideal of socially responsible science can fulfill the epistemic role as well as the political role of the retired ideal of value-free science?

“If it is,” you reply, “that will still not suffice to justify embracing it. The reason the ideal of value-free science retired, remember, was that it could not be put to use. Even what we take to be the greatest science failed to exemplify it, and sociologists and philosophers of science assured us that most science never would exemplify it, never could exemplify it. In short, the ideal of value-free science failed to be a viable ideal, useful for actual science. Is the ideal of socially responsible science similarly inapplicable?”

“Not at all,” boasts the candidate triumphantly. “Unlike value-free science, socially responsible science is possible. Indeed, it exists. As noted at the outset, feminist scientists such as West are among the scientists who are doing it. This does not mean that all that we currently consider the greatest science is socially responsible science. That has to be determined on a case by case basis, and feminist scientists and historians and philosophers of science, among others, have already done some of this work. But it does mean that there actually are concrete models now available to other scientists that help to show them what the ideal of socially responsible science amounts to and how it can be put into practice. And it also means that . . .”

Here the candidate is interrupted by you, waxing impatient: “Questions

concerning values—including the ‘values that meet the needs of society,’ the values that the ideal of socially responsible science aims to entrench in science—are highly controversial. Even feminists, who agree on so many things, are far from agreement concerning what their egalitarian social values amount to and how they can best be put into practice—for example, exactly what a gender equal society would be like and how it should be pursued. So isn't the ideal of socially responsible science just as inapplicable as the ideal of value-free science, since no one can agree concerning what would satisfy it—concerning which values would meet the needs of society?”

“You are not *listening*,” replies the candidate. “Of course there is disagreement concerning values, including the ‘values that meet the needs of society.’ But there is also crucially important agreement, especially concerning the concrete issues that affect people's day-to-day lives. Regarding West's research, for example, it is uncontroversial that women deserve to live without fear of violence from domestic partners, the value that underlies West's research. But it is equally uncontroversial that women deserve to live without fear of rape, sexual harassment, incest, and other forms of violence directed at women, and that women deserve equal educational opportunities with men, equal employment opportunities with men, equal opportunities for health care, and so on. These values are not only uncontroversial in Western cultures, they are attested to in the policy declarations and activities of such international organizations as the United Nations, the International Labour Organization, the World Health Organization, and Amnesty International. These are the kinds of shared values that motivate and inform feminist research in such fields as psychology, sociology, economics, political science, archaeology, anthropology, biology, and medical research. And this is the kind of research that exemplifies the ideal of socially responsible science.”

“So your question should be,” the candidate continues, “not *is* the ideal of socially responsible science applicable to real science under real, that is, our current, social conditions, but *how extensively* is this ideal applicable to this science under these conditions. That is to say, can the shared social values that shape the research of feminist scientists come to shape the research of other scientists as well, and can other social values that meet the needs of society but do not now shape research be added to them? These are large-scale empirical questions, but fortunately there is enough empirical evidence currently available to at least begin to answer them. Certainly the long-term flourishing of feminism in some fields—for example, primatology, cultural anthropology,

paleontology, and developmental biology—and its recent growth in others—for example, archaeology—give cause for optimism. Primatology is a particularly good example (see, for what follows, Fedigan 2001). This field has wholeheartedly embraced feminist ways of doing research—in pursuing research that rescues female primates from their previous second-class status in the theoretical understandings of the field (as merely mothers, as merely passive resources for males), in pursuing research that answers questions of importance to women (regarding male parenting roles or the evolution of female sexuality, for example), in pursuing research that uses new female-friendly conceptual tools (for example, sampling methods that more readily include females), and so on. Primatology has embraced such feminist ways of doing research even though very few of its practitioners see themselves as feminists, and even though the standard attitude of these practitioners is that politics does not belong in science. More significantly, the reasons these practitioners give for doing so—that it makes for better *science*, that it is *scientifically* right to consider questions from a female as well as a male perspective, to research issues of concern to women as well as men, and about females as well as males—give cause to be hopeful that further applications of the ideal of socially responsible science are possible.”

“But other fields tell a different story!” you interject.

The candidate falls silent for a moment. Then: “Other fields have made some of the same changes as primatology, but only under duress. U.S. medical research, for example. Only since 1993, when Congress passed the National Institutes of Health Revitalization Act that mandated the inclusion of women and minority men in publicly funded U.S. biomedical research and made funding contingent on that inclusion, has the neglect of females in both basic and clinical research been curtailed. Earlier initiatives—for example, NIH’s 1986 guidelines requiring grant applications to include female subjects in medical testing and research—were generally ignored (Rosser 1994; Schiebinger 1999). And still other fields have made few if any changes—economics, for example, in which women’s needs and priorities in the family as well as the larger society remain invisible or inadequately treated (Nelson 1996a, 1996b; Waring 1997). Do these cases show that the ideal of socially responsible science is of limited applicability? Not at all. The case of U.S. medical research shows that economic incentives—not only public funding but very possibly also tax incentives for industry-funded science and conditions on the tax exempt status of foundation-funded science—can be a powerful method to bring about socially responsible science. The case of economics shows that the need in some areas has never

been greater. And both cases show that much hard work will have to be done to determine for each of the various fields of science how best to achieve what the ideal of socially responsible science recommends. But this is the kind of work that makes sense only if, and after, the ideal of socially responsible science is adopted. For this work will answer the question, not how extensively is the ideal of socially responsible science applicable, but how can it be made more applicable.”

Do you have any more questions? Or is the interview over? And if so, what is its outcome? Has the ideal of socially responsible science shown both that it can fulfill the epistemic and political roles of the old ideal of value-free science and that it will actually get the job done, not fail to apply itself? Has it shown, in short, that it merits the position now vacated by the ideal of value-free science? Since I have put forward this candidate (and also argued in its defense) you should already know where I stand. But you have followed the interview as closely as I and you have posed most of the questions, so you play a role here, too. The decision, I think, now depends on you.

#### NOTES

This paper was completed while I was a visiting fellow at the University of Pittsburgh’s Center for Philosophy of Science. I gratefully acknowledge the research support of both the Center and the University of Notre Dame.

1. This was not the only way, as I shall make clear later.
2. Certainly, the sorts of questions Longino says must be answered in order to complete her analysis—for example, “In determining what counts as inappropriate exclusion of dissenting perspectives, does it matter what kind of issue is involved?” and “What bearing should greater cognitive authority have on the attribution of intellectual authority, understood as the capacity to participate in critical discussion and thus to contribute to critical understanding?” (Longino 2002, 133)—certainly these sorts of questions do not seem answerable by yet another round of reflection on the meaning of “knowledge” and related terms.
3. This may be a reason to deny that what PETERS produces is knowledge after all, that is, to deny that Longino’s social value management ideal of science fulfills the epistemic role of the ideal of value-free science.
4. Of course Longino might say at this point that if the requisite political movements or analytic methods or mathematical resources or instrumental technologies or funding or staffing or family supports were not there to aid the underprivileged ones in PETERS, then “all relevant perspectives” were not there in PETERS either. Hence, the conclusion to be drawn is not that the social value management ideal of science fails to fulfill the political role of the ideal of value-free science, but that the social value management ideal of science has not been provided with a genuine test case to see if it does. But such a response

on Longino's part would threaten to make her candidate's fulfillment of the political role of the ideal of value-free science true by definition (of "all relevant perspectives are represented"). It would also threaten to make her candidate unrealizable in practice—just the problem that caused the retirement of the ideal of value-free science.

5. Note, however, that Wylie qualifies this stand in Wylie and Nelson (1998). There she speaks of the changes in archaeology as having been brought about by "a standpoint of gender sensitivity—a grass-roots feminist sensibility" that "reflects the indirect influence of the second wave women's movement" (1998, 7).

6. Antony (1993) and Campbell (2001) classify together sexism and racism along with feminist social values as "biases." They then make a distinction between "good biases"—those that "facilitate the gathering of knowledge," that is, those that "lead us to the truth"—and "bad biases"—those that "lead us away from the truth." In short, "we must treat the goodness or badness of particular biases as an empirical question" (Antony 1993, 215, emphasis hers; and cf. Campbell 2001, 196, who quotes Antony approvingly, although he tries for a more elaborate kind of naturalism in 1998). Solomon (2001) also classifies together sexism, racism, and egalitarian social values, now as "ideology," and goes on to group together these ideological social factors ("decision vectors" or causes for theory choice) with other "nonempirical" decision vectors such as birth order, desire for credit, deference to authority, and competitiveness. But for her, an equal distribution of such nonempirical decision vectors among competing theories is what generally helps to produce "normatively appropriate" science.

7. One example West presents: "Black feminist thought can make a significant contribution by keeping the focus on historical perspectives. During slavery and well into reconstruction, Black women witnessed their husbands, fathers, sons, and brothers being abducted by slave owners, police officers, and Klansmen. For the contemporary Black woman, having her partner arrested may be reminiscent of these earlier historical traumas. Although she wants the violence to stop, she may be reluctant to thrust her batterer into a system that is discriminatory, hostile, and overcrowded with Black males. Batterers realize this and will often use this history to further manipulate their partners. Black feminists recommend that this history be acknowledged while simultaneously holding African-American men accountable for their abuse" (2002, 229).

8. Note that West (2002) begins by explaining that the studies conducted to date present a "contradictory" picture of racial differences in domestic violence. "In summary, some researchers found similar rates of partner violence across racial groups. . . . In contrast, other investigators discovered that Black women, when compared to their White counterparts, were significantly more likely to sustain and inflict aggression. Moreover, they were more likely to be victims of severe violence. This pattern was reported at every stage on the relationship continuum" (218). West's research program is a socially and epistemically sophisticated way to deal with this contradictory situation. What is now being suggested is that there may be other ways, and perhaps even better ways, to deal with it that should also be considered.

9. We can think of West's program as a Lakatosian research program (see Lakatos 1970). West's denial of the stereotype that black Americans are inherently more violent than other ethnic groups is part of the "hard core" of the program. Her instructions to highlight similarities and to explain away dissimilarities between the black and white com-

munities are part of the "negative heuristic" of the program that protects the hard core from refutation. And her instructions regarding how to do this—e.g., to revise concepts such as "partner violence" to uncover similarities and to formulate hypotheses to explain dissimilarities in terms of social factors such as racism and poverty—are part of the "positive heuristic" of the program. Finally, although Lakatos never considered social values as playing a legitimate role within scientific research programs, what motivates West's program are her egalitarian social values. What the candidate has just been saying is that there are conditions under which it will be rational to abandon (to consider "refuted") West's research program, conditions that Lakatos tried to describe in detail. Notice, however, that the abandonment of West's research program would not necessarily justify the abandonment ("refutation") of West's egalitarian social values, for reasons that were made clear in the preceding section. For example, if it were concluded that the stereotype about black Americans is true (which is the denial of the program's hard core), say because violence is inherent in black culture, it would not follow that black women do not deserve the same opportunities as white women to live without fear of violence from domestic partners. See for example the complicated debate about the relationship between feminism and multiculturalism in Okin 1999.

## REFERENCES

- Anderson, Elizabeth. 1995. "Knowledge, Human Interests, and Objectivity in Feminist Epistemology." *Philosophical Topics* 23 (2): 27–58.
- . 2004. "Uses of Value Judgments in Science: A General Argument, with Lessons from a Case Study of Feminist Research on Divorce." *Hypatia* 19 (1): 1–24.
- Antony, Louise. 1993. "Quine as Feminist: The Radical Import of Naturalized Epistemology." In *A Mind of One's Own: Feminist Essays on Reason and Objectivity*, ed. Louise Antony and Charlotte Witt, 110–53. Boulder: Westview.
- . 1995. "Sisters, Please, I'd Rather Do It Myself: A Defense of Individualism in Feminist Epistemology." *Philosophical Topics* 23 (2): 59–94.
- Bernal, John Desmond. 1971. *Science in History*, vol. 2: *The Scientific and Industrial Revolutions*. Cambridge, MA: MIT Press.
- Biology and Gender Study Group. 1988. "The Importance of Feminist Critique for Contemporary Cell Biology." *Hypatia* 3:61–76.
- Bleier, Ruth. 1984. *Sex and Gender*. New York: Pergamon Press.
- Campbell, Richmond. 1998. *Illusions of Paradox: A Feminist Epistemology Naturalized*. Lanham, MD: Rowman and Littlefield.
- . 2001. "The Bias Paradox in Feminist Epistemology." In *Engendering Rationalities*, ed. Nancy Tuana and Sandra Morgen, 195–217. Albany: State University of New York Press.
- Creager, Angela N., Elizabeth Lunbeck, and Londa Schiebinger, eds. 2001. *Feminism in Twentieth-Century Science, Technology, and Medicine*. Chicago: University of Chicago Press.
- Di Leonardo, Micaela, ed. 1991. *Gender at the Crossroads of Knowledge: Feminist Anthropology in the Postmodern Era*. Berkeley: University of California Press.