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IS PRIMATOLOGY A FEMINIST SCIENCE?

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Primatology appears to have come of age. Historical analyses of our field are now being written. But exactly what sort of discipline has primatology grown up to be? Not for the first time, I found myself pondering this question recently as I spent a day reading some forty of the many reviews of Donna Haraway’s 1989 book, Primate Visions. Most primatologists are aware of Haraway’s nearly 500-page analysis of the history of ideas and practices in the science of primatology; some will have read the book, and many more will have read the reviews of the book that appeared in biological and anthropological journals. Thus, they will be aware that Primate Visions was almost universally panned by primatologists (e.g., Cachel 1990; Cartmill 1991; Dunbar 1990, cf., Stanford 1991; Jolly and Jolly 1990; Rodman 1990; Reynolds 1991; Small 1990). However, they may not know that the same book was greeted with much fanfare and the highest praise in a range of journals, from history to science to feminist periodicals (e.g., Fausto-Sterling 1990; Harding 1990; Hubbard 1989; Marcus 1990; Masters 1990; Nyhart 1992; Rossiter 1990; Scheich 1991). For example, one of the latter reviewers stated that Primate Visions “changed her life” and was the “most important book to come along in twenty years” (Fausto-Sterling 1990). Although there were exceptions, one can generalize that practicing animal-watchers did not like the book (“infuriating” was an adjective that appeared repeatedly in their reviews), whereas those who study the process of science, especially those feminists who study science, found it brilliant and stunning. A perfect example of this dichotomized reaction is the joint review by Alison Jolly and her daughter Margareta in the New Scientist (1990): the primatologist mother found the book incomprehensible and wrong-headed, whereas the feminist, postmodernist daughter thought it noble and provocative.

It is possible to suggest several reasons why primatologists, male and female, younger and older alike, reacted so negatively to the book. First of all, as noted by Callan (1990) and Cartmill (1991), the deconstructionist analysis practiced by Haraway can be seen as a hostile act that challenges the authority of the scientist. Her fundamental assertions that facts are relative, that science is a form of story-telling, that sociopolitical forces have a major
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impact on how science is done, are deeply disturbing to many scientists. Secondly, Haraway is an “outsider,” who, like a journalist with an agenda, reported a version of the history of primatology with which many of the people who lived that history cannot concur (e.g., Dunbar 1990; Rodman 1990; Small 1990). Thirdly, *Primate Visions* frustrated many readers because it is written in a prose that is inaccessible to them, a writing style referred to by Alison Jolly as “armor-plated, post-modern, feminist jargon.” Haraway herself did not intend her analysis to be hostile to primatologists (1989: 366), and she may well have been surprised by the extent and depth of negative response she received from its practitioners. Indeed, it could be argued that Haraway's depiction of the history of primatology is that of a science becoming increasingly enlightened over time, especially, she implied, as more women entered the discipline. A thorough analysis of Donna Haraway’s *Primate Visions* and the reactions to it is beyond the scope of this chapter, but I would like to pursue here the point that feminist scholars liked and approved of this book, and, in fact, many of them look very favorably on the discipline of primatology. Primatologists should be aware that Haraway is only one of a group of “science studies” scholars who are out there watching and evaluating scientists; turning the tables by following *us* around with tape recorders and notebooks.

A review of the literature on gender and science shows that feminist scholars often single out primatology as a discipline in which women have made a greater than average impact (see Fedigan 1994; Strum and Fedigan, in press), and one in which women have had a marked influence for the betterment of their science. Although such scholars may disagree as to whether women have always, or only recently, played an important role in primatology, and they may dispute the precise nature of this role, it is clear that primatology is often singled out for praise by feminists. Indeed, it is sometimes interpreted as a feminist science itself. For example, Rosser (1986: 175) said: “Primatology is the field within the sciences where the research has been most transformed by the feminist perspective.” And Bleier (1986: 10) concluded that:

Primatology thus serves as an example of the correction that a feminist perspective can effect in a field of knowledge . . . primatology is a lone example in the natural sciences of dramatic changes made under feminist viewpoints. This is related, in part, to the presence of a critical mass of women and feminists within the field . . .

Similarly, Keller (1987a: 235) commented that:

Over the past 15 years, women working in the field [of primatology] have undertaken an extensive re-examination of theoretical concepts, often using essentially the same methodological tools. These efforts have resulted in some radically different formulations.
What strikes me as curious about such accolades from feminist science scholars is the possibility that theirs is an unrequited love affair, because there are so few primatologists who acknowledge that they are feminists or admire, much less pursue, feminist goals. Obviously, one may counter that it is not common scientific practice to declare one’s sociopolitical allegiances, and that we have no objective data on the proportion of primatologists who could be considered feminists. Further, it is possible that some primatologists wish to disassociate themselves from the implications and repercussions of being labeled feminists, while at the same time adhering to principles congruent with those of feminism. Has primatology quietly, and without announcement, become a genre of feminist science? Or is this a case of mistaken identity? Is it possible that primatologists are doing things of which feminists approve for reasons not directly related to feminism? In order to consider this question, it is necessary to first address a set of prior issues. What do feminists approve of in science—what is the feminist critique of science? What are the criteria for a feminist science? Is primatology a discipline influenced by the woman’s point of view? Is primatology a discipline influenced by the feminist point of view, indeed, a feminist science? I do not claim to give a definitive answer to the last question, but I will lay out the issues, offer an opinion, and make suggestions for how we might develop a better sense of primatology’s place in science.

FEMINIST CRITIQUES OF SCIENCE

It took some time for feminist scholars to turn their critical eye on the natural sciences, and even today there is not a unified challenge to the conceptual framework of science or one coherent strategy for alleviating what feminists see to be the problems with the scientific enterprise. According to Fee (1986), feminists in the early stages of the women’s movement saw science and technology as located in the (public) male world and having little to do with the politics of personal relationships, sexuality, and reproduction that were the focus of their concerns. Beginning in the mid-1970s and early 1980s, however, the growing issues of reproductive engineering, and the relationship between science and the technologies affecting the lives of women around the world, led feminist scholars to turn their analytical skills to addressing the production and application of scientific knowledge. In particular, many of these writers developed critiques of specific theories in the biological sciences, ranging from models of human evolution to deterministic explanations of differences between the sexes to endocrinological constructions of ontogeny (e.g., Birke 1986; Bleier 1984; Fausto-Sterling 1985; Haraway 1978, 1981; Hubbard et al. 1982; Keller 1992; Leibowitz 1983; Longino and Doell 1983; Lowe and Hubbard 1983; Sayers 1982; Tanner 1981; Tuana 1989; Zihlman 1978, 1981). Usually these critiques sought to expose the androcentric
language and concepts seen as inherent in the theories, and sometimes they offered an alternative explanation – one from the female point of view.

As well, feminist scholars in the 1980s and 1990s turned their attention to critiquing the entire scientific enterprise as it has been traditionally conceptualized and conducted in the Western world (e.g., Harding 1986; Keller 1985, 1992; Longino 1990; Merchant 1980; Tuana 1993). These analysts concluded that the history of science in the West is founded on assumptions of male domination and patriarchal power. Keller and others have argued that, at least since the Renaissance, the language and metaphors of science have been those of domination and sexuality. The mind is male and nature is female, men gain knowledge (power) by conquering and penetrating nature. Although these metaphors may no longer be so overt as in the writings of Francis Bacon, the fundamental dualities of mind/body, objectivity/subjectivity, active/passive, detachment/attachment, dominance/subordinance, subject/object, rationality/emotionality have become fundamental in Western thinking, and in all cases the former are associated with men, and with science. This association is believed by some to be the reason why women, even today, are less attracted to, and comfortable in, science. According to this argument, the men who brought about the scientific revolution created an enterprise in their own idealized image. Keller (1985 but cf. 1992), Chodorow (1978), Dinnerstein (1976), and Merchant (1980) have offered psychoanalytic theories to explain why men in Western societies wish to associate themselves with characteristics such as detachment, objectivity and rationality, and to accord them higher value than their opposites.

Women have reacted to this model of science in various ways. Most have simply steered clear of the enterprise. Others have attempted to enter science, but, according to Fee (1986), found it strategic to deny that gender attributes play any role in science. Often women scientists have found it necessary to be “nonfeminine” in order to be accorded authority. However, others have argued that women should not have to remake themselves in a masculine manner in order to be scientists; rather, science itself should change.

Harding (1986) has identified five different types of feminist critique of science. The first are equity studies which document the obstacles that women face in obtaining the educational and employment opportunities available to similarly talented men. The second are studies of the sexist uses and abuses of science and technology in various fields such as reproductive technologies. The third line of feminist critique questions the concept and possibility of scientific objectivity by demonstrating that all steps in the process are value-laden, from the original selection of phenomena to be studied to the final interpretation of results. A fourth type of critique uses techniques from psychoanalysis, literary criticism, and historical interpretation to find hidden symbolic and structural meanings in scientific claims and practices. And the fifth area of feminist criticism involves the development of feminist epistemologies (e.g., feminist empiricism, standpoint, and postmodernism) to lay the
foundation for an alternative understanding of how knowledge and beliefs are grounded in social experience.

Keller characterized the feminist critique of science as occurring along a political spectrum. Slightly left of center is the liberal critique that almost all scientists are men because of unfair employment practices. Compared to other criticisms, this critique would be relatively easy to address and correct. Further to the left is the radical critique that the predominance of men in science has led to bias in the choice of problems with which scientists have concerned themselves. In several sciences, such as the health sciences (and, I would argue, primatology), this criticism has begun to be addressed. Slightly more radical is the claim of bias in the design and interpretation of experiments. Finally, the most radical critique is to question the very assumptions of objectivity and rationality that underlie the scientific enterprise itself. Keller has cautioned against a view of science as pure social product and outlined the dangers of an intellectual descent into total relativity. In her opinion, we should reformulate and maintain the objective effort but abandon the objectivist illusion. “In short, rather than abandon the quintessentially human effort to understand the world in rational terms, we need to refine that effort” (Keller 1987a: 238).

Harding (1986) has also noted that the ultimate objective of feminist critiques should be to bring an end to androcentrism, not to systematic inquiry, even though an end to androcentrism will require far-reaching transformations of that inquiry. Although the feminist critiques are obviously diverse, it seems to me that they share two fundamental commonalities: (1) the assertion that the inferior status of women in science is related to the inferior status of women in society at large, and one will not change without reform in the other; and (2) the attempt to document and bring an end to androcentric bias in science.

**FEMINIST MODELS OF SCIENCE**

Just as there are various feminist critiques and many types of feminists, so there are a number of different models for feminist science. Some theorists have observed that the sciences are so diverse, it is unreasonable to expect them all to be transformed by one feminist framework, and that the search for one “correct” feminist approach is misplaced and runs the dangers of introducing a new orthodoxy (e.g., Longino 1989, 1990; Stanley and Wise 1983). Others have argued that it is not possible to even begin to design a feminist science until we have a more feminist and egalitarian society (Birke 1986; Bleier 1986; Fee 1983), or that asking us to envision a feminist science today is like asking a medieval peasant to design a space capsule (Fee 1983).

Nonetheless, a number of scholars have outlined their vision of what science would look like in a future, more feminist society, or how science might be, and indeed is, practiced by feminists today (e.g., Birke 1986; Bleier
1986; Fee 1986; Harding 1986; Longino 1990; Rosser 1989; Wylie 1992). Rather than describe each of these models in turn, I will attempt to extract the features that many of the descriptions have in common. Although I recognize that this risks oversimplification and the implication of one limiting orthodoxy, when in fact many views prevail, it does allow us to distill the elements of feminist ideology that have been applied specifically to the transformation of the practices of science. And such a distillation of the literature on feminist science is necessary before we can assess its application to the field of primate studies.

There are at least six features commonly outlined in models of feminist science. The first may be referred to as reflexivity, or the acknowledgement of the contextual values that influence everyone, including the scientists among us. Such contextual values are believed to act as constraints on the reasoning and interpretations that affect our world view, and usually are seen to be related to race, class, gender, and nationality, among other factors. In a feminist science, it is often proposed that practitioners would seek to understand their fundamental assumptions and how these affect their science; they would see themselves as people whose background and experiences are involved in the process of doing science. Such an acknowledgement of biases and of the role that sociopolitical considerations play in the scientific enterprise would clearly require a rethinking of the traditional concept of scientific objectivity.

In particular, feminists have been concerned that scientists acknowledge the role that gender plays in how they perceive the world, and that scientists explicitly factor gender into their research. This leads to the second feature common to many models of feminist science: the goal of empowering women by developing a way of understanding the world from the woman's point of view. As noted by Wylie (1992), such research would assist scientists to critically reassess the theory that distorts or devalues the lives and experiences of women, and would allow us to evaluate and understand the gendered dimensions of life that conventional categories of analysis ignore.

A third common feature of feminist models involves a reconceptualization of nature. In many models of feminist science, nature would be conceptualized not as passive and subject to human control, domination and manipulation, but rather as active, complex, and holistic. Science would be committed to understanding and working in cooperation with nature; and the language of scientists would shift away from metaphors of hierarchy and domination to those of comprehension and “empowerment.” Related to this is a fourth feature suggested in many models; the move away from dualisms and reductionism. Many feminist scientists have argued for the lessening of boundaries between the scientist as knower, and the object of knowledge, between objectivity and subjectivity, dispassion and empathy, and a move toward seeing the elements of nature on a continuum rather than in binary opposition.
Fifth, scientific knowledge would be seen and used as a liberating tool rather than one of domination and nationalism; it would be geared to humanitarian values, and to the solution of world problems. Many models of feminist science speak of an enterprise that would serve humanity rather than the military–industrial complex of western nations ("human need rather than corporate greed"; Birke 1986: 143). And finally, in feminist models, the scientific community itself would change; it would become less elitist and more accessible, egalitarian, diverse in make-up and background, and humble in the face of the complexity of life.

Clearly these are utopian goals, and perhaps we can understand now why many feminists argue that a feminist science is not possible in our present world. A more pragmatic approach is taken by Harding (1989, 1991), who concludes that there are feminist sciences already in existence today, and that we can recognize them by observing what feminist scientists do in fields such as anthropology and psychology, where feminist efforts are already a force with which to reckon. According to Harding, feminist scientists are characterized by being strongly reflexive, by focusing on gender as a variable that infuses behavior, views and society, and by "thinking from women's lives," thereby providing some of the crucial resources needed to develop science for the many, rather than for the elitist few.

**FEMALE, FEMININE, AND FEMINIST SCIENCE**

One of the confusing issues for nonfeminists and feminists alike is precisely what it means to "think from women's lives." Some have taken this to mean that women might possess a unified cognitive framework that can be brought to bear on the practices of science, and that women may thus do science differently from their male counterparts. Those adhering to this view can be broken into two categories. A very small minority of feminists have argued that women have biologically based traits which are superior to those of men, and that these traits should be espoused in science (e.g., Elshtain 1981; MacMillan 1982). This might be characterized as the argument for a "female science" based on biological sex differences. More commonly, theorists have suggested that the behavior and beliefs of women are socially constructed, and that it is the differential history, status, and socialization of women which provide them with a perspective on life and on science that is different from that of their male colleagues. This can be characterized as the argument for a "feminine science" based on socialized gender differences. Scattered through the literature on gender and science (see references in Fee 1983, 1986; Harding 1986; Longino 1990; Rosser 1986, 1989) are suggestions that, as a result of their experiences and position in life, women are more likely than men to possess certain characteristics that enable them to better understand the complexities of natural processes, or at least to develop an alternative world view to the traditional dualistic, hierarchical, "masculine view" of science. A
short list of proposed "feminine characteristics" are: a sense of connectedness to nature, an integrative, holistic, contextual world view, a disposition to attend to details, complexities and interactions, a sense of patience and empathy, and a high valuation of pragmatic, experiential knowledge. Fee (1986), for example, has argued that, whether consciously articulated or not, women carry the seeds of an alternative epistemology, and several notable works in psychology (e.g., Belenky et al. 1986; Gilligan 1982) have pursued this argumentation.

Some theorists have implied that a feminist science, that is a science based on a theoretical/political stance, would incorporate these presumed feminine characteristics, but there have been objections to this conflation of feminine traits and feminist goals on several grounds. For example, Longino (1990) noted that some women scientists object to such a characterization of feminist science simply as "soft" science, as a new guise for the old argument that women cannot do real, quantitative, hard science. A related objection to the thesis that women scientists will exhibit socialized "feminine traits" is the counterargument that both women and men scientists have been strongly socialized as scientists, and thus gender differences should be minimized. And some feminists (e.g., Harding 1986; Keller 1987b; Longino 1990) have argued that these very traits ascribed to women are socially constructed categories that originated in the historical subordination of women, and are merely the converse of the culturally dominant "masculine" traits. As such, they may be as much characteristics of "outsiders" of the scientific mainstream as characteristics of women. At the very least, it would surely be an oversimplification to suggest that these "feminine" traits reflect the temperaments and world view of all women.

Thus, it is important to distinguish the concept of a feminist science from that of a feminine science: feminism is a theoretical/political stance, and thus the characteristics of feminists doing science may well be distinctive from those of women doing science (see also Keller 1987b, 1992 on the distinction between gender ideology and women doing science). Feminist theorists, such as Harding, Keller and Longino, are not proposing that feminine biases should replace masculine biases in science, rather they are proposing that an acknowledgement of biases (i.e., contextual values) and a greater diversity of contextual values through the inclusion of people of different backgrounds will result in better science.

In practice, however, it is not always easy to separate the idea of a feminine from a feminist science, since many feminists do see those values thought to be more characteristic of women as essential to a feminist science. As Schiebinger (1987) has noted, traditional feminine values alone may not serve well as an epistemological base for new philosophies of science, but feminist critiques do promote feminine values as an essential part of the human experience, and envision a science that would integrate all aspects of the human experience.
WOMEN AND PRIMATOLOGY

Having summarized the feminist critique of science and distilled the common features of feminist models of science, we are now in a better position to address the questions about primatology raised at the beginning of this chapter. Is primatology a discipline influenced by the woman’s point of view? There are several levels at which this question may be addressed. First, there is the presence of a “critical mass of women” in primatology referred to by Bleier (1986) in the statement quoted earlier. A common perception among many observers of science is that there are more women in primatology than in similar fields. My recent analysis of proportions of women and men in professional societies in 1991–2 established that there is a significantly higher proportion of women in primatology than in analogous biological sciences, such as ornithology, mammalogy, and entomology (Fedigan 1994). However, there are not significantly more women primatologists than there are women anthropologists, psychologists and animal behaviorists, the latter being the three parental disciplines that gave rise to primatology. In 1991, women made up 48 per cent of the membership of the American Society of Primatologists and 38 per cent of the International Primatological Society. By 1992, French (1993) reported that women made up 52 per cent of the American Society of Primatologists. There has been a significant increase in the proportion of women members of primatological societies over the past decade. Thus, the perception that there is a critical mass of women in primatology is likely valid in a comparison across the biological sciences, but not particularly striking from the perspective of the behavioral sciences, such as anthropology and psychology.

Secondly, does the presence of relatively more women, or near gender parity, in a given science influence that discipline? As noted earlier, it has sometimes been argued that women may practice science differently from men, that is, they may tend to choose different topics, frame different questions, prefer different theories and hypotheses, select different methods, and favor different interpretations of scientific findings than do their male counterparts. There has been as yet little research into what male and female primatologists actually do, so there is not much evidence to support or reject the argument of gender differences in scientific practice. The primary assumption is that women scientists focus more on female animals, and there has been some, mainly indirect, evidence that this is the case (e.g., Adams and Burnett 1991; Burk 1986; Haraway 1989; Small 1984; cf. Holmes and Hitchcock 1992). It has also been suggested that women are more likely to try to see the social and physical environment from the female animal’s point of view (Haraway 1989; Hrdy 1984; Rowell 1984). I have argued elsewhere (Strum and Fedigan, in press) that over the past two decades the image of female primates has been fleshed out to include much more than just their roles as mothers and sexual partners of males, the two primary descriptors
used in earlier studies of primate behavior. In the past twenty years there have been many studies of the significance of female bonding through matrilineal networks, as well as analyses of female sexual assertiveness, female long-term knowledge of the group's local environment, female social strategies, female cognitive skills, and female competition for reproductive success. That women have been more responsible than men for developing our present model of the female primate has been suggested, but not documented. A quantitative scientist might examine whether there is a significant relationship between the relative proportions of women in primatology over the past four decades and the proportions of published papers written "from the female animal's point of view." This has not yet been done.

Finally, there is the possibility that primatology has been influenced by a distinctive cognitive and emotional framework or worldview of women described earlier as the "feminine" approach to science. Although there have been many criticisms of this suggestion, others have argued that women scientists are more likely than men to be patient and empathetic, to take a holistic, contextual approach, to attend to complexities and details, to favor pragmatic, empirical evidence, and integrative interpretations. Is this true of women primatologists? I think that this would be almost impossible to establish on any global scale. However, I have argued elsewhere (Fedigan and Fedigan 1989) that the women who were primarily responsible for transforming our model of baboon behavior in the 1970s and 1980s exhibited all of the characteristics just cited, albeit as did several of the men.

FEMINISM AND PRIMATOLOGY

Has primatology been influenced by the sociopolitical movement known as the women's movement and the theoretical/political stance known as feminism? Some scholars (e.g., Haraway 1989; Hrdy 1986; Sperling 1991) have argued it cannot be a coincidence that a strong shift in the perception of female primates began to occur in the mid-1970s, during the same years as those in which the second wave of western feminism urged scientists to take account of the female point of view. Apart from noting this apparent synchrony of historical events, how might we document the impact of feminism on primatology? Few primatologists, other than Hrdy (1986) and Smuts (in Rosenthal, 1991) have identified themselves in print as feminists, which does not mean that others were not influenced by feminism. It would be possible to ask those primatologists who focused on females and the female point of view, what influenced them to do so. However, this method would also run the risks of any self-reporting study (e.g., revisionist history).

Another approach would be to build a circumstantial case by showing that primatology in the past twenty years has shifted toward the values and practices of feminist science. One of the "science studies" scholars (Rosser
1986) has already made such an argument about primatology, and I will briefly outline her logic here, as well as offering my own examples for clarity.

Rosser modified a scheme originally developed to track the changes in curricula in the liberal arts and applied it to the feminist transformation of research and teaching in the sciences. Her scheme consists of six stages in the feminist transformation of science. Stage 1 is characterized by the failure to even note absence of women (or females). I would say that this stage would encompass the first wave of field studies following World War II (approximately 1950–65), during which time the male dominance hierarchy was often assumed to represent the entire social system of primates (see Strum and Fedigan, in press). Stage 2 begins the search for the missing females. Still working within the on-going paradigms of the science, the research that was formerly carried out on the males of the species was now conducted on the females as well. My interpretation is that in primatology, this stage was characterized by the deliberate attempt to collect more data on females and the publication of books such as Female Primates (Small 1984) and Social Behavior of Female Vertebrates (Wasser 1983). Stage 3 is characterized by a growing awareness that females have been a disadvantaged, subordinate group, and a questioning about why this is the case. Examples of this stage in primatology might be Hrdy and Williams (1983) and Fedigan (1982), both of which critiqued the past biases against females in primatological theory and data collection.

Stage 4 in Rosser’s scheme represents the transition from questioning within the traditional paradigm of the given science, to a breaking free to study females on their own terms, that is, to develop a female point of view which may be outside the prevailing paradigm. This stage includes a rise in feminist consciousness on the part of the researcher. Rosser takes her example of this stage from Hrdy’s description (1981, 1986) of how she (Hrdy) realized that the theories she had learned in graduate school did not apply to the female langurs she was studying. Hrdy noted that her shifting perception of female langurs was linked to her dawning awareness of male–female power relationships in her own life, and her attempts to understand and articulate the general experience of female primates. Stage 5 is characterized by the use of the newly discovered female point of view to challenge the traditional theories and models of the science. Gender is used as a category of analysis to test the traditional paradigms. Again, Rosser uses Hrdy’s research as an example, and interprets Hrdy’s studies of female competition, sexual assertiveness, and infanticide as examples of testing the established paradigms of sociobiology in the science of primatology. Other examples of testing and challenging established sociobiological theories using gender as a category of analysis would be Small (1993) and Smuts (1992; see also Smuts and Smuts 1992). Stage 6 represents a transformed, “balanced” view in which both female and male perspectives and experiences are included and integrated.

Thus, based largely on her reading of Sarah Hrdy’s research, Rosser finds
that primatology is the field within the sciences which has been most transformed by the feminist perspective. While it is certainly true that Rosser's interpretation would be strengthened had she read more widely in primatology, can we nonetheless concur with her general conclusion that our discipline has moved through the stages as outlined? I would argue, and have done so elsewhere (Fedigan 1994), that primatology has shown itself to be very responsive to criticisms of androcentric language and interpretations, and quite willing to redress the past focus on male behavior with a present focus on both sexes and on the relationship between the sexes. As primatologists, we have certainly seen more and more efforts to collect information on female lives and behaviors, and to develop equivalent understandings of how female and male primates perceive, behave, and interact in their worlds. If this is a feminist transformation, then it has happened in primatology. Below I will consider alternative explanations for why primatology in the past twenty years has better developed its knowledge and understanding of female primates.

A more generalized, if still circumstantial, case might be built by examining trends in primatology, especially changing trends over the past twenty years, in light of the six common characteristics of feminist models of science described earlier. Although I cannot pretend to a quantitative analysis or even a profound qualitative analysis here, I will offer my opinions as to whether or not primatology exhibits any or all of these six characteristics, as a vehicle for further discussion.

The most commonly mentioned feature of feminist science is "reflexivity," which, as noted above, refers to an awareness and acknowledgement of the contextual values that constrain our perception of the world, especially our views of our scientific subject-matter. Nothing in the published work of primatologists indicates that they are particularly reflexive about the role of race, class, or national biases in their work. However, there is one fundamental tenet in primatology which is highly reflexive and that is the awareness of the dangers of anthropomorphism. Primatologists work with animals that look and often seem to behave in ways familiar to humans, and one of the principles that is drilled into new recruits is that we must avoid ascribing human motivations, values, and understandings to our animal subjects. As scientists, primatologists are constantly reminded that we are limited by our human world view, and that this affects our understanding of our subjects, even as we strive to understand the animals in their own right. Further, most primatologists in North America are trained in anthropology departments (French 1993), and will be familiar with the taboo against ethnocentrism, the latter being the often unconscious view that one's cultural patterns are the only acceptable form of behavior. Although primatologists, like other scientists, strive for objectivity in their research, they have been made well aware that scientists come to their subject-matter with certain preconceptions.

A second feature common to feminist models of science is the factoring of
sex and gender differences into research and the development of the female point of view. I would say that primatology has definitely developed a strong female point of view over the past fifteen years, and it may well be this attention paid to female primates on the part of scientists that drew the attention of feminist scholars in the first place. Why have primatologists developed a strong female point of view? As noted above, it may be the result of feminist ideology. It may also be that the nature of the subject-matter lends itself to a female-centered “world view” in primatologists. Many primate societies are female-bonded; thus kin-related females are the permanent core of the social group, competing with conspecifics for resources, defending themselves against predators, and finding enough food to feed themselves and their suckling young. This was not immediately recognized by primatologists, but it has now forced itself on the consciousness of these scientists, and possibly facilitated a strong focus on females as well as attracting more women to the discipline.

A third feature in feminist models is a reconceptualization of nature as a complex phenomenon with which humans would best attempt to cooperate rather than dominate. Does primatology exhibit this trait? I would answer a cautious yes, and suggest that the primatologists’ conceptualization of nature, like the primatologist’s concept of female primates, is based largely on their subject-matter – the primates. Primates are complex, long-lived animals who exist in a multi-layered web of environmental and social interactions. In order to observe them in the wild, many months, even years, of patient observation are necessary. One develops a very different attitude in this type of study than that developed, for example, when studying thousands of short-lived creatures whose populations are easily manipulated. Without belittling the laboratory work and experimental field work that does take place in primatology, I would say that the goal of most field observation is to better understand the subject-matter, rather than to manipulate or control it. Furthermore, all primatologists are concerned about the increasingly endangered populations of primates in the wild, and the destruction of their habitats. This renders almost all primatologists environmentalists, the latter being a group that is certainly dedicated to working with and not against nature.

Has primatology exhibited the fourth feature common to many models of feminist science, that is, a move away from reductionism and dualisms? Again, I would answer a qualified yes. I would not argue that most primatologists have lessened the boundaries between themselves as scientists and their subjects, nor do they usually have the ability or desire to let the “subject” speak for her or his self, as is recently the case in the human behavioral sciences. However, a very important trend in the past twenty years of primatology is to increasingly portray our subjects as cognizant, sentient, socially intelligent creatures, who are not simply automatons responding to genetic or hormonal directives. A good example is the study of social
dominance relations. At first it was assumed by many primatologists that the bigger, stronger, tougher individuals would be socially dominant over their conspecifics. Now we realize the enormous role played by individual intelligence, social traditions, and social strategies in determining power relationships among nonhuman primates. We have moved from an oversimplified concept of "brute" force to a more complex one of "social finesse" (e.g., Strum 1987). I would say that a move from reductionist understandings of primate behavior to more sophisticated ones is characteristic of many areas of primatological research in the past couple of decades.

Fifth, is primatology geared to humanitarian values and to the solution of world problems rather than to serving nationalistic interests? Clearly, unlike such fields as physics and engineering, primatology does not lend itself particularly well to serving nationalistic, military-industrial interests. However, as pointed out by Haraway (1989), primatological research has sometimes been carried out by and for military interests. I do not know if this is any less true today than in the past. I do know, however, that primates are often used as models for human problems, both behavioral and biological, and in that respect primatology does serve humanitarian ends. The study of primates allows us to put humans into a larger, cross-specific comparative perspective, and one of the ultimate rewards of studying our primate relatives is a better understanding of what it means to be human.

Finally, there is the question of the primatological community; has it become more diverse, accessible and egalitarian over time, as postulated in feminist models of science? Certainly, more and more women are entering the discipline, but there is little evidence in North America and Europe that people of diverse races and classes are pouring into this science. However, there is an increasingly good representation of different nationalities at international primatological meetings, and there have been attempts on the part of many primatologists working in Third World countries to train local people to become scientists. Furthermore, the two major primatological societies (the International Primatological Society and the American Society of Primatologists) have recently made available scholarships specifically targeted for Third World students and scholars. But clearly more could be done to encourage accessibility and diversity of background in this science.

CONCLUSION

In sum, primatology does exhibit several of the features that have been described in feminist models of science. Also, more and more women have entered the discipline over the past decade, and recently there are nearly equal proportions of women and men primatologists. Over the past twenty years, primatology has produced a strong, well-developed focus on the female as well as the male primate. Has primatology become a genre of feminist science? According to the published criteria available on feminist science, I would say,
yes. But whether by design or not is a different question. Some primatologists are no doubt feminists. Others may subscribe to values and practices approved of by feminists for reasons that they do not directly relate to feminism.

If the correlation between feminist science and trends in primatology that has been suggested in this chapter were substantiated, at least two alternative explanations should be considered. The first is that the objectives of a feminist science may be similar to those of other alternative approaches to the scientific enterprise. For example, Fee (1986), Haraway (1989) and Montgomery (1991) have noted the similarities between the feminist critique of science and other epistemologies of science, such as the African, Indian, Chinese, Japanese and Marxist perspectives on natural knowledge. There may not be that many different ways to do science. The women’s movement in the 1970s can also be seen as part of a larger liberation movement growing out of the “counter-culture” of the 1960s in North American and Europe. A thorough analysis would consider the possible influences of many social forces, and not just feminism, on the development of the discipline of primatology in North America and Europe.

Secondly, some of the trends in primatology that have been identified in this chapter, such as the development of a female as well as male perspective, and the move from reductionism and dualisms to increasingly complex, sophisticated explanatory models, could arguably result from the processes intrinsic to the maturation of all scientific disciplines. It is possible that any new science would go through initial stages of being relatively mechanistic and making simplifying assumptions. As the science matures, it would be expected to graduate to sophisticated models that are more complex, dynamic, and multi-factorial. Thus, the goals of those who try to develop a better, more mature science of primatology may sometimes dovetail with the goals of those aspiring to a feminist science.

Nonetheless, a good circumstantial case can be made that primatology has been influenced, if not transformed, by feminist perspectives and objectives, and I have suggested ways that this influence might be more directly documented. At the very least, we should give credit to the feminist critique for drawing our attention to androcentric bias in science, and for challenging us to develop a more balanced view in which both female and male perspectives and experiences are taken fully into account.

However, the reception of the feminist critique by practicing scientists, including women scientists, has often been less than positive, and Hammonds reviews the reasons for this lack of enthusiasm (Longino and Hammonds 1990). She suggests that a primary reason for the negative response is the perception by scientists that the feminist critique of science is a political rather than a scholarly enterprise. She also argues that scientists and feminists cast the “women in science” problem differently: scientists ask “what is it about women’s lives that keep them from doing science?”, whereas feminists ask
"what is it about science that keeps women from participating?" The former question locates the problem with women; the latter formulation situates the problem in science.

Do these general observations on the chasm between many practicing scientists and feminist critics of science help us to understand the negative reaction to Haraway’s history of primatology on the part of its practitioners? Longino (in Longino and Hammonds 1990) states that scientists may mis-read Haraway as an anti-realist who licenses any claim so long as it is in opposition to the mainstream discourse, and who sees primatology as nothing more than self-serving stories. Longino argues on the contrary that Haraway sees the production of primate knowledge as rule-governed (although the rules may change over time), and Haraway acknowledges that scientific representations, produced according to the rules of inquiry in given fields, have made it possible to interact with our material surroundings in reliable ways. However, she believes that scientists cannot inform us about human values and justice. According to Longino, Haraway does not dispute the role of science as representer of natural processes, but she does contest primatology’s claim to hold objective blueprints for the transition from nature to culture and for the original form of human society and justice. Thus, Haraway has tried to convince her readers that “primatology is politics” and “political,” as noted by Hammonds, is precisely what most practicing scientists do not wish to be. One of primatology’s self-avowed tasks is to help us understand the evolution of primate and human sociality, and even those primatologists who would agree with many of the goals of feminist science may not be able to accept Haraway’s fundamental questioning of their authority in this endeavor.

ACKNOWLEDGEMENTS

My research is supported by an on-going grant from the Natural Sciences and Engineering Research Council of Canada (NSERC, Operating Grant no. A7723). Long walks and lively conversations with Shirley Strum over the past several years stimulated me to address the issues in this chapter, and I thank Shirley for her probing, but always courteous, questions about my assumptions. I also thank Pam Asquith, Mary Pavelka, Sandra Zohar and Lori Hager for their critical reading of the manuscript, and Meg Conkey for sharing her list of reviews of Donna Haraway’s Primate Visions.

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