2 Feminism and Science

Evelyn Fox Keller

In recent years, a new critique of science has begun to emerge from a number of feminist writings. The lens of feminist politics brings into focus certain masculinist distortions of the scientific enterprise, creating, for those of us who are scientists, a potential dilemma. Is there a conflict between our commitment to feminism and our commitment to science? As both a feminist and a scientist, I am more familiar than I might wish with the nervousness and defensiveness that such a potential conflict evokes. As scientists, we have very real difficulties in thinking about the kinds of issues that, as feminists, we have been raising. These difficulties may, however, ultimately be productive. My purpose in the present essay is to explore the implications of recent feminist criticism of science for the relationship between science and feminism. Do these criticisms imply conflict? If they do, how necessary is that conflict? I will argue that those elements of feminist criticism that seem to conflict most with at least conventional conceptions of science may, in fact, carry a liberating potential for science. It could therefore benefit scientists to attend closely to feminist criticism. I will suggest that we might even use feminist thought to illuminate and clarify part of the substructure of science (which may have been historically conditioned into distortion) in order to preserve the things that science has taught us, in order to be more objective. But first it is necessary to review the various criticisms that feminists have articulated.

The range of their critique is broad. Though they all claim that science embodies a strong androcentric bias, the meanings attached to this charge vary widely. It is convenient to represent the differences in meaning by a spectrum that parallels the political range characteristic of feminism as a whole. I label this spectrum from

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right to left, beginning somewhere left of centre with what might be called the liberal position. From the liberal critique, charges of androcentricity emerge that are relatively easy to correct. The more radical critique calls for correspondingly more radical changes; it requires a re-examination of the underlying assumptions of scientific theory and method for the presence of male bias. The difference between these positions is, however, often obscured by a knee-jerk reaction that leads many scientists to regard all such criticism as a unit—as a challenge to the neutrality of science. One of the points I wish to emphasize here is that the range of meanings attributed to the claim of androcentric bias reflects very different levels of challenge, some of which even the most conservative scientists ought to be able to accept.

First, in what I have called the liberal critique, is the charge that is essentially one of unfair employment practices. It proceeds from the observation that almost all scientists are men. This criticism is liberal in the sense that it in no way conflicts either with traditional conceptions of science or with current liberal, egalitarian politics.

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A slightly more radical criticism continues from this and argues that the predominance of men in the sciences has led to a bias in the choice and definition of problems with which scientists have concerned themselves. This argument is most frequently and most easily made in regard to the health sciences. It is claimed, for example, that contraception has not been given the scientific attention its human importance warrants and that, furthermore, the attention it has been given has been focused primarily on contraceptive techniques to be used by women.

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This kind of criticism does not touch our conception of what science is, nor our confidence in the neutrality of science. It may be true that in some areas we have ignored certain problems, but our definition of science does not include the choice of problem—that, we can readily agree, has always been influenced by social forces. We remain, therefore, in the liberal domain.

Continuing to the left, we next find claims of bias in the actual design and interpretation of experiments. For example, it is pointed out that virtually all of the animal-learning research on rats has been performed with male rats.[1] Though a simple explanation is offered—namely, that female rats have a four-day cycle that complicates experiments—the criticism is hardly vitiated by the explanation. The implicit assumption is, of course, that the male

rat represents the species. There exist many other, often similar, examples in psychology.

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Evidence for bias in the interpretation of observations and experiments is very easy to find in the more socially oriented sciences. The area of primatology is a familiar target. Over the past fifteen years women working in the field have undertaken an extensive reexamination of theoretical concepts, often using essentially the same methodological tools. These efforts have resulted in some radically different formulations. The range of difference frequently reflects the powerful influence of ordinary language in biasing our theoretical formulations. A great deal of very interesting work analysing such distortions has been done.[2]

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These critiques, which maintain that a substantive effect on scientific theory results from the predominance of men in the field, are almost exclusively aimed at the 'softer', even the 'softest', sciences. Thus they can still be accommodated within the traditional framework by the simple argument that the critiques, if justified, merely reflect the fact that these subjects are not sufficiently scientific. Presumably, fair-minded (or scientifically minded) scientists can and should join forces with the feminists in attempting to identify the presence of bias—equally offensive, if for different reasons, to both scientists and feminists—in order to make these 'soft' sciences more rigorous.

It is much more difficult to deal with the truly radical critique that attempts to locate androcentric bias even in the 'hard' sciences, indeed in scientific ideology itself. This range of criticism takes us out of the liberal domain and requires us to question the very assumptions of objectivity and rationality that underlie the scientific enterprise. To challenge the truth and necessity of the conclusions of natural science on the grounds that they too reflect the judgement of men is to take the Galilean credo and turn it on its head. It is not true that 'the conclusions of natural science are true, and necessary, and the judgement of man has nothing to do with them',[3] it is the judgement of woman that they have nothing to do with.

The impetus behind this radical move is twofold. First, it is supported by the experience of feminist scholars in other fields of inquiry. Over and over, feminists have found it necessary, in seeking to reinstate women as agents and as subjects, to question the very canons of their fields. They have turned their attention,

accordingly, to the operation of patriarchal bias on ever deeper levels of social structure, even of language and thought.

But the possibility of extending the feminist critique into the foundations of scientific thought is created by recent developments in the history and philosophy of science itself. As long as the course of scientific thought was judged to be exclusively determined by its own logical and empirical necessities, there could be no place for any signature, male or otherwise, in that system of knowledge. Furthermore, any suggestion of gender differences in our thinking about the world could argue only too readily for the further exclusion of women from science. But as the philosophical and historical inadequacies of the classical conception of science have become more evident, and as historians and sociologists have begun to identify the ways in which the development of scientific knowledge has been shaped by its particular social and political context, our understanding of science as a social process has grown. This understanding is a necessary prerequisite, both politically and intellectually, for a feminist theoretic in science.

Joining feminist thought to other social studies of science brings the promise of radically new insights, but it also adds to the existing intellectual danger a political threat. The intellectual danger resides in viewing science as pure social product; science then dissolves into ideology and objectivity loses all intrinsic meaning. In the resulting cultural relativism, any emancipatory function of modern science is negated, and the arbitration of truth recedes into the political domain. Against this background, the temptation arises for feminists to abandon their claim for representation in scientific culture and, in its place, to invite a return to a purely 'female' subjectivity, leaving rationality and objectivity in the male domain, dismissed as products of a purely male consciousness.

Many authors have addressed the problems raised by total relativism; here I wish merely to mention some of the special problems added by its feminist variant. They are several. In important respects, feminist relativism is just the kind of radical move that transforms the political spectrum into a circle. By rejecting objectivity as a masculine ideal, it simultaneously lends its voice to an enemy chorus and dooms women to residing outside of the realpolitik modern culture; it exacerbates the very problem it wishes to solve. It also nullifies the radical potential of feminist criticism for our understanding of science. As I see it, the task of a feminist theoretic in science is twofold: to distinguish that which is parochial from that which is universal in the scientific impulse,

reclaiming for women what has historically been denied to them; and to legitimate those elements of scientific culture that have been denied precisely because they are defined as female.

It is important to recognize that the framework inviting what might be called the nihilist retreat is in fact provided by the very ideology of objectivity we wish to escape. This is the ideology that asserts an opposition between (male) objectivity and (female) subjectivity and denies the possibility of mediation between the two. A first step, therefore, in extending the feminist critique to the foundations of scientific thought is to reconceptualize objectivity as a dialectical process so as to allow for the possibility of distinguishing the objective effort from the objectivist illusion.

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Rather than abandon the quintessentially human effort to understand the world in rational terms, we need to refine that effort. To do this, we need to add to the familiar methods of rational and empirical inquiry the additional process of critical self-reflection, . . . attending to the features of the scientific project that belie its claim to universality.

The ideological ingredients of particular concern to feminists are found where objectivity is linked with autonomy and masculinity, and in turn, the goals of science with power and domination. The linking of objectivity with social and political autonomy has been examined by many authors and shown to serve a variety of important political functions. The implications of joining objectivity with masculinity are less well understood. This conjunction also serves critical political functions. But an understanding of the sociopolitical meaning of the entire constellation requires an examination of the psychological processes through which these connections become internalized and perpetuated. Here psychoanalysis offers us an invaluable perspective, and it is to the exploitation of that perspective that much of my own work has been directed. In an earlier paper, I tried to show how psychoanalytic theories of development illuminate the structure and meaning of an interacting system of associations linking objectivity (a cognitive trait) with autonomy (an affective trait) and masculinity (a gender trait).[4] Here, after a brief summary of my earlier argument, I want to explore the relation of this system to power and domination.

Along with Nancy Chodorow and Dorothy Dinnerstein, I have found that branch of psychoanalytic theory known as object relations theory to be especially useful.[5] In seeking to account for personality development in terms of both innate drives and actual

relations with other objects (i.e. subjects), it permits us to understand the ways in which our earliest experiences—experiences in large part determined by the socially structured relationships that form the context of our developmental processes—help to shape our conception of the world and our characteristic orientations to it. In particular, our first steps in the world are guided primarily by the parents of one sex—our mothers; this determines a maturational framework for our emotional, cognitive, and gender development, a framework later filled in by cultural expectations.

In brief, I argued the following: Our early maternal environment, coupled with the cultural definition of masculine (that which can never appear feminine) and of autonomy (that which can never be compromised by dependency) leads to the association of female with the pleasures and dangers of merging, and of male with the comfort and loneliness of separateness. The boy's internal anxiety about both self and gender is echoed by the more widespread cultural anxiety, thereby encouraging postures of autonomy and masculinity, which can, indeed may, be designed to defend against that anxiety and the longing that generates it. Finally, for all of us, our sense of reality is carved out of the same developmental matrix. As Piaget and others have emphasized, the capacity for cognitive distinctions between self and other (objectivity) evolves concurrently and interdependently with the development of psychic autonomy; our cognitive ideals thereby become subject to the same psychological influences as our emotional and gender ideals. Along with autonomy the very act of separating subject from object—objectivity itself—comes to be associated with masculinity. The combined psychological and cultural pressures lead all three ideals—affective, gender, and cognitive—to a mutually reinforcing process of exaggeration and rigidification. The net result is the entrenchment of an objectivist ideology and a correlative devaluation of (female) subjectivity.

This analysis leaves out many things. Above all it omits discussion of the psychological meanings of power and domination, and it is to those meanings I now wish to turn. Central to object relations theory is the recognition that the condition of psychic autonomy is double-edged: it offers a profound source of pleasure, and simultaneously of potential dread. The values of autonomy are consonant with the values of competence, of mastery. Indeed competence is itself a prior condition for autonomy and serves immeasurably to confirm one's sense of self. But need the development of competence and the sense of mastery lead to a state of

alienated selfhood, of denied connectedness, of defensive separateness? To forms of autonomy that can be understood as protections against dread? Object relations theory makes us sensitive to autonomy's range of meanings; it simultaneously suggests the need to consider the corresponding meanings of competence. Under what circumstances does competence imply mastery of one's own fate and under what circumstances does it imply mastery over another's? In short, are control and domination essential ingredients of competence, and intrinsic to selfhood, or are they correlates of an alienated selfhood?

One way to answer these questions is to use the logic of the analysis summarized above to examine the shift from competence to power and control in the psychic economy of the young child. From that analysis, the impulse toward domination can be understood as a natural concomitant of defensive separateness—as Jessica Benjamin has written, 'A way of repudiating sameness, dependency and closeness with another person, while attempting to avoid the consequent feelings of aloneness.'[6] Perhaps no one has written more sensitively than psychoanalyst D. W. Winnicott of the rough waters the child must travel in negotiating the transition from symbiotic union to the recognition of self and other as autonomous entities. He alerts us to a danger that others have missed—a danger arising from the unconscious fantasy that the subject has actually destroyed the object in the process of becoming separate.

Indeed, he writes, 'It is the destruction of the object that places the object outside the area of control. . . . After "subject relates to object" comes "subject destroys object" (as it becomes external); then may come "*object survives* destruction by the subject". But there may or may not be survival.' When there is, 'because of the survival of the object, the subject may now have started to live a life in the world of objects, and so the subject stands to gain immeasurably; but the price has to be paid in acceptance of the ongoing destruction in unconscious fantasy relative to object-relating.'[7] Winnicott, of course, is not speaking of actual survival but of subjective confidence in the survival of the other. Survival in that sense requires that the child maintain relatedness; failure induces inevitable guilt and dread. The child is poised on a terrifying precipice. On one side lies the fear of having destroyed the object, on the other side, loss of self. The child may make an attempt to secure this precarious position by seeking to master the other. The cycles of destruction and survival are re-enacted while the other is kept safely at bay, and as Benjamin writes, 'the original self assertion

is . . . converted from innocent mastery to mastery over and against the other'.[8] In psychodynamic terms, this particular resolution of preoedipal conflicts is a product of oedipal consolidation. The (male) child achieves his final security by identification with the father—an identification involving simultaneously a denial of the mother and a transformation of guilt and fear into aggression.

Aggression, of course, has many meanings, many sources, and many forms of expression. Here I mean to refer only to the form underlying the impulse toward domination. I invoke psychoanalytic theory to help illuminate the forms of expression that impulse finds in science as a whole, and its relation to objectification in particular. The same questions I asked about the child I can also ask about science. Under what circumstances is scientific knowledge sought for the pleasures of knowing, for the increased competence it grants us, for the increased mastery (real or imagined) over our own fate, and under what circumstances is it fair to say that science seeks actually to dominate nature? Is there a meaningful distinction to be made here?

In his work *The Domination of Nature* William Leiss observes, 'The necessary correlate of domination is the consciousness of subordination in those who must obey the will of another; thus properly speaking only other men can be the objects of domination'.[9] (Or women, we might add.) Leiss infers from this observation that it is not the domination of physical nature we should worry about but the use of our knowledge of physical nature as an instrument for the domination of human nature. He therefore sees the need for correctives, not in science but in its uses. This is his point of departure from other authors of the Frankfurt school, who assume the very logic of science to be the logic of domination. I agree with Leiss's basic observation but draw a somewhat different inference. I suggest that the impulse toward domination does find expression in the goals (and even in the theories and practice) of modern science, and argue that where it finds such expression the impulse needs to be acknowledged as projection. In short, I argue that not only in the denial of interaction between subject and other but also in the access of domination to the goals of scientific knowledge, one finds the intrusion of a self we begin to recognize as partaking in the cultural construct of masculinity.

The value of consciousness is that it enables us to make choices—both as individuals and as scientists. Control and domination are in fact intrinsic neither to selfhood (i.e. autonomy) nor to scientific knowledge. I want to suggest, rather, that the particular emphasis

Western science has placed on these functions of knowledge is twin to the objectivist ideal. Knowledge in general, and scientific knowledge in particular, serves two gods: power and transcendence. It aspires alternately to mastery over and union with nature. Sexuality serves the same two gods, aspiring to domination and ecstatic communion—in short, aggression and eros. And it is hardly a new insight to say that power, control, and domination are fuelled largely by aggression, while union satisfies a more purely erotic impulse.

To see the emphasis on power and control so prevalent in the rhetoric of Western science as projection of a specifically male consciousness requires no great leap of the imagination. Indeed, that perception has become a commonplace. Above all, it is invited by the rhetoric that conjoins the domination of nature with the insistent image of nature as female, nowhere more familiar than in the writings of Francis Bacon. For Bacon, knowledge and power are one, and the promise of science is expressed as 'leading to you Nature with all her children to bind her to your service and make her your slave',[10] by means that do not 'merely exert a gentle guidance over nature's course; they have the power to conquer and subdue her, to shake her to her foundations'.[11] In the context of the Baconian vision, Bruno Betelheim's conclusion appears inescapable: 'Only with phallic psychology did aggressive manipulation of nature become possible.'[12]

The view of science as an oedipal project is also familiar from the writings of Herbert Marcuse and Norman O. Brown.[13] But Brown's preoccupation, as well as Marcuse's, is with what Brown calls a 'morbid' science. Accordingly, for both authors the quest for a non-morbid science, an 'erotic' science, remains a romantic one. This is so because their picture of science is incomplete: it omits from consideration the crucial, albeit less visible, erotic components already present in the scientific tradition. Our own quest, if it is to be realistic rather than romantic, must be based on a richer understanding of the scientific tradition, in all its dimensions, and on an understanding of the ways in which this complex, dialectical tradition becomes transformed into a monolithic rhetoric. Neither the oedipal child nor modern science has in fact managed to rid itself of its preoedipal and fundamentally bisexual yearnings. It is with this recognition that the quest for a different science, a science undistorted by masculinist bias, must begin.

The presence of contrasting themes, of a dialectic between aggressive and erotic impulses, can be seen both within the work of

individual scientists and, even more dramatically, in the juxtaposed writings of different scientists. Francis Bacon provides us with one model;[14] there are many others. For an especially striking contrast, consider a contemporary scientist who insists on the importance of 'letting the material speak to you', of allowing it to 'tell you what to do next'—one who chastises other scientists for attempting to 'impose an answer' on what they see. For this scientist, discovery is facilitated by becoming 'part of the system', rather than remaining outside; one must have a 'feeling for the organism'.[15] It is true that the author of these remarks is not only from a different epoch and a different field (Bacon himself was not actually a scientist by most standards), she is also a woman. It is also true that there are many reasons, some of which I have already suggested, for thinking that gender (itself constructed in an ideological context) actually does make a difference in scientific inquiry. Nevertheless, my point here is that neither science nor individuals are totally bound by ideology. In fact, it is not difficult to find similar sentiments expressed by male scientists. Consider, for example, the following remarks: 'I have often had cause to feel that my hands are cleverer than my head. That is a crude way of characterizing the dialectics of experimentation. When it is going well, it is like a quiet conversation with Nature.'[16] The difference between conceptions of science as 'dominating' and as 'conversing with' nature may not be a difference primarily between epochs, nor between the sexes. Rather, it can be seen as representing a dual theme played out in the work of all scientists, in all ages. But the two poles of this dialectic do not appear with equal weight in the history of science. What we therefore need to attend to is the evolutionary process that selects one theme as dominant.

Elsewhere I have argued for the importance of a different selection process.[17] In part, scientists are themselves selected by the emotional appeal of particular (stereotypic) images of science. Here I am arguing for the importance of selection within scientific thought—first of preferred methodologies and aims, and finally of preferred theories. The two processes are not unrelated. While stereotypes are not binding (i.e. they do not describe all or perhaps any individuals), and this fact creates the possibility for an ongoing contest within science, the first selection process undoubtedly influences the outcome of the second. That is, individuals drawn by a particular ideology will tend to select themes consistent with that ideology.

One example in which this process is played out on a theoretical

level is in the fate of interactionist theories in the history of biology. Consider the contest that has raged throughout this century between organismic and particulate views of cellular organization—between what might be described as hierarchical and non-hierarchical theories. Whether the debate is over the primacy of the nucleus or the cell as a whole, the genome or the cytoplasm, the proponents of hierarchy have won out. One geneticist has described the conflict in explicitly political terms:

> Two concepts of genetic mechanisms have persisted side by side throughout the growth of modern genetics, but the emphasis has been very strongly in favor of one of these. . . . The first of these we will designate as the 'Master Molecule' concept. . . . This is in essence the Theory of the Gene, interpreted to suggest a totalitarian government. . . . The second concept we will designate as the 'Steady State' concept. By this term . . . we envision a dynamic self-perpetuating organization of a variety of molecular species which owes its specific properties not to the characteristic of any one kind of molecule, but to the functional interrelationships of these molecular species.[18]

Soon after these remarks, the debate between 'master molecules' and dynamic interactionism was foreclosed by the synthesis provided by DNA and the 'central dogma'. With the success of the new molecular biology such 'steady state' (or egalitarian) theories lost interest for almost all geneticists. But today, the same conflict shows signs of re-emerging—in genetics, in theories of the immune system, and in theories of development.

I suggest that method and theory may constitute a natural continuum, despite Popperian claims to the contrary, and that the same processes of selection may bear equally and simultaneously on both the means and aims of science and the actual theoretical descriptions that emerge. I suggest this in part because of the recurrent and striking consonance that can be seen in the way scientists work, the relation they take to their object of study, and the theoretical orientation they favour. To pursue the example cited earlier, the same scientist who allowed herself to become 'part of the system', whose investigations were guided by a 'feeling for the organism', developed a paradigm that diverged as radically from the dominant paradigm of her field as did her methodological style.

In lieu of the linear hierarchy described by the central dogma of molecular biology, in which the DNA encodes and transmits all instructions for the unfolding of a living cell, her research yielded a view of the DNA in delicate interaction with the cellular environment—an organismic view. For more important than the genome

as such (i.e. the DNA) is the 'overall organism'. As she sees it, the genome functions 'only in respect to the environment in which it is found'.[19] In this work the programme encoded by the DNA is itself subject to change. No longer is a master control to be found in a single component of the cell; rather, control resides in the complex interactions of the entire system. When first presented, the work underlying this vision was not understood, and it was poorly received.[20] Today much of that work is undergoing a renaissance, although it is important to say that her full vision remains too radical for most biologists to accept.

This example suggests that we need not rely on our imagination for a vision of what a different science—a science less restrained by the impulse to dominate—might be like. Rather, we need only look to the thematic pluralism in the history of our own science as it has evolved. Many other examples can be found, but we lack an adequate understanding of the full range of influences that lead to the acceptance or rejection not only of particular theories but of different theoretical orientations. What I am suggesting is that if certain theoretical interpretations have been selected against, it is precisely in this process of selection that ideology in general, and a masculinist ideology in particular, can be found to effect its influence. The task this implies for a radical feminist critique of science is, then, first a historical one, but finally a transformative one. In the historical effort, feminists can bring a whole new range of sensitivities, leading to an equally new consciousness of the potentialities lying latent in the scientific project.

Notes

1. I would like to thank Lila Braine for calling this point to my attention.
2. See, e.g. Donna Haraway, 'Animal Sociology and a Natural Economy of the Body Politic, Part I: A Political Physiology of Dominance'; and 'Animal Sociology and a Natural Economy of the Body Politic, Part II: The Past Is the Contested Zone: Human Nature and Theories of Production and Reproduction in Primate Behavior Studies', *Signs: Journal of Women in Culture and Society*, 4/1 (Autumn 1978), 21–60.
3. Galileo Galilei, *Dialogue on the Great World Systems*, trans. T. Salusbury, ed. G. de Santillana (Chicago: University of Chicago Press, 1953), 63.
4. Evelyn Fox Keller, 'Gender and Science', *Psychoanalysis and Contemporary Thought*, 1 (1978), 409–33.
5. Nancy Chodorow, *The Reproduction of Mothering: Psychoanalysis and the Sociology of Gender* (Berkeley: University of California Press, 1978); and Dorothy Dinnerstein, *The Mermaid and the Minotaur: Sexual Arrangements and Human Malaise* (New York: Harper & Row, 1976).

6. Jessica Benjamin has discussed this same issue in an excellent analysis of the place of domination in sexuality. See 'The Bonds of Love: Rational Violence and Erotic Domination', *Feminist Studies* 6/1 (Spring 1980), 144–74, esp. 150.
7. D. W. Winnicott, *Playing and Reality* (New York: Basic Books, 1971), 89–90.
8. Benjamin, 165.
9. William Leiss, *The Domination of Nature* (Boston: Beacon Press, 1974), 122.
10. B. Farrington, '*Temporis Partus Masculus:* An Untranslated Writing of Francis Bacon', *Centaurus*, 1 (1951), 193–205, esp. 197.
11. Francis Bacon, 'Description of the Intellectual Globe', in *The Philosophical Works of Francis Bacon*, ed. J. H. Robertson (London: Routledge & Sons, 1905), 506.
12. Quoted in Norman O. Brown, *Life against Death* (New York: Random House, 1959), 280.
13. Brown; and Herbert Marcuse, *One Dimensional Man* (Boston: Beacon Press, 1964).
14. For a discussion of the presence of the same dialectic in the writings of Francis Bacon, see Evelyn Fox Keller, 'Baconian Science: A Hermaphrodite Birth', *Philosophical Forum* 11/3 (Spring 1980), 299–308.
15. Barbara McClintock, private interviews, 1 Dec. 1978, and 13 Jan. 1979.
16. G. Wald, 'The Molecular Basis of Visual Excitation', *Les Prix Nobel en 1967* (Stockholm: Kungliga Boktryckerlet, 1968), 260.
17. Keller, 'Gender and Science'.
18. D. L. Nanney, 'The Role of the Cyctoplasm in Heredity', in William D. McElroy and Bentley Glass (eds.) *The Chemical Basis of Heredity* (Baltimore: Johns Hopkins University Press, 1957), 136.
19. McClintock, 1 Dec. 1978.
20. McClintock, 'Chromosome Organization and Genic Expression', *Cold Spring Harbor Symposium of Quantitative Biology*, 16 (1951), 13–44.

3 Reason, Science and the Domination of Matter

Genevieve Lloyd

INTRODUCTION

In a striking passage in *The Second Sex*, Simone de Beauvoir suggested that 'male activity', in prevailing over the 'confused forces of life', has subdued both Nature and woman.[1] The association between Nature and woman to which de Beauvoir here alludes has a long history in the self-definitions of Western culture. Nietzsche, with characteristic overstatement, suggested in a fragment on 'The Greek woman' that woman's closeness to Nature makes her play to the State the role that sleep plays for man.

> In her nature lies the healing power which replaces that which has been used up, the beneficial rest in which everything immoderate confines itself, the eternal Same, by which the excessive and the surplus regulate themselves. In her the future generation dreams. Woman is more closely related to Nature than man and in all her essentials she remains ever herself. Culture is with her always something external, a something which does not touch the kernel that is eternally faithful to Nature.[2]

But in associating woman with sleep Nietzsche only pushed to its limits a long-standing antipathy between femaleness and active, 'male' Culture. The pursuit of rational knowledge has been a major strand in western culture's definitions of itself as opposed to Nature. It is for us in many ways equatable with Culture's transforming or transcending of Nature. Rational knowledge has been construed as a transcending, transformation or control of natural forces; and the feminine has been associated with what rational knowledge transcends, dominates, or simply leaves behind.

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