

towards a feminist
transformation of the sciences

Love, power and knowledge

HILARY ROSE

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Towards a Feminist Transformation of the Sciences

Hilary Rose

Polity Press

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Love, Power and Knowledge

*To Steven for (mostly)
sharing dreams and being
practical*

Plates

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Prologue

The genesis of this book lies a long way back in personal biography and its continuing intersection with history. As with any pre-occupation which has developed over a period of years there is no one single moment, no clear unfolding, just a lumpy thread in the fabric of everyday life, a lumpiness which insisted that I look at it more closely. Genesis becomes less a tidy chronological account than a series of troubling memories; generation as well as gender, class and 'race' frame my thinking. The starting point is memories of war, the horrifying enigma of the Nazi death camps, for these were simultaneously real and unbelievable. How could anyone systematically exterminate an entire people? Other cultures, not least that to which I belonged, had massacred and killed; the new dimension was the meticulous book-keeping of murder. Thus the specific obscenity of the death camps was this 'rationality'. At the time I think I understood this as perverse, for my sense of rationality stood on the side of freedom and justice. But history was to render this sense problematic.

It was perhaps not until the fifties, as a very young woman, that I became intensely aware that the nuclear bomb might well mean no future for my own or for any other child. How was it that science, which seemed to promise so much, was also so deadly that it threatened the human experiment itself? With many others of that generation I walked at Easter to Aldermaston, the centre of bomb research in Britain. Science's collusive relationship to militarism, and scientists' liking for the corridors of power, were untidily entangled with the social optimism of that postwar generation which believed that full employment and an improving welfare infrastructure were

its birthright. I remember reading a book in the late fifties which spoke of the authoritarianism of science; it was like being told about a key which might unlock the puzzle.

The 1960s brought the Vietnam War and the explosive appearance of an international student movement which wanted both an end to an imperialist war and a beginning to a new and more democratic society. An enraged opposition to a genocidal technoscience was integral to the refusal of a genocidal and racist culture; the visible and international network of those who were both in and against this technoscience formed the radical science movement. Being part of an immense social movement gives courage, not least courage to look closely at science and at its self-representation – even to begin to smell and see the possibility that not only was science these things but also both it and its critics were profoundly androcentric.

As I grow older I feel that trying to capture criticism in words, by writing and publishing, is like trying to put salt on the tail of a devil. The book that Steven (Rose) and I wrote in the sixties called *Science and Society* – which at the time seemed just the right title – later made both of us feel rueful. For such a title reinforced the very idea we were trying to overcome, namely that science and society were distinct. Collected essays grouped under the banners of *The Radicalisation of Science* and *The Political Economy of Science* seemed fine in the mid-seventies until my growing sense of the conceptual and political obliteration of gender brought discomfort. Adding women to the marxist political economy of science and stirring was no longer enough.

Trying to comfort research students who tell me that their theoretical framework has changed and that they are finding it difficult to finish their theses, I sometimes suggest looking critically but kindly at oneself over time, as, rather concretely, the 'younger and misguided Hilary Rose'. They and I know that it is not quite as easy as this; I still feel myself accountable for what I have written before (taking responsibility for that allegedly generic 'he' I know I have used) and that I have to make a reckoning with that younger self. So writing, as I did, a paper called 'Hand, Brain and Heart' in the early eighties (*Signs: Journal of Women in Culture and Society*, 9 (1) 1983, pp. 73–90) was for me a way of seeking the reconciliation of a number of different selves and above all of this new self, which had been able to come more clearly into existence within second-wave feminism. In my essay the metonym of the Heart stood in for the caring labour of women, left out by marxist political economy, and for the responsible thinking that arose from this labour which was left out of a marxist theory of knowledge. Such a new feminist knowledge might, I argued, re-vision rationality itself, fostering representations of nature which were more pacific to women and nature alike.

Teaching social work and women's studies students at the University of Bradford, with their immense respect for women's every-

day lives, has made me very conscious of the relationship between knowledge and love. Yet what were the connections between that everyday responsible rationality, that thinking from caring, and the power/knowledge couple which has dominated thinking about science from Francis Bacon to Michel Foucault? There were theoretical difficulties too. Although I felt myself to be a marxist feminist, within Britain the feminism which took gender and the body most seriously was that of radical feminism. How could I admit the body without biological reductionism, and still make connections to class and race? My precarious solution was to think of myself as a materialist feminist and to engage with the feminisms of Scandinavia and the US, as these placed gender as central and took the body as real. For that matter so did the strong tradition of British feminist research on human reproduction to which I also felt indebted.

However, for those of us living in Britain, an old industrial society with a problematic economy and a growing culture of social indifference, the changed context of the 1980s and 1990s has seen those fierce divisions of radical and socialist feminisms diminish; the body and gender are now central issues for feminism. The significant difference is that now feminist materialism is itself having to compete for intellectual space against a strong poststructuralist current. It has been in and against this changing context that the present book has been all too slowly written. I wanted to explore and listen to the many different voices within the feminist science debate. I have felt more than uneasy at some of the new developments but have had no intention of returning to that tradition of fierce polemic in which I was constructed and which it has been a source of satisfaction to resist. (Though I am not so good a feminist that I do not chuckle over robust and witty denunciations, usually from within that self-same marxist viriculture of androcentric poststructuralists.)

The nine chapters of *Love, Power and Knowledge* are organized around three broad concerns: first, the content, context and history of the feminist critique of science as it has developed since the 1970s (chapters 1–4); second, the situation of women within the institutions of science (chapters 5–7); and third, the culture of science – both actually existing science, and science as feminists might reconstruct it (chapters 8–9, and the epilogue).

The book thus begins with a focus on theoretical issues. Chapter 1 surveys feminist science criticism and theory as they have developed (primarily but not only) in the West, tracing their origins as in part the disobedient daughters of the radical science movement, and in part the daughters of the women's liberation movement and of academic feminism. These were to become powerful voices within and of feminism in the eighties and nineties. The second chapter explores feminist constructions of a responsible rationality as shaped by the everyday lives of women and by feminist values; the belief which is central to my book is that such a revisioning of rationality is crucial to

the reconstruction of science. Such a feminist project is both politically realist and utopian; realist because the contemporary culture of technoscience is so deadly that it must be reconstructed; and utopian because the gap between this reality and any gentler one is still immense. Chapter 3 explores the institution of academic feminism as the means through which feminism as a social movement is seeking to change the knowledge system. This chapter is preoccupied with the tension between academic feminism, its cultural and political projects, and its location in diverse national contexts within a global production system of knowledge. I wrote it as a first stab at a feminist sociology of feminist knowledge, as it seemed to me that this might help academic feminists in our many and manifold struggles against that old and appropriately gendered adage of 'he who pays the piper calls the tune.' My fourth chapter turns to the debates within feminist science theory. I read these debates between realists (or standpoint theorists) and postmodernists as very different from those within the mainstream culture, because of the overt commitment of all their participants to feminism as a political project, but also as subtly different from the debates in other areas of feminist knowledge and cultural production. The common preoccupation with nature and with representations of nature frames the debate in ways that are different from discussions of literature, film or the psyche.

My second theme occupies the next three chapters, which are concerned with the structure of the scientific knowledge system and where women scientists are within it. Chapter 5 is thus a structural counterpart to chapter 4; where the latter looks at ideas, the former looks at how far different patriarchal academies have admitted, or been forced to admit, women. Just how far has feminism achieved its goals of equality of representation within the academic labour force? How near is the objective of 'nothing less than half the labs'? Chapter 6 examines the story of the admission of women scientists into the Royal Society, that bastion of British scientific eminence which for three centuries managed to exclude women. The interest of this particular account is the dramatic contrast between the self-representation by this elite body of how Fellows are customarily elected, and the quite extraordinary treatment accorded the first woman candidate to be proposed in the light of the anti-discriminatory legislation passed some two decades previously. The archives of the Royal Society provide a marvellous insight into the ways men have managed to exclude women and how actively they 'man'aged their admission into elite institutions. It is to the credit of the Royal Society that unlike the British government it does not seem to weed its archives, so that the mechanics of the patriarchal scientific power elite are exposed to view. The third chapter in this group focuses on women scientists at the apex of the prestige system of science, the nine women Nobel Laureates there have been over the nine decades since

the institution of the prize. As well as honouring the extraordinary achievements of these women I wanted to show how their biographies could also be understood as like those of other women scientists of their time. (Working on this chapter in Sweden, where governmental papers are, especially to a British social scientist accustomed to a culture and law of official secrecy, remarkable for their openness, was peculiarly frustrating, as the Nobel archives are closed for fifty years.) Chapters 5–7 thus seek to reinforce the need to battle for space for women within the organizational structure of the production of knowledge even while feminism struggles to reconceptualize the knowledge system itself.

Chapters 8 and 9 are in very different ways about threats and hopes. Chapter 8 focuses on the powerful emphasis given to the new genetics within the life sciences. Increasingly consuming a significant section of the life science budget, its highly reductionist explanations of human bodies and behaviour alike seek to dominate the biomedical culture and bring particular challenges to women. The chapter brings together a recognition that science is socially shaped with a critical analysis of the cultural content and implications of that knowledge. Chapter 9, for me one of the most enjoyable to write, explores some of the texts of feminist science fiction in an extensively revised version of a paper, 'Dreaming the Future', originally published in *Hypatia*, 3 (1), 1988, pp. 119–37. Here, in a laboratory of our own, feminists can explore and experiment with other ways of knowing, other sciences and other futures than those offered by the seeming inevitability of an androcentric technoscience. Finally, in the epilogue, I address the unfinished business of moving beyond the one-sided rationality of masculinist science, to ask how, within our everyday lives, we can begin to create sciences which bring together love, power and knowledge.

Thinking and writing this book in a changing socioscape has for me been a protracted process, a mixture of isolation and feeling part of a continuing and immensely creative conversation. At the birth of modern science in seventeenth-century England the men and tiny numbers of women who corresponded with one another nationally and internationally, sharing and arguing over ideas about nature, felt themselves to be part of an invisible college. Over the past two decades a new invisible college, this time of feminist critics and theorists of science, has come into existence. Initially no more than a handful, the numbers have grown quite rapidly. Making my acknowledgements is thus, for very welcome reasons, hard. But the particular invisible college to which I am indebted, both individually and collectively, and which I think has never corporeally and completely met, includes: Lynda Birke, Tarja Cronberg, Anne Fausto-Stirling, Donna Haraway, Sandra Harding, Nancy Hartsock, Ruth Hubbard, Evelyn Fox Keller, Maureen McNeil, Nellie Oudshom, Vandana Shiva, Kate Soper and Ethel Tobach. Death has taken some

of the most wonderful participants; I think with sadness of Ruth Bleier's and Wendy Farrant's premature deaths; yet different others enter. A central pleasure in this feminist symposium is heterodoxy, pleasure in contention rivalling delight in discovered agreement.

The University of Bradford has provided an extraordinarily rich feminist milieu, especially since we established the women's studies degree in 1981, an act of creative resistance in a year of brutal and stupid cuts in British higher education. Colleagues and friends there have been a precious resource; two with very different approaches to feminism, who live a caring responsibility of knowledge and have been particularly important to me, are Sheila Allen and Jalna Hanmer. Errollyn Bruce, Pauline Brier and my students within the West Yorkshire Centre for Research on Women have been a valued source of stimulation and friendship. Conversations with feminists over the years working in and on human reproduction have been important, notably Ann Oakley, Frances Price, Wendy Savage, Meg Stacey, Michelle Stanworth and Gail Vines.

In addition to drawing general support and encouragement from being part of a rich feminist culture I have many directly book-related debts owed to an amazingly multidisciplinary network of friends and colleagues who read draft chapters and sets of chapters: Lynette Hunter, my literary friend; historian Diana Long; and biologists Ann McLaren, Clare Woodward and Val Woodward. I owe very special intellectual political and personal debts to that heroic band who read and commented on the entire book: Sandra Harding, Donna Haraway, Ruth Hubbard and my Polity editor Michelle Stanworth. Last I must thank Steven Rose, who read and discussed many drafts at different stages and whose sustained emotional and intellectual support was crucial to my finishing.

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Introduction: Is a Feminist Science Possible?

Science it would seem is not sexless; she is a man, a father and infected too.

Virginia Woolf, *Three Guineas*

For the master's tools will never dismantle the master's house. They may allow us to beat him at his own game but they will never enable us to bring about genuine change.

Audre Lorde, *Sister Outsider*

To ask, 'Is feminist science possible?' is to return to our own history of struggle and the contradictory relationship of feminism to science and its changing definition.¹ For second-wave feminism, science and technology have not – with the almost single and certainly exceptional voice of Shulamith Firestone – been seen as progressive for women's interests. There has been little chance of invoking the metaphor, unhappy or otherwise, of courtship and marriage that was widely used to foster the hoped-for relationship between marxism and feminism. Where the radical science movement of the 1960s had to free itself from the progressivist claims of science – to show that science was not even neutral but often oppressive and antithetical to human liberation – many women, already outside such progressivist claims as a result of their very exclusion from science, had a hunch that modern science and technology served all too often as means of domination and not liberation.

Overtly relegated to nature by the recrudescence during the seventies of the patriarchal determinism of sociobiology, feminists learnt to uncover and contest the practices of an androcentric science. In claiming a place in culture, feminism has had to think much more deeply about both social relationships and the relationship of women to nature. Indeed feminist biologists, in contesting the boundaries of nature and culture laid down by sociobiology, understood in a direct and practical way that as women we, our bodies and ourselves, are part both of nature and of culture. Political and cultural struggles waged by feminists within and without science have contested a patriarchal science's right to determine those boundaries. For the most part feminist struggles have resisted biological determinism, which reduced women to nothing but their wombs, hormones, genes, or whatever was the bodily part in biological fashion,² but there is also a record of feminists using nature – even essentialism – as a resource in the defence of women.³

The recurrent mood, as and when the feminist movement preoccupied itself with science, has been one of anger. This anger extended from a sense of injustice at being shut out of an activity that some women, despite the engendered rules of the game, always wanted to take part in to an overwhelming sense of fury that masculinist science and technology are part of a culture of death. The ideology of science, proclaiming objectivity, freedom from values, and dispassionate pursuit of truth, has excluded women and been integral to our cultural domination, has harmed women's bodies (in our best interests, of course), and has threatened the environment itself. That science claimed its ideological purity, leaving by implication its partner technology to carry the responsibility for the dirty side of the relationship, was part of science's skill at conveying a culture of no culture.

Second-wave feminism began relatively slowly to analyse and contest science, to see the connections between this entity called 'science' and those issues that the movement defined as its own.⁴ There were good reasons why the movement was slow; its central preoccupation was with women's shared experience, to reclaim what had been denied or trivialized out of existence and return it to social and political existence. The feminist movement has developed and changed in many ways since those early, path-breaking years of the late 1960s and early 1970s. Then, to consider housework, abortion, sexuality, love, birth control, motherhood and male violence as central social issues was to work against the grain of an arrogant and naturalizing masculinism. Feminism necessarily embraced body politics; the struggle for the repossession of our bodies, including knowledge about them, was to become central to the movement. The very process of examining these everyday aspects of women's lives, learning to speak about them, forged new concepts, new names.

Naming – conceptualizing – has been rightly seen within feminism

as empowerment.⁵ Naming brings into consciousness phenomena and experiences hitherto denied space in both nature and culture. In the fierce opposition to new concepts, it becomes clear that often these are not merely unacknowledged aspects of reality waiting to be discovered, but are actively erased by the values of the dominant culture. Even today feminism's concept of gender meets strong resistance from androcentric social theorists, or it is used as a euphemism for women, thus denying relationality and so diminishing the political and cultural claims. Naming, above all when the words become part of the language of new historic subjects seeking to take their place in society, simultaneously contests existing hegemony and affirms a changed consciousness of reality.

Feminists both constructed new knowledge, new accounts of the world from the perspective of women's everyday lives, and also tore down existing hegemonic ideas. Central concepts which had organized thought and culture, not least sacred reason itself, were interrogated and found to be far from some timeless universal thought form, but instead a gendered, historically and geographically specific construct. The intense abstractionism of masculine thought came into visibility.⁶ To catch the distinctive character of women's and feminist thought, feminists evoked alternative metaphors of spinning and quilt-making, reconstructions of a responsible rationality, of an ethic of care.⁷ As Adrienne Rich wrote: I am convinced that 'there are ways of thinking that we don't yet know about. I take these words to mean that many women are even now thinking in ways which traditional intellection denies, decries or is unable to grasp.'

Although feminism has touched women's lives the world over and draws increasing numbers of women into its vortex, it is none the less true that the movement has been strongest within the old capitalist societies – and it is here that the discussion of science has been most intense. This is not to say that feminists in what were the societies of 'actually existing socialism' and third world or sometimes black feminists within advanced industrial societies have experienced science and technology in a particularly favourable way; rather that, for necessary reasons, their attention has been primarily focused elsewhere. It has been the unrelenting struggle to produce enough food without further green revolutions harming people and land alike, the struggle against disease, not least the AIDS which sweeps Africa, and other crises of the environment which have placed science and technology on the agenda of third world women's struggles to survive.⁸

From the earliest days of the radical science movement of the 1960s, the critique of science and technology has focused attention on the ways in which existing science and technology are locked into the contemporary forms of capitalism and imperialism as systems of domination. This denunciation has served two functions. Negatively, it has facilitated the growth of an antipathy to science that rejects all

scientific investigation carried out under any conditions and at any historical time.⁹ Within feminism this took the form of denouncing all of science and technology as monolithically and irretrievably male. More positively, the denunciation has fostered the difficult task of constructing, in a prefigurative way, both the forms and the content of a different, alternative science – one that anticipates the science and technology possible in a new society and, at the same time, contributes through innovative practice to the realization of that society.¹⁰ But from its inception, with its false starts as well as real achievements, its perilous balancing between atheoretical activism and abstract theoreticism, the project was not without its contradictions and difficulties. Feminism is just beginning to recapture the full force of Virginia Woolf's compelling aphorism; science, it would seem – to rephrase – is neither raceless, sexless nor classless; she is a white man, bourgeois, and infected too.

The trouble with science and technology from a feminist perspective is that they are integral not only to the systems of domination of late capitalism and its new forms of imperialism, but also to one of patriarchal domination; yet to try to discuss science under these structures of domination or to argue that they constitute one social formation has proved peculiarly difficult. The present chapter serves to open that discussion by looking, first, at the radical critique of science of the 1960s and 1970s, and then at the growing body of feminist scholarship which developed partly in co-operation with, and partly against, the androcentric voice of the radical science movement.¹¹

The radical critique of science

The critique of science was to explode into practice and to struggle into theory during the radical movements of the late 1960s and early 1970s. The rich and complex issues contained in the class and social struggles of those movements were frequently narrowed and constrained as the theoreticians filtered the wealth of lived experience through the abstract categories of theory. From an early rhetoric which attacked with a certain even-handedness the class society, imperialism, racism and sexism (those who were black, colonized or women might well have had doubts about their equal prioritization in practice as well as in rhetoric), two main lines of analysis were developed. The first considered the political economy of science, and the second took up the relationship between science and ideology. While the two are linked at many points, work in political economy was more coherently developed; work on the debate over science and ideology was and remains more problematic.¹²

The need to reply immediately to the renewed biological determinism of the 1970s and 1980s was urgent as scientific racism sustained a