Conflicting Scientific Feminisms
Charlotte Haldane and Naomi Mitchison

Susan Squier

Scientific discourse served women as a vehicle for conveying arguments about female cultural politics. (Benjamin 40)

Practicing conflict is also practicing feminism. (Childers and hooks 70)

For me the unity of women is best understood not as a given, on the basis of a natural/psychological commonality; it is something that has to be worked for, struggled towards—*in history.* (Mohanty 84)

Contemporary feminist theory has sensitized us to the fact that debates about female cultural politics take place not only across the gender divide, but between women as well.¹ I want to use that insight to extend our analysis of women writing about science, using it to move beyond the crucial reclamation of women’s popular science writing as an arena in which women have demonstrated their involvement with scientific practice and exerted power and agency to consideration of the issues and positions being advanced and debated when women write about science. My concern in this essay is to tease out the differences—and, indeed, the conflicts—between feminist positions. I will do so through an analysis of the writings of two modernist women science writers: Charlotte Burghes Haldane and Naomi Haldane Mitchison.

Like many female popularizers of science, Naomi Haldane Mitchison was born into a scientific family; like others, Charlotte Burghes married into one. Mitchison was the daughter of Oxford physiologist John Scott Haldane, and the younger sister of J. B. S. Haldane, the geneticist and popular science writer. With J. B. S.’s marriage to Charlotte Burghes, the two women became sisters-in-law for a time. In addition to this relation to Jack Haldane, Naomi Mitchison and Charlotte
Haldane shared a fascination with scientific practice and a determination to communicate scientific findings to the general public. Yet despite these commonalities, they were far from united in their views on or ways of writing about science. A comparison of the scientific writings of these two women, both of whom explicitly defined themselves as feminists and yet whose feminisms were dramatically different in content and method may expand our understanding of the tensions and possibilities at play when modernist women writers turned to scientific discourse to articulate feminist issues.

Although both Haldane and Mitchison were drawn to popular science writing as an authoritative site on which to stage arguments for women’s increased agency, voice, and social position, the uses they made of scientific discourse were as different as their feminism and their class origins. They used scientific discourse to authorize two quite different arguments for woman’s agency as a reproductive/sexual body, Charlotte Haldane in *Motherhood and Its Enemies* (1927) and Naomi Mitchison in *Comments on Birth Control* (1930). In their science writings they exemplify two conflicting feminist stances toward science: a valorization of the maternal role accompanied by an affirmation
of normal science, and alternatively an appreciation of the multiplicity of women's biological and social possibilities accompanied by a revisionary drive to expand our notions of both scientific practice and scientists. As a brief survey of some of their popular science work will demonstrate, the different positions on science the two women held reflected their conflicting feminist commitments. Haldane's pronatalist, essentialist feminism led her to scientific meliorism, while Mitchison's
proto-postmodern feminism led her to challenge the very disciplinary and epistemological premises of scientific practice.

The horizon of expectations against which we read the popular science writings of Naomi Haldane Mitchison and Charlotte Haldane was set by J. B. S. Haldane in his classic essay, "How to Write a Popular Scientific Article." While he came to fame as a popularizer of science with his *Daedalus, or Science and the Future* (1923), an essay that predicted the revolutionary changes in domestic, social, and political life that would result from the application of science to human reproduction, it was with the later article that J. B. S. Haldane codified the accomplishment of his youth. "Most scientific workers desire to spread a knowledge of their subject and to increase their own incomes," he magisterially begins his advice for popular science writers (3). Yet a gender bias narrows Haldane’s horizon in this essay: if the scientific worker is a woman, her scientific activity has already been curtailed by her gender. She has often been relegated to the margins, as craftworker, folk healer, teacher, or what Londa Schiebinger has called “invisible assistant” to male scientists (8). Moreover, when the science writer is a woman she may have motivations unanticipated by J. B. S. Haldane. Rather than hoping to spread a knowledge of her subject and increase her income, she may simply wish to achieve a foothold or to attain authority in science.

She may also hope to use science to authorize a feminist position. "Apart from my early acquaintance with the menace of anti-semitism, the second greatest influence on my youthful mind was that of feminism," Charlotte explained in her autobiography (*Truth Will Out* 6). Naomi Mitchison began, and then abandoned, a book on feminism in the 1930s. Later, she mused in her diary, "my feminism is deeper in me than, say, nationalism or socialism: it is more irrational, harder to argue about, nearer the hurting core." Although Mitchison rejected the label "feminist" in her old age, her writing and political activities demonstrate her lifelong, deep allegiances to feminism and socialism (Benton 63, 128). Yet in their era, to speak as feminists and achieve credibility was a difficult task. "By the late nineteenth century it was already necessary to demonstrate a scientific approach in order to gain full recognition," Jane Lewis has observed. "The ideas formulated by scientists and mediated by the medical profession formed the framework within which all women, including active feminists . . . had to work" (82).

Though as feminists they shared a strategic interest in science, Charlotte Haldane and Naomi Mitchison came to popular science writing by different routes, dramatizing a factor at times hidden by a feminist focus on gender and science: how class shapes a woman's development.
Naomi was educated at Lynam’s School and Oxford University, where formal science training extended the science that was an inevitable part of her home life as the daughter of John Scott Haldane, reader in physiology at New College, Oxford. While only a teenager, she wrote a play about modern genetics that was given a full performance at Lynam’s School, and “for a long time it was thought,” she recalls in her memoirs, “that I would have made a good scientist” (“All Change Here” 63). Even after she had decided to abandon science in favor of writing, she had the background and the family connections that made it possible for her to write knowledgeably on a variety of scientific matters. In the jacket copy to her 1976 novel Solution Three, Mitchison describes herself as “coming from a family of scientists.” Yet while Mitchison’s family connection was clearly important, it would be an exaggeration to say that connection ensured automatic acceptance for her science writing. As she put it to me in a letter, “Scientists think I am frivolous, and non-scientists think I make things difficult.”

In contrast, Charlotte Burghes Haldane’s scientific education was limited to “the elementary bases of physics, chemistry and biology I had learnt at my German school in Belgium; barely enough to enable a schoolboy to pass matriculation” (Truth Will Out 16). Her plans for further education after her German secondary school were dashed by her father’s business reversals. Forced to become a secretary, she only gradually found her way into journalism. When she decided to write a novel about science, she realized she required a scientific advisor. Unable to turn to any relative or close friend, as could Mitchison, she boldly sought out the author of the popular science essay that had impressed her with its vision of reproductive innovations, Daedalus, or Science and the Future. That man—who later became her husband—was J. B. S. Haldane.

Their class positions also shaped the positions on marriage and motherhood that Mitchison and Haldane turned to scientific discourse to articulate. Haldane, who described herself in her autobiography as a woman financially unable to stay home and care for her child, invoked scientific expertise to argue the case for subsidized motherhood. In contrast, Naomi Mitchison—whose work as a novelist was a matter of choice, not financial necessity, and who had nursemaids to help with the care of her five children—challenged the existing scientific technologies of contraception as giving a still-incomplete solution to woman’s desire to combine employment, sexual freedom, and maternity. Note the divergence: both positions were designed to increase woman’s agency, yet one conceptualized that agency as achieved through and focused on maternal involvement (so Haldane stressed
increasing the social support for women as mothers), while the other saw it as expressed in a variety of venues, maternal, sexual, and occupational. So Mitchison argued that feminists will not want to be forced to choose between work and maternal/sexual love. They will want both worlds, and should be able to have both:

Intelligent and truly feminist women want two things: they want to live as women, to have masses of children by the men they love and leisure to be tender and aware of both lovers and children: and they want to do their own work, whatever it may be. The two things are not compatible, except in very rare cases. . . . Adequate contraceptive methods are an essential part of this compromise. (Comments 25)

Both writers also constructed the social role of science differently. The duty of scientists, according to Charlotte Haldane, was to inform state policy, by delineating the difference between "normal" women who were qualified to become state-supported vocational mothers and abnormal, "intersexual" women—feminists and career women—who tended to disrupt social relations. "To give such females political and social power . . . may prove in the end the means to inactivate or to endanger those who must first of all be encouraged and protected," Haldane argued in Motherhood and Its Enemies (136). In contrast, again, Mitchison saw scientists as far less authoritative arbiters of social policy. In her Comments on Birth Control, she wrote of the contraceptive technologies they produced as "a compromise, and all compromises are by nature uninspiring and un-universal" (31). Yet she concluded that the difficult mood of sexual self-consciousness produced by the contraceptive compromise, while "a bad business on the whole, . . . is for the moment not only inevitable, but necessary," and she went on to acknowledge that "the whole problem of women's work, and especially married women's work, is in flux" (32).

While this divergence in the ways that Haldane and Mitchison treated the scientific power over women's bodies reveals the different agendas of pronatalist and sexual reform feminists, another moment of parallel popular science involvement by the two writers reveals a different sort of contrast; in the position they take toward science and the scientist. In the 1920s and early 1930s, both women took on a managerial or editorial role in popular science writing: Charlotte first as literary agent for J. B. S. Haldane and later as editor of the socialist women's magazine Woman Today, and Naomi as editor of the controversial Outline for Boys and Girls and Their Parents (1932). The assumption of such roles was a characteristic and important strategy of the female science writer, for they provided an autonomy and agency otherwise hard to
come by in a profession implicitly (albeit unconsciously) gendered male. Such managerial/editorial roles in popular science writing merit a closer look by feminist scholars, for they represent another way that women have been able to "do science" (Eden 581).

Charlotte Haldane acknowledged this explicitly in her autobiography, recounting that it was she who gave J. B. S. the idea of writing popular science articles in order to capitalize on the success of his *Daedalus*:

*I foresaw the demand that would follow, for popular articles by him on scientific themes... he willingly accepted my suggestion that he should practice it [scientific journalism] as a hobby in his spare time, especially as it could be made to pay well. We decided that I would become his secretary and his agent. (Truth Will Out 21)*

In later years, when she spoke with a BBC interviewer after Haldane’s death, Charlotte expanded humorously on her role as J. B. S.‘s secretary and agent, making it clear that she felt she had been responsible for a large part of his creative production. "I began to feed questions into this human computer," she recalled, "and out would come the explanations as to how things and people worked. I then typed it out and proceeded to sell them to various magazines, and later to English and American publishers. In two years, I created a legend and doubled J. B. S. Haldane’s income."³ In this retrospective reconstruction of her professional relationship to J. B. S., Charlotte "invents" the scientist as a docile machine, a sort of profitable cyborg, and privileges her ingenuity (in constructing questions for J. B. S. and in marketing his explanations) over the scientist’s automatic responses. Clearly, *she* is the creative partner in what is otherwise represented as an essentially mechanistic enterprise.

Yet in spite of this authoritative self-presentation as the controller of the mechanistic scientist, when she assumed the position as editor of *Woman Today*, a socialist woman’s magazine published briefly in the late 1930s, Charlotte Haldane adopted a subservient, even adulatory attitude toward scientists and scientific practice, probably because she had then to conform to public opinion in order to keep up the magazine’s faltering circulation. Reflecting her awareness that there was an expanding market for scientific knowledge, she built the readership of *Woman Today* by publishing articles that addressed traditional women’s magazine topics from a scientific perspective, with an ideological message.

Careful not to alienate her readership, Haldane took a position diametrically opposed to the one she claimed first motivated her to take on the editorial role. Rather than acknowledging her editorial authority in relation to scientists, whether acquaintances or her husband, she
played up her own femininity, purveying a traditional construction of the scientist as expert, infallible, and inevitably male. She included scientifically tinged articles reflecting the understanding that scientists, rather than women themselves, were the authoritative sources for knowledge about the female body. And if a scientist who published in Woman Today also happened to be a woman, Haldane’s editorial treatment of her biography was telling. When she published Dr. Barbara Holmes’s essay “The Gland That Controls Your Sex,” the biographical note on Dr. Holmes introduced her to readers shorn of her professional title, describing her instead as “Mrs. Barbara Holmes . . . the daughter of a very great scientist, Professor Sir John Gowland Hopkins, a former President of the Royal Society.” Even the professional occupation specified for Dr. Holmes was diminished by double domestic modifiers: “Mrs. Holmes works in the Biochemical Laboratory at Cambridge, of which her father is the director” (Haldane, “Calling” 3). Haldane’s biographical note affirms patriarchal constructions of the scientist as male, representing women scientists as (merely) members of scientific families—daughters or wives of scientific men. Haldane also cloaked her own narrative of scientific practice within the more acceptable narrative of heterosexual romance, when she published “They Were Two Hours from Death but I Was Not Afraid,” her account of a dangerous physiology experiment carried out by her husband in the context of a wartime tragedy—the suffocation of submariners on the Thetis. The essay emphasizes (almost to the point of caricature) Charlotte Haldane’s domestic, possessive, and hero-worshiping relation to her scientist husband, J. B. S. Haldane:

The scientific tradition is one of the noblest conventions of mankind. Scientists do not take foolish risks. . . . Whenever my husband has made an experiment on himself, for example, he has always told me in advance just what he was trying to find out [sic] and what he thought would happen. He has never been wrong. So, as a well-trained scientist’s wife, I am not brave, but confident in my husband’s ability and knowledge.

This nearly parodic construction of infallible scientist husband and “well-trained scientist’s wife”—clearly a capitulation to traditional gender roles—reflects Haldane’s strategy of using normal scientific discourse, along with conventional women’s magazine topics, to advance radical causes (whether in terms of politics or gender politics). A similar use of traditional gender roles and a traditional construction of science to press nontraditional political positions occurred when Woman Today published Leonora Gregory’s “Lipsticks are Politics.” That essay argues for using “the aids which science has provided to even up the bad
deal we may have had from nature and from our environment," in
order to deduce a moral that is not biological, but political. "Whereas
make-up is frowned on in Germany, lipsticks are in great demand in
the Soviet Union," Gregory points out, and she deduces from this con-
trast "two attitudes to life that go right to the bone. The one: anti-
progressive, anti-scientific, which results in restricting the mass of peo-
ple to a minimum share of what the world has to offer. The other: for
utilizing everything that nature and science can provide in order to
improve the lot of all" (16–17).

The centrist, meliorist, and patriarchal model for scientific practice
that Charlotte Haldane's popular science writing adopted to advance
the position of women as wives and mothers contrasts dramatically
with the way that Naomi Mitchison used science in her volume An
Outline for Boys and Girls and Their Parents (1932). Intended as "a group
of essays about the state of the sciences and humanities written for
children by left-leaning thinkers," An Outline caused a controversy
upon publication because it included Charles Skepper's critique of the
nuclear family as merely "one way of keeping together" (Benton 82–83;
Skepper 461–92). Rather than shoring up the family as a way of impro-
vosing women's position, as Charlotte Haldane's work attempted to do,
this essay argued that emphasis on the importance of the family was
itself a "condition unfavorable to women" (Skepper 480). "Where the
family is important, there is nobody else to look after children, and it
becomes all the more necessary that women should be deprived of
rights in order to make them specialise in this task. The inferior posi-
tion of women is therefore . . . closely connected with family life"
(480). Skepper's essay in An Outline catalyzed a sharp debate in the
press: an open letter appeared, attacking the volume for promoting the
"break-up of the traditional family," signed by a group of prominent
churchmen, headmasters, and other public figures. Left-wing thinkers
and writers flocked to Mitchison's defense, among them Dora Russell,
Rebecca West, C. E. M. Joad, George Bernard Shaw, Harold Laski, and
the publisher himself, Victor Gollancz (Benton 83). The outcome of the
controversy ironically recalls Charlotte Haldane's editorial strategy for
Woman Today: "If we want to run an intelligent paper for intelligent
women . . . we must, just like the trusts, go for circulation" (Haldane,
"Special Announcement" 9). Sadly, as Benton reports, the "attack on
An Outline killed it in the market-place. To Naomi Mitchison's disap-
pointment it was never published in the United States," and even in
Britain the audience for the volume was so small that Mitchison was
unable to pay her contributors (83).

Mitchison's editorial influence was clearly felt in the feminist cri-
tique of the family that created so much trouble for An Outline owing to the increasing resistance in the 1930s to feminist discourse (Benton 83). But another aspect of Mitchison’s work on An Outline also merits some examination: her editorial construction of the place of science and the scientist. Unlike Charlotte Haldane’s affirmation of “the scientific tradition [as] one of the noblest conventions of mankind” and her self-presentation as the “well-trained scientist’s wife,” (“They Were Two Hours from Death” 3), Mitchison’s editorial preface and her editorial introductions to each author’s segment of An Outline deliberately relativize the scientific project and decenter the scientist, making both marginal to the central figure in the book: the curious child.

As Mitchison explains to her readers in the “Editorial Preface” to An Outline: “this book is planned on a definite scheme. It is all working outward, from Me or You (the one thing of whose existence one is fairly certain) to the Universe. From Now (the present) to all time, past and future” (5). This commitment to making the child central and communicating science as one knowledge practice among many reflects Mitchison’s earlier involvement as a contributing editor to the shortlived Realist: A Journal of Scientific Humanism, a 1929 publication dedicated to breaking down the disciplinary boundaries separating the sciences and the humanities. Mitchison allows for differences among her readers that will result in different valuations of the different ways of knowing as well: “One kind of knowledge will be exciting to one sort of person, but not to another. If you are bored by any chapter, go on to the next,” Mitchison advises (Outline 4). In both her choice of illustrations and her text, Mitchison portrays science not as the dominant system of knowledge, but as merely one among many. A series of schematic figures represent the child’s relation to the different discursive communities and knowledge practices that make sense of the world for the child (see figures 10.3–10.5). These figures are not hierarchically arranged but rather offer alternative ways to think about the world. Mitchison reinforces that visual point in her “Editor’s Preface,” where she explains:

One oughtn’t really to separate the history and science parts nearly so definitely, but it made the scheme of the book simpler. . . . Here again, everything fits together, though there are gaps in historical knowledge as there are gaps in scientific knowledge, and it is as exciting to be a good historian as it is to be a good scientist. (Outline 9)

Mitchison’s casual acknowledgment that disciplinary boundaries are merely schematic conveniences rather than intrinsic truth elements is paralleled, in the biographical paragraphs on her contributors, by the
inclusion of personal as well as professional data. Here again, she subverts professional as well as epistemological hierarchies, explaining that "some of my authors are eminent and some are not eminent yet. I have written biographies of most of them, but some of them would not let me do that, and others made me cut out what I thought were the best and funniest bits . . ." (13). Those biographical introductions insist on placing scientific involvement in social context: thus she details the obstacles surmounted by Winifred Cullis, professor of physiology, because "when she was a girl it was not so easy to get a good education and become a doctor"; she mocks Eric Strauss for wearing "an eye-glass, so as to impress patients (or perhaps it really helps him to see them too)"; and she concludes her biography
of N. W. Pirie ("a bio-chemist [who] works in the bio-chemical laboratory at Cambridge, doing experiments") by mentioning, "Just before this book was finished his eldest son, John, was born" (73, 139, 209). Unlike Charlotte Haldane’s *Motherhood and Its Enemies*, which began with the ringing assertion of disciplinary—"Any contribution to the discussion of sex problems must, I hold, keep firmly within certain specified limits" (3)—Mitchison’s *An Outline for Boys and Girls and Their Parents* revels in the productive transgression of boundaries, whether of disciplines, of genders, or between the public and private realms.

What significance is there in the different ways Charlotte Haldane and Naomi Mitchison practiced feminism in their popular science writings?
As with any bit of representational history, the meanings we find are to some degree shaped by our own contemporary concerns: what issues are currently contested and what ideological work we are doing in our own writings. I will just sketch out some of the significance I find in the contrast between the science writing of these two modern women, in the hope that readers will add meanings of their own.

Those of us involved in rethinking modernism in terms of a broader notion of its themes and practitioners will find here evidence of a more explicit concern with issues of scientific culture and scientific practice than is usually attributed to modernist writers. Moreover, we will no-
tice that these two modern women writers address the feminist implications of science in a surprising range of genres: encyclopedia, romance fiction, political tract, birth control pamphlet, self-help essay. This generic diversity confirms the point recently made by Suzanne Clark: that no simple correlation can be made between genre choice and ideology in the case of modern women writers (38–39). Far from being the refuge of writers who support the sociosexual status quo, for women writers realistic and even sentimental fiction and poetry have functioned as a site of cultural critique, from the lyrics of Edna St. Vincent Millay with their affirmation of female selfhood to the fiction of Kay Boyle with its representation of politics interwoven with heterosexual love and desire. Moreover, as Ruth Hoberman has recently shown, even historical fiction, often understood as a bastion of conservative masculinism, appealed to twentieth-century women writers as a genre that enabled them simultaneously to claim, and to revise, their cultural heritage. Thus, Laura Riding rewrote the story of the Trojan War to stage a critique of gender-role stereotyping in A Trojan Ending, while Naomi Mitchison turned to tales of ancient Greece in Frazer’s Golden Bough, and to late Victorian tales of ancient Rome, for stories that both expressed the British attraction to imperial power and provided material for a feminist challenge to masculine cultural dominance. In a sense, there is a parallel between Mitchison’s incorporation and subversion of classical history in her historical novels and her evocation and revision of science in her science fiction and popular science writing. In each instance, a traditionally masculine field is being entered by a woman writer in order to use it as a platform from which to reimagine both self and world.

Just as a remarkable variety of early-twentieth-century women writers were drawn to historical fiction, so too scholars of early-twentieth-century feminism will find a surprisingly wide range of opinions about scientific practice and the figure of the scientist. Haldane’s and Mitchison’s writings articulate positions ranging from a meliorist affirmation of normal science to a Latourenean challenge to the purified boundaries of science itself. Indeed, in her biographical portraits in An Outline, Mitchison gives us the scientist her/himself as a hybrid object—both reproductive body and productive mind, both private parent and public citizen.

Scholars interested in investigating how scientific discourses of the body express resistance as well as power will notice the different ways Haldane and Mitchison used scientific discourse to make arguments on behalf of feminist causes. While both women understood themselves to be working to improve the lot of women, Mitchison did so by chal-
lenging the dominance of a male-constructed model of scientific practice, while Charlotte Haldane’s call for a scientifically enforced vocational mothering embraced the authority of normal science. Haldane’s strategy stands as a poignant example of the “misplaced resistance” that, as political scientist Kathy Ferguson puts it, “appeals to established doctrines for more equitable treatment and thus participates in the perpetuation of those very doctrines” (218). Those of us working in science studies will find in the contrasting writings of Haldane and Mitchison a sample of the many strategies women used to become involved in science: from journalism and essay writing through journal and encyclopedia editing. Finally, those committed to a notion of feminism that is not unitary but multivocal and complex will find in the contrasting science writings of Charlotte Haldane and Naomi Mitchison in the early twentieth century confirmation of the assertion that conflicts—not merely across the gender divide but in feminism and between women—are part of the history of feminist response to the problems and promise of contemporary science.

**Charlotte Haldane (1894–1969): Major Works:**

*Motherhood and Its Enemies* (1927)
“Special Announcement,” *Woman Today* (March 1939)
“Calling All Women,” *Woman Today* (July 1939)
“They Were Two Hours from Death but I Was Not Afraid,” *Woman Today* (1939)
*Truth Will Out* (1949)
“My Husband the Professor,” BBC Third Programme (11 September 1965)

**Naomi Mitchison (b. 1897): Major Works:**

*Comments on Birth Control* (1930)
*An Outline for Boys and Girls and Their Parents* (1932)
*Solution Three* (1976)
“All Change Here,” *As It Was* (1988)

**Notes**

1. For analyses of such conflicts, see Hirsch and Keller, especially Mary Childers and bell hooks, “A Conversation about Race and Class”: (60–81); and Mohanty.

2. I use the term “protopostmodern” to indicate Mitchison’s nonessentialist awareness of difference within feminism, and her consistent stress on the power of location and position in setting a feminist agenda. Similarly, in her science writing she might be described as a “protopostmodern” critic of science
because she understands scientific knowledge as culturally constructed. For a longer discussion of these issues, see my Babies in Bottles.


Works Cited


Haldane, Charlotte. “They Were Two Hours from Death but I Was Not Afraid.” Woman Today, August 1939, 2–3.


Hoberman, Ruth. Resisting History: Classical Antiquity in Twentieth-Century British Women’s Historical Fiction. Forthcoming, SUNY P.


