First of all, for her ‘Cyborg Manifesto’, first published in 1985, revised and collected into her book *Simians, Cyborgs, and Women* in 1991, and relentlessly anthologized since then. This essay has become, as Constance Penley and Andrew Ross (1991: 1) put it, a ‘cult text’ – hugely influential in cybertulture studies, and way beyond; as her former student Zoë Sofoulis (2002: 84) rightly says, the Cyborg Manifesto generated an enormous ‘cyberquake’ reverberating across intellectual domains, setting out ‘multidisciplinary questions, connections, and directions for further research’; as she adds, its ‘rumbles in the field of cyberstudies, a field it helped to initiate, are still being felt at the beginning of the 21st century’.

In the magazine *Wired*, Hari Kunzru (1998: 1) goes ever further, writing that ‘To boho twentysomethings, her name has the kind of cachet usually reserved for techno acts or phenethyllamines’. While her figuration of the cyborg has overshadowed her many other interventions to a range of important debates – an overshadowing I am inevitably also contributing to here – the ongoing aftershocks of the Manifesto make it truly one of the *ur*-texts of cyberculture theory.

But Haraway is about so much more than that. In interviews, when pressed to summarize the overarching concerns of her work, she
describes it using variants of the question: ‘what counts as nature [or culture] in the world today?’ or ‘what’s at stake in what counts … ?’. She asks a lot – what’s at stake in things, who benefits, and how might the stakes be changed? – for her work is motivated by a deep politics, though her harshest critics wrongly see her as a postmodernist prankster. She is not; as I hope to be able to show you. Haraway’s work takes seriously the stories in which we live, and she also wants to find ways to tell better ones, to live better ones; what Joseph Schneider (2005: 162) poetically calls ‘imagining and writing elsewheres’. Her key methods – diffraction, figuration, situated knowledges – are all about this, as we shall see. So, in one sense Haraway doesn’t really ‘fit in’ here, in this strange coterie of cybertheorists; I’m sure she’d be both amused and bemused at being included. But her work is simply too important to ignore; the sin of omission would be greater than that of uneasy inclusion.

First let’s take a brief look at her life, before moving on to examine the life, or more accurately lives, of her cyborg. Donna Haraway was born in Denver, Colorado, USA, in 1944. She has talked extensively about her life and work in a number of published interviews – Haraway, it must be said, ‘gives good interview’ – and the Further Reading section points up the most useful and interesting of these conversations, or what Schneider (2005: 6) names ‘the stories of her selves that she tells’. Her upbringing was Catholic and, while she says she has become anti-Catholic, she nevertheless acknowledges the religion’s imprint on her way of thinking. After high school she went on to attend Colorado College, taking an unusual triple major – but entirely in keeping with the trajectory of her intellectual development – in English literature, philosophy and zoology. After graduating she spent a year in Paris, before enrolling for a PhD in biology at Yale University, ‘made possible’, she observed, ‘by Sputnik’s impact on U.S. science-education policy’, thus implicating her squarely in technoculture (Haraway 1991: 173). During her studies she progressively turned towards the history of biology, and completed a thesis on the use of organic metaphors in biology, tracking different ways of thinking within scientific practice. The thesis would later become Crystals, Fabrics, and Fields: Metaphors of Organicism in Twentieth-century Developmental Biology (1976/2004). With her then partner, she moved for a short time to the University of Hawaii in Honolulu, before taking a post at Johns Hopkins
University in the Department of the History of Science. From here she started research on primatology, published in book form as *Primate Visions: Gender, Race, and Nature in the World of Modern Science* (1989), a book she would later see as the first volume in a trilogy with shared concerns about Western science, society, nature and culture. In 1980 she was appointed to an interdisciplinary unit at the University of California at Santa Cruz (UCSC), the Board in the History of Consciousness, where she remains in post today, and from where she researched and wrote a number of landmark essays; publications that are, as Schneider (2005: 12) sums up, ‘both pathbreaking and pathmaking’ (Schneider provides a very clear summary of her life and work; see also Clough and Schneider 2001 and the book-length interview, *How Like a Leaf*, by Haraway with Goodeve 2000).

Along with a string of highly influential papers, Haraway completed her trilogy of interconnected books, first with *Simians, Cyborgs, and Women* (1991) and then with her book with a complex and punny title, formed as an email address and summoning another series of particular figures, or what she names ‘material-semiotic entities’: *Modest_Witness@Second_Millennium.FemaleMan©_Meets_OncoMouse™* (1997), arguably her most challenging and important work. More recently, her attention has shifted towards relationships, or better relationalities, between dogs and humans, rewriting the Manifesto format to think through the idea of ‘companion species’ (Haraway 2003a) as the start of what she sees as a continuation of her work on ‘naturecultures’ and on the menagerie or ‘kinship of feminist figurations’ (Haraway 2004a).

**NATURECULTURES**

Haraway uses this neologism to emphasize the impossibility of separating the natural and the cultural – what we think of as ‘nature’ is ‘one of culture’s most startling and non-innocent products’ (Haraway 1991/1988a: 109). But culture is also the product of nature, in that humans are a biological species. In her work on ‘companion species’, for example, Haraway talks of the naturecultures of the co-evolution of dogs and humans. Separating nature and culture is an ideological act, so the questions turn to ‘What’s at stake in naming some things as nature and others as culture?’ and ‘Who benefits?’
Surveying her own work when assembling a *Reader*, Haraway comments that ‘I feel that I have written the same paper twenty times’ (2004a: 2), seeing the connections that draw her to particular ideas and ways of thinking – later she concludes that ‘Perhaps the same paper needs to be written again and again’ (ibid.: 5) in the hope of building what she calls ‘more livable worlds’. She sees gathered in her work ‘my queer family of feminists, anti-racists, scientists, scholars, genetically engineered lab rodents, cyborgs, dogs, dog people, vampires, modest witnesses, writers, molecules, and both living and stuffed apes’ (ibid.: 3), a kin group that captures her call, in *Modest Witness*, for ‘models of solidarity and human unity and difference rooted in friendship, work, partially shared purposes, intractable collective pain, inescapable mortality, and persistent hope’ (Haraway 1997: 265).

So, as it should be becoming clear by now, Haraway is about much more than the cyborg, though she is arguably best known for that queer kin. Trying to sum up her work, Schneider (2005: 21) writes that ‘she hopes to encourage a way of seeing, thinking, and acting together that begins to change the way humans and the many others to whom they are connected know and live together now and in the future’ – reminding us once more of the ethical and political heart of Haraway’s writing. A final comment from Schneider with his coauthor Patricia Ticineto Clough, in an earlier summary of Haraway’s life and work, seems a fitting place to end this introduction, reinforcing the politics at stake here, before we focus in on the cyborg:

No other cultural critic has had more influence than Haraway in bringing forward difficult questions that point to the ways scientific work and knowledge are inter-implicated with a wide range of global and local practices of exploitation and domination. In this work she has established links between cultural studies and science studies that benefit both lines of work.

(Clough and Schneider 2001: 345)
I feel it is necessary to give Haraway’s cyborg a lengthy treatment here; it has had a long and complex life, or series of lives, and the ‘cyberquake’ it generated rumbles on in endless aftershocks. So I shall start with the Cyborg Manifesto, not the birthplace of the cyborg, not its ‘origin story’ – these things being resolutely un-cyborgian – but as the place where the author began to think through a particular and located figuration, in a particular intellectual and political context, which needs to be mapped out with some precision if we are going to understand the significance (and also the limitations) of thinking with the cyborg. And like its sci-fi kin the replicants, in the movie Blade Runner (1982), the cyborg has been tasked with a lot of difficult and dirty work, so we also need to spend quite a bit of time exploring that here.

**CYBORG MANIFESTO**

You can tell you are in the presence of a cyborg figure when you feel a new world coming into being around you.

(Myerson 2000: 24)

In a critical overview of Haraway’s work, Rene Munnik (2001) describes the ‘short prehistory’ of the Cyborg Manifesto: in 1983 Haraway contributed
two papers to a conference, ‘New Machines, New Bodies, New Communities: Political Dilemmas of a Cyborg Feminist’ and ‘The Scholar and the Feminist X: The Question of Technology’, and in the following year she published a version of the Manifesto in a German journal, though that essay focused more on genetic engineering. In 1985, following a request from the editors of the journal Socialist Review to submit a short commentary on the state of socialist feminism in the Reagan ‘Star Wars’ era, the article was published therein as ‘A Manifesto for Cyborgs: Science, Technology, and Socialist Feminism in the 1980s’ (Haraway 1985).

Haraway describes the commissioning of the Manifesto in an interview:

Socialist feminism had disappeared as a living social movement in the United States. Although it hardly ever existed as a living social movement in the United States, or frankly too little, it had been a kind of compelling vision, a kind of consensual hallucination anyway ... [Socialist Review] sent a bunch of us letters and said, ‘Look, you were all socialist feminists. What happened? What does it mean in the Reagan years?’ ‘A Manifesto for Cyborgs’ emerged as a kind of dream-space piece.

(Gordon 1994: 243)

The essay was, she puts it, written ‘to try to think through how to do critique, remember war and its offspring, keep ecofeminism and technoscience joined in the flesh, and generally honor possibilities that escape unkind origins’ (Haraway 2004a: 3). The Manifesto was then revised and collected into Simians, Cyborgs, and Women along with nine other important essays on what she would later call ‘naturecultures’ (Haraway 1991), with the slight but important changes to its title, ‘A Cyborg Manifesto: Science,
Technology, and Socialist-Feminism in the Late Twentieth Century’. It has been lively in print ever since, tinkered with by Haraway and by others, reappearing in Haraway’s subsequent work, as well as starring in countless Readers and being cited and worked over in a dizzying range of contexts (as we shall see). One last fact about the Manifesto’s birth that has become almost legendary: it was the first article that Haraway wrote on a computer, her first foray into cyborg writing (Kunzru 1998). As Sofoulis (2002) writes, the Manifesto was zeitgeisty for lots of reasons, not least that its publication occurred at precisely the time when lots of humanities academics were starting to experience computers in their working lives, were starting to feel a bit like cyborgs themselves.

Schneider (2005: 58) quite rightly calls the Manifesto ‘challenging, difficult, and exhilarating’, but I think he is wrong to call it ‘somewhat dated’; perhaps we should say instead that, as Haraway herself has pointed out, it belongs to a particular time and place, as noted in the story of its sourcing: it is a Reagan-era product reflecting on post-Second World War America, on technoscience and politics, or perhaps on technoscience as politics and vice versa. John Christie (1992: 175) also writes that the Manifesto has ‘a recognizably eighties feminist political and aesthetic sensibility’, that it is a kind of time capsule or period piece, even as it has lived on, endlessly cited and quoted. True, it talks of Star Wars and Reaganism, and doesn’t foresee the many technoscientific challenges and adventures ahead, but its resonant shockwaves justify its longevity as much more than a relic or curio (see also Crewe 1997). But, while the cyborg has been wrenched from its historical and geographical locations, pushed back to the future and forward

SOCIALIST FEMINISM

Also known as materialist feminism, this branch of feminist theory and politics has its roots in Marxism, and argues that liberation for women can be achieved only by working to end the causes of women’s oppression, which are economic and cultural. Socialist feminism thus broadens strictly Marxist feminism’s focus on the central role of capitalism in the oppression of women, adding in elements from radical feminism’s theorizations of patriarchy, thereby highlighting the interrelations of class and gender.
to the past, it is important to see the situatedness of the cyborg, and of the Manifesto, before attending to its subsequent disembedding, stretching and morphing.

**CYBORG STORYING**

I want to begin by describing the Manifesto, its form and content, and then to move closer and explore its key ideas. It may be challenging and difficult, but it is definitely also exhilarating, and rewards repeat reading. The first time I attempted the Manifesto, it really made my head hurt; it still does, at times, but there’s such a thrill to reading it, so many clever and funny moments, so much work. As I hold a densely annotated copy in my hand – one of several, all bearing the marks of past readings – I still keep seeing new things, new connections, new diffractions. A dream-space piece indeed. The Manifesto comprises six interlocked sections, and I want to sketch these here.

**AN IRONIC DREAM OF A COMMON LANGUAGE FOR WOMEN IN THE INTEGRATED CIRCUIT**

This opening section introduces Haraway’s way of thinking the cyborg and the Manifesto; the former is ‘a creature of social reality as well as a creature of fiction’, the latter ‘an ironic political myth faithful to feminism, socialism, and materialism’, to which she adds that it is ‘faithful as
blasphemy is faithful’, starting the playful (yet deadly serious) unpicking and unpacking, redescribing and diffracting that characterizes the article (Haraway 1991: 149). Sofoulis (2002) notes that this is the most-quoted section of the Manifesto, full of telling phrases that we do indeed find littered across countless subsequent cyborg stories, though they are often pared down to aphorisms. These are among my favourites:

- By the late twentieth century, our time, a mythic time, we are all chimeras, theorized and fabricated hybrids of machine and organism; in short, we are all cyborgs. The cyborg is our ontology; it gives us our politics.
- This essay is an argument for pleasure in the confusion of boundaries and for responsibility in their construction.
- The cyborg is a creature in a post-gender worlds; it has no truck with bisexuality, pre-Oedipal symbiosis, unalienated labor, or other seductions to organic wholeness …
- The cyborg is resolutely committed to partiality, irony, intimacy, and perversity. It is oppositional, utopian, and completely without innocence.
- Cyborgs are not reverent; they do not remember the cosmos. They are wary of holism, but needy for connection …
- The main trouble with cyborgs … is that they are the illegitimate offspring of militarism, patriarchal capitalism, not to mention state socialism. But illegitimate offspring are often exceedingly unfaithful to their origins. Their fathers, after all, are inessential.

(Haraway 1991: 150 – 1)

These fragments, even decoupled from their overall flow, contain so many of the key themes of the Manifesto it isn’t surprising they have been copied and used in many subsequent discussions: the refusal of transcendent wholeness, the illegitimacy, the anti-psychoanalytic view, the irony. … In fact, the irony of the Manifesto has been quite a source of trouble in its afterlife, being either used to dismiss the article as pointless postmodern relativism or being missed in readings that take things too literally; as Haraway says in an interview, the Manifesto was written with a ‘kind of contained ironic fury’, but ‘the reading practices … took me aback from the very beginning, and I learned that irony is a dangerous
The key component of the first section of the Manifesto is the observation of the breaching of boundaries by the cyborg, or the idea of the cyborg, that is the cybernetic organism, a fusing of the organic and the technological. As she later found out, thanks to a student, the first documented cyborg was a lab rat fitted with an osmotic pump, created by scientists interested in preparing the human body for space flight (Clynes and Kline 1995 [1960]; Haraway 1995). The space race is intertwined, of course, with the Cold War, with militarism and supremicism, making it, as Kunzru (1998: 6) says, ‘a kind of scientific and military daydream’. But, Haraway argues, the cyborg is illegitimate, unfaithful, wily: it does not play by its father’s rules, and can be put to different dreamwork. Thought differently, the cyborg can challenge the places from whence it came; this is part of its irony.

So part of the cyborg’s challenge is that its existence – including its existence in science fiction as well as social reality – threatens fundamental rhetorical strategy’ (Markussen, Olesen and Lykke 2003: 50). So, the irony is also fury, irony used as a way to contain fury, to make it more productive. These are not the ‘ramblings of a blissed-out, technobunny, fembot’ (Haraway 2004a: 3); the commitment to socialist feminism, but also the critique of it (and of other feminisms), for one thing, often get stepped over by readings that wrench a few key phrases out of the article and spin their own theories from there. As I have done above; let me rectify that now.

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So part of the cyborg’s challenge is that its existence – including its existence in science fiction as well as social reality – threatens fundamental
boundaries that have long structured ways of understanding the world. These boundaries include those between:

- human and animal
- organism and machine
- physical and non-physical

Now, a big part of the irony is that science, or perhaps more accurately technoscience, has been at the heart of this undoing, this blurring and breaching of boundaries. To take some recent exemplars: xenotransplantation, the use of animal organs in human transplants, or sociobiology, which ‘explains’ human behaviour by looking at animals; smart machines (including smart weapons) that can ‘think’ for us and that are ‘disturbingly lively’ (Haraway 1991: 152); nanoscience and quantum theory, where material and immaterial are much closer together than we may have thought, where matter is energy – or, as Haraway poetically put it, where ‘our best machines are made of sunshine’ (ibid.: 153). In these and other ways, technoscience is troubling boundaries that have worked for so long to keep everything in its place. These tidy dualisms, integral to the Western worldview, have been ruptured as the modern technoscientific age has progressed (see also Latour 1993). For its role(s) in these ‘transgressed boundaries, potent fusions and dangerous possibilities’ (Haraway 1991: 154), the cyborg deserves our careful attention, our ironic handling.

But there’s that bigger layer of irony to attend to: the cyborg is also implicated in ‘the final imposition of a grid of control on the planet, [it is] about the final abstraction embodied in a Star Wars apocalypse waged in the name of defense, about the final appropriation of women’s bodies in a masculinist orgy of war’ (ibid.: 154). That’s one way of reading the cyborg, but for Haraway that is fatalistic and fatal: better to at least try to build more livable worlds with this cyborg, better to think it and us differently:

From another perspective, a cyborg world might be about lived social and bodily realities in which people are not afraid of their joint kinship with animals and machines, not afraid of permanently partial identities and contradictory standpoints. The political struggle is to see from both perspectives at once because each reveals both dominations and possibilities unimaginable from the other vantage point. ... Cyborg unities are monstrous and illegitimate; in our
present political circumstances, we could hardly hope for more potent myths for resistance and recoupling.

(Haraway 1991: 154)

Absolutely not a technobunny’s blissed-out ramblings, then: a Manifesto in the truest sense, a call to action, to change (see also Bartsch, DiPalma and Sells 2001).

**FRACTURED IDENTITIES**

In the second main section of the Manifesto, Haraway situates her work ‘in relation to issues within feminist theory, including questions of identities in multi-ethnic communities where essentialisms don’t seem to work, at a time when the category “woman” has lost its “innocence” as a political, analytic, and epistemological starting point’ (Sofoulis 2002: 85). So this section concerns feminism in the 1980s, the splintering of feminist theory and politics into multiple feminisms – a fracturing too of the idea of a universal or essential category of ‘woman’ and of ‘women’s experience’, destabilized by the vectors of difference (Weedon 1999). A time of heated debate within feminism, then, out of which Haraway hopes to salvage something, a new way of talking about identity, about feminism, about domination and resistance: ‘What kind of politics could embrace partial, contradictory, permanently unclosed constructions of personal and collective selves and be faithful, effective – and, ironically, socialist feminist?’, she tellingly asks (Haraway 1991: 157). Can feminism still being a meaningful politics, an identification, once difference is fully acknowledged?

In ‘Fractured Identities’, Haraway works through some ways of addressing this issue, starting with ways she finds unsatisfactory, critiquing both socialist and radical feminism, while wanting to hold on to something that each offers. She rejects attempts to totalize identity or experience, to claim to ‘speak for’ others under the common name ‘Woman’. Yet she is also critical of the then-modish response to this, so-called difference feminism (or postmodern feminism), preferring instead to borrow some terms from another of her students, Chela Sandoval: oppositional or differential consciousness, and the methodology of the oppressed, used by Sandoval to talk about ‘women of color’ as a postmodern political identification that refuses unity (but also relativism;
see Sandoval 1995). Like oppositional consciousness, then, Haraway calls for a cyborg feminism, a feminism built from ‘partial [but] real connection’ (Haraway 1991: 161) – a theme she develops in the next section of the Manifesto.

**THE INFORMATICS OF DOMINATION**

Here Haraway attempts to map out the world today, or at least a series of changes in ‘worldwide social relations tied to science and technology’ (Haraway 1991: 161); she produces a long chart of paired terms, comparing key terms from modernity to those of contemporary technoscience and arguing, in a way at once similar and different to Manuel Castells’ informationalism, for recognizing that we are now in ‘an emerging system of world order analogous in its novelty and scope to that created by industrial capitalism’; a world order built of ‘scary new networks’ – the informatics of domination.

Rather than repeat the whole list here – it has been reproduced by countless others – I will pick ‘n’ mix some pairs, and use them to illustrate the overarching lesson of the listing. First off, again echoing Castells and others, such as Jean Baudrillard, we have ‘representation’ replaced by ‘simulation’ – where the former maintains an anchor in the ‘real’ and the latter has come to stand in for reality. ‘Scientific management in home / factory’ is superseded by ‘global factory / electronic cottage’, ‘labor’ by ‘robotics’, ‘functional specialization’ with ‘modular construction’ – all

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**MICHEL FOUCAULT**

Professor of the History of Systems of Thought at the College de France, Michel Foucault (1926 – 84) wrote widely and critically on social institutions such as the prison and the mental asylum, and was concerned with how knowledge is used to produce order, to produce people as subjects, and to designate the ‘normal’ and the ‘deviant’ – to order subjects. He also developed theories of power / knowledge – the relationship between knowledge and power in modern societies, for example through surveillance; of the potentially ‘productive’ force of power, and of the role of discourse, or expert knowledges, in shaping societies in modernity. His work has been immensely influential across the humanities and social sciences.
similarly resonant echoes of the network society. And remember how Castells talked about the feminization of work, with the organization man replaced by the flexible woman? Haraway has a consonant pair here, too: ‘family / market / factory’ transposes to ‘women in the integrated circuit’ (see below). Lastly, at the foot of the table, we have the crunch: ‘white capitalist patriarchy’ becomes the ‘informatics of domination’. The new world order brings new dominations; the question will inevitably turn to new resistances before the Manifesto ends, the twinning of power and resistance revealing the influence of Michel Foucault on Haraway (Sofoulis 2002).

The twin columns of the chart accomplish more than description, of course: the terms are unsettled or denaturalized by being paired, Haraway writes, the second term deconstructing (though she doesn’t use that word) the first, undermining its authority as an original Truth. Or, as Jonathan Crewe (1997: 895) puts it, the chart performs an act of ‘transcoding’, with ‘each term in the right-hand column transcoding and historically displacing its counterpart in the left-hand column’. Moreover, these new times, emblematized by the ‘new’ second terms, call for a new politics. For feminist theory and politics, this means attending to the informatics of domination: the actual situation of women is their integration / exploitation into a world system of production / reproduction and communication. This means addressing the new terms, not still kicking against the old ones. Hence one key route for ‘reconstructing [note: not abandoning] socialist-feminist politics is through theory and practice addressed to the social relations of science and technology, including crucially the systems of myth and meanings structuring our imaginations’ (Haraway 1991: 163). Communications sciences and biotechnologies turn the world into code – machine code, genetic code – producing ‘fresh sources of power’ that have to be met with ‘fresh sources of analysis and political action’, again showing her Foucauldianism. Understanding this is, for Haraway, crucial to the reconstruction of feminism in the times of the cyborg.

**THE ‘HOMEWORK ECONOMY’ OUTSIDE ‘THE HOME’**

The new division of labour ushered in by the information age is the focus of this next short section – especially the new global working class, made
up in large part of Castells’ flexible women. Haraway borrows the term ‘homework economy’ to describe new work patterns, a ‘world capitalist organizational structure … made possible by (not caused by) the new technologies’ (Haraway 1991: 166) – underemployment, casualization, insecurity, lack of welfare, and a bi-modal social structure, switched on or switched off, valued or discarded. And not just work; private life, leisure time, intimacy are all restructured by science and technology. The question for Haraway then turns towards feminist science, towards the possibilities of doing science with an oppositional consciousness, of forging a new politics of science.

WOMEN IN THE INTEGRATED CIRCUIT

Here Haraway builds on the insights of the previous section to think through ‘the complexities of international gendered and ethnic divisions of labor in the globalized economy’ (Sofoulis 2002: 85), using the idea and ideology of the network as ‘both a feminist practice and a multinational corporate strategy’ (Haraway 1991: 170), akin to Castells’ grassroots the space of flows. In fact, in this section Haraway considers a sequence of idealized capitalist spaces – home, market, workplace, state, school, hospital, church – and then riffs the (ambivalent) impacts of science and technology on each, for example:

*Home:* Women-headed households, serial monogamy, flight of men, old women alone, technology of domestic work, paid homework, re-emergence of home sweat-shops, home-based businesses and telecommuting, electronic cottage, urban homelessness, migration, module architecture, reinforced (simulated) nuclear family, intense domestic violence.

*Church:* Electronic fundamentalist ‘super-saver’ preachers solemnizing the union of electronic capital and automated fetish goods; intensified importance of churches in resisting the militarized state; central struggle over women’s meanings and authority in religion; continued relevance of spirituality, intertwined with sex and health, in political struggle.

(Haraway 1991: 171 – 2)

Interestingly, in the 2004 reprint of this article in *The Haraway Reader*, much of this section, including these lists, has been cut by the author,
perhaps a reflection of the even more ambivalent outcomes of twenty more years of the informatics of domination. Out of this discussion, she moves towards a position of hope, or at least grounds for hope, in a new partial feminist politics that rejects ‘the feminist dream of a common language’ (Haraway 1991: 173) and does not need to resolve contradictions and find universality.

**CYBORGS: A MYTH OF POLITICAL IDENTITY**

Hence a return to the cyborg, this time as it has been imagined in feminist science fiction, a source which Haraway finds inspiring for its abilities to think otherwise. Calling her chosen authors ‘theorists for cyborgs’ (Haraway 1991), she brings all the threads together, though together in the form of a cat’s cradle – a favourite metaphor of hers – rather than anything tidied up and finished. As well as science fiction, she discusses writing by ‘women of color’ as producing other potent fusions and boundary transgressions, as a form of cyborg writing here conceived as being ‘about the power to survive, not on the basis of original innocence, but on the basis of seizing the tools to mark the world that marked them as other’ (ibid.: 175). Observing that ‘writing is pre-eminently the technology of cyborgs’ (ibid.: 176), and given her earlier comment about coding as the logic of the informatics of domination, she is thus able to conjure an affinity between feminist sci-fi cyborgs, in all their complex heterogeneity, and ‘real-life cyborgs’, such as ‘the Southeast Asian village women workers in Japanese and US electronics firms’ who are ‘actively rewriting the texts of their bodies and societies’.

And she rehearses the key issue about dualisms as a way of knowing. We have used them in the West to order things, in a simple binary logic. Everything is either this, or not-this, with no room for in-betweens: ‘self / other, mind / body, culture / nature, male / female, civilized / primitive’ and so on (ibid.: 177). Western modernity has been all about this ordering and tidying up, and science has had a lead role to play in helping us collect, name and classify anything and everything (Latour 1993). The trouble is, technoscience has also led to the blurring of these binaries; as we find out more about the world, or come up with new marvels, so we undermine the simplicity of the binary classes. ‘High-tech
culture’, Haraway says, ‘challenges these dualisms in intriguing ways’ (ibid.: 177). Cyborgs epitomize that intriguing trouble; they are irreducible back to one thing or another; instead of either / or, they are neither / both.

After tracking cyborgs in a selection of feminist science fiction texts, showing how they ‘make very problematic the statuses of man or woman, human, artefact, member of a race, individual entity, or body’ (ibid.: 178), Haraway moves towards her finale, with its famous, often-quoted phrases and ideas (I for one know this bit almost off by heart). First comes this intense set of statements:

There are several consequences to taking seriously the imagery of cyborgs as other than our enemies. Our bodies, ourselves; bodies are maps of power and identity. Cyborgs are no exception. A cyborg body is not innocent; it was not born in a garden; it does not seek unitary identity and so generate antagonistic dualisms without end (or until the world ends); it takes irony for granted. One is too few, and two is only one possibility. Intense pleasure in skill, machine skill, ceases to be a sin, but an aspect of embodiment. The machine is not an it to be animated, worshipped, and dominated. The machine is us, our processes, an aspect of our embodiment. We can be responsible for machines; they do not dominate or threaten us. We are responsible for boundaries; we are they.

(Haraway 1991: 180, emphasis in original)

Here is cyborg myth, cyborg gender, the cyborg reimagined away from militarism and the informatics of domination. ‘We’ are ‘they’: the categories blur and meld, ‘the machine is us’. Sofoulis (2002) comments that this last segment of the Manifesto has often been misunderstood and misquoted in a decontextualized fashion, shorn of its socialist-feminist fuzz and buffed up to a shiny technophilia; certainly, as we shall see, the afterlives of Haraway’s cyborg have taken it every which way, though this is in some senses inevitable – as Haraway (1995: xix) herself comments, ‘cyborgs do not stay still’.

Here she is trying to story the world otherwise, to say that the cyborg is here, is us, but that we can do more than accept this on the terms of technoscience and the military – industrial complex. And returning finally to the question of feminism, as theory and politics, she comes to
her famous summation. First, totalizing theory ‘misses most of reality, probably always, but certainly now’. Second, it is inadequate to take up an anti-science and anti-technology standpoint – it is vital to find ways to work with and against science and technology, and here is where the cyborg can help us:

Cyborg imagery can suggest a way out of the maze of dualisms in which we have explained our bodies and our tools to ourselves. This is a dream not of a common language, but of a powerful infidel heteroglossia. It is an imagination of a feminist speaking in tongues to strike fear into the circuits of the super-savers of the new right. It means both building and destroying machines, identities, categories, relationships, space stories. Though both are bound in the spiral dance, I would rather be a cyborg than a goddess.

(Haraway 1991: 181)

Cyborg feminism – for some an uncomfortable, even oxymoronic term – is thus conjured here as a powerful force; powerful in its denial of dualisms, in its deployment rather than rejection of cyborg imagery, such as pleasure in machine skill, but still powerfully feminist. While this means rejecting the totalizing ideas of ‘goddess feminism’, it summons a resonant political alternative to challenge the informatics of domination. The rejection of previous articulations of feminism, goddess or radical or difference based, should not be misread as a rejection of feminism; far from it. This is not – or rather not only – the male cyborg of militarism or Hollywood. Indeed, in an interview Haraway insists that her cyborg is female:

[The cyborg] is a polychromatic girl … the cyborg is a bad girl, she is really not a boy. Maybe she is not so much bad as she is a shape-changer, whose dislocations are never free. She is a girl who’s trying not to become Woman, but remain responsible to women of many colors and positions, and who hasn’t really figured out a politics that makes the necessary articulations with the boys who are your allies. It’s undone work.

(Penley and Ross 1991: 20)

So the irony is in taking the cyborg, whether a vivisected lab rat fitted for space flight, or the tech-noir fantasies of hypermasculine Terminators and Blade Runners, and turning them into something politically potent,
feminist and progressive: ‘cyborgs for earthly survival!’ (Haraway 1995) As Schneider (2005: 66) sums up, ‘Multiplicities. Heterodoxies. Monstrosities. Improbable but promising couplings made by choice and based on assumed short-term common ends as well as means. These are the marks of Haraway’s cyborg as a figure to think and live with’.

**GODDESS FEMINISM**

Also known as thealogy, contemporary goddess feminism emerged alongside so-called ‘second wave’ feminism, in the 1970s, and it remains a thriving global movement with a number of variants. Often connected to ecofeminism, a branch of feminism stressing women’s connection to the natural environment, and to the idea of the Earth goddess, it combines spiritualism, ecologism and feminism centred on the goddess as a symbol of life, natural energy and female essence. The goddess is seen as a healer of the broken bonds between human and nature, body, Earth and cosmos, and as a symbol of fecundity.

**SUMMARY**

The Cyborg Manifesto was written ‘as a somewhat desperate effort in the early Reagan years to hold together impossible things that all seemed true and necessary simultaneously’ (Haraway 2004a: 3), a response to a request to account for the fate and future of socialist feminism in this ‘new world order’. Haraway summoned the cyborg as a boundary blurring trickster figure, working to undermine the dualisms which have hitherto structured how we think and live. Aware of the cyborg’s implication in what she calls the informatics of domination, and equally mindful of the trap of totalization which had arguably dead-ended feminist theory and politics at the time, she draws on an unlikely grab-bag of resources in an attempt to think the cyborg otherwise, as a figure of irony but also of hope.
2 CYBORG INVOCATIONS

Exuberant, expansive, perhaps over-responsible, and certainly ambitiously synthetic, with its own suggestive flaws and fissures, the chimerical assemblage of elements that is Haraway’s Manifesto was capable of bearing many readings by highly divergent audiences.

(Sofoulis 2002: 91)

Resisting the idea that she has somehow spawned a monster with a life of its own, even though saying at one point that ‘as an oppositional figure the cyborg has a rather short half-life’ (Markussen, Olesen and Lykke 2003: 52), Haraway remains doggedly committed to her cyborg, now enfolded into a menagerie, or bestiary, or litter of figurations along with, among others, OncoMouse™, FemaleMan©, Mixotricha paradoxa, vampire, gene, chip, database, dog. In this section I want to track some of these subsequent manifestations, in her own and others’ work – for this is not just about diverse readings, but also diverse cyborg rewritings, diverse invocations of the cyborg. As Clough and Schnieder (2001: 345) say, ‘Haraway’s figure of the cyborg … has spawned countless clones and there is yet no end to its productivity’; it has ‘managed to insinuate itself into diverse discursive spaces’ (Sofoulis 2002: 91), and we now have around us a ‘gallery of cyborg incarnation’ (Christie 1992: 195).

CYBORG OLOGY

Perhaps inevitably, this morphing and cloning of the cyborg has put the figure to all kinds of work, a lot of it beyond what Haraway has imagined, though she is generously supportive of much of the reworking of her ideas, not wanting to stake a claim in ‘ownership’ of the cyborg as a tool for thinking: ‘These young feminists’, she comments in one interview, ‘have truly rewritten the manifesto in ways that were not part of my intention, but I can see what they are doing’. She adds, ‘I think it is a legitimate reading, and I like it, but it really wasn’t what I wrote’ (Markussen, Olesen and Lykke 2003: 51). She does, however, confess to finding some of the readings and rewritings ‘distressing’, and to wanting to refuse the idea of the cyborg as a ‘meta-category’; but I guess that is also an inevitable part of the cyborg’s unfaithfulness, to slip and slide into
new contexts, new places and times. Here she is in another interview, *locating* the cyborg:

> I am very concerned that the term ‘cyborg’ be used specifically to refer to those kinds of entities that became historically possible around World War II and just after. The cyborg is intimately involved in specific histories of militarization, of specific research projects with ties to psychiatry and communications theory, behavioral research and psychopharmacological research, theories of information and information processing. It is essential that the cyborg is seen to emerge out of such a specific matrix.

(Haraway with Goodeve 2000: 129)

So, while Schneider (2005: 21) writes that she has been ‘trying to avoid being misread while knowing that is, finally, impossible’, Haraway has found herself, her cyborg and her Manifesto stitched into a range of debates about science, culture and society, some ‘faithful’ to these specificities, others not. And Haraway also confesses an unease at the ‘celebrity’ of her cyborg, but says that there is still worthwhile work to be done with this particular figuration: ‘instead of giving up because it has become too famous, let’s keep pushing and filling it’ (Haraway with Goodeve 2000: 136).

Other writers have arguably done more that Haraway herself to police the cyborg’s many new lives, to contain its celebrity. The Manifesto has catalysed a ‘cyborg industry’ in academia – birthing the field of ‘cyborgology’, as Gray, Figueroa-Sarriera and Mentor (1995) term it, itself part of the bigger explosion of interest in all things cyber. Cyborgology has indeed pushed and filled the cyborg, but not in ways that suit everyone’s tastes. Bartsch, DiPalma and Sells (2001: 140), for example, argue that the cyborg has become overly ‘literalized’ in other theorists’ hands, shedding its irony, its work as metaphor. They add that it now serves as ‘the icon for a loose confederacy of cyborg scholars’ who endlessly ‘jockey the cyborg’s currency’ in academia. There is discomfort in some of the uses to which cyborg figuration is put, and a kind of squabbling over interpretations, over the ‘faithfulness’ of readings and rewritings which is understandable but also kind of ironic. Reviewing a number of these readings and rewritings, Sofoulis (2002) finds both consonant and dissonant texts, and a loose confederacy of divergent interpretations and critiques. She finds, for example, Judith Halberstam
(1991) connecting the cyborg to ideas about gender as technology; Sadie Plant (1995) articulating a ‘celebratory’ woman-centred cyberfeminism; Stacey Alaimo (1994) unable to reconcile the cyborg with ecofeminism, and therefore jettisoning the former. Kathleen Woodward (1994) is seen by Sofoulis as awkwardly oversimplifying the Manifesto’s handling of technology, while Nina Lykke (1996) rightly applauds its effects on feminist science studies, and Carol Stabile (1994) is found looking for the wrong answers from the cyborg and as wrongly seeing the Manifesto as political, unproductive and avant gardist. Anne Balsamo (1996) and Rosi Braidotti (1994) receive more sympathetic treatment … and so I could go on.

This is part of the game that academics play, of course; interpreting other people’s ideas, critiquing other people’s interpretations of other people’s ideas, working things over, so it’s only to be expected. Cyborgs don’t stand still, remember. Part of this comes back to the issue of timing: the Manifesto coincided with the turbulent period of postmodern high theory and the necessary fragmenting of feminism, and it often thus stands accused of becoming ‘a widely accepted and largely unquestioned orthodoxy of postmodern feminist thinking’ (Currier 2003: 321) and as opening up an unbridgeable rift between ecofeminism and cyborg or postmodern feminism – though Haraway’s later book Modest_Witness is regarded as healing that rift (Scott 2001).

**CYBORG KINSHIP**

My world is sustained by queer confederacies.

(Haraway 2004b: 128)

Different parts of the Manifesto, different ways of thinking about the cyborg, have been sampled and remixed, expanded or critiqued, by subsequent writers from myriad different disciplines and orientations. The bloom in cyborg publishing, cashing in on the cyborg’s currency (in good and bad ways), has brought us big compendiums like The Cyborg Handbook (Gray, Figueroa-Sarriera and Mentor 1995) and The Gendered Cyborg (Kirkup, Janes, Woodward and Hovenden 2000), the latter a graduate course reader evidencing the spread of the cyborg into the classroom. We also have, among
countless others, books about *The Cyborg Experiments* in the art of Stelarc and Orlan (Zylinska 2002) and about the *Cyborg Citizen* in its myriad manifestations (Gray 2001), discussions of *Cyborg Babies* (Davis-Floyd and Dumit 1998), a title riffing on the closing phrase of the Manifesto, *Between Monsters, Goddesses and Cyborgs* (Lykke and Braidotti 1996), and so on. That last book invokes its three ‘dubious creatures’, all ‘signifiers of chaos, heterogeneity and unstable identities’ (Lykke 1996: 5), not to fold them together as dopplegangers, but to read them ‘as a network of differing but unstably circulating meanings which inform current feminist dialogues and confrontations with science and technology’ (ibid.). Others have similarly tried to keep cyborg and goddess in productive tension, refusing the choice that Haraway (with irony) makes, seeing goddesses as cyborgs (see Graham 1999, 2002). And, in one of my favourite asides, that also riffs on that closing phrase, Haraway responds to an interview question with ‘I would rather go to bed with a cyborg than a sensitive man’ (Penley and Ross 1991: 18).

Monsters, goddesses and cyborgs do have some kind of connection, some kind of kinship, of course. And Haraway has long been interested in the ideas of kinship, relationality, affinity; she has wanted to find different ways of thinking about connections and relations that aren’t based on bloodline and family, in part to sidestep the pitfalls of psychoanalysis invoked to think the family in theory and in therapy, as well as to avoid the reductions of biologism – and also to arrive at a more open and productive set of encounters and coalitions which aren’t about surrender, mastery or ownership, nor about totalizing identities, about two becoming one. Hence the cyborg mantra, *neither / both*, in place of either / or. This is an easy point to miss, however; some critics have written that the boundary transgressing of the cyborg depends on installing binaries to be transgressed (Kirby 1997), that Haraway can’t help reifying the categories she uses her cyborg to smash. But I think this misses the bigger point and is little more than language games.

As already noted, one aspect of cyborg kinship that can be seen as troubling is the kinship of other types of cyborg, those that don’t ‘fit’ with the Manifesto’s dreamwork. As Elaine Graham (2002: 210) says, ‘Haraway cannot claim a monopoly on cyborgs’ – not that she’d want to – ‘or assume that they are innocent of contrary readings’. She adds that Haraway’s invocation of the cyborg ‘cannot remain uncontaminated by
other representations circulating in popular culture’ (ibid.: 208), including many that work against the spirit of the Manifesto. Anne Balsamo (2000 [1988]), Mark Oehlert (1995) and Jennifer Gonzalez (2000 [1995]) all track popular culture’s cyborgs, finding in some an echo of the promises of Haraway, but in others ‘limiting, not liberating, gender stereotypes’, especially when it comes to tracking ‘cyborg women’ (Balsamo 2000 [1988]: 155). But, remember how Haraway stresses the non-innocence of the cyborg, its blasphemy and unfaithfulness. So I think that unruly kin have to be seen as part of the cyborg’s network: cyborgs don’t stand still, and they don’t always do what you want them to do. They are, as she would say later, ‘bumptious’.

Haraway herself soon became mindful of this issue, arguing that cyborgs will always be changing, be changelings: ‘already in the few decades that they have existed, they have mutated, in fact and fiction, into second-order entities like genomic and electronic databases and other denizens of the zone called cyberspace’ (Haraway 1995: xix). But she is also aware of the sensible limits of cyborg figuration, preferring to see the cyborg as one of the litter, along with ‘many sorts of entities that are neither nature nor culture’ (Markussen, Olesen and Lykke 2003: 57). Hence she arrives at the term ‘a kinship of feminist figurations’ (Haraway 2004a), made up of, as she puts it, ‘florid, machinic, organic, and textual entities with which we share the earth and our flesh. These figures are full of bumptious life’ (ibid.: 1). By now echoing Lykke and Braidotti as well as reworking her own earlier formulations, in this kin group she sees ‘cyborgs and goddesses working for earthly survival’ (ibid.: 3), and not just them, too: primates, coyotes, *Mixotricha paradoxa*, vampires, OncoMouse™ and FemaleMan®, dogs and dog people, and the famous list of figurations she gives in *Modest Witness* (though she was then still calling them ‘cyborg figures’): ‘seed, chip, gene, database, bomb, fetus, race, brain, and ecosystem’, products of global technoscience ‘shocked into being from the force of the implosion of the natural and the artificial, nature and culture, subject and object, machine and organic body, money and lives, narrative and reality’ (Haraway 1997: 12, 14). Developing her kinship thesis later in *Modest Witness*, she writes:

I am sick to death of bonding through kinship and ‘the family,’ and I long for models of solidarity and human unity and difference rooted in friendship, work,
Let’s take a couple of examples from her kin list, by way of illustration. First up, *Mixotricha paradoxa* (Haraway 1995, 2004b), which she discusses twice, as part of a confessional meditation on her own ‘desire’ for nature and her love of biology, and also as a kind-of cyborg, not least because knowledge of its existence and form is only enabled (for humans, at least) by the infrastructure of technoscience. *M. paradoxa* is a parasite that lives in the ‘dark passages of a termite’s gut’ (Haraway 1995: xvi), from where its ‘genre defying talents’ have been observed thanks to ‘all the materializing instruments, discourses, and political economies of transnational technoscience – from scanning electron microscopes, to molecular genetic analysis, to theories of evolution, to circulations of money and people’ (ibid.).

*M. paradoxa* is an extraordinary thing, a tiny ‘hair’ made up of assorted specialized micro-organisms living symbiotically or confederately. Here is Haraway’s discussion of the significance of this parasite:

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*Haraway*’s discussion of the significance of this parasite:

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This tiny hair-like thing in the termite’s hindgut, then, unsettles our ‘normal’ way of thinking about individuals and groups, and about relationships; it ‘interrogates individuality and collectivity at the same time’ (Haraway with Goodeve 2000: 83). Even Haraway struggles with the words to describe what’s going on here, with the relationship between
part and whole – is it ‘it’ or ‘they’? I guess it’s the cyborg answer: it’s neither / both. And there are many other examples of such ‘heterogeneous associations’, obligatory symbioses and loose-or-tight confederacies of co-evolution and co-constitution. We are all of us bound in these kinds of connections. Hence ‘the relationship is the smallest possible unit of analysis’ (Haraway 2003b: 77). And, in her most recent work, Haraway has turned to a particular figuration of that unit of analysis.

COMPANION SPECIES

I consider dog writing to be a branch of feminist theory, or the other way around.

(Haraway 2003a: 3)

Over the last couple of years, Haraway has turned her attention towards dogs and people, as a way ‘to explore the layered meanings of historically cohabiting companion species of many ontological kinds, organic and not’ (2004a: 5) – hence an explicit kin connection, right back to cyborgs. Yet it would be a mistake to see the dog-person as a cyborg hybrid (though see Michael 2000 for a suggestive similar reading of the ‘hudogledog’ – the human + dog lead + dog). Or, as she puts it, ‘the differences between even the most politically correct cyborg and an ordinary dog matter’, adding that ‘by the end of the millennium … cyborgs could no longer do the work of a proper herding dog to gather up the threads needed for serious critical inquiry’ (Haraway 2003b: 60). So, by her own omission, she has ‘gone to the dogs’. Importantly, dogs are material-semiotic entities; they are not metaphors, they are dogs, and ‘they are not here just to think with. They are here to live with. … Dogs and people figure a universe’ (Haraway 2003a: 5, 21). That universe, of course, is all about naturecultures; the story of co-evolution and cohabitation, of dogs and people, of relational domesticating, is all about ‘otherness-in-connection’ (ibid.: 44). Dogs are not us, she insists, no matter how we anthropomorphize them. Using tales of her own life with dogs, as well as diverse sources on dog–human relationships ranging from archaeozoology to training manuals, Haraway explores the many ways that ‘dogs are neither nature nor culture, not both / and, not neither / nor, but something
else. ... Dogs are very many kinds of entities’ (Markussen, Olesen and Lykke 2003: 56, 55).

And, of course, companion species is a category much, much broader than dog worlds. Haraway is attuned to the specificities of dogs, to be sure, but also to understanding the broader implications of ‘significant otherness’, of how forms of relating between different material-semiotic entities get done. And she is aware that ‘species’ is a far-from-innocent concept, implicated in practices designed to ensure ‘purity’ – though she wants to keep the idea of species open to all kinds of entities (hence her choice of the term companion species over the more common but limiting ‘companion animal’). Her ‘Cyborgs to Companion Species’ essay ends with a ‘cat’s cradle’ listing twenty-one things Haraway likes about companion species, ending beautifully with ‘A key question is: who cleans up the shit in a companion species relationship?’ (Haraway 2003b: 79).

As part of this work she gives a reading of domestication and co-evolution of dogs and humans that stresses the relationality at work: people didn’t simply decide to tame wolves to make them into dogs. What she calls ‘dogs-to-be’ worked at a way of relating with people that benefited both parties, as did the people: ‘agency here is distributed, mobile, and complex’, summarizes Schneider (2005: 85). And so it is today, in the many ways of relating between people and dogs: ‘dogs are about the inescapable, contradictory story of relationships – co-constitutive relationships in which none of the partners pre-exist the relating, and the relating is never done once and for all’ (Haraway 2003a: 12, my emphasis). Although we have in some senses strayed a long way beyond our comfort zone in terms of this little book’s focus in cyberculture – we too have gone to the dogs – it is hopefully clear why we have ended up here: cyborgs, Haraway has come to see, are ‘junior siblings in the much bigger, queer family of companion species’ (ibid.: 11), are all part of the same stories of technoscience and naturecultures.

**SUMMARY**

The Cyborg Manifesto catalysed a new field of cultural inquiry, cyborgology. People found cyborgs everywhere, doing all kinds of things – often things at odds
with those described in the Manifesto. The Manifesto itself generated a lot of heat, and was installed at the core of this cyborgology. Haraway, meanwhile, was taking her cyborg in new directions, and introducing it to its ‘queer kin’, most recently by tracing a line from the cyborg to the companion species, and specifically to dog–human relationships. While not addressing the famous cartoon about identity masquerade on the Internet, ‘In cyberspace no-one knows you’re a dog’, Haraway’s work relocated the cyborg as part of this bigger kin group, all of whom in their own ways raise the question of what counts as nature and culture in our technoscientific world, and in the possibilities of more livable worlds.

3 CYBORG METHODS

To round off my discussion, I want to briefly focus on some recurring ideas in Haraway’s work; these are ideas about method, about the way she approaches her units of analysis, about ‘how to write theory … in order to find an absent, but perhaps possible, other present’ (Haraway 1992: 295). But this isn’t a discussion of method such as we might expect in social science, it isn’t about sampling and such like. As we should by now expect from someone who confesses that she ‘cannot not think through metaphor’ (Haraway with Goodeve 2000: 86), Haraway uses a number of powerful devices to discuss her working method, but these too are often metaphorical: cat’s cradle, diffraction. These are, of course, the most apposite methods with which to approach cyborgs. So, while Haraway confesses to finding ‘words like “methodology” … very scary’, preferring to talk of her ‘ways of working’ (ibid.: 82), a sketch map of cyborg methods will, I hope, help us understand those ways of working.

FIGURATION

If you’ve been reading attentively, you will have noticed that Haraway talks often of figuration. This notion, Sofoulis (2002) notes, is central to her method, and is most fully explicated in Modest_Witness, where she describes it as a ‘contaminated practice’ (Haraway 1997: 8). Figuration
connects to another key notion I will try to explain in a moment, her discussion of ‘material-semiotic entities’. But first to figuration, a concept that, Haraway writes, has ‘deep roots in the semiotics of Western Christian realism’ (ibid.: 9), in which the Old Testament is seen by the Christian Church as a prefiguring of events in the New Testament, as though the events described in the Old Testament, although they really happened, are allegorical and can be understood only by reference to the New Testament. So, in the context of Christian figural realism, the Old Testament is, in short, a figuration of the New Testament; the latter ‘fulfils’ the former, and there is a connection made between temporal meaning (history) and eternal meaning (a kind of retrospectively-read prophecy). Haraway detects this figural realism, and the Christian discourse around it, infusing technoscience in what she calls a ‘barely secularized’ form: ‘In the United States, at least, technoscience is a millenarian discourse about beginnings and ends, first and last things, suffering and progress, figures and fulfillment’ (Haraway 1997: 10).

This idea, then, immediately reminds us of Haraway’s Catholic roots which, though she now calls herself anti-Catholic, nevertheless have left an indelible mark on her thinking, and which she mixes in with her other eclectic sources of inspiration. As Schenider (2005: 5) summarizes:

One could safely say that her ‘theory’ [and I would add her method, too] is found primarily in her highly imaginative use of a range of metaphors and figures drawn from biology, feminism, Christianity, and science fiction; and often from all of these at once. Her narratives and their agents, dramas, and passions – even when they are somewhat fantastic – are always grounded in details of lived reality or embodied material at the same time that they invite us to think, act, and relate in hopeful ways that point beyond but intersect with these current ‘real’ local arrangements and practices toward new but also always ‘real’ possibilities. She has described this quality of her work as insisting on both the literal and the figural at the same time – something like literal / figural.

(Schneider 2005: 5)

Of course, figuration, the figural, means others things, too, and Haraway is fully mindful of this matrix of meaning: the use of the term in analyses of rhetoric; the French meaning, face; figuring things out; figure meaning
an illustration or drawing … (It is also a branch of sociology associated with Norbert Elias.) So, she concludes:

Figurations are performative images that can be inhabited. Verbal or visual, figurations can be condensed maps of contestable worlds. All language … is figurative, that is, made of tropes, constituted by bumps that make us swerve from literal-mindedness. I emphasize figuration to make explicit and inescapable the tropic quality of all material-semiotic processes, especially in technoscience.

(Haraway 1997: 11)

This quote contains another of Haraway’s favourite terms, trope. This also has a number of meanings that nest together in her work: a trope is a familiar or repeated term, symbol or character in a type or genre of literature (such as mad scientists in horror); it is also a figure of speech which involves a play on words, such as metaphor or irony; and it is used in the theory of history to account for the ways that different historians write history – a use associated with the American academic Hayden White, who hired Haraway at UCSC. So, lots of playful relationalities are at work even in the words she chooses.

In conversation with Thyrza Nichols Goodeve, Haraway returns repeatedly to her use of figuration, and to the tropic – to the folding of the figural and the literal, ‘the join between materiality and semiosis’ or the ways in which ‘the literal and the figurative, the factual and the narrative, the scientific and religious and the literary, are all imploded’ (Haraway with Goodeve 2000: 86, 141). This implosion, so aptly tagged

**SEMIOTICS**

The so-called theory or science of signs, of how things mean. Described as ‘the single most important set of theoretical tools that is available to cultural studies’ (Edgar and Sedgwick 1999: 351), it has its origin in linguistics, and concerns the links between things and words (signifiers) and meanings (signified). Signifier plus signified equals sign, the thing and its meaning. To quote a suitably canid example from a sociology dictionary: ‘a photograph of a Rottweiler = dog = power, a fighting dog = threat to children’ (Jary and Jary 2000: 349).
by the many-meaning terms figuration and figure, is evident in her insis-
tent conjoining of paired terms, most notably material-semiotic.

**MATERIAL-SEMIOTIC**

When Haraway says, as noted earlier, that dogs aren’t metaphors, they are
dogs, she is reminding us that they are, in fact, material-semiotic entities.
To say that they are dogs doesn’t mean to take the category ‘dog’ as
self-evident and literal; it means to see dogs as concrete, or material,
or fleshy things, but also as entities that mean things. Hence the
material – the thingness of things – is welded to the semiotic (i.e.
meaning).

But things aren’t just what they mean, they are concrete, real things,
too: a dog is a dog; although, as she says, ‘dogs are many different kinds of
entities’ and ‘the ontology of dogs turns out to be quite big’ (Markussen,
Olesen and Lykke 2003: 55). Hence, *material-semiotic* or, in Haraway’s
words, ‘There’s no place to be in the world outside of stories. … Objects
are frozen stories’ (Haraway with Goodeve 2000: 107). She uses the term
to discuss particular objects of knowledge, such as the gene, tracking at
once ‘how it is made to mean, and what is materially done to it or with it’
(Sofoulis 2002: 88) – so there are material-semiotic actors, fields, prac-
tices, bodies, objects, worlds. Hence ‘a gene is not a thing … Instead, the
term *gene* signifies a node of durable action where many actors, human
and nonhuman, meet’ (Haraway 1997: 142) – like the cyborg lab rat
made by Clynes and Kline, or the tale of *Mixotricha paradoxa* told through
technoscience, the gene is a recurrent figuration in Haraway’s work. In
fact, it is highlighted as one of two key figurations of the technoscientific
present, along with the computer. As a central concept in Haraway’s
work, then, material-semiotic has echoes of naturecultures, not least in
its insistence on conjoining or rejoining terms cleaved apart by a Western
mindset stuck on binaries.

**SITUATED KNOWLEDGES AND DIFFRACTION**

Diffraction patterns record the history of interaction, interference, reinforcement,
difference. Diffraction is about heterogeneous history … Diffraction is a narrative,
graphic, psychological, spiritual, and political technology for making consequent-
tial meanings.

(Haraway 1997: 273)

Over a number of years, Haraway has developed a perspective on the theo-
ries and methods of science studies. This is another vital strand to her
work, but I cannot give it full treatment here, because it takes us too far
from the cyborg – though, as I hope to suggest, there’s something ‘cyborg-
gian’ imprinted in her thinking here, too. The first key concept in this
aspect of Haraway’s work is ‘situated knowledges’, which she has worked
through in relation to feminist science studies and in relation to teaching
women’s studies (Haraway 1992, 1997). It represents her attempt to
bridge an impasse in feminist thought between so-called standpoint
theory and postmodern or difference feminism, and it centres on the
problematic notion of ‘women’s experience’ as an analytical location.

In her essay ‘Reading Buchi Emecheta: contests for “women’s experi-
ence in women’s studies”’ (Haraway 1992/1988a), Haraway discusses
feminist reading practices in relation to a Nigerian-born writer who emi-
grated to London in the 1960s. Using readings of Emecheta’s work as a
focus, her aim in this essay is to rethink the idea of ‘women’s experience’
in the context of difference. Wanting to refuse the collapse into ‘endless
difference’ (ibid.: 109) that she sees in postmodernism, Haraway wants to

FEMINIST STANDPOINT THEORY

Branch of feminist theory developed in the 1980s that argues that all knowl-
edge is situated and produced from different standpoints or locations. Some
knowledge is privileged, especially knowledge from oppressed or subjugated
positions, because those in positions of power or authority cannot see the real
conditions of domination and subordination. It draws on historical materialism
within Marxism, that attempted to ‘reveal’ real class relations – the reality
beneath appearances. So feminism can help women see the material condi-
tions of gender oppression under which they live, and can thus activate change.
Like much second-wave feminism, standpoint theory became fractured by vec-
tors of difference that undermined any claim on a universal ‘woman’ or ‘women’s
experience’.
articulate difference to politics and to the idea of accountability. So she begins to talk about ‘situated knowledges’ as a way of saying that knowledge is socially produced and so is related to experience and location, but not to say this means the ‘anything goes’ relativism that postmodern thinking gets tarred with. Crucially, and for some problematically, she highlights the situated knowledges of the oppressed or subjugated as particularly important:

Situated knowledges are particularly powerful tools to produce maps of consciousness for people who have been inscribed within the marked categories of race and sex that have been so exuberantly produced in the histories of masculinist, racist, and colonialist dominations. Situated knowledges are always marked knowledges; they are re-markings, reorientations, of the great maps that globalized the heterogeneous body of the world in the history of masculinist capitalism and colonialism.

(Haraway 1992/1988b: 111, emphasis in original)

In this formulation she is trying also to bridge feminist theory and ‘the critical study of colonialist discourse’, or what we might name postcolonial theory, by mapping how both ‘intersect with each other in terms of two crucial binary pairs – that is, local / global and personal / political’ (ibid.). And, through this, Haraway hopes to rethink the notion of ‘women’s experience’ away from totalizing or universalizing, indeed away from identity and identity politics, and instead towards a politics built on affinity: local and global and personal and political. Her hope in this essay

**SOCIAL CONSTRUCTIONISM**

The idea that knowledge, facts, truth, even reality, are all constructed in a particular culture or society, rather than being pre-existing or natural. In science studies, social constructionism (sometimes called constructivism) argues that scientists are social actors, and that science is a social practice: rather than uncovering the truth, scientists construct it through the ways they think and work. The term is also more broadly applied in cultural studies and sociology, as the opposite of essentialism in work on identity for example – so the identity category ‘woman’ is a product of society, not pre-given or natural.
is to find ‘a space for political accountability and for cherishing ambiguities, multiplicities, and affinities without freezing identities’ (ibid.: 121). So there is a clear connection here across to her work on cyborgs and companion species in this grappling with difference and affinity, as well as to Chela Sandoval’s (1995) ‘methodology of the oppressed’ which influenced the Cyborg Manifesto.

These ideas she further elaborated in a parallel essay, ‘Situated Knowledges: The Science Question in Feminism and the Privilege of Partial Perspective’ (Haraway 1992/1988b). This piece resonated through a whole other series of debates, too, in terms of feminist science studies; it has been as impactful as the Cyborg Manifesto, in fact, across a range of disciplines trying to find ways to think about the researching, writing and reading practices generally framed by the notion of the social construction of knowledge.

In this engagement with science studies and especially feminist science studies, Haraway also critiqued the dominant methodological approach, reflexivity (see also Haraway 1997). Reflexivity here means ‘an interrogation of the practices that frame our accounts of the world’, including accounts called science and accounts about science (Campbell 2004: 163). Reflexivity is a way of getting at the idea that what counts as truth is socially constructed, and involves ways of reading and of writing that seek to reveal how knowledge is constructed. It has come to be an almost standard element of social studies of science, though still a hotly contested
one. The problem with this approach for Haraway, according to Schneider (2005) is that it places too much emphasis on the semiotic, not enough on the material; given what we now know about her insistence on conjoining these two terms, I think Schneider is right.

The development of this kind of thinking in feminist science studies has a slightly different trajectory, but arguably retains a greater sense of the politics at work here, connecting science studies back out from the laboratory to the world, to gender issues: ‘[feminist science studies] often has strong reasons to argue that the fiction of gender that science presents is not merely less persuasive but less accurate’ (Campbell 2004: 167) – hence Haraway’s insistence on objectivity.

As with ‘Reading Buchi Emecheta’, there is also here an engagement with postmodern thinking, an attempt not to succumb to the ‘play of signifiers’ and language games. And this engagement is about politics: ‘the further I get with the description of the radical social constructionist programme and a particular version of postmodernism, the more nervous I get’ (Haraway 1992/1988b: 185). She particularly wants to hold onto something that had become a dirty word in constructionist thinking: the notion of objectivity, derived from Marxist feminism and central to standpoint theory. But she finds both postmodern constructionism and standpoint theory limited and limiting, and strives to think situated knowledges as a way of moving beyond this impasse too:

So, I think my problem and ‘our’ problem is how to have simultaneously an account of radical historical contingency for all knowledge claims and knowing subjects, a critical practice for recognizing our own ‘semiotic technologies’ for making meanings, and a no-nonsense commitment to faithful accounts of a ‘real’ world, one that can be partially shared and friendly to earth-wide projects of finite freedom, adequate material abundance, modest meaning in suffering, and limited happiness.


A notion of feminist objectivity emerges here as situated knowledge, embodied and located. Knowledge is produced in networks of ‘actants’, human and nonhuman, in particular circumstances and particular configurations or relationalities: ‘in a differentiated social space, different social positions will produce different knowledges’ (Campbell 2004:...
171) – but not just flatly different: some are better, more accurate, than others: ‘a knower occupying a social position of subjugation will provide a more accurate knowledge of oppressive social relations’ (ibid.). So a situated reflexivity here aims to hold onto the promises of reflexivity but to reinforce the location from which that reflexivity comes, always with a political imperative.

Now, to find a way to think this through, Haraway offers the idea of diffraction to replace the reflection audible in reflexivity:

Reflexivity has been much recommended as a critical practice, but my suspicion is that reflexivity, like reflection, only displaces the same elsewhere ... Reflexivity is a bad trope for escaping the false choice between realism and relativism in thinking about strong objectivity and situated knowledges in technoscientific knowledge. What we need is to make a difference in material-semiotic apparatuses, to diffract the rays of technoscience so that we get more promising interference patterns on the recording films of our lives and bodies.

(Haraway 1997: 16)

Stressing that diffraction is for her ‘a metaphor for the effort to make a difference in the world’ (ibid.), Haraway sees it as a way to intervene in the networks of actants to produce both new actants (which she also refers to as ‘inappropriate/d others’) and new networks. Diffraction is an oppositional practice ‘in which we learn to think our political aims from the analytic and imaginative standpoint of those existing in different networks to those of domination’ (Campbell 2004: 175).

Diffraction for Haraway is also about different reading practices interacting – reading a scientific paper or reading a poem, for example – connecting us back to her work on Buchi Emecheta and, indeed, her work on primatology. As she elaborates in an interview with Joseph Schneider, ‘Different reading skills interact diffractively. I know the difference between one set of skills and another, but they constantly interrupt each other productively. They produce jokes, so that what appears to be straightforward gets bent in interesting ways’ (Schneider 2005: 149). She exemplifies this through one of her favourite resources, science fiction, and a comment by writer Samuel Delaney that the phrase ‘Her world exploded’ means one thing in ‘ordinary literature’ – it suggests
some kind of psychological breakdown or whatever – while in science fiction it might mean literally that the character’s world, her home planet, blew up. The juxtaposition between those two readings is diffraction. So diffraction patterns register interference, how things are changed in interaction, thus figuring for Haraway the strong objectivity of situated knowledges and ways of relating and interacting that produce patterns of difference. Such ways of relating and patterns are also conjured in the last ‘cyborg method’ I want to talk about here, cat’s cradle.

**CAT’S CRADLE**

The ‘string-on-fingers’ game of cat’s cradle is offered by Haraway as a better way to understand the practices of science, and thus as a ‘method’ for science studies, in place of more adversarial metaphors of struggle and battle (Haraway 1994, 1997; see also Schneider 2005). Cat’s cradle is relational, attentive and embodied; it is about knots and patterns, and the game is best played collectively, passing the cradle from one person’s hands to another, making more and more patterns, complex and changing: ‘one person can build up a large repertoire of string figures on a single pair of hands, but the cat’s cradle figures can be passed back and forth on the hands of several players, who add new moves in the building of complex patterns’ (Haraway 1997: 268). Moreover, there is no ‘winner’ in this game, no final score: ‘the goal is more interesting and open-ended than that’ (ibid.). The fun of producing knots and patterns, of figuring out how certain moves made certain knots (though not always possible), represents an ‘embodied analytical skill’ (ibid.), echoing her discussion of pleasure in machine skill for cyborgs. It is, Haraway says to Goodeve, ‘methodology with a small “m”. It’s a way of working and a way of thinking about work’, adding that it was addressed by her ‘to science studies people to draw more thickly from feminist studies and cultural studies and vice versa’, and that it’s also how teaching should be (Haraway with Goodeve 2000: 156). Played all over the world, cat’s cradle is ‘both local and global, distributed and knotted together’ (Haraway 1997: 268), hence figuring for Haraway a possible new way of knotting together ‘the varying threads of science studies, antiracist feminist theory, and cultural
studies’ (ibid.). As an image and a practice to end on, nothing seems more appropriate than this passed-between-hands, strings-on-fingers game of patterns and knots.

**SUMMARY**

Throughout her work, Haraway attempts to find new ways of thinking and writing about the world as it is, and about possible, more ‘livable’ worlds. Her work is marked by a deep political commitment, borne out in her working methods. The key concepts discussed here – figuration, material-semiotic, situated knowledges, diffraction, cat’s cradle – do not represent a ‘cyborg toolkit’ for how to ‘do a Haraway’; rather they should be seen as parts of an ongoing working-through of how to talk about ‘elsewhere’. The interference patterns that diffraction produces, the knotty webs of cat’s cradle, the strong objectivity that situated knowledges promise, and the insistence on understanding figurations of material-semiotic entities as ‘frozen stories’, are themselves knotted threads, passed back and forth, still producing surprising patterns.
FURTHER READING

WORKS BY CASTELLS

This annotated list includes the main books written or co-written by Castells that are discussed here, plus some of the articles and chapters that elaborate the main themes of *The Information Age*, some published interviews, and a selection of critical appraisals. A more lengthy bibliography, with accompanying biography, can be found in Castells and Ince (2003).

Castells’ first major work in urban sociology, showing his indebtedness to Marxist approaches to understanding the social and economic geography of cities.

Definitive and highly influential study of social movement politics in San Francisco.

Begins to develop ideas fleshed out in *The Information Age*, such as the space of flows, via an analysis of the changing regional industrial geography of the USA.

Co-written survey of new ‘milieux of innovation’ in major city-regions worldwide.


The first volume of the trilogy, laying out key ideas such as the network society and the culture of real virtuality.


A run-through of the main ideas in *The Information Age*, focusing especially on issues of identity.


Second volume, focusing on cultural social movements, uses of identity to articulate resistance to the network society, and the changing role of nation-states and party politics.


Covers the collapse of statism, the new Fourth World, the global criminal economy, and rounds off the trilogy with a conclusion and some (rare) futurology.


Offers a corrective to Castells’ earlier view that withdrawing to ‘cultural communes’ was the only countercultural response to the network society; he shows here how social movements of various types make use of networks.


Focuses on the economic geographies of the network society.


Castells is also series editor for The Information Age Series, published by Blackwell, self-described as ‘the Nasdaq of the social sciences’, which publishes empirically informed analyses of dimensions of the network society, including volumes by former graduate students. They are thus important nodes in the ‘Castells network’. The series has so far included the following:


WORKS ABOUT CASTELLS

Only those critical works referred to in the text are cited here. For an extensive collection of critiques, see Webster and Dimitriou (2004).


A short newspaper article introducing The Information Age.


A useful critical appreciation of the first two volumes of the trilogy.


An incisive review essay of the trilogy that does a great job of condensing 1500 pages of Castells into just eight.

Good, critical review of *The Information Age*, highlighting what the reviewer sees as conceptual weaknesses, for example around causality and technological determinism.


Excellent overview and critical commentary, though less critical than some of Webster’s other articles on Castells.


A collection of critiques of Castells’ main body of work; volumes 2 and 3 centre on *The Information Age* material, reprinting reviews and responses.


Arguments that there’s more continuity than change in the information age, especially where capital and class are concerned.

**Works by Haraway**

A full and up-to-date bibliography of Haraway’s work can be found in Schneider (2005) — and there are also several on the web. Here I list the main publications discussed in this book, some of the published interviews (which offer an accessible insight into Haraway’s work, life and sense of humour) and a selection of useful secondary works.


Based on her PhD thesis, this book shows Haraway’s ideas about science as culture taking shape; the new introduction situates it in the context of her later work.

Her response to the question of the fate of socialist feminism under Reaganism – an ironic political myth. Also published, with revisions, in *Simians, Cyborgs, and Women* and *The Haraway Reader*.


A study of primatology’s way of seeing apes, and humans, deepening Haraway’s method of reading and writing science with a strong political edge.


Collects many of the important articles written in the 1980s, with three sections: ‘Natures as a system of production and reproduction’, ‘Contested readings: narrative natures’ and ‘Differential politics for inappropriate/d others’.


Uses the metaphor of cat’s cradle to suggest the unfinished, ever-changing intersections of these three ways of thinking about the world.


Brilliant short discussion that moves between cyborg lab rats to the hind-gut of a termite, and many places in between.

**FURTHER READING**


Haraway ‘gone to the dogs’, thinking the relationalities of dogs and their humans in all their complexity, as naturecultures.


Charts her move towards the companion species manifesto, and from cyborgs to dogs and dog people. Also published in *The Haraway Reader*.


A great introduction to this collection of her ‘greatest hits’ – a great way into her work and her current preoccupations.


She describes this as a ‘confessional piece’, taking back to her roots in biology, and to a parasite in a termite’s hindgut.


Nine key essays, a great interview, and a contextualizing introduction.

**INTERVIEWS WITH HARAWAY**

As I noted earlier, Donna Haraway ‘gives good interview’: these are excellent ways into her work, showing her humour, combining autobiography with theory, in an accessible, conversational style. All of these are highly recommended.


**WORKS ABOUT HArAWAY**


Tracks science fiction’s cyborgs, with a close eye on their genderings.


Compares the cyborg with the vampire figured in *Modest_Witness*, and discusses Florida’s wetlands as vampiric and / or cyborgian landscape.


Critical summary of Haraway’s ‘situated knowledged’ work in the context of social studies of science and feminist studies of science.


Graham, E. (1999) ‘Cyborgs or goddesses? Becoming divine in a cyber-feminist age’, *Information, Communication & Society* 2(4): 419 – 38. Springs from the Cyborg Manifesto’s famous last line to consider a binary argued to have been left untroubled by Haraway: that between the divine and the secular. See also Graham 2002, in Other Work Cited.


**Works About Cyberculture**


FURTHER READING


Those references not included in the previous sections, but cited in the book, are listed here.


Williams, R. (1976) *Keywords: A Vocabulary of Culture and Society*, London: Fontana.