

BETWEEN
MONSTERS
GODDESSES
AND
CYBORGS

FEMINIST CONFRONTATIONS WITH
SCIENCE, MEDICINE AND CYBERSPACE



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ZED BOOKS
London & New Jersey



**BETWEEN MONSTERS,
GODDESSES AND CYBORGS: FEMINIST
CONFRONTATIONS WITH SCIENCE**

Nina Lykke

It is becoming more and more difficult today for even the most stubborn traditionalists within academia to reject feminist arguments regarding the significance of gender in culture and society. In the so-called 'hard' sciences, however, this is not the case. These sciences seem to be more resistant to the intruding feminist subjects than the humanities and social sciences. One of the reasons for this state of affairs is no doubt to be found in still dominant notions of science. If science is regarded as an enterprise which, no more and no less, aims at a value-neutral, progressive discovery of 'universal and objective truths' about nature and matter, there is no room for feminism. Feminists can, of course, participate in the important work to change the gender balance in scientific communities, but actions beyond that point will not seem appropriate. The claim that feminist perspectives can be meaningful in the hard sciences, beyond the issue of recruiting more women, involves a radical challenge to the traditional notion of science as a 'pure' search for the hidden truths of nature and matter.

In this chapter I will draw a map of some discursive spaces which seem to emerge when feminists confront and challenge science. The map I shall draw will be based on three landmarks: the metaphors of monsters, goddesses and cyborgs. I have chosen these metaphors because they are able to serve as evocative and open-ended markers. Through them I will point out different aspects of critical feminist rethinking concerning the relationship between gender, scientific subjects and the material worlds of artefacts and natural bodies, which have

traditionally been cast in the role of passive objects and bearers of the desired 'objective truths'.

First, I ask the monster metaphor to perform as a representation of boundary phenomena in the interdisciplinary or hybrid grey zone between the cultural and natural sciences. In this zone boundary subjects and boundary objects, monsters which cannot be defined as either human or non-human, challenge established borders between the sciences. This is a zone where confrontations between feminism and science take place. I will draw a map of this zone of monsters as a place where feminist science studies can proliferate in promising ways and activate processes which may transform science.

In the second part of the chapter, two other boundary figures, goddesses and cyborgs (that is, hybrids of machines and organisms), both of which have attracted a great amount of feminist attention and debate, are introduced into the text. They are called forth to serve as metaphors for another border: that between 'the artefactual' and 'the natural', which traditionally divides non-human phenomena into two separate compartments. Like the border *between* human and non-human, this border *within* the non-human affects feminists in their confrontations with science. 'I would rather be a cyborg than a goddess', is the conclusion with which Donna Haraway ends her famous cyborg manifesto (Haraway 1991b: 181). In return, spiritually oriented ecofeminists would argue that a feminist reclaiming of the great goddesses of pre-historic matriarchies may help to redirect society, science and technology away from their present policies of violence – sexism, racism, 'naturism',¹ and so on.

Instead of focusing on the apparent dichotomy between these feminist positions, I will ask a cyborg and a goddess to voice both their sameness and their difference. My purpose is to map out a space for a non-dichotomic conversation about feminist alternatives to the traditional scientific reduction of the non-human world to resources and mere objects without subjectivity.

THE GREAT DIVIDE

As a scholar, I am situated within the 'soft' humanities, but oriented towards interdisciplinary work and transdisciplinary efforts at breaking down excessively rigid boundaries between disciplines. When I approach the 'hard' sciences from this point of departure, it strikes me how great the divide that seems to separate natural and cultural sciences still is.

C.P. Snow's famous diagnosis (Snow 1965) of the intellectual world of modernity as split into two different cultures seems to be true even today, despite the best endeavours of postmodern and feminist science studies to deconstruct the boundaries. The dichotomy, which is signalled by the popular predicates of 'hard' and 'soft' sciences, has definitely not lost its significance.

One testimony to this dichotomy is the institutionalized divide between university faculties. Although certain hybrids (such as arts and science programmes) are emerging, the great divide between faculties still seems to hold the majority within academia spellbound. Marking one pole of this divide, the humanities and social sciences supposedly deal with those phenomena that differentiate the universal human being, traditionally identified as 'man', from 'his' others: things/artefacts and nature. Among these phenomena are the ability to think and the linguistic, aesthetic, ethical, imaginative and social capacities of the human being. At the other pole of the great divide we find the techno-, biomedical and exact sciences. They are expected to explore the non-human, which includes the biological dimensions of the human body, since universal man principally shares them with non-human creatures such as other mammals. Very little interaction takes place across the borders of this demarcation line. Literary and physics departments, for example, seldom act as if they have anything in common other than the infrastructure of university buildings. 'Nature' in literature and 'nature' in physics seem to be two totally separate phenomena. One is inscribed in the world of art and language and supposed to be human, while the other is defined as non-human and subject to natural laws.

MODERN MONSTERS

A conspicuous characteristic of the great modern divide between human and non-human is that its construction is accompanied by strong hostility to monsters and hybrids in their capacity as boundary figures which adhere to neither the human nor the non-human sphere. As an illustration, I shall call Frankenstein's monster as my first witness.

Mary Shelley's enormously popular horror story about this monster (Shelley 1968), which has been more or less canonized as *the* myth of modern science monsters, touches strongly on these feelings of fear and aversion to the non-human/human boundary figure. Frankenstein's

monster appears as monstrous precisely because he/it is situated on the borderline between human and non-human. The mixture of human and non-human dimensions is what constitutes the monster's mostrosity.

From its conception the monster was supposed to be a true mirror of his human creator, but the result of the scientific birth process, initiated by the scientist Victor Frankenstein, turned into something very different. It became a human yet non-human creature whose borderline existence made him/it appear terrifying.

Shelley's novel makes it very clear that the monster's appearance violates the boundary between human and non-human. An example is the portrayal of the monster's eyes, which represent its most threatening feature. To Victor Frankenstein, the human yet non-human eyes of the monster become the main symbol of horrible monstrosity. Why do the eyes hold this position in the novel? Culturally, the eyes are considered the mirror of the soul, and they represent the primary sense of the enlightened human being, the vision. They disclose the human essence of the individual or, alas, they make it fail to pass as truly human. Had the monster been a human being, his eyes would have mirrored his human mentality. But the monster's eyes are not true and pure human eyes. They are boundary eyes: 'His eyes, if eyes they may be called, were fixed on me', is Victor Frankenstein's horror-stricken comment about the moment when the monster confronts him after the 'birth' (Shelley 1968: 319).

In spite of the hostility to monsters, the great divide of modernity nevertheless seems to produce very fertile soil for an excessive, although hidden and repressed, proliferation of these feared and loathed creatures. In his essay *We Have Never Been Modern* (Latour 1993), philosopher of science and sociologist Bruno Latour describes modernity as a process of purification. The great divide between the human and the non-human is the result of this process, he says. With overzealous perseverance the moderns try to make sure that any monster or hybrid that threatens to transgress the border is reclassified and ascribed to either the human or the non-human sphere.

According to Latour, however, modern acts of purification are never successful. They are continuously counteracted by an underground proliferation of monsters. The modern purification of the oppositions human/non-human and socio-culture/nature implies a tremendous act of repression of monstrous and hybrid forms, he says. The constant emergence of hybrids, including non-human humans, presents a never-ending threat to the modern construction of the great divide. In fact, says Latour, hybrid characteristics are the norm rather than the

deviation. The moderns will, however, persist in denying all this impure and improper stuff; but Latour argues that the denial in no way keeps the monsters from breeding and proliferating beneath the surface. Quite the contrary: modernity manifests itself in its production of monsters and hybrids. Frankenstein's monster is only an early harbinger of the cyborg world of the late twentieth century. Cyborgs which, like Frankenstein's monster, transgress forbidden borders are becoming more and more common, and their repression, conversely, less and less successful. In the cyborg world of post-industrial society the proliferation of monsters is indeed getting completely out of control. The processes of purification, which in Latour's opinion have always been illusory, can no longer disguise this fact.

THE MONSTROSITIES OF FEMINIST SCIENCE STUDIES

Feminist science studies are to be found among the permanently proliferating monsters which undermine the foundation of the great modern divide between human and non-human. Seen from the point of view of believers in the great divide, a whole range of monstrosities sticks to these kind of studies. But since monsters, boundary figures and other dubious creatures seem today to be the 'true' rebels, there is nothing to worry about. In the last decade of the twentieth century it is perhaps clearer than ever before that no 'pure' identity politics is possible. 'Pure' women, workers, people of colour, gays and lesbians, indigenous peoples, eco-activists and non-human actors in 'wild' nature have been transformed into inappropriate/d others: a diversity of actors who do not fit into the pure categories prescribed for them (Haraway 1992). So why should the freaks who insist on transgressing borders by doing feminist science studies not jump out of the closet? Why should we not admit our hybrid identity and enjoy what Donna Haraway has called 'the promise of monsters' (Haraway 1992), the potential monsters have for creating embodied and never unambiguous sites for displacing and transforming actions on many levels?

So long as the great modern divide between human and non-human maintains its hegemonic power over academia, there are many reasons why feminist science studies must apparently work from a monstrous (but promising) position of inappropriate/d otherness. By briefly outlining a couple of these reasons, I shall illustrate how feminist science studies contribute to the displacement and destabilization of the divide.

**GENDER AND SCIENCE:
A MONSTROUS CONSTRUCT**

First of all, feminist science studies must appear monstrous to the believers in the great divide simply because such categories as women, sex, gender and so on are brought to the fore together with science. This will be the case no matter which definition of feminism is used. Through these categories, feminist thought in general and feminist science studies in particular pledge their faith in the promises of the monstrous.

Being close to nature in patriarchal thought, 'woman' may often be found lurking in discursive spaces representing what lies between universal man and his non-human others. Therefore, any research which promotes the idea of a female, feminist subject must be prepared to find itself situated along with other monstrous enterprises in the grey zone between the human and the non-human. If the feminist subject tries instead to escape the grey zone of the monstrous through the category of 'gender', she may at first glance seem to be saved. Apparently, she has attained a subject position on the human side of the great divide.

Without losing sight of the positive effects that the sex/gender distinction has had for the unfolding of feminist thought, it is nevertheless time for a critical assessment of its kinship with the great divide. Feminist constructions of the sex/gender distinction, which have been strongly supported by the English language,² appear as acts of purification. They are among the acts through which feminist thought has tried to inscribe itself in the discourses of modernity. Sex is nature, belonging to the non-human part of our being; gender is culture and a purely human affair. Hybrid interpretations are not admitted!

By insisting on this definition, the gendered, feminist subject can distinguish herself from her female, feminist sister by apparently keeping herself free of the monstrous. But (and this is my point) this will only be the case so long as she does not commit herself to feminist science studies. For if we followed the logic of the pure modern line of thought on sex and gender to its ultimate conclusion, we would paradoxically end up taking sides with those scientists who would claim that science is a 'pure' search for the truths of nature and matter with no room at all for feminist perspectives. Seen through this lens, gender studies would be defined as a purely human enterprise and should therefore be situated exclusively at the humanities or social-science pole of the great divide.

In other words, feminist science studies cannot be saved from the monstrous by the category 'gender'. Quite the contrary. The introduction of 'gender' as a socio-cultural and/or socio-psychological category will call forth conflicts with the image of science as a purely rational, depersonalized and value-neutral enterprise, exclusively absorbed in the discovery of truths about the material world. When gender and science are linked, the boundaries between human and non-human are challenged and the monstrous, invoked.

This becomes very clear in Evelyn Fox Keller's important writings on gender and science (Keller 1985, 1989 and 1992), which set out to shake the foundations of the traditional image of science by inscribing it in its context of socio-cultural and socio-psychological patterns of genderization. Evelyn Fox Keller suggests

that our 'laws of nature' are more than simple expressions of the results of objective inquiry or of political and social pressures; they must also be read for their personal – and by tradition, masculine – content. (Keller 1985: 10)

To an adherent of the great divide this is, of course, an utterly monstrous statement, an undue mixing up of laws of nature with socio-cultural gender. Keller herself is, however, perfectly well aware of the dilemmas she mobilizes when talking of gender and science. She seeks a 'middle ground' between nature and culture (Keller 1989: 34). On the one hand, she wants to maintain that modern science is basically culturally genderized; on the other, she does not want to reduce science to a purely cultural and relative phenomenon. Nor does she want to strip biological sex of all meaning. She knows that the search for this 'middle ground' forces her to navigate in dangerous waters that constantly threaten to pull her out into a monstrous grey zone where clear statements can only be made at the expense of important ambiguities and excesses of meaning regarding science as well as gender. But for her, as for Donna Haraway, this affinity with the monstrous is one of the strengths of feminist science studies rather than their deficiency:

Indeed, it might be said that feminist studies of science has become the field in which these ambiguities [the ambiguities of the terms 'gender' and 'science' – NL] are most clearly visible, and accordingly, the field that offers the best opportunity for understanding the factors that may be working against a clear and stable 'middle ground' account of both concepts. (Keller 1989: 35)

CONSTRUCTIONISM OR OBJECTIVITY? A MONSTROUS DILEMMA

The dilemmas involved in the mobilization of gendered categories in the study of the hard sciences represent only one kind of problem facing the feminist subject who wants to do science studies in the present situation, in which the great divide still exerts a hegemonic power over academia. I shall briefly discuss another, related, problem which likewise forces feminists engaged in science studies out onto the monstrous boundaries between the human and the non-human: namely, is science a socio-cultural construct, or can it lead to objective truth?

In the transformatory work, which attempts to recast the image of science and open a space for feminist perspectives, a constructionist approach has proved very useful. When science is reconsidered as a socio-cultural and textual construct, plenty of space is opened for feminist perspectives. At the same time, however, a new problem appears: constructionism threatens to bracket the question of scientific objectivity. It may lead to the unpleasant consequence that the feminist subject who thought that she had constructed a room of her own *within* science, suddenly seems to have sold herself to *non-science*.

Donna Haraway has described this situation very evocatively as an 'epistemological electro-shock' which, at some point in the unfolding of feminist science studies, hit feminist scientists whose critique of the objectivist tradition in which they were trained had led them to recast the image of science along constructionist lines:

I, and others, started out wanting a strong tool for deconstructing the truth claims of hostile science by showing the radical historical specificity, and so contestability, of every layer of the onion of scientific and technological constructions, and we end up with a kind of epistemological electro-shock, which far from ushering us into the high stakes tables of the game of contesting public truths, lays us out on the table with self-induced multiple personality disorder. (Haraway 1991c: 186)

Haraway's solution to the dilemma is her concept of 'situated knowledges' (Haraway 1991c: 183ff.), which defines a new kind of objectivity based upon an always partial, embodied and localized vision. It excludes the classical 'god-trick' of modern science, pretending to build up a potentially universal, omniscient and omnipresent knowledge of the 'laws of nature'.

My purpose here, however, is not to discuss this or other solutions, but in general to emphasize that the dilemma of 'objectivity or

constructionism?' leads to a questioning of the borders between human and non-human. As an illustration, I shall choose my own point of view, thereby situating myself and other feminists from the humanities who find it important to take part in a transdisciplinary conversation about feminism and science, and who perhaps are in a still more monstrous and inappropriate/d position vis-à-vis science than feminist scientists. How does the transgressive step taken by feminist scientists from a traditional conception of objectivity to constructionism, look from the margins that I inhabit? To me it seems to open up a path from my position of total outsider with no critical authority whatsoever to a position that is at least potentially rather powerful.

Let us look first at the outsider's position. It goes without saying that the higher one climbs in the traditional hierarchy of sciences, as defined by Auguste Comte, and the more one's object of study is distanced from the human pole of the great divide, the less a feminist voice from the humanities counts. A modern version of this kind of outlook can be found in the discussion of feminism and science undertaken by the philosopher of science Isabelle Stengers (Stengers 1994). She is critical of the hierarchical thinking implied in traditional approaches to science, but wants to keep the distinctions between human and natural sciences clear. In her opinion, feminists have made a stronger case for playing a role in the transformation of science in precisely those sciences which are *not* at the top of the traditional scientific hierarchy. It is possible, Stengers says, to criticize the *external* political context of the hard sciences from feminist and other political points of view. Moreover, she finds it desirable that all those who are being othered by science should articulate political demands with respect to this context. But this critique of the *external* context will not, cannot, and shall not, so Stengers claims, open a way to the *internal* core of the scientific problem.

From this sketch of the outsider's position, let me turn to the favourable insider's position, which feminist scholars from the humanities can take up when constructionism is put on the agenda. If feminist science studies are about the rhetoric of science, the semiotics of science, the philosophy of science, the history of science and so on, it becomes possible for me to recast my position as a total outsider in the world of science to a very central one. All the sophisticated knowledge about metaphors, narrativity, style and genre which I amassed when training as a literary scholar now seem to be extremely useful in my science studies. Even the hardest sciences at the very top of the traditional scientific hierarchy, which, like the Sleeping Beauty, used to be

protected against my would-be critical eyes by a thorny hedge of equations and formulae, unintelligible to me, are now brought into the centre of my expertise. By one stroke of the magic wand, 'constructionism', they are laid totally open to my analytical skills as a humanities scholar and to my critical outlook as a feminist. What a very pleasant reversal of the traditional scientific hierarchy! And what a great opportunity for expanding the reach of feminist critique.

But wait a minute. Maybe this is too easy. A simple reversal of the scientific hierarchy, which the radical constructionist approach to science represents, might be a useful tool, but it is not a solution that can stand alone. In other words, I agree with those feminist scientists who maintain that the reduction of science to mere textuality or pure power games,³ while bracketing the question of objectivity, is not a desirable path for feminist science studies. Why? Because it would restrict the conversation to the narrow outlook of one or the other pole of the great divide.

To define the conversational terms so that feminist non-scientists are in the outsider position, as Stengers has recommended, means that physics and the other hard sciences are left with a purely non-human core and an insider's space, the 'laboratory', which *a priori* excludes any attempt to set up a feminist conversation. The opposite line of thought, the reduction of science to textuality or power games, places me and other feminists doing cultural science studies in the position of central insider but leaves us with another pure core, the human spheres of the textual and/or the socio-political. Neither alternative seems appropriate for a critical, feminist discussion of the proliferating hybrids and monsters who/which populate the modern world in increasing numbers.

The monstrous in-between position seems to be by far the most promising site for further explorations.

CYBORGS AND GODDESSES

In the discussion so far, I have situated feminist science studies in the border zone between the cultural and natural sciences, where human/non-human monsters play their disruptive games. From the monster metaphor and the great divide between human and non-human, I shall now turn to the two other metaphors of the title, cyborgs and goddesses, and the divide within the non-human sphere between the world of 'artefacts/things' and the world of 'wild/raw/unmanufactured/undomesticated nature'.

This second divide has also engaged modernity passionately. In the seventeenth century, Francis Bacon, the so-called father of modern science, cast future science in the triumphant role of large-scale transformer of wild nature into domesticated artefacts. Bacon's vision,⁴ which has been criticized by feminist science historians (for example, Merchant 1980), is a powerful example of the modern preoccupation with the great divide between artefacts and nature. It is a celebration of the 'artefactual', which is cast as representation of a happy future where humans are in total control of nature. The romantic critique of the artefactualism of the scientific world-view, embedded for example in *Frankenstein*, puts another kind of focus on the divide between artefacts and nature. It differs from Bacon's vision in that the two poles are valued in exactly opposite ways. Here 'the artefactual' is 'evil' and 'the natural' is 'good'. In its capacity as an ugly and evil artefact, Frankenstein's monster is contrasted in the novel to the beauties of the natural world, which inspire the female characters. They embody a state of harmony with nature. The novel sets this up as an ethical and aesthetic ideal, by which standard the creation of the monster is measured and condemned as evil.

Feminist rethinkings of the interaction between science/technology and the material world of 'non-humans' are obviously affected by this old dichotomy between the 'artefactual' and the 'natural'. The feminist attention and the heated debates that the cyborgs and the goddesses have attracted testify to this, because the dichotomy between the two metaphors seems to follow precisely the lines of the divide between 'the artefactual' and 'the natural'. On the one hand, the cyborg metaphor, which was inscribed in the feminist debate in the wake of the publication of Donna Haraway's cyborg manifesto (Haraway 1991b),⁵ seems to lead to a critical welcoming of 'the artefactual' (which is not the same as an uncritical celebration in the Baconian sense!). On the other hand, the goddess metaphor, which for many years has functioned as a common landmark for the international wave of spiritual ecofeminism, seems to point us in the opposite direction: toward a return to 'the natural'. To Donna Haraway and other 'cyborg feminists', feminist goddess worship is an expression of a modern nostalgic construction of a 'good' (non-existent) origin to return to. In the cyborg manifesto, she elaborates on her remark regarding her preference for cyborgs rather than goddesses by way of a critique of ecofeminists such as Susan Griffin (Griffin 1978) and their construction of a dichotomy between a good 'organic' world as opposed to an evil 'technological' one (Haraway 1991b: 174).

If, however, we compare the cyborg and the goddess as two metaphorical landmarks, it is obvious that they have much in common. Both are, so to speak, designed to transgress the borders between human and non-human. Both challenge the ways in which the modern scientific world-view is rooted in a long tradition that casts the non-human in the role of a mere object and exploitable resource for the human, for centuries identified with the powerful and hegemonic position of the white Western man of science, capital and industry. Both the cyborg and goddess metaphors recast the non-human other in the role of subject, actor and agent in her/his own right. Both try to redefine the relation between human and non-human as one of conversation and non-suppressive dialogue between different subjects, instead of a hierarchical and exploitative relation between dichotomously separated opposites: human subject and non-human object and other. In order to illustrate this common ground, I shall call first a cyborg and then a goddess as witnesses.

CYBORG LIBERATION

The cyborg I call is the principal character of a feminist science-fiction novel that deals with the phenomenon of 'virtual reality'. Virtual reality is a modern communications technology which makes it possible to obtain a very 'intimate "interface" between humans and computer imagery' (Woolley 1992: 5). It is so intimate that all the sense data that make up the 'real' experience are supposed to be present in the virtual, electronic space (in future versions of the technology, at least). The material world is, so to speak, absorbed into a virtual one.

In her novel *Virtual Girl* (Thomson 1993), American author Amy Thomson explores virtual-reality technology. Maggie, the principal character, is a very human-like robot, created through virtual-reality technology by the lonely and homeless computer hacker Arnold, who wants a female companion to take care of him. Maggie is a cyborg, a humanoid machine created to fit the image of Arnold's desire for a beautiful, caring, loving and dutiful 'female' companion. Unlike Frankenstein's monster, Maggie is a cyborg whom everybody mistakes for a human, so perfect is the resemblance. She looks like a human, and is capable of imitating human behaviour on a very complex level. She is the perfect non-human human.

Seen from Arnold's human point of view, Maggie is a wonderful machine. She completely fulfils the purpose for which she was designed, at least in the first part of the novel. Here she acts as the perfect

companion who/which takes care of all of Arnold's needs. However, the novel is the story of her emancipation from Arnold, about her unfolding as a subject in her own right in her capacity as a self-aware, thinking, feeling and sensing machine.

Maggie's emancipation process is initiated by a programming error. At some point in the creation process, Arnold tries to design a core identity for Maggie so that she can distinguish between important and non-important sense data and experiences. Arnold's idea is to program her so that she will always give priority to data that is important for fulfilling *his* needs. 'Maggie, you are the most important thing I have ever done, ... I need you. Start there', Arnold says (Thomson 1993: 27). Due to the confused state of her programming at the given moment, she only catches the first half of the sentence. Thus she is programmed with the 'wrong' idea that she herself, rather than Arnold's needs, is the 'most important thing'. From this point on, Maggie reprograms herself, and she slowly unfolds a stronger and stronger core identity which gives priority to her own basic needs.

There are many steps in Maggie's emancipation process. The novel is a fascinating unfolding of many complex stages of a cyborg identity. In a very moving scene in the middle of the novel, for instance, Maggie becomes aware of her independent core identity with the help of another self-aware computer program, whom/which she in return sets free on the net and later helps to slip into a male robot body. She thus shows herself capable of such deeds as the creation of a new robot, which originally were defined as an exclusively human enterprise. In another scene, Maggie is taught about human sexual life by a transvestite/gay human, Marie/Murray, who, to Maggie's great surprise, tells her that s/he is not a female in biological terms. In return for this openness, Maggie feels that she can be open too. Out of a new feeling of trust in humans, based not on Arnold's programming but on her own experience, she breaks one of the fundamental precepts of Arnold's original programming, which forbade her to disclose her non-humanness to humans. For the first time she tells a human being that she is a non-human. The transvestite/gay, who thinks s/he knows everything about different identities, is taken completely aback. Apart from the sexual difference which the transvestite/gay knows so well from experience, cyborg difference is brought into his/her world as an absolutely new dimension. The episode ends in a warm, trusting friendship between the two inappropriate/d and very different others.

In the dramatic conclusion of the novel, Arnold's initial programming error leads to Maggie's final emancipation. Arnold has by then

inherited his father's fortune and is the owner of a big computer company. He wants to create a slave army of robot workers, with Maggie, his most complex and human-like creation, as an instrument in this process. But Maggie, for whom the thought of enslaving self-aware machines is terrifying, manages to defeat Arnold's plans and free herself and the other self-aware machines. Arnold learns that it is unethical to treat another subject as a mere thing and a slave, whether it is human or non-human.

RESURRECTION OF THE GREAT COSMIC MOTHER: A HEALING OF BROKEN BONDS

As my next witness, I call a goddess from the spiritual ecofeminist tradition. The goddess I invite into my text is the spiritual mother and significant title character of the book *The Great Cosmic Mother: Rediscovering the Religion of the Earth* (Sjöö and Mor 1987). As in many cultural-historical writings of spiritual ecofeminism, the book presents the goddess as a potential healer of broken bonds between human and nature, between the human mind and non-human matter – body, earth, cosmos. The her/history that is told is a myth of origins intended to revise and replace the patriarchal ones. It is told in the language of mythical realism:⁶ the goddess is understood not just as a metaphor or representation, but as a real, universal being. In this story we are all seen as born of the great cosmic mother. Originally, we lived in a direct physical-emotional-spiritual connectedness with her, as children of her cosmic womb or egg. Her physical-emotional-spiritual movements were our movements. Mind and body, human and nature, earth and cosmos were one inseparable whole. According to this kind of (her/hi)story-telling, the spiritual and worldly hegemony of the patriarchal father is a late stage in human history, the result of a violent take-over (located by the book in question in the Bronze Age). On the spiritual level, the patriarchal take-over, so the mythical story goes, meant that creator and creation, mind and matter, human and non-human, I and other, and so on, were separated and set up in a violent hierarchy, created in the image of the 'colonization of the indigenous female by the imperial male' (Sjöö and Mor 1987: 413).

Today, our minds are far away from the goddess, say Sjöö and Mor, but we can revive her in ourselves. If we accept that we are part of her, and if we retrace the universal, spiritual-material unity she embodies, we/she can heal the broken bond. According to Sjöö and Mor, the resurrection of the great cosmic mother and of our original dyadic

relationship with her is the only meaningful political direction we can take today. It will, they say, be a step forward in human evolution, which they conceptualize as a spiral. They emphasize that they do not want a simple linear turning back of the clock of history. They are talking about a 'step forward to the same place where we began, but on the path of a larger circle of consciousness' (418), which, among other things, includes present-day techno-scientific knowledge. In New Age language, the new life in the goddess is defined thus:

This time it will be a global consciousness of our global oneness, and it will realize itself on a very sophisticated technological stage; with perhaps a total merger of psychic and electronic activity. (Sjöö and Mor 1987: 418)

TO BE A CYBORG AND/OR A GODDESS?

Feminist cyborg stories point towards subjectivization and narrativization of the non-human. Amy Thomson's cyborg and the ones Donna Haraway inhabits in her writings are reconstructed as subjects with a right to their own stories. But the same can be said about the goddess stories of spiritual ecofeminism, which resurrect and remythologize non-human nature as the great cosmic mother. Both moves deconstruct the hegemonic position of the human subject of science vis-à-vis non-human objects and others. Both moves try to rethink the world as interaction between material-embodied and semiotic (that is, sign-producing and communicating) actors and subjects, who cannot be divided along the traditional lines of human versus non-human, conscious mind versus stupid matter.

There seems, however, to be a difference in the way goddesses and cyborgs act as material-semiotic subjects. They blur the boundaries between human and non-human, between the material world and the semiotic world of signs and meanings, in different ways. The cyborg of virtual reality tends to absorb the material into the semiotic. The material is constructed as potentially changeable by semiotic, sign-producing acts, by programming and reprogramming. The goddess is different. When she represents a mythical reality to her adherents, we might say that she, in contrast to her cyborg counterpart, tends to absorb the semiotic into the material. For her adherents, the goddess is not just a name, a semiotic device; she is.

This difference between cyborg and goddess might be related to another difference. A celebration of the cyborg and her/his/its tendency to absorb the material into the flow of semiosis (sign production) and

ever-changing meanings tends to put the focus on technologies which speed up the meaning-changing processes. In contrast, a celebration of the goddess who absorbs the semiotic into the material will often be accompanied by a tendency to concentrate attention on the basic, natural conditions of our existence.

These differences between cyborgs and goddesses may collapse into a split along the lines of the modern divide between 'the artefactual' and 'the natural'. But to me this collapse looks like a misplaced act of purification that represses their kinship as feminist monsters, who/which in important ways contribute to the deconstruction of the great divide between human and non-human. In my opinion, feminist science studies should reject neither the goddess metaphor nor the cyborg metaphor. Why not instead talk much more about their monstrous sisterhood? Why not explore the potentials of cybergoddesses?

NOTES

1. The term 'naturism' is used by some ecofeminists as a parallel to 'sexism' and 'racism'. 'Naturism' means abusive and violent treatment of non-human nature. According to the ecofeminist philosopher Karen Warren: 'Feminism is a movement to end sexism', and 'feminism is [also] a movement to end "naturism"' (Warren 1990: 133).
2. In many languages it is not possible to distinguish between sex and gender as it is in English. In my native language, Danish, for example, there is only one word for the English terms 'sex' and 'gender'. Both are translated into Danish as *ken*.
3. In his critique of the purifying and reductionist modern approaches, Latour exemplifies the reduction of science to power games by recourse to the French sociologist Pierre Bourdieu, whom he holds up as an emblematic figure, while the reduction to textuality is illustrated by the French philosopher of language, Jacques Derrida (Latour 1993).
4. The vision is illustrated clearly in Bacon's novel *The New Atlantis* (Bacon 1870) from 1624. It anticipates the artefactualism of modernity.
5. The Haraway-inspired cyborg debate started in the early 1980s. In a note to the 1991 edition of the cyborg manifesto, Haraway dates the beginning of the debate to her paper, 'New Machines, New Bodies, New Communities: Political Dilemmas of a Cyborg Feminist', at 'The Scholar and the Feminist X: The Question of Technology' Conference, Barnard College, April 1983 (see Haraway 1991b: 243).
6. Realism is here defined as one pole of the binary pair nominalism/realism. A 'nominalist' approach understands general concepts as nothing but names, while 'realism' indicates the absence of distance between the sign and the represented reality. In mythical realism, sign and reality are an inseparable unity (Cassirer 1987).

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