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GENDERED BODIES AND NEW
TECHNOLOGIES

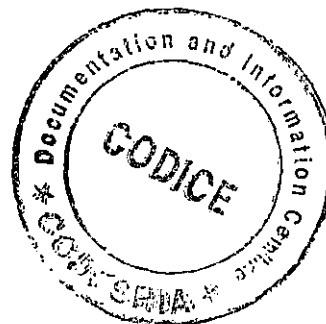NOVEMBER 2002

GENDERED BODIES AND NEW TECHNOLOGIES

by

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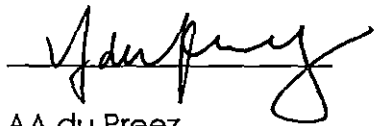
Ek bedank die volgende:

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I declare that *Gendered bodies and new technologies* is my own work and that all the sources that I have used or quoted have been indicated and acknowledged by means of complete references.

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SUMMARY

Gendered bodies and new technologies
By AA du Preez
Degree: DLitt et Phil
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Gendered bodies and new technologies has one founding premise, namely that embodiment constitutes a non-negotiable prerequisite for human life. Although this may seem like an obvious statement, it is a statement that needs to be affirmed in the virtual age wherein we live. New technologies in most of its forms tend to discredit the embodied aspects of human life and instead concentrate on the disembodied aspects thereof. Among new technologies the following are specifically noted: microelectronics, telecommunication networks, nano-technology, virtual reality, computer-mediated communications and other forms of computer technologies. In short, "new technologies" refer to all things digital. I explore the issue of embodiment from a gendered perspective, seeing that the female body is the embodiment most likely to be discarded, not only in metaphysical systems, but also in developments within new technologies. The main focus of my gendered analysis is on the visual image and more specifically as it manifests in cinema, advertisements, the Internet, interactive artwork and television. The critical perspective that foregrounds my approach is that of the fairly new field of cyberfeminism. The main concern of cyberfeminism being a critical engagement of women's position in terms of new technologies. In this regard, cyberfeminism does not perpetuate an anti-technology stance, but rather embraces technology by emphasising the embodied nature of our existence.

I have identified four body types to explore the interactions between bodies and new technologies. They are: the techno-transcendent body; the techno-enhanced body; the marked body and the cyborg body. The four body types differ in the way in which gendered embodiment is negotiated in its interaction with new technologies and these are highlighted and discussed in the four chapters dealing with these four body types.

KEYWORDS

Gender studies; new technologies; cyberfeminism; embodiment; cyborgs; visual culture; miming strategies; women and technology.

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Introduction
Positioning the body

Fig. I Robert Demachy, *Nu*, 1900
Negative plate (La Société Française de Photographie)

My scream got lost in a paper cup
you think there's a heaven
where some screams have gone
I hear my voice and it's been HERE
Silent all these years

Tori Amos, Silent all these years, *Little earthquakes*, 1991

In this era of excessive information and heightened consumer convenience, human interaction with new technologies has become increasingly seamless and bio-bodies have steadily been constructed as just another designer interface. Yet I propose to argue that being human also necessarily implies being embodied. Embodiment, as applied in this study, can loosely be described as the complicated and dynamic intersection between the highly contested "mind" and "body", psychological and physiological strata. In contrast to most cyber-theorists' perpetuation of the mind/body schism, and hence their transcendental optimism about leaving the body behind, I propose to position myself through an embodied material perspective in the debates on new technologies. In taking such a position I align myself with a cyberfeminist standpoint, which assumes that although embodiment is ever-changing, it remains the nexus of human interaction with new technologies.

The bio-bodies that were traditionally viewed as being mostly occupied with the notion of embodiment are women's bodies. Apart from the fact that it is the

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embodiment best related to my own situated experiences, it is the embodied stratum, due to its previous placing as "lacking" and "inferior", that is probably best positioned and equipped to deal with the body-technology crisis. It is also the embodiment that contrasts most precipitously with the silicon cleanliness of new technologies, due to its overwhelming associations with the organic and the terrestrial. Anne Balsamo (1996:39) argues in this regard that the female body plays a vital role in recreating perceptions about bodies and new technologies. According to her, the struggle between technologies and nature will be witnessed from the female body in particular. In the challenge to resignify and reposition the corporeal in terms of cyber-theories, the embodied female position, therefore, forms my central focus.

In this study several embodied material locations will be hermeneutically researched in terms of how they are depicted in relation to and within new technologies. Among new technologies the following are specifically noted: microelectronics, telecommunication networks, nano-technology, virtual reality, computer-mediated communications and other forms of computer technologies. In short, "new technologies" refers to all things digital. These technological practices manifest corporeally in cosmetic and sexual re-assignment surgery, bioengineering (genetics, eugenics, cloning, prosthetics, implants and transplants) and new reproductive technologies (embryo transfers, artificial wombs and insemination), to name only a few. An extended understanding of new technologies is utilised, however, so as also to include new image technologies such as film, video, the Internet, virtual reality, advertisements and the engrossing landscape of visuality in which we are immersed.

Writing on/from/about the body in a "virtual age" – an age during which the relationship between self and body is said to be drastically changing (Stone 1998:17) – is notoriously complicated. The body is that which is assumed to be a given and yet, it is also that which indefinitely escapes final delimitations. Simplistic statements and predictions about the interactions between bodies and technologies will not suffice. Furthermore, trying to expand the ways in which to resignify bodies and new technologies from a cyberfeminist position challenges feminist and non-feminist positions alike. For, in an attempt to morph[1] a cyberfeminist position, the body is viewed as a singular event that cannot be completely appropriated by a technological symbolic order, or rather bodies are viewed as singular events that are in excess of the controlling

parameters of new technologies. However, neither bodies nor technologies are represented as unified agencies of power or subjectivity. Instead, each meeting between body and technology is unique and singular and is treated as such as far as possible. By using such a singular approach, I hope to elude body determinisms on the one hand, and transcendental Cartesian escapisms on the other. The bodies that are, accordingly, morphing with new technologies are "in-between" bodies or hybrid-bodies: what cyber-sociologist Donna Haraway terms cyborgs. Just as Haraway's cyborgs are creatures that share simultaneously in fact and fantasy, these hybrid-bodies under discussion are both discursively and materially, technologically and organically constructed. As bodies and technologies meet intermittently in the new technological symbolic order – with harmonious and/or disastrous results – a cyberfeminist position is morphed. Subsequently, the bodily forms from which my discussion takes its initial steps are not clearly fixed: neither are the proposed embodiments resolved. Throughout this study's parameters bodies are perceived to be constantly changing and adapting to technologies, just as technologies change and adapt to bodies, but at no stage are bodies perceived as fatally disappearing into virtual oblivion.

There are, however, a few eminent debates that inform such a discussion on bodies and new technologies, of which the topic of essentialism in feminism is perhaps one of the most pressing. I will briefly deal with the issue of essentialism so as to situate my discussions on gendered bodies and new technologies within the broader feminist debate.

I.   De-essentialising essentialism

The intensity with which recent feminist debates have grappled with the issue of essentialism and non-essentialism[2] indicate that writing on the body within a cyberfeminist idiom without also grappling sufficiently with the issue would be short-sighted. Also, the fact that this study aligns itself, although not in an unqualified way, with a post-Irigarayan idiom as similarly voiced, for instance by Rosi Braidotti, Vicky Kirby and Elizabeth Grosz, may be cause for concern for some readers. Accordingly, I have to position myself strategically at the outset in this debate that has overshadowed most of the feminist agenda since the dispersal of the unitary (male) subject became a

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theoretical reality within poststructuralist and postmodernist (in the broadest sense) theories.

Taking into account that the body, whether politically or philosophically constructed, has formed the main focus of feminism in all its variants, makes the resolution of the essentialism/non-essentialism debate all the more pressing for the purposes of my analysis. At the centre of this fierce debate rests the problematic concept of "woman" or, rather, the assumption that woman does indeed have an essence: or, differently phrased, that woman has a specific sexed body. Essentially speaking, "woman" is then specified by a number of so-called inborn attributes that stretch across time, place and context, and, if these specified attributes are no longer present, the category "woman" apparently ceases to exist.

Typically, feminists who have been marked as essentialist, such as Andrea Dworkin, Adrienne Rich, Susan Griffin and Nancy Hartsock, base their theories on the specificities of the female body as particularly experienced in everyday life. It is especially the embodied female experiences that exclude men, such as menstruation, vaginal penetration, giving birth, nursing, menopause and lesbian sexual practices that become favoured "essentialist" viewpoints. Women's experiences are narrowed to these bodily essences and those who fall outside the scope are obviously excluded from the "women" tag.

Another problem that arises from such an essentialist and confessional mode of revealing the body only in her specificity and locality, is obviously, that a broader public or political concept of the body is submerged in the details of a private "my body" (Ebert 1996:250). In other words, the private body is absolutised to such an extent that the public body loses all political possibilities. Whereas the private has been excluded from the public domain, it now becomes the encompassing focus and all political action is reduced to the private. Accordingly, it has become impossible to speak for and about "women", for no one meets the description or complies with the requirements. The disparities that exist between individual private bodies have, consequently, dispersed the notion of a publicly constructed category of "women". For how can "women" be treated as a homogeneous category if that category is splintered by class, race, sexual preferences, gender constructions, labour divisions, religious beliefs and access to technology, to name only a few dividing issues?

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The female body is, nevertheless, not only essentialised by essentialist feminisms, but it has also been conveniently transfixed and essentialised by patriarchal discourses and systems as that which embodies, bears children, tends to the private domain and is closest to nature. By positioning women solely as embodied beings, men could erect themselves politically and intellectually on the corporeal substratum of women's unmediated and therefore, unpoliticised bodies. Women's bodies have become sites on which men's economy, society, religion and philosophy were and are still constructed. While women were given the task of "minding" their immanent bodies ("nature"), men were allowed the luxury of "embodying" their transcendent minds ("culture"). Given this context of inequality, it makes perfect sense that feminists doubt the category "women". It is ludicrous if feminism plays into the hands of patriarchy by occupying the doubtful site that is "women" and, by implication, also accepting that dubious site, which is the "female body" as constructed under patriarchy.

It is precisely because of a reluctance to fall back into the "women" trap and the problems associated with the "female body" that most poststructuralist feminists refrain from using the term "women" altogether. As Donna Haraway states, "There is nothing about being 'female' that naturally binds women" (1990:197). Similarly, Toril Moi insists that to define woman is also necessary to essentialise her (1988: 139). On the other hand, when so-called non-essentialists do use the term "women", they do not refer to an embodied material female, but rather to a discursive construct. In this regard, Judith Butler's *Bodies that matter* (1993) has become an extremely important path-guider in the discourses on essentialism and feminism. Butler utilises the concept of "discursive performativity" (1993:12) to show how bodies are materialised in discourses or rather how bodies are made to "matter" within discourse. She explains:

> We may seek to return to matter as prior to discourse to ground our claims about sexual difference only to discover that **matter is fully sedimented with discourses** on sex and sexuality that prefigure and constrain the uses to which that term can be put. (Butler 1993:29, emphasis added)

Yet, realising that the matter of bodies is sedimented in discourses – almost entirely but not fully – how do women rally for political issues if there are no bodies on which to base

them? If there are no "women", how for instance, can women mobilise for reproductive rights or violence against women? These rights, although discursively constructed, are embodied in specific locations, contexts and sexed bodies. Susan Bordo challenges the discursive limits of how bodies have been constructed in postmodern and poststructuralist theories as follows:

> The deconstructionist erasure of the body is not affected, as in the Cartesian version, through a trip to "nowhere", but in a resistance to the recognition that one is always *somewhere*, and limited. (1990:145, original emphasis)

In accordance with Bordo, I would like to argue, contra the essentialist view restricting certain bodies to particular essences, or the confessional "my private body" mode, or the full body submergence into discursiveness, that some form of embodied materialism is the necessary precondition for any political action to take place. In this study I am, therefore, busying myself with a politics of incarnation. In this regard I align myself with Seyla Benhabib's notion of a "strategic essentialism" (1984:110), which allows for a form of highly temporal, politicised identity or "concrete standpoint" from which political actions can be launched.

Women need a site – a *somewhere* – to operate from, no matter how temporary and provisional that locus may be. In this regard Elizabeth Grosz maintains, "if women cannot be characterized in any general way [...] then how can feminism be taken seriously? [...] If we are not justified in taking women as a category, then what political grounding does feminism have?" (1990:341). Grosz also finds a convincing way to side-step essentialising women into one universal body type, by suggesting the use of multiple different body types interspersed by sex, religion, class, and race. She states: "there is no body as such: there are only *bodies* – male or female, black, brown, white large or small – and the gradations in between" (Grosz 1994:19, original emphasis). This means that women do not have one essential body, but rather a field of different bodies distinguished by their specific sexualities and by racial, cultural, gender and class specificities and intersections.

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If we are then not referring to one body type, but rather to different body types, we are nevertheless, still referring to specific and particular bodies. Vicky Kirby in "Corporeal habits: addressing essentialism differently" (1997), argues that the name "woman", although not a proper name, is never immaterial. She adds, "For if women matter at all, it is as this word's embodied realization" (1991:17). If women are denied a specific bodily existence, as some anti-essentialists suggest, this has more or less the same implications for women as the patriarchal confinement of women to being mere embodied beings. Therefore, in some instances, non-essentialism, by over-emphasising the discursive body, ironically plays into the hands of patriarchy – exactly the same problem that is levelled against essentialism.

In stating this, I am not suggesting that the non-essentialist debate does not make meaningful contributions to the feminist arena and that it is not an important part of defining feminisms in a virtual age, but I am interested in showing the limits of the non-essentialist debate by revealing the essentialist assumptions on which it is in turn based. Arguably, neither essentialism nor non-essentialism are integrated concepts, but should rather be referred to as multiple essentialisms and non-essentialisms. The attacks and criticisms launched against essentialism are, similarly, not launched from one consolidated position and are not focused on a unified "enemy" either. In fact, Naomi Schor states that anti-essentialist criticisms "serve diverse, even conflicting interests and draw on distinct, often incompatible conceptual frameworks" (1994:60).[3] Nevertheless, non-essentialist discourses tend to treat essentialism as if it has **one** core or essence, which is clearly not the case. Even though neither essentialism nor non-essentialism is consolidated concepts, non-essentialism does not escape the tyranny of essentialism, for it essentialises essentialism in its criticism thereof. Consequently, non-essentialism imitates exactly that which it finds so problematic about essentialism, becoming in turn essentialist about essentialism. In this regard Schor suggests a process of "de-essentialising essentialism"(1994:60), acknowledging that both essentialism and non-essentialism have certain restrictions. The position that I take is an extension of such a process of de-essentialising essentialism by intentionally taking a "strategic essentialist" position, being fully aware that such a position is necessarily a construction with its own specific limitations. It is, however, a necessary construction.

What follows will delineate my position within embodied differences while attempting to push the borders of those differences further. I will make use of several appropriated and seemingly paradoxical concepts to plot my embodied case (as is explained under the section "Rethinking embodiment" in this Introduction). But first I want to place the controversial body of the hysterical woman on the centre stage, which will enable me to set an agenda for de-essentialising essentialism. For the bodies of hysteria – a disease that has been essentialised as being predominantly female – have been interpreted by psychoanalysis, philosophy and feminism alike as those which cannot "speak". In other words, hysterical bodies do not form part of the symbolic order, due to the fact that these unruly bodies apparently do not "speak" the language of the symbolic order. The bodies of hysterics have therefore been constructed as discursively inaccessible and muted – a fate bestowed on most female bodies. What better or more controversial place to begin a process of de-essentialising essentialism than precisely from those essentialised female bodies that have been constructed as excessively deviant and essentially different?

By engaging with the body of hysteria, as assembled in medical discourses during the late nineteenth century, I will also be able to show how the technologies of discourses have actively construed the materiality of the female body as different and other. It is also an opportune example of showing how embodied materialism can actively "write" and "speak" back by manifesting differences and deviancies and being in excess of the techno-medical discourses that endeavoured to create them.

In order to set the stage I shall return to Paris of the 1870s and specifically to the research of the acclaimed French neurologist Jean-Martin Charcot (1825-1893). Charcot served during the so-called "golden age of hysteria" at the famous Salpêtrière hospital between 1872 and 1893. It was during the "Charcot regime" (Matlock 1994:128) that the percentage of women diagnosed as hysterical rose from 1% to 18% in the years from 1840 to 1880. These statistics, furthermore, reveal that hysteria was most often diagnosed in women, who had the cunning aptitude of miming all illnesses' symptoms with such accuracy that the "real" patients could not be distinguished from the miming hysterics. The crafty and puzzling ability of the hysteric to mime any disease emerges in this study as one of the key features in **morphing** a cyberfeminist position on

embodiment. As I shall show, miming and morphing share commonalities that prove helpful to a cyberfeminist enterprise.

Although various valuable studies[4] on hysteria are in existence, my analysis focuses on the body of the hysterical patient and how it has been constructed in medical discourses, specifically by the neurologist Jean-Martin Charcot. As the discussion on hysteria unwraps it will become clear that my interest in the (dis)ease lies on a discursive level. In other words, I am interested more in hysteria as a discourse than in its clinical and medical technicalities. I will, however, construe the medical practices and theories as part of the discourses of hysteria. By paraphrasing disease into a (dis)ease, I aim not only to show my own unease with this so-called (dis)ease, but also to suggest that the "golden age of hysteria" was an attempt to construe a (dis)ease as an illness in order to promote Charcot's ambitious scientific career. Therefore, some observations on hysteria as a (dis)ease are necessary before I proceed to a more theoretical reading of the (dis)ease.

II.   The body of hysteria: wandering and wayward wombs

The term hysteria, derived from the Greek word *hystera*, literally means womb or uterus. The earliest records, coming from ancient Egypt as early as 1 900 BC, which identified hysteria as a (dis)ease, unequivocally linked it to the womb (Veith 1965:2). It was, in particular, the position or whereabouts of the womb that apparently caused problems, and subsequently, hysteria was linked to "the wandering womb". It was thought that the wandering of the womb in the woman's body actually caused hysteria. The womb was considered to be like an animal – a separate living organism within the female body with a life of its own. Aretaeus, the Cappadocian, writes in the second century: "the womb is like an animal **within an animal**" (quoted in Slavney 1990:13, emphasis added). (Not only are women referred to as animals, but they also suspected of containing other animals, such as the womb, within their bodies!) In cases where the "little animal" wandered too far up in the body, it was lured back via the vagina with sweet-smelling substances or repelled downwards (like a little lap-dog) by administering "evil tasting and foul-smelling" (Veith 1965:3) substances.

The cause of hysteria in Greco-Roman medicine was thought to be the under-employment of the womb. Plato refers in the following manner to this presumed under utilisation of the womb: "**The womb is an animal** which longs to generate children. When it remains barren too long after puberty, it is distressed and sorely disturbed" (quoted in Veith 1965:265N16, emphasis added). In other words, if the womb did not produce children on a regular basis it was believed to dry out and float upwards in the body like a deflated balloon and suspected of causing pressure to build up on the (already waning) female brain. The wandering womb could also presumably cause choking, by means of obstruction, which was in turn diagnosed as "hysterical suffocation" or *globus hystericus* (Slavney 1990:14). The supposed ability of the womb to roam around ended with the research of the great Galen of Pergamon (AD 129-99), who seriously questioned and denied the ability of the uterus to wander about. He, instead, identified the problem as "seminal retention" (Veith 1965:37). This meant that the womb literally dried up due to sexual inactivity. Subsequently, Galen believed that if women had regular sex and reproduced often, the hysterical fits would also subside.

Much later, during the Victorian period, hysteria was also associated with a lazy or inactive womb. This meant that wealthy unmarried women were apparently most predisposed to hysteria. Marriage was prescribed as the remedy, for then at least the "offensive" and "inactive" uterus would be utilised for the purpose for which it was apparently created, namely bearing children. In Victorian England, working-class women suffered less from this strange (ma)lady, because their reproductive systems stood firmly in the service of patriarchal expectations. The situation did, however, differ at the Salpêtrière hospital in France, where most of the hysterical inmates came from the poorer rural areas. Hysteria did, therefore, not show an unvarying geographical profile, but in fact differed greatly in geographical manifestations and occurrences at the time. However, the factor that united all these plentiful profiles of hysteria, was the budding medical sciences' urge to closely monitor and treat the (dis)ease. It is in this context that Charcot's treatment and surveillance of the female hysterical body takes on a specific meaning.

**Fig. II André Pierre Brouillet, *A Clinical lesson of Dr. Charcot at Salpêtrière*, 1887
(Countway Library, Harvard University)**

As part of his surveillance techniques Dr. Charcot held regular public lectures for his students and colleagues. During these public lectures female bodies were displayed and unveiled in their apparent deviance and to make matters worse, it seems that the female bodies on display obliged unfailingly with fitting collapses and turbulent convulsions. The well-known work done by French artist André Pierre Brouillet entitled *A clinical lesson of Dr. Charcot at Salpêtrière* (1887) depicts in dramatic tones, the spectacle of a hysterical attack in full view of an audience [Fig. II]. (I will return to Fig. II) Not only were these women's bodies specula(rise)d[5] by medical science, but they became spectacles in themselves by obliging with spectacular performances. In other words, they rose to the dramatic occasion with spectacular results and their bodies did indeed connote a *"to-be-looked-at-ness"* (Mulvey 1975:63, original emphasis).

Sadly in this morbid theatre of the *"hysterisation of women's bodies"* (Foucault 1978:104, original emphasis), women's bodies were disparaged as being saturated with deviancy, both physically and psychically, and consequently, as being intrinsically pathological. Not surprisingly, women were found to be "disgustingly" over-embodied and therefore not fit for the public domain and its intellectual challenges.[6] In this regard Michel Foucault describes the surveillance of late nineteenth-century medicine, which played an active part in constructing hysteria, as follows:

> [Medical surveillance] was an enormous apparatus for observation, with
> its examinations, interrogations, and experiments, but it was also a

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machinery for incitement, with its public presentations, its theatre of ritual crises, carefully staged with the help of ether or amyl nitrate, its interplay of dialogues, palpations, laying on of hands, postures [....] its hierarchy of personnel who kept watch [...] monitored, and reported, and who accumulated an immense pyramid of observations and dossiers. (Foucault 1978:55-6)

At the time hysteria was also steadily being linked to women's suffrage, especially in England. As *The Times* of 11 December 1908 sardonically reports: "One does not need to be against woman suffrage to see that some of the more violent partisans of that cause are suffering from **hysteria**" (Tickner 1987:192, emphasis added). In the face of women's increasing mobility and transgression of traditional social roles their biological destiny had to be reasserted.[7] Women had to be reminded of their bodies, their apparent inabilities and consequently, of their wayward wombs. The figure of the "militant Suffragist" and the hysterical female were conflated into a powerful anti-suffragist image and both were suspected of moral decay and aberrant behaviour.[8] The image of the Suffragette also accorded with that of the so-called New Women, who were similarly portrayed as home-breakers who neglected their family duties. Women's activities were scrutinised and even an apparently inconspicuous action, such as the reading of a novel,[9] was viewed with suspicion for it could apparently jeopardise women's fragile emotional balance and cause them to become hysterical. Therefore the "shrieking sisterhood", as Suffragettes were often labelled, was marginalised and in the hands of the anti-suffragists, hysteria became a powerful and destructive weapon used very effectively to discredit these women.

Other perspectives on hysteria hold, however, that hysteria may be a form of resistance against oppressive role models. In other words, whereas men utilised hysteria as an instrument to designate women's place in the private domain, women became hysterical as a mode of resistance to that appointed place. In this sense hysteria can be interpreted as a challenge against the patriarchal definition of what it means to be a "woman". Juliet Mitchell takes an oppositional position on hysteria:

To put it somewhat glibly, at a simple *social* level, hysteria, with its malingering invalidism, tantrums and wilfulness was the nineteenth-

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century woman's protest against confinement in the home-sweet-home
of bourgeois industrial capitalism. (1984:117, original emphasis)

This perspective opens up the possibility that hysteria embodies women's resistance. Accordingly, hysteria is resistance "spoken" from the body. However, Elaine Showalter warns in *The female malady. Women, madness and English culture, 1830-1980* that interpreting hysteria as a form of rebellion stands the chance of romanticising female madness. She suggests that hysteria should rather be viewed as "the desperate communication of the powerless" (1985:5). Showalter calls for a nuanced treatment of hysteria that would neither essentialise women as mad nor romanticise women's madness. Showalter's warning is possibly directed at feminists such as Hélène Cixous, Catherine Clément, Michèle Montrelay and Luce Irigaray, who have all reclaimed hysteria as a powerful tool for women to rebel against the bastions of rationality as constructed under patriarchy. According to Showalter, these feminists connect "the hysteric's silences, symptoms and distorted speech to female symbolism, semiotic, or infantile wordless verbalization"(1997:56). I do not understand these feminists as solely responsible for romanticising or essentialising hysteria, for hysteria has been essentialised as female without their doing. Their work can rather be understood to be a powerful ploy of mimetic politics in an attempt to de-essentialise essentialism. In this regard, Luce Irigaray's view on hysteria is indispensable to my own analysis of hysteria, as I will discuss in more detail later.

In the next section, I want to draw an analogy between Charcot and miming hysterical patients, on the one hand, and patriarchal discourses and women, on the other. I am aware that such an analogy runs the risk of simplifying matters by conflating Charcot's personality with patriarchal discourses and diagnosing all women as hysterical. Furthermore, Charcot did his work in a specific context and time, which does not necessary apply to patriarchal discourses as a whole. In fact, defining patriarchy as a homogenous system is problematic in any case, for as Christine Battersby explains, "there always have been a variety of metaphysical traditions" (1998:7) and there are "many different modes of patriarchy – not a single model that everywhere betrays its origins in a metaphysics of substance" (1998:123). Nevertheless, I am convinced that this analogy, although superficial and provisional in its assumptions, can creatively **morph** different perspectives on embodiment and technologies in a virtual age.

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Fig. III Jean-Martin Charcot in a signed photograph given to Sigmund Freud as a souvenir of the time spent studying at Salpêtrière, 1886
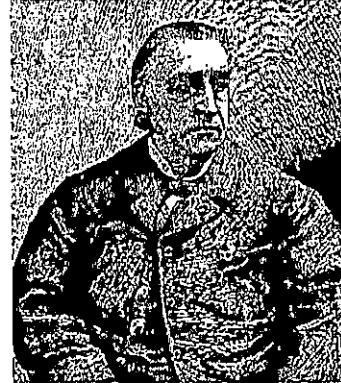
Fig. IV Portrait of Charcot

III.   The great Charcot and the golden age of hysteria

I will begin by spending some time on the personality of Charcot, as described by others, to unfold my analogy. What follows is by no means a precise reconstruction or psychoanalytical analysis of Charcot's personality. Instead, accounts and impressions of Charcot made, for instance, by his colleagues and other theorists are traced, in order to re-construct his work and thoughts on hysteria as a (dis)ease.

Charcot is described as "the most precise neurological scientist of his day" (Veith 1965:228). "He ruled supreme over the whole faculty of medicine", states Axel Munthe, one of his students. Some of his French colleagues even referred to him as "the daring Caesar of hysteria" (Showalter 1997:30); others describe him as "a very calm, yet very cold man with a Napoleonic profile" (Veith 1965:229). Havelock Ellis, the foremost erotologist of the period, describes Charcot in exactly those terms:

> Anyone who was privileged to observe his methods of work at the Salpêtrière will easily recall the great master's **towering figure**; the **disdainful expression**, sometimes even, it seemed, a little sour; the lofty bearing which enthusiastic admirers called **Napoleonic**. (Veith 1965:230, emphasis added)

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Elsewhere Havelock Ellis describes Charcot as "magnificent like a god of Mount Olympus, [...] severe, with the head of an antique Jupiter" (Veith 1965:238). Similarly Dr Alexandre Souques, one of Charcot's contemporaries, could not forget his "scrutinizing eyes" (Showalter 1997:31). The available portraits and photographs of Charcot affirm his "Napoleonic profile" and his resemblance to the "head of Jupiter" [Figs. III, IV, V, & VI]. It is especially in Fig. III, where Charcot strikes a typical Napoleonic pose with one hand folded into his jacket, that he most closely resembles the French emperor. In Fig. VI Charcot, the showman, stands before the "hall of fame" that he has created, with sketches of hysterical women in contorted positions in the background. Some of these sketches were drawn by himself. In Fig. V the majestic Charcot can be seen bending over a human brain that he is holding in his hands. It can be assumed that it is the brain of a deceased female hysteric and that Charcot is pondering the mysteries of this mute female organ. It is almost as if the viewer can hear him musing aloud to himself: "If only I could crack the code of this mysterious disease".

Fig. V Dr. Charcot pondering the mysteries of a human brain

Fig. VI Docteur Charcot. Wood engraving; (22.9 x 15.1 cm) Florian, after Charles Paul Renouard. Paris, Plate from Revue illustree. Call No: I C4692 RE1.

Ironically, whenever Charcot had the opportunity in real life to address the riddle of hysteria to his embodied patients, he did so in a "cold, distant, sometimes impatient"

(Veith 1965:238) manner. Apparently, he also did not pay much attention to what his patients had to say: "You see how hysterics shout, much ado about nothing" (quoted in Showalter 1985:154). Charcot also did not make hospital rounds like the other physicians; patients were brought to his office for examination or were examined in the "theatrical space" (Matlock 1994:133) of the public lecture rooms of Salpêtrière. The events of these private consultations are described as follows:

> He would have the patients brought to his office and **stripped naked;** he would observe them, ask them to perform certain movements, stare, meditate, and then have them led out. [...] he rarely exchanged words with the patients. (Evans 1991:20, emphasis added)

In other words, patients who had been diagnosed with hysteria were not consulted about their own bodies that were out of control, for they were silenced in many ways. Firstly, Charcot did not speak to them and, if they spoke, Charcot silenced them immediately ("I didn't ask you") or he ridiculed them (Evans 1991:37). He preferred to treat hysteria as a (dis)ease that had to be carefully detected by means of vision – a spectacle, which is best observed and not heard.[10] Women were not perceived to be accurate witnesses of their own (dis)eases. They were silenced and reduced to "storied bodies" (Matlock 1994:137), which could only be unravelled by the rational minds of (male) physicians. Their blabbering and wicked silences could apparently not contribute to solving the mysteries of their (dis)eased bodies. Nevertheless, apart from sometimes suffering from aphasia (loss of speech), when these women did speak their minds, they did so with a so-called lack of modesty and audacity by addressing men as if they were of the same sex (Evans 1991:39). Therefore, much to the discomfort of male physicians, when hysterical women did speak, they did so just like men. [11]

Furthermore, not only did the "great" Charcot silence his patients: he also had no aptitude for purely psychological investigations into his patients' problems. Even though Charcot is popularly credited as the neurologist who recognised the role of emotions in the production of hysteria, he saw his patients mainly as a "huge neurological laboratory of material for his experiments" (Veith 1965:230). In other words, the role of emotions was acknowledged, though not for therapeutic reasons, but rather as something that had to

be neutralised in order to gain more knowledge of the (dis)ease. Charcot was, therefore, mainly interested in a scientific analysis of the (dis)ease and not particularly interested in identifying with the miseries of his predominantly female patients.

Charcot's coldness and lack of compassion impacted negatively on him in his later years. Ilza Veith (1965) makes reference precisely to his "exaggerated confidence", "his aloof personality" and "his systematic study". Although most commentaries on Charcot sketch him as a thorough, concise and disciplined scientist, he is also described as a cold and distant human being.[12] It is ironic that such a precise and confident scientist would later be thoroughly discredited by the Nancy School of medical investigators under the guidance of A.A. Liébault, medical practitioner and Hyppolythe Bernheim, professor at the University of Nancy, who showed the misplaced role that hypnosis played in Charcot's theories on hysteria. Even though Charcot's downfall cannot be attributed entirely to his own doing, but probably more to "the well-meaning efforts of his faithful associates" (Veith 1965:239), his godlike and aloof exterior certainly does not assist in reconstructing a positive image of him. I am not attempting to construct Charcot as necessarily and conclusively "bad", but rather to throw some light on the exaggerated confidence he placed in the "temple of science" (Showalter 1997:32) as an infallible tool for analysing the mysteries of the female body of hysteria.

The fact that hysteria has been linked to the female uterus from its earliest inception meant that the illness had a sexual disposition from the start. Paradoxically, Charcot is the most important neurologist in modern times who attempted to dislodge hysteria from the uterus. He made the following observation regarding the separation of the two during a lecture:

> Keep it well in mind and this should not require a great effort that **the word "hysteria" means nothing,** and little by little you will acquire the habit of speaking of hysteria in **man without thinking in any way of the uterus.** (Veith 1965:232, emphasis added)

However, the Salpêtrière hospital was mainly for female patients, therefore, obviously, most of Charcot's patients were female.[13] These female patients, under the careful surveillance of Charcot, continued to show symptoms that were not recorded in male

hysterical patients, such as spontaneous pains in the regions of the ovary and mammary glands. Charcot referred to these regions as "hysterogenic zones" (Veith 1965:232). Consequently, even though he tried to dislodge the connection between uterus and hysteria, he could not resist essentialising the ovary and mammary glands as being so-called "hysterogenic zones". Sigmund Freud, who studied under Charcot in 1885, also overheard the master confessing during a private conversation that the causes of hysteria can always be traced back to its genital origins. "It is always the genital thing ... always ... always ... always" (Evans 1991:26), Charcot confessed. Although Charcot did not express this opinion in public, his private thoughts obviously informed his scientific research.

As a dedicated scientist Charcot had to find a medical cure for these symptoms, which were specific to the female body. A technological device had to be invented to keep the over-sexed female body at bay. The peculiar ovary compressor [Fig. VII], which is described as "a heavy leather and metal belt strapped onto the patient and often left for as long as three days" (Showalter 1997:33) was invented to place pressure on the ovaries that threatened to explode into hysterical outbursts. The emphasis did, however, shift from the uterus to the ovaries, because the ovaries, and not the uterus, were ironically regarded during the late nineteenth century as the control centre of female reproduction and therefore as the locus of deviance.
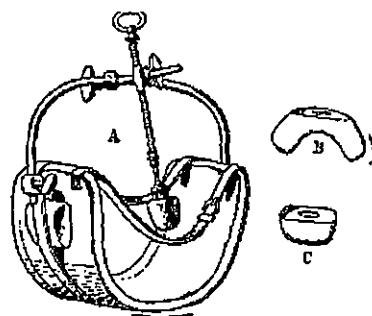
Fig. VII Ovary compressor as used by Charcot, From Bourneville and P. Regnard, *Iconographie photographique de la Salpêtrière*, Paris: Progrès Médical, 1878

Charcot provided detailed directions of how the suspicious ovarian area should be examined: "It is indispensable to **push** on with the investigation and, by **penetrating** [...] in the abdomen with the fingers [...]. The doctor should **plunge** his closed fist in the area

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of the ovarian pain" (quoted in Evans 1991:29, emphasis added). This description is interspersed with sadistic and sexual innuendoes by the use of terms such as push, plunge and penetrate. Charcot's shocking treatment of the "hysterogenic zones" are also described in an unpublished document dealing with his public lectures. A description of such a session held on 25 November 1877 is provided:

> The subject exhibits hysterical spasms; Charcot suspends an **attack** by **placing first his hand, then the end of a baton, on the woman's ovaries.** He withdraws the baton, and there is a fresh attack, which he accelerates by administering inhalations of amyl nitrate. The afflicted woman then cries out for the **sex-baton** in words that are devoid of any metaphor: [She] is taken away and her delirium continues. (Foucault 1978:56N, emphasis added)

This description is filled with sadistic sexuality. The female ovaries had to be contained and compressed back into their place. First Charcot placed his hand and then "the sex-baton" on the woman's abdomen, and later the woman cried out again for the sex-instrument in "words that are devoid of any metaphor". When the "language" spoken by hysteria is recalled, it becomes evident that hysterical women sometimes used brutal or vile language, which was not ladylike behaviour. (Could this be another suggestion that these women, when they spoke, did so like men and therefore transgressed traditional gender roles?)

The fact that no reference is made to a male equivalent for either the ovary compressor or the sex-baton is significant, for it shows that men were not suspected of being devious and uncontrollable sexual beings. In fact, hysterical female patients were explicitly described as being sexually devious creatures and Jules Falret, alienist at Salpêtrière, explicitly describes hysteric patients in these terms:

> These patients are veritable actresses. They do not know of a greater pleasure than to **deceive** [...]. In one word, the life of the hysteric is nothing but one perpetual **falsehood**; they affect the airs of piety and devotion and let themselves be taken for saints while at the same time secretly abandoning themselves to the most **shameful** actions. (Poovey 1986:153, emphasis added)

By using terms such as deceive, falsehood and shameful in his description of hysterics, Falret provides useful clues to the construction of hysteria as being linked to female seditiousness and divergence. Apparently, the hysteric did not only pose a threat to the doctor's authority and ability to diagnose disease, for she could easily feign any disease: in addition, she posed a sexual threat to him. Sexual threats apparently came in the form of women abandoning themselves seductively to shameful and indecent acts such as masturbation, prostitution and nymphomania.[14] Such seemingly indecent acts only confirmed male anxieties about sexuality, and the so-called deviant essence of female sexuality in particular.

It was, however, in Freud's *Studies on hysteria* (1895) that sexuality, or rather the repression of sexuality, was for the first time openly acknowledged as being at the root of hysteria. What is interesting about the studies of hysteria during the late nineteenth century is the fact that the causes of hysteria were no longer projected onto the female body, but also migrated to her gender attributes. We find the increasing inclusion of gender traits such as exaggerated emotionality and sensitivity being included as the causes of hysteria. The essence of hysteria was conflated with the essences of both femaleness (sex) and femininity (gender) during the late nineteenth century to such an extent that these terms became substitutes for one another. Women were epitomised as harbouring extreme emotions, feelings, sensitivities and being very impressionable. Therefore, hysteria itself was diagnosed as a disease of impressionability and susceptibility: "If woman is sensitive in the extreme and if hysteria is a form of extreme sensitivity, then hysteria is being a woman" (Ender 1995:47). This meant that being female inevitably also implied being hysterical.[15] Hysteria was mapped onto the female body and being born a female automatically implied being born with a disposition towards hysteria.

It is important for my proposed analogy between Charcot's techno-scientific discourses and patriarchal discourses, on the one hand, and woman and hysteria, on the other, to note how hysteria was affixed to femaleness and femininity. Women's essence was captured as being hysterogenic. Furthermore, hysteria was interpreted as a mysterious disease, just as women were seen to be mysterious beings. The male physician (technologist) was the one chosen to unravel the labyrinth of hysteria's body.

The associations between women and mystery, and men as the chosen code-breakers are, however, not unique within patriarchal discourses.[16]

IV.   Whose (dis)ease is it anyway?

The most significant aspect of the female hysterical body, to which I have only briefly referred, is the ability to mime or simulate other diseases perfectly. During the 1870s, due to renovations at Salpêtrière, the hysterics were placed in the same ward as the epileptics. This meant that the hysterics, with their neurotic tendency to mime diseases, were greatly affected by their constant exposure to epileptic patients. Apparently, it was especially the young hysterics who began meticulously to imitate every phase of epileptic seizures. At first Charcot failed to distinguish the imitations from the "real" seizures. He even went so far as to diagnose a new disease termed "hystero-epilepsy" (Veith 1965:231). It was only later that he realised that he had been deceived and that there was indeed a difference between the clinical and the mimed form of epilepsy.[17]

It was only after realising their deception that Charcot and his colleagues could later distinguish fake from real symptoms, based on the fact that a patient had a history of imitating diseases seeing that "today's smallpox becomes next week's scarlet fever, or last month's measles, or dermatitis" (Kirby 1997:57). In turn, Charcot had to search for other more "reliable" symptoms to diagnose hysteria and he found them in what has been termed the physical stigmata of hysteria, namely the narrowing of the field of vision and skin sensitivities, including hemianesthesia or the loss of sensation on one side of the body. Another "reliable" symptom that was identified was the powerful role that suggestion played during hypnosis. It is important to note that Charcot's theories collapsed exactly on this point. Charcot interpreted mere susceptibility to hypnotism as one of hysteria's symptoms. He was supported by other influential neurologists of the period, such as Joseph Babinski (1857-1932), who referred to hysteria as *pithiatisme* or suggestibility (Merskey 1979:23); while Pierre Briquet (1796-1881) in his *Traité clinique et thérapeutique de l'hystérie* (1859) preferred the word *impressionable* (Ender 1995:37) when referring to hysteria. Hysterics were thought to be more susceptible to hypnotism than ordinary citizens and therefore suggestibility could be used as a reliable diagnostic

tool. This was later revealed to be a false assumption,[18] for the Nancy School showed that, although impressionability ranges from person to person, most people are susceptible to hypnotism. The fact that hysterics were especially suggestible was, therefore, not symptomatic of pathology. Charcot used suggestibility to diagnose hysteria, rather than curing it as the Nancy School did, and this error in judgement reflected negatively against him. As a precise scientist Charcot "made sick people of the apparently wilfully misbehaving, disagreeable women who had, in the nineteenth century, been suspected of malingering" (Veith 1965:238). He set out to diagnose, analyse, detect, define and represent a disease. It was only later that Liébault and Bernheimer of the Nancy School would implement suggestion differently and with great success to cure hysteria. Suggestibility revealed itself as no diagnostic tool, but rather as a healing tool.

Charcot did, however, although unknowingly,[19] gain and suffer simultaneously because of his predominantly female patients' susceptibility to suggestion during hypnosis. In fact, one may speculate that, if they were not so susceptible to suggestion, Charcot would not have made such scientific progress, but neither would his theories have been discredited later on. Charcot did, however, acknowledge the role that suggestion played in the creation of symptoms, such as artificially induced paralysis. Nevertheless, he was quite confident that "in the matter of suggestion, what is done can be undone" (Veith 1965:235). In other words, the female hysteric's body is a clean slate upon which any suggestion can be "written", after which the slate can be cleaned again, ready to imitate or rather to embody the next suggested symptom. Charcot showed no unease with suggested (dis)ease. He felt confidently in control of these suggestions, but did not realise that they also suggested something in return. To rephrase it in psychoanalytic terms, transference took place between psychiatrist and patient. Charcot did not heed the process of transference and therefore did not take into account that "hysteria is dialogic" (Showalter 1997:11). Instead of the supposed mismatch between a scientific monologue on the one hand (Charcot's techno-scientific discourse), and the incomprehensible blabbering (hysteric's discourse) on the other, hysteria is a dialogue between patient and physician. The one calls the other into existence. Hysteria mirrors the physician, just as he in turn mirrors hysteria. As Vicky Kirby, in *Telling Flesh. The substance of the corporeal*, explains: "It is as if the hysteric is a mirror of her surroundings, incorporating the signs from an other's body as the reflection of her

own" (1997:57). Charcot's hysterical patients mirrored his suggestions truthfully. Ironically, the more Charcot was convinced of his findings, the more the results mocked him. The more his research mirrored his own image, the more distorted his image became. Charcot's claims that he knew what caused hysteria, namely the suggestibility of the hysteric, at first mimed his findings by playing out every suggestion and then turned his research upside-down by actually becoming the cure for the (dis)ease. Charcot suggested differently, therefore his fixing of "woman" in one place actually suggested that women were already in another place. Charcot's impulse to define and fix diagnostic symptoms can in some ways be likened to the urge within patriarchal discourse to essentialise "woman" as naturally embodied and in alliance with matter. Charcot's misinterpretation of the hysterics' susceptibility to suggestion, eventually led to the demise of his dedicated analytical work. In the same way patriarchal discourse fixes "woman" in a place where she cannot entirely be found. This does not mean women have no embodied places or "essences" for that matter, but neither does it automatically imply that women can be fixed or essentialised into one embodied place or essence.

V.   Putting on appearances

As suggested earlier, hysteria was dialogical by nature and transference occurred excessively between physician and patient. It was, however, especially in the occurrence of the phenomenon of dermagraphism that mirroring between patient and physician became the most obvious. Dermagraphism entailed that the skin of hysterics showed the autographic ability to "write" or "draw'" onto itself. One of Charcot's co-physicians, Barthélémy, offers an account of such a spectacular dermagraphic event:

> [...] a patient is hypnotized; the doctor writes his own name on the patient's fore-arms with a rubber stylet and issues the following suggestion: "this evening, at 4pm, after falling asleep, you will bleed from the lines that I have drawn on your arms." At the appointed time, the patient obliges. The character appears in bright relief upon [the] skin,

and droplets of blood rise in several spots. The words persist for more than three months. (quoted in Kirby 1997:57)

The impressionability of the hysterics' skin, which echoed their aptitude for miming any disease, earned them the nickname of *femme-cliché*. Like parrots, the hysterics apparently repeated their masters' voices in obedience. Therefore, comparing the skin of the hysteric to the impressionability of a photographic recording plate is not absurd. Just as the photographic plate is sensitive to light, so the hysteric's skin was apparently sensitive to the slightest suggestion or "writing" from the master physician. The arrogant notion that the female body is a clean slate, passively awaiting the active male "writing" or "imaging", is unproblematically reinforced in the construction of hysteria. In fact, it is almost as if the hysteric skin, the *tabula rasa*, is turned into a *tableau vivant* under the suggestive hand of the master physician. These women not only caused a scene by misbehaving, they quite literally became "scenes" by embodying all suggestions in a spectacularly "truthful" manner.

Fig. VIII Astasia-abasia, From Paul Richer, *Paralysies et contractures hystèriques*, Sketch by Charcot, 1892

Fig. IX Generalised contractures following a major attack of hysteria, From Paul Richer, *Études cliniques sur la grand hystèrie*, Sketch by Paul Richer, 1885

Charcot himself was duly fascinated by the artistic possibilities of the hysteric skin. Accordingly he, compared the study of hysterical symptoms to the study of an artwork. He did indeed create an iconography of hysteria during his reigning years at Salpêtrière by carefully documenting the (dis)ease in different media. Freud, who studied at Salpêtrière between 1885-6, also makes mention of Charcot's artistic inclination.

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According to Freud, Charcot "had an artistically gifted temperament – as he said himself, he was a 'visuel', a seer" (Showalter 1985:150). In the face of the accusation that he played a major role in the creation of hysterical symptoms, Charcot simply replied: "It would be a truly marvellous thing if I could thus create maladies according to my whim and fantasy. But in truth I am no more there than the photographer; I inscribe what I see" (quoted in Matlock 1994:135). Charcot, therefore, humbles himself to the role of mere observer of the drama of hysteria and denies having played any major part in its creation. According to him, he merely and objectively recorded what he saw. Even though Charcot denied the part that he played in producing the text that is hysteria, furthermore, the privileged role of vision within western metaphysics [ocularcentrism as Irigaray discusses it in *Speculum of the other woman* (1985a)], cannot readily be humbled to the role of "mere observer". The objective gaze of science was consequently actively involved in the production of hysteria by "merely observing" the (dis)ease.[20]

Fig. X Photo of Blanche Wittman during a hysterical attack – the woman in André Pierre Brouillet's painting. Taken from the cover of *The Makings of Dr. Charcot's hysteria shows*, Dianne Hunter (ed) (Edwin Mellen Press, 1998)

As part of this seemingly innocent recording process, Charcot and his students made extensive sketches of the postures of "hystero-epilepsy" and other hysterical collapses, which were hung in the halls of Salpêtrière [Figs. VIII & IX]. These sketches acted as a hall of mirrors for the receptive inmates, reminding them of how to play out the tantrums and contortions of theatrical hysteria. Paintings depicting hysteria, such as Brouillet's *A clinical lesson of Dr. Charcot at Salpêtrière* (1887) [Fig. II], (discussed earlier), were hung

in the lecture halls where hysterical women, such as Blanche Wittman, the woman in Brouillet's painting, was regularly displayed. In the painting Blanche Wittman [Fig. X],[21] collapses fittingly into the arms of assistant Joseph Babinski, while Charcot, the showman and "master of ceremonies" (Matlock 1994:133) lectures to an arrested audience. The eyes of the onlookers fall as much on Charcot as on the conveniently half-exposed breasts of Blanche Wittman. In these pictures, the site that is "woman" is displayed incessantly to provide evidence of her aberrant otherness and implicitly affirms masculine techno-medicine's control.

The visual processes whereby femaleness was and still is othered, by means of affirming the male counterpart as the standardised universal, is convincingly treated in a recent series of work by Montréal artist, Nicole Jolicoeur. In a series of works dealing with female bodies and medical discourses, Jolicoeur comments specifically on the urge to project diseased otherness onto the hysterical female body. Since the early 1980s Jolicoeur has focused on the ways in which Charcot's theories constructed femaleness as a misfortunate (dis)eased state (Martin & Meyer 1997:144). In her work, entitled *Étude de JM Charcot* (1988) [Fig. XI], Jolicoeur appropriates André Brouillet's painting of Charcot's lecture by overlaying an etched drawing in white of the Italian Renaissance artist Andrea Del Sarto (1486-1530), entitled *St.Philippe of Neri healing a possessed woman* (1509). In both visual narratives femaleness is associated with calamity, for in Brouillet's case she is diseased and in Del Sarto's case she is possessed.

Fig. XI Nicole Jolicoeur, *Étude de JM Charcot*, photos and drawings, 1988

What makes Jolicoeur's appropriation of these visual narratives even more significant is the fact that apparently Charcot was familiar with Del Sarto's drawing. As for the Brouillet painting, it hung in the hall where Charcot presented most of his public lectures. Through "quoting" two artworks from different historical periods, namely from the Renaissance and late nineteenth century, Jolicoeur attempts to trace the persistent typecasting of woman as necessarily ill and man as implicit healer and redeemer. In another series entitled *La Vérité Folle* (1990) [Fig. XII] Jolicoeur continues her interrogation of Brouillet's painting and this time affixes excerpts from Bourneville and Régnard's *Iconographies photographies de la Salpêtrière* (1876-80) to the work. She endeavours to illustrate how theories of hysteria were primarily based on the act of looking.[22] By distorting eminent depictions of hysteria Jolicoeur attempts to unveil the power that techno-medical texts exerted, and still exert, over women's bodies.

Fig. XII Nicole Jolicoeur, *La Vérité Folle*, photos and drawings, 1990

As Jolicoeur cleverly shows, hysteria has been constructed by Charcot and his followers as a (dis)ease in need of representation. Hysteria was indeed "perpetually presented, represented, and reproduced" (Showalter 1985:150) in the halls of Salpêtrière. Hysterical women reproduced the physician via suggestion, who then reproduced them in sketches, paintings and photographs. Images were created, circulated and exhibited to a captive hysterical audience inhabiting the theatrical halls of Salpêtrière. Image doubled upon image, appearances mirrored appearances,[23] and texts referred to texts. But who were the "true" authors of these texts? Who "wrote" these texts? It is obvious that Charcot and the other physicians claimed artistic authorship to these morbid bodily

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texts. The hysterics certainly did not claim authorship of the textuality of their bodies: they merely obliged in mimicry, it seems.

When enquiring about the so-called authorship of hysterical appearances, it should be noted that it is not only the signs (the symbolic order, the physician) that are "writing" here, but also bodily symptoms or signifiers that "write" by perfectly embodying signs. In Vicky Kirby's opinion the textuality of hysterical bodies is not an explicit example of a subject writing on a body, but more a case of a body that writes upon signs itself (1997:59). She explains this as follows: "The example of the autographic skin witnesses an outside becoming an inside, an image (real)ised, a body *as its own* historical and cultural context" (Kirby 1997:62). Just as Charcot "wrote" upon his patients' seemingly ever-receptive skin surfaces, they "wrote" back to him. He created a text in which he defined their (dis)ease, and they in their textuality created his dis-ease. This is not a clear example of mind wielding power over matter, but rather mind mattered, a "bodying forth" (Kirby 1997:80) of mind.

VI.   The (dis)ease that is no disease

Charcot was in search of a specific (dis)ease and he wanted to specify the (dis)ease. It now seems, however, as if he was deceived by this (dis)ease that turned out to be a non-disease. Modern analysis of conversion disorder (the term used for hysteria since the 1950s) has shown that hysteria marks the exact absence of any disease, for no pathological changes or causes can be found in the body. The hysteric mimes a physical (dis)ease, only to be found to have no disease at all.

Charcot nevertheless, continued to defend the position that hysteria was something a patient *had* rather than *did*. He refers to this ability of his hysterical patients as "intentional simulation [...] in which the patient exaggerates real symptoms, or creates all at once an imaginary group of symptoms" (Slavney 1990:131). He felt that this simulation of (dis)ease was "the province of the physician [...] **to sort out the symptoms which form a fundamental part of the malady**, from those which are simulated, and added to it, by the artifice of the patient" (quoted in Slavney 1990:132, emphasis

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added). In other words, Charcot assumed that real symptoms, as opposed to simulated ones, were truly present. He was set on sorting these in his attempt to define a (dis)ease that did not exist, for as we know by now, hysteria may be an illness, but it is no disease. Phillip Slavney (1990:9) in *Perspectives on "Hysteria"* explains the difference between illness and disease as illness being reserved for the patient's subjective experience of physical and mental distress, whereas disease is reserved for the physician who constructs the explanation of the patient's distress. This means that someone who is ill may not be diagnosed as having a disease and someone with a disease may not feel ill. Slavney explains the paradox in terms of hysteria as a present illness in the absence of a disease.

Charcot did, however, continue to survey the hysterical bodies for symptoms and traces of an evasive (dis)ease, only to find new symptoms or simulations that evaded his final resolution. In other words, Charcot wanted to construct an illness into a (dis)ease and he kept looking for the pathological processes in the body in order to prove his disease(d) hypotheses. He was convinced that there were physical changes in the bodies of hysterical women that they themselves knew nothing about. He explained this by describing how leeches yielded very little blood from the side of a hysterical hemianesthesia, whilst blood flowed freely from the other side. Charcot was convinced that there was a physical alteration of the blood vessels, which resulted in the reduced bleeding. If the affected paralysed side bled less than the other side, Charcot was sure that this constituted a physical symptom. What Charcot apparently did not comprehend was the role the unconscious played in the creation of so-called physical symptoms. If hysteria could re-enact the physical symptoms of scarlet fever and smallpox "truthfully", for instance, why not also simulate other anatomical changes, such as closed veins and reduced blood flow?

Freud later tried to explain these simulated anatomical changes in *Dora. Fragment of a case of hysteria* (1905), by means of a theory of repression, according to which a person can "know" something unconsciously without "knowing" consciously. The spectacular scenes of hysteria are accordingly interpreted as bodily manifestations of dark and hidden (sexual) secrets. It is argued that hysterical women's performances actually embody their guilty consciences about their hidden sexual desires, which

cannot otherwise be vented in public. The body is therefore attempting to tell the "truth" about a guilty mind, which does not know its own secrets to the full.

I align my interpretation of the hysterical body in one way with Freud's theory of sexual repression, namely by agreeing that the body of the hysterical woman is representing a "truthful" tale about such repression. However, she is not constructing a tale of female sexual repression, but rather of male such repression. Amazingly, Freud attempts to unravel the repression of female sexual desire, without stumbling across his own repressed sexual desires. In my opinion, the hysterical body embodies the impossible position woman occupies in patriarchal discourses: she is not revealing a deep, dark, misplaced female sexual desire, as Freud assumes. For on the one hand "woman" is suspected of being overly embodied and deviously sexed, and on the other hand she is described as a hidden mystery, an unveiled secret, an impossible labyrinth. The hysterical woman mimes this impossible position by playing the overtly sexualised wanton and at the same time, denying her sexuality. She simultaneously becomes oversexed and yet she has no sex. It is important, however, to stress that she **mimes** this position: she does not become it to the full and cannot, therefore, be reduced to this position. Similarly, Charcot's female hysterical patients obliged his theories by mimicking them. It can thus be argued that whatever patriarchal discourses accuse and suspect "woman" of being, women mimickly oblige. The strategy of mime is, nevertheless, a powerful one, for it does not accept its fate mutely. By miming their allotted place, women also exceed it by over-compliance and in the process changes and shifts are made in the discourses that create and construct femaleness.

Charcot did not in the least suspect that his patients were miming or mirroring his scientific analysis, and thus he confidently essentialised hysteria as a physical condition. Hysteria was, consequently, essentialised onto the female body. In other words, he defined "woman" within a specific place, just as patriarchal discourses define "woman" as having a specific sexed embodiment. Charcot looked for hysteria in an appointed place, hoping to find rational science, but instead his theories were mocked and mimicked – for the body of hysteria was already located somewhere else. Charcot's discourse on the female hysterical body could not contain her, for there is no way of conclusively pinpointing or locating her. Although the hysteric seemingly abandons herself to scientific analysis by creating a spectacle of symptoms, she does so in

simulation, representation and mime. As Matlock explains: "Hysteria has an appearance, but no materiality. Its symptoms can be catalogued, their frequency registered, but it remains always beyond understanding" (1994:141). Any attempt to essentialise her fails, for, although women are embodied beings, they cannot be contained within one conclusive body. The other trick played by patriarchal discourses, namely, to evaporate women like a mysterious perfume into unexplainable oblivion, will also not hold, for women **do** exist, but not as patriarchy **thinks** they do.

Hysteria is no longer diagnosed at the dawn of the twenty-first century. Showalter explains this shift as follows: "What used to be called hysteria is now diagnosed as somatization disorder, conversion disorder, or dissociative identity disorder" (1997:17). The patients have not changed, whereas the terminology applied to them has. This means that today's anorexia nervosa or multiple personality disorder, may be a latter-day guise of hysteria. Despite the lack of diagnosis in the late twentieth century, hysteria was however, again revived for the purposes of the May 1972 street demonstrations organised by the Movement for the Liberation of Women (MLF) in Paris. Posters with the motto: "Vive l'hystérie!" were hung and a crowd of angry women chanted "Nous sommes toutes des hystériques!" (We are all hysterics!) (Evans 1991:201). The figure of the hysteric was rectified and revived as a heroine and emblem of freedom by the female liberation fighters of the seventies. The question now arises of the relevance of the hysteric for a cyberfeminist philosophy of the body in the late twentieth century and early twenty-first century. What creative part can the miming hysterical body play in a virtual age, where the relationship between body and self is drastically scrutinised and pressurised by the excessive use of new technologies?

VII. Miming strategies: how to make bodies "speak"

It is in this regard that Luce Irigaray's work on hysteria and miming strategies proves meaningful and important in disentangling embodiment from a cyberfeminist standpoint. Irigaray has been accused of essentialism exactly on this point, because she plays the part of the hysteric so convincingly in her texts that she is suspected of being hysterical herself and also essentialising women as being hysterical per se. My reading of

Irigaray's miming strategies is, nevertheless, more compatible with other feminist theorists, such as Jane Gallop (1988), Elizabeth Grosz (1989), Margaret Whitford (1991), Rosi Braidotti (1991), Vicky Kirby (1997) and Michelle Boulous Walker (1998) and their analysis of what Irigaray is trying to achieve by playing "mad". Irigaray puts on a mask of madness in order to reveal some of the faces of women that have been hidden from patriarchal discourses.

I concede that, in a sense, Irigaray appears to play expressly into the hands of patriarchal discourses by seemingly becoming that of which she is suspected, namely hysterical. The major difference is, however, that she plays mad with such excess and "over compliance" (Grosz 1989:135) that it is no longer patriarchy that is in control of her madness and neither is it she who is in control thereof. In fact, Irigaray tells us, it is precisely this out-of-control game between the sexes which gives us a foretaste of what the meeting between the sexes might be like without the enforced laws of patriarchal sameness or oneness, as Irigaray refers to them.

Irigaray acts a dangerous role indeed, but in her view it is the only route to take. She asserts, *Hysteria is all she has left* (1985a:71, original emphasis). Women are faced with a choice between going quietly and passively like a "dutiful daughter" by "censoring her instincts" (Irigaray 1985a:72) or refusing the silenced death of male mono-language by miming hysterical silence in an attempt to develop her own "language". Irigaray is not, in my view, trying to create a "language" outside discourse or outside the symbolic order. She is, rather, attempting to create a space within discourse from where women can "speak" freely as subjects in their own right. Irigaray's "speaking subjects" do not speak as disembodied patriarchal subjects and neither pretend to be speaking directly in an unmediated way from the body. In other words, Irigaray is not essentialising women as solely constrained to one unified female body, but neither is she submissively allowing female differences to vanish into male sameness.

The body that Irigaray is reviving is a discursive body, an in-between body, or, as Jane Gallop states, Irigaray is concerned with a "poetics of the body" (1988:99). Irigaray resuscitates the "body" of discourse, within discourse, by unveiling the ghostly no-place or the difference that has always been appointed to that (female) body. On the one hand this body has always been unspeakable (over-embodied) and on the other hand, it has always been unspoken (disembodied).

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Utilising a miming strategy is a clever way of revealing the dilemma or impossibility of the female body in discourse. It shows that the female hysterical body, specifically, has always been that which hovers on the limits of discourse and that which is in excess of language. It is the remainder, but importantly, as Irigaray also shows, the predicate for discourse. The female body is, therefore, not only outside language, but also the necessary pre-condition for language, in other words, she is "a threshold that is always *half-open*" (Irigaray 1993:18, original emphasis). If the female body is, then, simultaneously inside and outside language, it shows the impossible position that she perpetually finds herself in. According to patriarchal discourse then, she cannot speak, and yet she is the very matter of language – the threshold that makes all language possible.

Consequently, the hysterical body, with its physical aphasia, its apparent loss of speech, is not in my view discursively "speechless", as patriarchal discourses have labelled it. In fact, aphasia mimes women's silence by not speaking, and in the process doubles the effect of silence to the extent that it becomes "speech". Michelle Walker (1998:132) explains this doubling effect: "[Patriarchal society] decides that nothing *intelligible* is spoken, in fact nothing is spoken. For Irigaray, the hysteric's bodily symptoms are a language, though not one that can be readily translated into masculine terms". Irigaray is therefore attempting to re-conceptualise "the silent space of hysterical pain as a speaking position" (Walker 1998:132). The hysterical body is at the same time, inside and outside discourse, she is simultaneously speaking and not speaking.

As was indicated in the investigation of the autographing skins of hysteria, the hysterical body mimes the language of patriarchal oneness by "writing" back. In the cases referred to earlier, where hysterical patients had the audacity to speak to men as if they were men, the logic of mimicry also applies. Even in the instances where hysterics blabbered non-sense and were ignored or not heard, they mimed speech. It seem as if the hysterics discussed earlier followed three general patterns when miming speech: first, they mimed a position of enunciation "as if" they could not speak, by means of aphasia or silence; then miming the speaking position "as if" what they said had no meaning, by prattling and blabbering; and finally miming the position "as if" they were speaking subjects by speaking like men. In conclusion, it seems that if women want to

speak they can either oppose patriarchal discourse by remaining outside discourse (as in the case of Kristeva's semiotic, perhaps) or by miming patriarchy's mono-language to such an extent, that they become something else (the other's other?). Irigaray (1985b:76) describes the mimetic process as follows: "One must assume the feminine role deliberately. [...] To play with mimesis is thus, for a woman, to try to locate the place of her exploitation by discourse, without allowing herself to be simply reduced to it".

VIII.   Rethinking embodiment

In working towards an understanding of embodiment from a cyberfeminist perspective, the concepts of the *sensible transcendent*, *flesh*, embodied subjectivity and corporeography are explored and strategically recuperated to position embodiment in cyber-discourses. One such embodied solution is provided by Irigaray's concept of the *sensible transcendent* or *tangible transcendent*. This seemingly contradictory concept, consisting of two incompatible terms, namely the "sensible" (that which is tactile, tangible and immanent), as opposed to the "transcendent" (that which is disembodied *per se*), opens interesting prospects for positioning differences and embodiment in a virtual age. Irigaray's *sensible transcendent* is the meeting place, the continuum, the horizon, where differences meet one another continuously, every time, as if for the first time. This junction sets the conditions for an ethics of sexual differences – differences between women and men and within women themselves. The *sensible transcendent* is also the intersection where a "double desire" (Irigaray 1993:9) meets, meaning that neither of the sexes can be reduced to one another and nor can one be substituted by the other. Irigaray is not suggesting a fusion of identities, but rather calls for "a mutual crossing of boundaries which is creative, and yet where identity is not swallowed up" (Whitford 1991:167).

In terms of embodiment the *sensible transcendent* means that women's bodies should be differently symbolised so that embodiment can no longer be reduced to women "as the sole guardians of corporeality" (Whitford 1991:142). Instead, men should incorporate their own corporeality, so that each of the sexes is simultaneously "transcendent and a transcended, each is **flesh**" (Whitford 1991:167, emphasis added).

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Whitford's use of the concept of flesh is not innocent, but heavily indebted to the French phenomenologist Maurice Merleau-Ponty. In order to illuminate Irigaray's *sensible transcendent* further, I continue with a discussion of Merleau-Ponty's work on embodiment and specifically concentrate on his concept of *flesh*. This does not mean, however, that Irigaray's *sensible transcendent* can be substituted for Merleau-Ponty's *flesh*, but rather that these concepts can usefully be juxtaposed and both shed light on embodiment within a cyberfeminist frame of reference.

Maurice Merleau-Ponty's *The Visible and the invisible* (1968), an unfinished text published after his death, is one of the most profound destabilisations of the Cartesian mind/body split. "The intertwining – the chiasm", where Merleau-Ponty explores the evasive concept of *flesh*, is especially relevant for my purposes. Merleau-Ponty informs us that *flesh* "has no name in any philosophy"(1968:147). This means that the concept of *flesh* has never been named in philosophy, because it cannot be "experienced as thought" (Vasseleu 1998:28). It escapes theory, for it cannot be comprehended to the full or grasped completely (like the hysterical body). I am interested here in the possibilities that Merleau-Ponty's notion of *flesh* holds for understanding embodiment in a virtual age. The fact that Merleau-Ponty undermines the mind/body split assists in constructing a position beyond and within body/mind differences.

Merleau-Ponty defines the mind as "the *other side* of the body" (1968:259, original emphasis). He continues: "We have no idea of a mind that would not be *doubled* with a body, that would not be *established* on this *ground*" (1968:259, original emphasis). This is very important when plotting a cyberfeminist approach to embodiment, for it shows the unworkability of the mind/body split. As Merleau-Ponty explicates, an unproblematic return to a mind/body dichotomy is no longer conceivable, for: "There is a body of the mind, and a mind of the body and a chiasm between them" (1968:259). The chiasm to which Merleau-Ponty is alluding is fully developed in his concept of *flesh*, which in turn overlaps with my construction of embodiment as set out within the parameters of this study. He argues: "The flesh is not matter, is not mind, is not substance [...] midway between the spatio-temporal individual and the idea [...]. Not a fact or a sum of facts, and yet adherent to *location* and to the *now*" (1968:140, original emphasis). So although *flesh* is not a material fact, it is not completely mind either, but the pre-condition for both. *Flesh* is also not a substitute term for the body, in other words *flesh* is neither "the

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objective body, nor the body thought by the soul as its own (Descartes)" (1968:259). *Flesh* intercepts the Cartesian mind/body split, by refusing to split them and by emphasising the crisscrossing between the two. Merleau-Ponty uses the example of a person's two hands touching one another, in the double touch,[24] to explain the crisscrossing between mind and body, which constitutes his concept of *flesh*.

What is fruitful for my discussion is how Merleau-Ponty interprets embodiment and the body. As stated earlier, Merleau-Ponty's *flesh* is not a substitute term for the body. Cathryn Vasseleu maintains in *Textures of light* that the body is rather a term that is contained within the broader concept of *flesh*: "The flesh is the body inasmuch as it is the visible seer, the audible hearer, the tangible touch – the sensitive sensible" (1968: iv). Merleau-Ponty distinguishes two sides to the body: the one is the "phenomenal" (lived body) and the other is the "objective" (physical body) and adds, "my body is at once phenomenal body and objective body" (1968:136). He continues by referring to the body as "sensible sentient" (1968:136), thus a combination of phenomenal and objective bodies:

> If one wants metaphors, it would be better to say that the body sensed and the body sentient are as the obverse and the reverse, or again, as two segments of one sole circular course which goes above from left to right and below from right to left, but which is but one sole movement in its two phases. (1968:138)

The body sensed and the body sentient in "one sole movement in its two phases" are *flesh*. In other words, the body as a thing in itself and the body that is conscious of itself are intertwined together, and form the chiasm, or the Möbius strip that is *flesh*. Accordingly, the body, which cannot be properly conceived, adequately thematised or reproduced in thought can be described as *flesh*. Merleau-Ponty persuasively explains: "We must not think the flesh starting from substances, from body or spirit – for then it would be the union of contradictories – but we must think it [...] as an element, as the concrete emblem of a general manner of being" (1968:147). *Flesh* is, therefore, not a mere joining of mind and body. In fact, it is that which makes both possible, jointly, without the one being reduced to the other. In this regard Merleau-Ponty's *flesh* and

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Irigaray's *sensible transcendent* share features that are useful in developing a cyberfeminist position on embodiment.

Regardless of the liberating possibilities of Merleau-Ponty's *flesh* for re-thinking embodiment and even perhaps initiating a feminist phenomenology, he fails to account for sexual differences in his theory. The model of sexuality that he puts forward is based on a "universal" male sexual experience. Merleau-Ponty does not and cannot give meaning to specific female embodiments and lived female experiences such as pregnancy.[25] This does not, however, discredit his work completely, for the fact that Merleau-Ponty "locates experience midway between mind and body" implies that experience is always necessarily embodied, as well as corporeally constituted. Consequently, the mind is always already embodied. This will prove a pivotal aspect in crashing new technologies' drives towards disembodiment as set forward so unwaveringly in popular cyber-theories.

In fact, I want to venture the assessment that Merleau-Ponty's *flesh*, although flawed in some respects, is one of the driving impulses behind many recent feminist ponderings (cyberfeminism(s) included) on embodiment. In this regard, Elizabeth Grosz in *Volatile bodies* (1994) sets out to create a non-dichotomous feminist philosophy by employing the concepts of "embodied subjectivity" and "psychical subjectivity" (1994:22). Grosz's embodied subjectivity and psychic corporeality are coloured by Merleau-Ponty's *flesh*, for she understands the subject and psyche as always already embodied. Comparably, Christine Battersby in *The phenomenal woman* (1998) concerns herself with developing a concept of "embodied subjects" (1998:9) from a fleshly embodied female position. She states: "I am interested in what would be involved in thinking identity in terms that take the fleshy female – not 'feminine' – subject-position as norm" (1998:96). Her rethinking of the subject position from an embodied female perspective does not aim merely to lodge the subject in a female body. In other words, it is "not a form imposed on matter by the mind in a top-down way" (1998:202), but rather a mutual making and becoming of both. Embodiment is, accordingly, not understood as form (mind) imposing itself on matter (body), but rather as a process that irrupts in matter and becomes a "state of matter" (1998:51).

In the previous sections ways of rethinking the mind/body split have been discussed that may prove useful in a cyberfeminist analysis of gendered bodies and

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new technologies. Nevertheless, one should be careful of producing easy solutions and re-figurations of the mind/body schism, for such easy solutions may, in fact, just lead the argument back to the initial roots of the problem, namely the problematic severing of the inseparable. Both the "'body" and "mind" are produced within a "complicituous intertext" (Kirby 1997:60) that is embodiment. This intertext clearly converges with Merleau-Ponty's *flesh* and Irigaray's *sensible transcendent*. Accordingly, both body and mind are texts emerging from a complicated intertextuality or "writing" in the all-encompassing sense.[26]

What is useful for my discussion is what Jacques Derrida's much-quoted phase "*Il n'y a pas de hors-texte*" (There is nothing outside the text) may mean in terms of such an intertextual embodiment. One popular interpretation of Derrida's statement, mostly found in literary theory, is that meaning is lost from one signifier to the next. This version holds that there is always a representational reality, which is inside the text, that refers to a stable material reality outside the text. The representational world with its endlessly deferred status, crossing from one signifier to the next, is interpreted as groundlessness. By contrast the material world (the body in this context), which is located outside the play of signifiers, is associated with stable groundedness, therefore it is understood to be solid and fixed. But what if the groundedness, the solid world of materiality outside the text, is itself a "mutable intertext" or "writing"? This interpretation of "nothing outside the text" calls into question the assumption that materiality (the body) is a rock-solid unchangeable substance located outside the text. Substance itself – the body – is textuality and the question of what comes first, the body or the mind, is interrupted by this line of thinking. When the mind, "inside" text, refers to the body, which is presumably "outside" text, it actually refers to another text within a broader landscape of intertextuality.

This means that the body is not only a surface which is written upon, but the body also writes actively. The example of the "skin mirrors" of hysterical patients whose skins "wrote" back after being written on during hypnosis clearly illustrates this. The body is a text, written and writing, a text referring to a text. Derrida broadens the concept of writing to include "the most elementary processes of information within the living cell" (1984:9) as well. If the body then writes from the most elementary atomic level upward, how can one bridge the gap between the body as written and the body as writing?

Who writes whom? Does biology write the body or does the body write biology? To return to my earlier analogy, did Charcot write his patients' (dis)ease or did they write his dis-ease? The hysterical body is represented as it represents. Setting up boundaries, not only between the exterior body (form) and the interior body (substance), but also between the body inside and outside text, is extremely debatable. Any attempt to detach form and substance, inside and outside, or mind and body conclusively is not plausible for a cyberfeminist reading of embodiment in a virtual age.

IX.   This body which is not one

In an attempt to interpret the meeting of bio-bodies with new technologies in a meaningful way I have decided to adapt and combine several hermeneutic strategies and semiotic devices. I have done this in order to avoid rigid binaries and also in the hope of weaving a richer tapestry of possible meanings and interpretations.

First, it cannot unequivocally be stated that **the** body meets technology: but it is, rather, a case of bodies meeting technologies. There is no one universal body that meets with one unified agency of technology. As Elizabeth Grosz incisively argues: "[T]here is no body as such: there are only *bodies* – male or female, black, brown, white, large or small – and the graduations in between" (1994:19, original emphasis). Therefore, for the purposes of this study, it is more fruitful to deploy a field of body types that encounters technologies, so as to broaden the scope of the investigation and to enrich the hermeneutic field of possible interpretations. In this regard I have identified a field of four body types that differ in their interaction and cohesion with new technologies. These are: the techno-transcendent body; the techno-enhanced body; the marked body and the cyborg body (I will unpack them shortly by means of the semiotic square). Obviously the field of body types that I have identified is not nearly exhaustive and other body types can also be applied to the field of bodies encountering technologies, but for reasons of clarity and interest I have decided to focus on these four body types.

In this regard I have adapted the semiotic square of Greimas – structuralist and semiotic analyst – to enrich my reading of how bio-bodies can be represented when merging with new technologies. Greimas's semiotic square lends itself to the unpacking of binary oppositions in a meaningful way, since it opens up the possibility for more

complex interrelated readings of binary pairs. It also lends itself to the disruptions and deconstructions of binaries, which is useful for a cyberfeminist reading of embodiment. The binary opposition (or rather as been established earlier, the unworkable opposition between mind and body, embodiment and disembodiment, which forms a *leitmotiv* throughout my study) will be unpacked on the semiotic square to tease out the matrices of meanings and readings that are possible between this pair. I will interpret Greimas's semiotic square loosely and not follow his implications to the letter: rather, I will make use of the semiotic square in the same vein as Katherine Hayles does, when she states that "it is useful as a stimulus to thought and as a way to tease out relationships that might not otherwise be apparent" (1999:320N2). Accordingly, the four body types will be placed on the semiotic square in order to establish the obvious relations between them, as well as identifying those relations that are obscured by the rigidity of a binary reading.

Another text that has guided my identification of a field of body types is cyberpunk novelist,[27] Pat Cadigan's *Synners* (1991), in which four different embodiments of technologies are explored by means of the four main characters in her novel. The title of the novel refers to a posthuman state wherein three species of technological humans exist, namely "synthe*sizing* humans, synthe*sized* humans [and the] bastard offspring of both" (Cadigan 1991:386-7, original emphasis), namely artificial intelligence. The characters in the book are all "synners" for whom disconnection from the information matrix is unthinkable. What makes the novel interesting for identifying a field of body types is how the four main characters differently embody themselves in relation to new technologies.

The four main characters are Gina, Visual Mark, Sam and Gabe, of which two are female, namely Sam and Gina, while Visual Mark and Gabe are male. It is also interesting to note how the male characters interact differently with technology from the two female characters. It becomes clear in Cadigan's novel that the two female protagonists favour a more embodied version whereas the two male protagonists opt for near-disembodied solutions when dealing with technologies.

Of the four characters Visual Mark is the one that strives most towards becoming completely disembodied and releasing his consciousness into cyberspace, (this is reminiscent of Hans Moravec's mind-uploading project, which I discuss later). On the other hand, Gina, who, like Visual Mark has been fitted with a brain-socket, which allows

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for direct brain to computer communication, merely endures her cyber-travels. Gina's body is also marked by her colour; she is a woman of colour,[28] in an otherwise white male-dominated domain. Gina's relation to embodiment is therefore, more "real" and she is constantly reminded of her corporeality as marked by racial signifiers, whereas Visual Mark, who has no "real" embodied signifiers (in a racial system locked into a white male default) to remind anyone of his embodiment, in the end opts to merge with "the System".

The other male character, Gabe, retreats into the fantasy world of cyberspace because it makes his real world bearable, but when he initially makes physical contact with Gina through pain, he re-connects with his own embodiment. Gabe, therefore differs by returning to his own body in effect, whereas Visual Mark aspires to completely leave "the meat that had been his prison for close to fifty years" (Cadigan 1991:232) behind and become virtual. Both Gabe and Visual Mark contrast distinctly with Gabe's daughter, Sam, a seventeen-year-old, who embodies a fascinating position in the confluence of bodies and new technologies. Sam is a hacker, who co-opts "the System" when needed, but succeeds in remaining independent. In other words, contrary to Gabe, who becomes addicted to cyberspace's illusions, she uses the information network without merging with it. She also hacks the specifications for an insulin-pump chip reader that runs off her body's energy. When every other terminal is infected by a virus, Sam's insulin-pump reader is the only non-infected access point to the System. What makes Sam an interesting prospect for a cyberfeminist reading is that her body keeps its labouring abilities in relation to technologies. Put differently, although infiltrated by and infiltrating technology, she remains embodied.

On a continuum of possibilities ranging from becoming completely disembodied to remaining embodied, the four characters will run from Visual Mark, the epitome of becoming disembodied, on the one end of the spectrum, to Sam, the embodiment of the labouring body, on the other end. Subsequently, Cadigan's novel provides ample possibilities for identifying a field of body types. Adding to that Anne Balsamo's (1996:145) reading of Cadigan's *Synners* in which Balsamo has placed the four characters on a matrix, as becomes evident from the figure below [Fig. XIII], I have similarly adapted the four characters' relations to new technologies to suit my own requirements, to yield four body types.

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GINA *(the marked body)* Multicultural Bodies Tattoos, Piercing	VISUAL MARK *(the disappearing body)* Cosmetic Surgery Bioengineering
SAM *(the labouring body)* Female Bodybuilders Mothers as Wombs	GABE *(the repressed body)* Virtual reality Computer Communication

Fig. XIII Postmodern forms of technological embodiment (Balsamo 1996:145)

I have unpacked the four body types, namely the **techno-transcended, techno-enhanced, marked** and **cyborg** bodies that are mentioned in the semiotic square above according to the position they occupy in terms of binaries such as embodiment and disembodiment, technophoria and technophobia, mind and body, male and female, masculine and feminine. Furthermore, the four pairings that Hayles makes in *How we became posthuman* (1999), which unpack Greimas's semiotic square in relation to the binary pairs of [present/random], [absent/random], [present/pattern] and [absent/pattern] have been transposed onto the position that the four body types occupy in terms of their relation to new technologies, which alternates between absent/present and random/pattern [Figs. XIV & XV]. These will be cited as epigraphs to every chapter dealing with one of these body types indicating their relation to new technologies.

The Marked Body (present/random)	**The Techno-Transcended Body** (absent/random)
The Cyborg Body (present/pattern)	**The Techno-Enhanced Body** (absent/pattern)

Fig. XIV The four body types

In terms of the binary pairs of [present/random], [absent/random], [present/pattern] and [absent/pattern], I describe the **techno-transcended** body by means of the [absent/random] pairing, for it is the body type which most significantly seeks to disembody itself by means of fusing with disconcerting new technologies such as mind

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uploading, head transplants, artificial intelligence and virtual reality. Therefore the [absent] label corresponds with the discarded body and the [random] aspect shows that the new disembodied form has no specific pattern or structure in which it perpetuates itself. In terms of gender, this body type also shows the most animosity towards the embodied stratum, and therefore aspires to move beyond the plane of female corporeality towards the virtual realm of masculinised ideas. The **techno-enhanced** body corresponds again with the [absent/pattern] pairing on more or less the same principles, for the body is treated as an instrument that needs technological enhancement by means of prosthetics, body sculpting and surgery. The body is in effect transcended, although, in contrast with techno-transcendence some residual embodiment remains and therefore some [pattern].
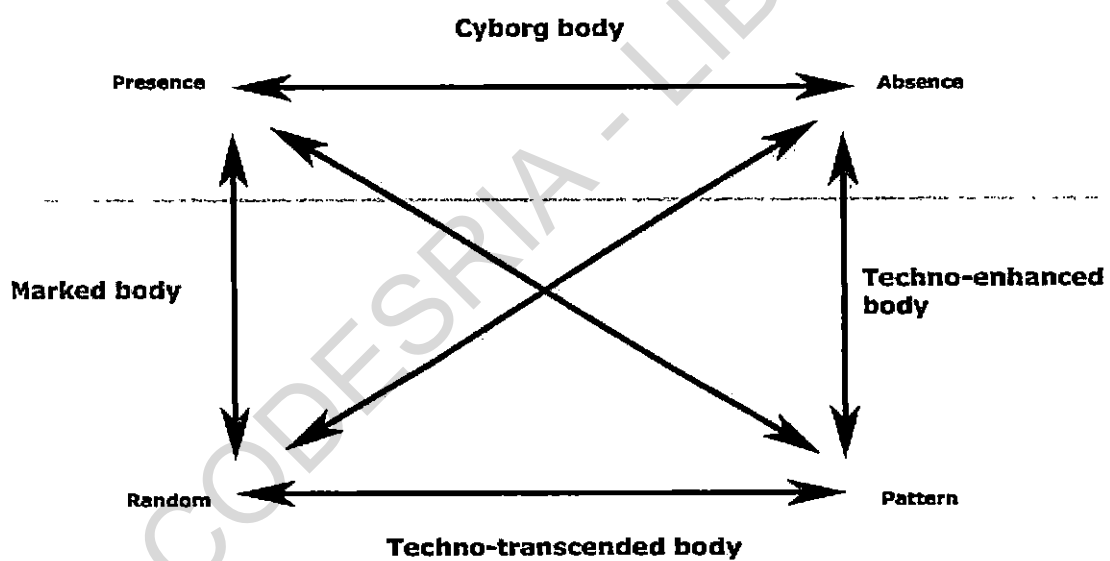
Fig. XV The four body types unpacked on the semiotic square

The **marked** body is placed at the [present/random] pairing, which indicates that embodiment is present, albeit in a mutable form, for the body's surface is treated as a clean slate that can been altered by means of different markings in terms of sexed and gendered categories specifically. The **cyborg** body, which forms the crux of this study's

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cyberfeminist argumentation, foregrounds embodiment as being [present] and having a [pattern]. The cyborg body is infiltrated by and in turn infiltrates technologies. This indicates that embodiment is a non-negotiable given and, despite constantly morphing and not predetermined by discredited constructions such as "natural" and "complete", the body does exist and needs to exist in order for existence to be a remote possibility. As Bruno Latour claims: "the opposite of body is not emancipation, it is not soul, it is not spirit, it is not life, especially not eternal life, **the opposite of body is death**" (1999).

In later chapters these four body types and their specific relation to the embodiment/disembodiment binary in terms of new technologies will be explored. First, though, I shall explore the problematic and contrived relation between women and technologies, in order to draw out the implications for a cyberfeminist framework and the four body types.

Endnotes:

[1] The term "morphing" refers to computer-produced visual effects in which one physical object appears to metamorphose or morph into another. The term became a household word with movies such as *Terminator 2* (1991) in which a killer robot, T1000, morphs into many different shapes due to its liquid metal construction. For an interesting compilation of essays on morphing, not only in computer graphics, but also on a metaphysical level see Vivian Sobchack (ed). (2000), *Meta-morphing: visual transformation and the culture of quick change.*

[2] See Elizabeth Grosz's *Volatile bodies: Toward a corporeal feminism* (1994), Vicky Kirby's "Corporeal habits: Addressing essentialism differently"(1991) and Naomi Schor's "This essentialism which is not one" (1994) for valuable contributions on the essentialism/non-essentialism debate.

[3] For a further discussion and identification of four such non-essentialist criticisms see Naomi Schor, "This essentialism which is not one" in Burke, Schor and Whitford (eds). 1994. *Engaging with Irigaray.*

[4] See Ilza Veith's *Hysteria. The history of a disease* (1965), which provides a thorough historical overview of the disease, while others, such as Martha Evans's *Fits and starts. A genealogy of hysteria in modern France* (1991) and Elaine Showalter's *Hystories. Hysterical epidemics and modern media* (1997) both take a feminist interest in the disease.

[5] My use of the term specula(rise)d is indebted to Luce Irigaray's use of the term "specula(riza)tion" (1985a:308). Irigaray's term inverts the instrument of the speculum and the need to see into the female body into the term "specula(riza)tion".

[6] This devaluation of women's intellectual capacities and their so-called inability to perform in the public domain will become an important point of discussion again in chapter three when the work of the first "computer programmer", Ada Lovelace, is discussed.

[7] See, in this regard, Thomas Laqueur's (1987) "Orgasm, generation, and the politics of reproductive biology" wherein he describes how: "The body generally, but especially the female body in its reproductive capacity and in distinction from that of the male, came to occupy a critical place in a whole range of political discourses" (1987:1).

[8] The deviancy of the hysterical woman is closely associated with that of the figure of the witch, especially in images and diagnoses. In fact Martha Evans (1991:26N) explains in *Fits and starts* that, when church leaders searched for stigmata that would reveal witches' supposed alliance with the devil, it was done in a similar way to the manner in which hysterical women were tested for skin sensitivities by medical scientists, namely by pricking the naked body all over. In the painting below a woman is examined for witchery. She is stripped naked whilst onlookers, mainly males, observe her so-called deviousness.

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Fig. XVI TE Matteson, *Examination of a witch,*
The Peabody-Essex Museum (1853)

[9] Reading was perceived to be a dangerous activity for women, for it could apparently fill their heads with "nasty" ideas. A ban was placed at the time on "imagination, impression, curiosity [...] illicit conversations, no reading that might stimulate the imagination or could leave strong impressions other than religious or moral" (Ender 1995:48). The reading of novels was thought to be the secret cause of disorders of the imagination, and hysteria was indeed constructed as a disorder of the imagination.

[10] The precedence given to sight or the visible is not an unusual preference within patriarchal discourses. See Luce Irigaray's criticism of Plato in *Speculum of the other woman* (1985a) and her close reading of Merleau-Ponty in *The ethics of sexual difference* (1993), where she shows how vision has gained a primary position amongst the senses. According to Irigaray, "all of western discourse and culture displays the structure of specularization, in which the male projects his own ego on to the world, which then becomes a mirror which enables him to see his own reflection wherever he looks. Women as body/matter are the material of which the mirror is made, that part of the mirror which cannot be reflected, the tain of the mirror for example, and so never see reflections of themselves" (Whitford 1991:34). Irigaray maintains that women are literally that which makes vision (seeing) possible, for women's bodies are the "matter" of vision, so to speak.

[11] This gender inversion provides opportunity for interesting speculations about hysteria as a possible miming position of enunciation. This line of thought is pursued later in this Introduction.

[12] Charcot's distance is echoed in the frequent depictions of the scientist as a "lonely" male who prefers to work on his own in the science fiction genre. For example in the discussion on the German film *Metropolis* (1926) by director Fritz Lang in chapter six; the recluse scientist Rotwang's personality overlaps with this construction of the hermitic scientist.

[13] Records show the following rate of diagnoses at Salpêtrière between 1841 and 1842: 648 women patients were admitted, of which only 1% were diagnosed with hysteria. Between 1882 and 1883, at the height of Charcot's "reign", 500 women were admitted and between 18-20% were diagnosed as hysterical. In the male insane asylum at Bicêtre, between 1841 and 1842, none of the inmates was diagnosed as hysterical; in 1883 only two men were diagnosed as hysterical. In other words, hysteria gained the profile of being a predominantly female disease, especially under the guidance of Charcot.

[14] The disturbing connection that is made between hysteria and nymphomania (*furor uterinus*) had already been made prior in the eighteenth-century by a French neurologist, Philippe Pinel (1745-1813) (Veith 1965:33).

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[15] In his *Traité de l'hystérie* (1847), Jean-Louis Brachet exclaims, "*l'hystérie, c'est la femme*". This quite literally means that hysteria is a woman (sex). Taken idiomatically, it can also mean that hysteria implies womanhood as a whole.

[16] See Susan Griffin's (1978) *Women and nature. The roaring inside her,* where Griffin discusses how women have been constructed as earth nurturers versus men as weapon-makers and desecrators of nature. Griffin's work provides some radical perceptions about patriarchy, nuclear war and looming environmental degradation.   -

[17] In his essay entitled "Isolation in the treatment of hysteria", Charcot expressed his admiration for "the ruse, the sagacity, and the unyielding tenacity that especially women, who are under the influence of a severe neurosis, display in order to deceive in particular when the victim of the deceit happens to be a physician" (quoted in Veith 1965:235).

[18] As the Swedish doctor Axel Munthe complained: "If the statement of the Salpêtrière school that only hysterical subjects were hypnotizable was correct it would mean that at least eighty-five percent of mankind was suffering from hysteria" (quoted in Showalter 1997:34).

[19] Ilza Veith in *Hysteria. The history of disease* (1965) speculates that Charcot's assistants, in a misguided attempt to be helpful, "trained" hysterical patients to perform at the right times, such as the precise time of lectures and demonstrations before a captive and appreciative audience. Also, Charcot never induced the trance state (deep hypnosis) during his sessions with a patient - he left that to his assistants: "It has been assumed that unbeknown to Charcot these men conditioned the patients to perform according to their chief's expectations. Thus the eminent neuroscientist was led into serious error by the well-meaning efforts of his faithful associates" (1965:239).

[20] Werner Hiesenberg's *The uncertainty principle* (1927) is of relevance here, according to which Heisenberg determined that, for a subatomic particle, "The more precisely the position is determined, the less precisely the momentum is known in this instant, and vice versa". This means that a subatomic particle behaves differently when being watched than otherwise. This uncertain and unpredictable relation between position and momentum of subatomic particles has profound implications for notions of causality and the determination of the future behaviour of an atomic particle. Likewise, female hysterics' behaviour was directly affected by their awareness of being observed.

[21] Blanche Wittman was known as the celebrated "Queen of the Hysterics" (Showalter 1997:34). She entered Salpêtrière in 1877 at the tender age of fifteen after an attempted rape. She sadly remained an inmate her whole life. Ironically, after Charcot's death in 1893, she became a laboratory technician and eventually she advanced to the position of radiologist. Wittman did, however, until her deathbed insist that her fits had been "genuine".

[22] The "act of looking" did indeed reach new heights with the use of photography in recording hysteria and played a profound role in creating an iconography of hysteria. One of Charcot's admirers observes: "The camera was as crucial to the study of hysteria as the microscope was to histology" (Showalter 1985:149). By the 1880s Albert Londe, a professional photographer, was hired to take charge of a fully-fledged photographic service at Salpêtrière. Charcot suspected that the evasive nature and invisible traces of hysteria could only be captured successfully by means of so-called objective photographs. It was hoped that the deceptively mobile (dis)ease could finally become visible or come to light (so to speak) through the so-called objective eye of the camera. It was assumed that hysteria as an unmediated illness could be mediated and be brought "into a discursive construction" (Grzinic 1999) through photography. The silent and unspeakable bodies were voiced through the positivism of photography. Besides the dramatic postures of hysteria, the bizarre "artistic" skingraphs where also carefully documented. Some physicians even went so far as to sign and date the "artworks" they had created on the hysteric skin in anticipation of the

photograph, "as if the physician was the author of the subject, the artist of an **embodied icon**" (Kirby 1997:58, emphasis added).
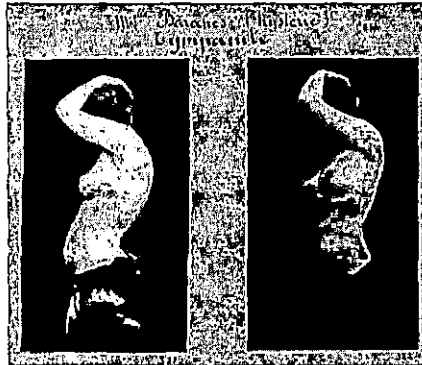
Albert Londe, *Mle Banares (hystérie). Tympanite,*
postive paper, gélatino-bromure, 35.5 x 47 cm, Texbraun collection, 1883

Albert Londe, *Parmentier (28ans). salle Duchenne de Boulogne (attaque d'hystérie)*
positive paper, gélatino-bromure, 35.5 x 47 cm, Texbraun collection, 1883

[23] What is also fascinating in the analysis of hysteria and appearances is that hysterical women were themselves obsessed with their own appearances. There are many accounts of hysterical women's sense of detail and decoration, such as the example of the hysterical patient who asked that a ribbon be attached to her straitjacket during a brief interruption of a hysterical attack (Evans 1991:31). Also in the hospital wards, apparently, the difference between the beds of the epileptics and the hysterics was clearly visible, for the hysterics decorated their charts with flowers, ribbons, mirrors, pictures and bright colours (Evans 1991:31). This indicates that hysterics had some sense of themselves as "visions" and the importance connoted by their appearances in the creation of hysteria as a (dis)ease.

[24] When two hands touch one another, the person is both the one who touches and the one who is touched. In other words, the person is both subject and object of the touch. These seemingly opposing positions, namely touching and being touched, cannot, though, be experienced together. Merleau-Ponty explains: "If my left hand is touching my right hand, and if I should suddenly wish to apprehend with my right hand the work of my left hand [...] this reflection always miscarries at the last moment: the moment I feel my left hand with my right hand, I correspondingly cease touching my right hand with my left hand" (1968:9). One switches indefinitely from being touched to touching, thus from the object touched to the subject touching. That which underlies the reversibility between object and subject is *flesh*. In other words *flesh* is the pre-condition for experiencing being touched and touching, *flesh* binds them together and makes the experience possible. The same logic applies to vision and the visible. The visible is not only seen, but also constitutes the seer: they are intertwined into the same *flesh*. They cannot be separated into different opposing entities, for the one constitutes the other. The preference given in the western tradition to vision and taking possession with the eyes is frustrated by Merleau-Ponty's self-thinking *flesh*. Merleau-Ponty does not interpret the body as the locus simply from where we see, but the body is immersed within the terms of perception. Just as the body sees, it is also seen. In fact, it is because the body is visible that it sees. Merleau-

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Ponty's idea of *flesh* can thus assist in displacing Charcot's insistence on observing the symptoms of hysteria, rather than talking to or touching his patients. Charcot did not understand that observing and watching also means to be seen, or that, just as the seer sees, he himself is visible: "[...] he who sees cannot possess the visible unless he is possessed by it, unless he *is* of *it*" (Merleau-Ponty 1968:135).

[25] For a more detailed analysis of this criticism of Merleau-Ponty, see Iris Young's *Throwing like a girl and other essays in feminist philosophy and social theory* (1990). In the essay entitled: "Throwing like a girl. A phenomenology of feminine body comportment, motility, and spatiality", Young deals with the differences between the two sexes' throwing abilities, in other words the differences in how the two sexes embody themselves in terms of throwing a stone. She shows that women lack trust in their bodies and that they do not put their whole body into a physical task the way men do. Apparently, women also have the tendency to underestimate their bodily capacity, whether that capacity is real or constructed.

[26] Like Kirby, I do not understand Derrida's notion of writing in the narrow phenomenal sense or only as a literary notion, but, as Derrida himself states, writing covers the whole "cybernetic program" (1984:9). This indicates that writing extends to cinematography, choreography, the pictorial, the musical, the sculptural, the athletic and the political (among other forms of discourse).

[27] Cyberpunk is a science-fiction sub-genre that concerns itself mainly with the failure of the human body when faced with invading new technologies. Pat Cadigan cannot be described as a cyberpunk author without some clarification first. Although many of the general characteristics of cyberpunk appear in her work, there are, nevertheless, some significant differences in her handling of cyberpunk elements that make her a more complex author to place. Her treatment of gender and embodiment, for instance, differs greatly from that of her male cyberpunk counterparts, such as William Gibson and Bruce Sterling.

[28] The category "woman of colour" will become particularly significant in the last chapter, dealing with the cyborg body as described by Donna Haraway in her "A manifesto for cyborgs" (1990).

Chapter One
Gendered Technologies
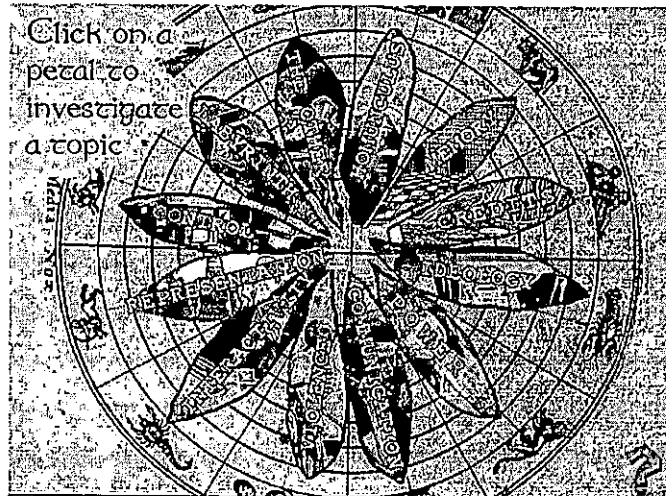
Fig. 1.1 Christine Tamblyn , *She loves it, She loves it not: Women and Technology*, 1993

The relationship between women and technology has for the most part been discursively and materially configured as an awkward and rather ambiguous one. According to predominant thought systems, women and technology are two incompatible spheres that exclude one another on account of their dissimilarities in nature. Women have been locked into the embodied feminine sphere, while technology traditionally belongs to the disembodied, "risky" and "exciting" masculine world. These two domains have been discursively constructed and materially organised to exclude one another, and therefore women's relationship with technologies has for the greatest part been one of exclusion and separation.

This decisively problematic relation between women and technology is shrewdly illustrated in an interactive artwork entitled *She loves it, She loves it not: Women and technology* (1993) [Fig. 1.1] by conceptual artist Christine Tamblyn (1951-1998). Tamblyn presents women's relation to technology as oscillating between "love" and "hate". The first screen of Tamblyn's project is, quite fittingly, as shown above, an image of a daisy accompanied by the text "*she loves it, she loves it not*". Each petal is a clickable option, linking to a category considering the relationship between women and technology.[1] Tamblyn asks pertinent questions about women's relation to and alienation from technology in the past, present and future. For instance: How can women relate differently to technologies given more opportunity to do so and how can women build different relations with technologies in future? Tamblyn's questions do, therefore, pre-empt a cyberfeminist approach to the relation between women and technologies. As in Tamblyn's artwork, cyberfeminism

suggests that women and technologies, although disassociated in and by patriarchal schemes, share the same intimate history and are in fact in a perverse alliance. This means that the traditional relationship between women and technologies is not only based on false assumptions, but the possibility of forging another kind of relationship is also greatly obscured from women themselves.

But what is technology? Is technology a form of know-how, something people do or just a set of physical tools such as spanners and computers? My use of the term "technology" refers to a more encompassing human activity that is contextually bound and yet transcends an instrumentalist view of technology as providing mere tools for human use. The categories of technologies that will be included in my discussion are inclusive rather than exclusive.

Technology is, however, not restricted to machines and devices, but also includes social, economic and institutional forces. Teresa de Lauretis, in *Technologies of gender,* extends technology's meaning to include "various social technologies such as cinema, institutionalized discourses, epistemologies and critical practices, as well as practices of daily life" (1987:2).

The emphasis of the discussion is on a cyberfeminist reading of women and technologies and how women's warped relations to technologies impact on embodiment in an age during which the body is said to be disappearing into technological oblivion. If women and bodies have been perceived (and remain to be perceived) as inseparable categories, what is at stake for women specifically when bodies are dissolving into information networks?

As a consequence, it seems ludicrous to advocate, that bodies are technologically innocent and untouched by new technologies, for not only are bodies touched by new technologies, but they are also invaded, penetrated and permeated by technologies. New technologies have become all-pervasive and seductive to the point where distinguishing between the so-called "original" (technologically uninfected) organism and extreme new technologies, such as invasive neuro-transplants and infectious nano-robots, has become technically impossible. In the exchanges between bodies and new technologies, bodies cannot be viewed as static given entities (not that they ever could): instead, they are constantly changing, regenerating and in flux. As Michel Feher explains in "Of bodies and technologies", there is a continuous process of transferral: "the body is instead a reality constantly produced, an effect of techniques promoting specific gestures and postures, sensations and feelings" (1987:159).

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Clearly it is no longer a question of technologies existing solely outside bodies, but more a case of technologies – specifically nano-technologies – infiltrating and infecting bodies. As Donna Haraway states: "The machine is us, our processes, an aspect of our embodiment" (1990:222). What this means is that unexacting distinctions between the organic "self" and mechanised "other" are no longer possible, without the risk of being literally deconstructed from the inside out. We are embodying machines, just as they embody us.

On the other hand, to argue that bodies have come to their evolutionary grand finale and that humans can sustain a technologically-enhanced life without embodiment of some sort, is as ludicrous as conjuring a technologically innocent body. The dream of disembodied techno-existence ironically "embodies" a misguided trip to a paradise of self-annihilation.

Cyberfeminism's skilful and embodied espousing of new technologies, without necessarily signing up for permanent virtual existence (disembodiment), appears to steer clear of these hidden ontological and epistemological landmines on our screens. Like their hysterical sisters of the previous century, cyberfeminists know that embodiment, although changing and shifting, is a prerequisite for existence. As Katherine Hayles reiterates: "At the end of the twentieth century, it is evidently still necessary to insist on the obvious: **we are embodied creatures**" (1996:3, emphasis added). In the face of techno-determinism's severe indifference towards the body, cyberfeminism is therefore suspected of propagating body-essentialisms and nostalgia for a so-called lost "pure" and "innocent" body. The mere suggestion that we are embodied beings or, in Donna Haraway's terms, "situated knowledges" (1997:11), although continuously changing or "becoming", is treated with suspicion and discredited as being technologically inapt and techno-phobic. Those who treat embodiment with particular contempt are the Transhumanist groupings, Cybernetics, cyber-theorists such as John Barlow, Jaron Lanier, Hans Moravec, and new media artist such as Stelarc, who are all discussed later. This chapter navigates its discussion of technology and gender between the poles of technophobia and technophilia. Melvin Kranzberg aptly states: "Technology is neither good nor bad, nor is it neutral" (1985:4), and it is the non-neutral aspect of technology that is of particular interest to a cyberfeminist analysis.

1.1 Does technology have an essence?

As mentioned earlier, the term technology is used to refer to and imply the more complex compound of "technoscience" as developed by Bruno Latour (1987:174). Historically science has been described as that which **discovers**, and technology as that which **applies.** This hierarchical division of labour between discoverer and applier can playfully be compared to the relationship between "master" and "handmaiden". Accordingly, science has been construed as the more valuable partner in the relationship, but this changed during the early twentieth century, when the uneven relationship between "master" and "handmaiden" developed into what Hillary Rose describes as an "iron-bound marriage" (1994:11). In other words, the "handmaiden" has become the lawful mistress of the house of science, so to speak.

As notions about science and technology changed in and over time and within different contexts and societies, the initially strict hierarchical relation between the two dissolved. It has likewise become apparent that technology has contributed as much to science as vice versa. The role played by computers, for instance, in the discoveries made by science is a good example of technology's immeasurable contribution to the sciences. No longer does science hold the privileged position of discoverer, while technology is denigrated as the mere applicator of its discoveries. In fact, Don Ihde is of the opinion that to speak of science today is also, *ipso facto*, to speak of technology (1993:78). Others take the argument a step further by asserting that it is no longer science that is shaping technology: technology is instead shaping itself (Winner 1977:57-73). Technology has steadily slipped through "master" science's controlling fingers and has mutated into what can more aptly be termed as technoscience, which "exceeds the distinction between science and technology" (Haraway 1997:3). Therefore, when reference is made to new technologies within this study, I imply a close conceptual link to the mutated concept of technoscience.

Continuing my exploration into the meanings of technology, particularly for a cyberfeminist reading, I nevertheless have no illusions, about the impossibility of uncovering the "true" essence of technology. Like Martin Heidegger, I affirm that, whether viewed positively or negatively, technology cannot be ignored. Heidegger poses the question concerning technology as follows:

> Everywhere we remain unfree and chained to technology, whether we passionately affirm or deny it. **But we are delivered over to it in the worst possible way when we regard it as something neutral;** for this

conception of it [...] makes us utterly blind to the essence of technology. (Heidegger 1977:4, emphasis added)

In accordance with Heidegger, the question concerning gendered bodies and new technologies cannot be viewed from a neutral stance and hence my choice of a cyberfeminist position. Heidegger's concept of the *Gestell* (enframing) is how reality appears or unveils itself to us in this age of modern technology.[2] We are born into this "mode of ordering" (1977:24) and therefore, we are always already embedded into the *Gestell* (enframing). Consequently, our thoughts on bodies and technologies are inevitably informed by a technological reality, as Heidegger explicates: "[Man] can never take up a relationship to it [technology] only subsequently" (1977:24). Any questions as to how this relationship started are, therefore, always **too late**, according to Heidegger. The only relevant questions that remain to be asked are those concerning whether we actually experience the workings of the *Gestell* and if so, how we experience them.

Heidegger's *Gestell* is not technology, but rather "what essentially comes to pass in technology" (Caputo 1993:182): in other words, it is the essence of technology. The distinction between the so-called essence of technology and technology itself is described as follows by Heidegger: "[The *Gestell*] is nothing technological, nothing of the order of a machine. It is the way in which the real reveals itself as standing-reserve" (1977:23). In Heidegger's deployment of the *Gestell*, tools and technical instruments are mere manifestations: they are **not** the essence of technology as such. This means that Heidegger does not understand the essence of technology to be instrumental or anthropological: in other words, he does not define technology as a means to an end or a human activity. He searches beyond the instrumental definition of technology, for as he argues: "the correct instrumental definition of technology still does not show us technology's essence" (1977:6). Technology in essence is rather how "the real reveals itself as standing reserve". This means that the world comes to us in this age as a place where all things and, in particular, the material world are reduced to usable materials standing-by, waiting to be unlocked, transformed, stored up and distributed – a standing reserve (*Bestand*). What is useful for a cyberfeminist understanding of technology is how Heidegger describes the relationship between *Gestell* and nature, or, in embodied terms, how he describes the relationship between bodies and technologies. Heidegger states that the *Gestell* challenges man to put "to nature the unreasonable demand that it supply energy that can be extracted and stored as such" (1977:14). Nature's energies

and resources must be unlocked and exposed, in order to be transformed, stored up and distributed "toward [...] the maximum yield at the minimum expense" (1977:15). In other words, with the minimum input the maximum energy must be extracted. Nature is confined to a "standing reserve" (*Bestand*); a resource; a reservoir of potentiality. In fact, man[3] himself in the form of "human resources" (1997:18) is part of the standing reserve, waiting to be tapped into and expedited. This inevitably means that man is not the all-controlling subject, determining technological processes, but rather man himself becomes an object of the grinding *Gestell*. Heidegger asks if the *Gestell* happens beyond all human doing and answers himself: "No. But neither does it happen exclusively *in* man, or decisively *through* man" (1997:24, original emphasis).

Although Heidegger's unpacking of the *Gestell* (enframing) is very foreboding in its outlook and implications, it does, nevertheless, provide a position on technology beyond the usual instrumentalist and anthropological versions, neither of which asks about the essence of technology. Heidegger supplies his reader with a new ontology regarding technology, in which reality is said to unfold fatally as a "standing reserve" waiting to be technologically instrumentalised. Michael Heim, an important voice in discourses on new technologies, clarifies Heidegger's use of the *Gestell* as follows:

> For Heidegger, [...] the question of technology was not an ontic one, not one about the proliferation of devices or even about the possible supremacy of the machine over human beings. His ontological questions touch the world, the clearing or backdrop against which things appear. (Heim 1993:66)

Contra and yet in close accordance with Heidegger, the *Gestell* is probed in this study by asking questions about its limits, seeking out and infiltrating its fissures and lacerating its certainties from a cyberfeminist stance. As part of a cyberfeminist exploration, the position I take in relation to technologies is neither techno-phobic nor techno-phoric, or, phrased differently, it is neither anti-technological nor blindly pro-technology. In her insightful essay entitled "On bodies and technologies" (1987) Alice Jardine sets out four types of responses to technology and I would like to explore them briefly in order to position this study's response to technologies. The first is an **anti-technology** position, which manifests in left- and right-wing variations. On the left, the anti-technology position is articulated in simplistic oppositions between the earth as "good" and technology as "bad". On the right, technology is resisted on the basis of puritan ethics, such as those voiced, for instance by the anti-abortion league's opposition to meddling with "nature".

In contrast with the anti-technology variants, the other major response towards technology is to be obliviously **pro-technology** and to embrace every available technological enhancement uncritically. According to pro-technologists, it is a wonderful prospect to become a cyborg.[4] The third approach to technology is best outlined in the philosophy of Rosi Braidotti, who, in *Between monsters, goddesses and cyborgs* (1996), sets out to show that science and technology are invented by men to liberate themselves from the so-called monstrous female. Therefore inventions, especially in reproductive technologies, are geared to take over the reproductive function from women by substituting women's bodies with technological devices. In this regard, cultural feminist Mary Daly is another good example of this type of response to technology. Daly argues (not completely without merit), that "phallotechnic progress" (1990:53) aims to substitute femininity with holograms and females with robots by techniques such as cloning and transsexuality. Daly does, nevertheless, assume that bodies are natural and technology artificial, without acknowledging the interlacing of these categories. Bodies are not exclusively natural and neither are technologies solely artificial. Phrased differently: "we are cyborgs" (Haraway 1990:191) and, therefore, the traditional distinctions between ("natural") human selves and ("artificial") machines have dissolved in the virtual age.

The fourth type of response, which Jardine identifies, ties up with Braidotti's and Daly's positions, but with an interesting twist added. According to this response, technology has always been focused on the maternal body, but moreover, it understands the machine to be a woman. Jardine explains: "technology always has been about the maternal body and it does seem to be about some kind of male phantasm, but, more, it perceives that the machine is a woman in that phantasm" (1987:156). Once again the female body, as was the case with nineteenth-century hysterics, becomes the contested site. It is with this position that I will mostly associate myself, along with other cyberfeminists such as Sadie Plant, Katherine Hayles and Donna Haraway (discussed in the next chapter).

Aligned and guided by this fourth response to technologies, an attempt is made within this study to "de-homogenize" (Sofia 1995:148) technologies, in reaction to most feminist impulses which tend to homogenise or over-generalise technology such as Mary Daly (1990) and Hilary Rose (1994). The homogenising approach to technologies entails that technology is constructed as inevitably phallic, masculine and therefore, as deadly and westernised *per se*. In such a model, one technology becomes a synecdoche of technologies in general. Accordingly, contexts and histories of technologies are over-simplified and technologies are demonised and

unequivocally rejected on account of this reductionism. I rather propose a strategy of de-homogenising, wherein neither technologies nor bodies is put forward as universal subjects or categories and nor are they exclusively dichotomised. As Judith Halberstam advises: "feminists [...] must rather begin to theorize their position in relation to a plurality of technologies and from a place already within postmodernism" (1991:441).

Consequently, I propose that bodies meet technologies constantly and the result of each meeting differs. This indicates that the same technology may be used differently and even for a different purpose in different cultures, contexts and by different genders. Don Ihde affirms this when he states that technologies are "frequently variably culturally embedded" (1993:130). Therefore, universal predictions about how technologies will impact on different cultures and different genders are not feasible. The different uses of technologies by different genders are probably best illustrated in women's creative "misuses" of the telephone (Terry & Calvert 1997:5) [Fig. 1.2]. Apparently, the telephone was originally designed to assist business transactions between men, but was used more often by bored and isolated housewives as a means of making and keeping social contact with other women. The inventors of the telephone did not anticipate these subversive uses of the telephone, but neither could they control the unexpected ways in which the telephone was used.

Fig. 1.2 Christine Tamblyn , *She loves it, She loves it not: women and technology*, 1993

Technology cannot be contained in one universalising envelope, for, as Ihde shows, technologies' uses and meanings also depend on how the concept of "nature" is constructed within a specific societal context (1993:124-5). For instance, there is a significant difference in the use of technologies in a society wherein nature is constructed as a "standing reserve" (Heideggerian *Bestand*), as opposed to those wherein nature is valued in an animistic tradition as a lifelike entity. I am not hereby implying that no patterns of dominance as constructed in a patriarchal system can be detected from the ongoing meeting between bodies and technologies, but I

argue that these patterns are constantly shifting and morphing. I will, however, relentlessly critique biased patterns relating to gender and power as they manifest in the meeting between bodies and technologies.

1.2   Why gender and technology?

Before setting out to answer the questions relating to the gender of technology and to whether gender is a technology, I shall provide some reasons for choosing to use the term "gender" and not "sex" when dealing with bodies and technologies. Hilary Rose warns, in *Love, power and knowledge*, that "Arguments about whether science is gendered inexorably become entangled with the issue of which `sex' produces sciences" (1994:98). And rightly so in my opinion, for to ask about gender is always related in a sense to questions about sex.

In my introduction dealing with the hysterical female body, I constructed the sexed body as a speaking position. The question of who is speaking is always important, not in order to capture the speaker, but rather to situate the speaker. The introduction also argues that embodiment forms an integral part of any speaking position, especially in the development of concepts such as "embodied subjects" and "psychic corporealities". So when one asks who is speaking, the question does not refer to what sex or gender is speaking, but rather enquires about both. If we ask about the gender of technology, we also inevitably ask about its sex. As established earlier, just as the mind/body split is unworkable, so is the sex/gender dichotomy.

Traditionally it was argued that sex pertains to the "natural" body and gender to the "cultural" mind. Nevertheless, this dichotomy can be disrupted in similar ways to those in which the so-called mind/body split has been disrupted by means of concepts such as Merleau-Ponty's *flesh* and Luce Irigaray's *sensible transcendent*. If it is accepted that we are always already embodied in a meshed joining of mind and body, how can sex be split from gender? Just as the body "writes" and is a text, so is sex. The sexed body writes to the gendered mind, just as the gendered mind writes to the sexed body. Evelyn Fox Keller, an important theorist on science and gender, seems to agree when she states: "gender is a fundamental relational construct which, although not determined by sex, is never entirely independent of it" (1989:38). The sexed body is, therefore, not valued as a pure given, waiting passively for the inscriptions of the ostensibly active gendered mind to produce it and vice versa. It may be argued that in some ways gender does construct bodies, but no more or less than sexed bodies construct gender.

In this view both gender and sex are texts in the widest sense of the word. Sex does not have one final essence, but rather essences sliding on a continuum between male and female, and the same applies to gender sliding between femininity and masculinity. The sex and gender continua do, however, intersect at certain points and meet one another in the form of embodiments. In other words, I do not consider gender entirely amputated from sex, but rather propose that gender and sex are mutually, although not prescriptively, instantiated. Anne Balsamo in her inspiring text, *Technologies of the gendered body* (1996:36), similarly argues:

> [...] gender, like the body, is a hybrid construction, belonging both to the order of the material body and the social discursive systems within which bodies are embedded. [...] Gender is never separate from the bodies that are taken up within it or marked by it.

This means that social change will not, in my view, be brought about only by transforming gender-roles, for that assumes (on a crude basic level) that if we change our minds the material world is accordingly changed. Subsequently, the mind-over-matter mode prevails and women, being mostly associated with matter, are once again devalued in such an assumption. Accordingly, I contest the emphasis that second-wave feminists, such as Simone de Beauvoir, place on the inter-changeability of gender-roles in order to reach equality.[5] As will become clearer later, gender cannot be perceived as a piece of clothing or mask to put on and take off at the subject's will.[6] Obviously, there is an element of play and masquerade attached to gender construction, and certainly gender is not fixed or cut into the flesh, but neither is it a subjective choice from a drop-down menu over which the subject has full command.

My choice of the term gender, when referring to bodies and technologies is, then, therefore, solely a pragmatic one, since the term gender is (absurdly) mostly associated with women (as if men do not have a gender), for "gender seems to 'stick' more readily to women than to men" (Adam 1998:21). It is feminist debates that have placed gender on the political agenda as Jane Flax (1990:40) affirms: "A fundamental goal of feminist theory is (and ought to be) to analyze gender relations". In a system where being white, male and masculine is taken as the default standard, one does not need to speak about gender, but once one starts speaking for and about the positions that are not "normal", namely women and homosexuals, you have to be reminded that there are (at least) two genders. It is perhaps best to

refer to a sex-gender system as Donna Haraway suggests (1991:130), but seeing that gender has become shorthand for the whole complex debate, it will be used here. When gendered bodies are referred to, as in the title of the study, I am broadening its scope so as to include the always already embodied sexed and gendered state in which we find ourselves. It is argued that gender and sex (mind/body) cannot be severed into distinctive categories and subsequently, the use of gendered bodies implies the always already incorporated state of having and being both sex and gender.

1.3   Does technology have a gender?

The short answer to the question, "Does technology have a gender?" is "yes", for if we heed Heidegger's warning not to regard technology as something neutral, it should also include gender neutrality. For too long, science and technology have attempted to hide themselves behind a mask of so-called neutrality and objectivity.[7] As Don Ihde claims, "To make a technology is not simply to make a tool or an artefact – *it is to make a world*" (Ihde 1993:103, original emphasis). It must be asked what worlds are created by technologies? Moreover, what kind of gendered worlds do technologies create?

Technologies are, therefore, not neutral: they possess gender, precisely because specific technologies favour specific genders. Sandra Harding asserts: "If science [technology] is a totally social activity – it is structured by expressions of gender" (1986:57). Although I do risk homogenising technologies at this point, nevertheless, I want to suggest that the gender that is predominantly favoured by most technologies is, indeed, masculinity. Furthermore, I want to add that most technologies also privilege a specific sex, namely the male. When Cynthia Cockburn argues convincingly that "we cannot do without a politics of physical power and that it need not immobilize us" (1985:128), she is arguing for the inclusion of sex in the debate on gender and technology. Under physical power, Cockburn includes both "corporeal effectivity (relative bodily strength and capability) and technical effectivity (relative familiarity with and control over machinery and tools)" (1985:128). On an entry level technology requires an initial cost, namely the necessary skills, access – not only to use technologies, but also to create technologies, and in some cases technologies require above average (for a woman?) physical strength. The

everyday realities of the labour market dictate that women are still paid less than men and, when it comes to "know-how", women are less skilled in technologies for a variety of reasons. In addition, traditionally the average woman has embodied herself differently from men in terms of technologies and this produces and perpetuates a system of exclusion that has been kept intact from context to context. But is the gender/sex and technology debate merely a question of access, resources, skills and strength? What transpires on the meta-discursive level that makes the bond between masculinity/maleness and technology so powerful? In *Feminism confronts technology* Judy Wajcman explains:

> To emphasize [...] the ways in which the symbolic representation of technology is sharply gendered is not to deny that real differences do exist between women and men in relation to technology. Nor is it to imply that all men are technologically skilled or knowledgeable. Rather [...] it is the ideology of masculinity that has this intimate bond with technology. (1991:137)

Wajcman is careful not to reduce all technological relations to gender differences by keeping open the possibility that "real differences do exist between women and men in relation to technology" (1991:137). In other words, sexual differences co-exist in tandem with gender differences. Neither does Wajcman argue in a sexist reductionist manner that physical men are necessarily technologically inclined, just because they are men. On the contrary, women are definitely technologically capable, but in order "to feel technically competent is to feel manly" (Cockburn 1985:12). In other words, a woman has to traverse traditional gender roles in order to "feel" technologically adept. Obviously, it is not inherently negative to cross traditional gender-roles (in fact it is laudable), but what Cockburn is hinting at here is how technology is inscribed into masculinity and how technology is seamlessly aligned with power and masculinity.

Cockburn and Wajcman are not arguing that technology is **inherently** masculine, but they demonstrate how technology has been socially constructed as being masculine. Obviously, the masculinity referred to here is the so-called "dominant masculinity" (Halberstam 1998:2), which has unproblematically aligned itself with patriarchy, power and maleness. Alternative masculinities do exist, such as gay masculinities, female masculinities and masculinities otherwise organised than according to the western model. However, these alternative masculinities do not necessarily have the same access to power and institutional support as the

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"dominant masculinity". This indicates that technology's relation to dominant masculinity has a long and dynamic history, which may (hopefully from a gender-egalitarian perspective) change again in the near future. Wajcman also stresses that there is no "coherent single form of masculinity" and that the "masculine culture of technology may take a partially different form for working class and middle-class men" (1991:39). This means that, although there are differences within the masculine culture of technology itself and it is not one coherent system, all these differences still tap into the "ideology of masculinity", which has a close bond with technology and power. In an interview, Diane Greco, author of the interactive hypertext, *Cyborg: Engineering the body electric*, comments, as follows, on the link between technology and power:

> For me, technology isn't the issue. **Power** is. When we talk about 'women and technology', **the word 'technology' stands in for power.** [...] the problem is that women (and men) are still hugely ambivalent about the issue of women's relationships to power [...] and when 'technology' comes to represent power, it acts as a kind of lightning rod. (Interview on *Riding the meridian*: 2000, emphasis added)

Given technology's unproblematic alliance with the dominance of masculinity, it is not surprising that the prototypical inventor or scientist is represented as male. Although women have also created and invented technologies, specifically in the arena of horticulture, agriculture, cooking and childcare, they are mostly disassociated from the power core of technology. The technologies invented by women have, subsequently, been discredited as second-rate and "low-tech", and not part of the so-called male "high-tech" mainstream.[8] Furthermore, if an invention were made for instance by a black woman, such as Ellen Eglui – the inventor of the first clothes wringer for washing machines [Fig. 1.3] – race would become another inhibiting factor that prevented her from being acknowledged as a great inventor. Realising these fateful circumstances Eglui sold the patent rights to her invention for a meagre $18.00 in 1888, because, as she rightly observed:

> You know I am black and if it was known that a Negro woman patented the invention white ladies would not buy the wringer, I was afraid to be known because of my color, in having it introduced into the market, that is the only reason. (*New Scientist*, 24 May 1984:10)

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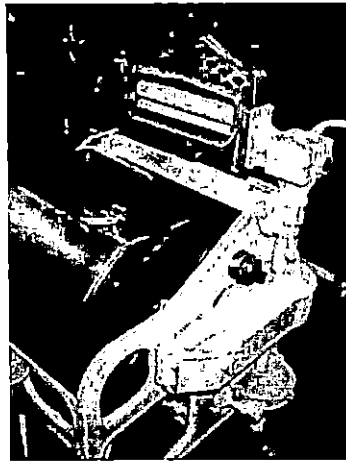
Fig. 1.3 Ellen Eglui's clothes wringer for washing machines, 1888
(*New Scientist* 1984:10)

Not only are female inventors under-represented and marginalised in the histories of science and technology, as in the case of Ellen Eglui, but finding references and information about female inventors is also a very difficult task. Anne Balsamo confirms this sad state of affairs: "Gathering even basic biographical material about the women who participated in traditional male-dominated technical and professional fields [...] is not an easy project" (1996:151). Even when one is fortunate enough to find references to early female inventors, their inventions are mostly not treated with the same significance as their male counterparts for "the traditional conception of technology is heavily weighted against women" (Wajcman 1991:137).

Fig. 1.4 Ada Byron King, Countess of Lovelace (1815-1852), (Photo Gallery of Women and Technology).

Fig. 1.5 Grace Murray Hopper, Portrait in uniform (1909-1992), (Photo Gallery of Women and Technology).

There is, however, a trend within recent feminist studies to search for and to recover women's contributions to the historical development of different sciences and

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technologies. For instance, the reclamation of the contributions that women, such as Ada Lovelace [Fig. 1.4] and Grace Hopper [Fig. 1.5] have made to computer programming are promising and encouraging to other women. However, it is debatable whether the revival and resurrection of lost female voices within the male-dominated sphere of science and technology is the only feasible way of placing women on the technology agenda. Although this is a valuable project, the discriminating premises of technology are still left unchallenged. Such a project merely reinstates women within the history or canon of men's science and technology, and places women inventors within a broader male framework. By inserting these female inventors into science and technology that have overwhelmingly been governed by male-defined notions and aspirations, these women will be valued in terms of the male standard as producing inventions which are "not-bad-for-a-woman". In Sandra Harding's terms, by keeping the masculine epistemological premises of science and technology unchallenged, both "bad science" and "science-as-usual" (1986:25) remain secure. Harding suggests that both "bad science" [science misused to prove gender-biased positions] and "science-as-usual" [science with an apparently neutral premise hiding a gendered bias] will have to be uprooted, in order for women to make inroads into the "science question".

Introducing a quota system will also not transform the so-called neutral and objective premises of science; it may merely push more women into a male-dominated system. The real challenge is rather to show that the subject of science is not neutral but in fact sexed and gendered. As Irigaray in "Is the subject of science sexed?", argues "But maybe we can ask whether there is not, underlying, underground, a *common producer* that makes science. But who? Is there someone? Does *he* show himself?" (1989:59, original emphasis). In other words, putting women into the science and technology sphere to make up numbers (quotas) will keep the knowledge foundation of science intact. Susan Harding appropriately enquires: "Does the increased presence of women in science have any effect at all on the **nature** of scientific problematics and outcomes?" (1986:21, emphasis added) and the answer to her question appears to be in the negative at this stage.

Another way of tackling the "science question in feminism" would be to enquire how the epistemological supposition of technology as inherently aligned with masculinity, is perpetually being constructed and maintained as such. How are different social values, meanings and genders assigned to scientific and technological reason (Harding 1989)? Are scientific (masculine) claims to knowledge

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always better than so-called non-scientific (feminine) claims to knowledge (Fox Keller 1989)? The following sections will tackle these questions.

1.4   How technologies are gendered

Some answers to these questions can be gleaned from recent information concerning the genders' differing relations and responses to new technologies in classrooms, advertisements and on the Internet. Dale Spender's everyday accounts in *Nattering on the Net* (1995) of what actually happens in Australian classrooms between the girls and boys provide insightful information about "how" most boys tap into the power behind the masculine-technology alliance. It is amazing how "even three-year-old boys in pre-school insist that the computers are the boys' territory, and the girls are verbally and physically driven away" (1995:167), writes Spender. In the end the girls either lose interest or accept that it is not "their" territory and, in order to avoid conflict – another very feminised trait – they stop demanding access to computers. The stereotype of technology being equated with masculinity and "if you lack masculinity you don't have access" are uncritically reinforced by such daily events. It is, however, not only girls that suffer this fate, for Spender also mentions cases where specific boys are also targeted, and accordingly, ostracised from the boys' club. Perhaps these targeted boys, just like the girls, are punished for not being masculine enough and are, subsequently, excluded from the inner sanctum of technology.

The enforced exclusion of girls and certain boys does, however, not end at secondary school level, for similarly, young men in university computer laboratories ban the girls (and un-masculine men) from the "holy" male territory of technology. They make use of unsubtle methods, such as physical force and verbal abuse, and other more subtle methods, such as creating a generally women-hostile environment.[9] If a woman wants to choose the technological route she has two choices, namely becoming "one of the boys" or taking a difficult oppositional route. Add to this the fact that role models for women in technology are scarce and constantly under pressure and the task ahead for women interacting with technologies seems rather gruelling and torturous.

Women's failed participation in technological endeavours is, therefore, not based on an inherent technological handicap, although most women may have wrongly internalised such a supposed handicap, but rather because women are

alienated from an early age from technology. Accordingly, women may find it difficult to align themselves unproblematically with technology. To reiterate the point: technology is **not** inherently masculine, but it is constructed as such and even sometimes physically claimed as male territory. Even though women create and use technology, they still do not gain effortless access to the ideology of masculinity and the power residing therein. It appears that only those men who behave in certain masculine ways are rewarded with technological power. The hacker culture, as exemplified in the image of the lonesome warrior [Fig. 1.6], is an excellent example of how "macho" myths of war, control, invasion and conquest are constantly being reinforced. Women do not, as a rule, associate themselves easily with such destructive warrior myths (this is not to say that women cannot be warriors) and are consequently mostly estranged from the hacker idiom.

Fig. 1.6 Image from "Digital underground" story, .NET magazine, June 2001

Another example of how women are alienated from the inner sanctum of technology comes from the research by Carol Cohn into the language used by "defence intellectuals" – men who do nuclear strategic planning for the US government – by unmasking the biased principles on which this highly specialised and masculinised language operates. "Technostrategic" (1987:690), as Cohn labels the initiated language of defence intellectuals, is based on "thinking [that is] more abstract, more focused on parts disembedded from their context, more attentive to the survival of weapons than the survival of human beings" (1987:715). Subsequently, it is not possible to learn how to speak "technostrategic" without also obviously

starting to think and operate in a rationalised and distant manner. Learning "technostrategic" requires one to conveniently forget "the mass incineration caused by nuclear attack" (1987:713). Therefore, "technostrategic" is a language created by men, for men, in order to control nuclear technologies and make provision for an exclusive masculine "nuclear priesthood" (1987:702) of highly informed and powerful men.[10]

Likewise, Ellen Ullman, software engineer and consultant, confirms: "there is a male sort of loneliness that adheres in programming" (1996:3). In her reflections on her relationship with co-programmers (mostly males) it becomes clear that communication amongst programmers complies with specific alienating rules.[11] Ullman discloses: "Fifteen years of programming, and I've finally learned to take my loneliness **like a man**" (1996:4, emphasis added). As a female programmer, Ullman is forced to transgress gender (assuming that there are traditional gender roles) in order to fit into the solitary male-dominated sphere of software engineering. According to Ullman, everything is "cut off from real working things" (1996:12) in software engineering, and explicitly severed from the personal and physical realms and consequently, "cut off from the real body, we construct a substitute body: ourselves online" (1996:12). Although Ullman adapted to these alienating "rules" and is probably a successful software engineer, she nevertheless draws attention to the implied and enforced "masculinity" of computer programming, which most women may initially experience as intimidating and alienating.

The same logic applies to computer games, for traditional "male" games deal with the annihilation of opponents and victory through killing. Most computer games require a specific, almost clannish attitude. In opposition most traditional "female" computer games concern problem-solving, emotional involvement, social interaction and adventures without violence. The difference between the game strategies is described as follows: "The masculinity of the machines has been largely defined by the games that have been developed and fervently taken up by boys, games which tend to leave young women cold" (Willinsky 1996). There are, naturally, many examples and individuals that do not fit these highly gendered categories, but the fact remains that about 80 percent of the computer game market is aimed at and consumed by young men between the ages of 8 and 28. Arguably, this predominantly adolescent male audience sustains the financial success of the computer game market and, therefore, computer games are mainly created with this specific target audience in mind. The success of highly sexualised female game

characters, such as Lara Croft, only attests to this fact (not to imply that women do not play the game as well).

It appears, therefore, that, despite the advent of new technologies, which, with their anarchic tendencies and their decentred and multiple processes, have created expectations for differently structured gender relations and ratios, the exclusivity and hierarchical favouritism of the masculine has resiliently prevailed. This becomes especially evident when looking at how current labour divisions are still organised in terms of gender and technology. Thus, while new technologies represent a force and opportunity for democratic change,[12] they are still constrained by pre-existing divisions of labour. As Judy Wajcman confirms: "If technology is designed with job stereotypes in mind then it is hardly surprising that sex segregation is being further incorporated into the workplace" (1991:28). In other words, the top positions in the technology sphere are still made by and secured for men.[13]

Given these gender-biased practices, it is ironic that "the electronics industry is largely a women's industry, **at least as far as production is concerned**" (Wajcman 1991:149, emphasis added). It is female workers who assemble most electronic equipment, especially in Silicon Valley, where the majority of women are Afro-American, Hispanic, or Asian. These women are cheap labour producing "boys' toys". Paradoxically, it is also women who mainly assemble the electronics of modern naval warfare vessels and other military equipment. Men get to play with technology, while women neatly assemble it for them, it seems.

It is also significant that in 8.3 million households in America it is a woman who is the primary home computer user and that two out of every three on-the-job computer users are women (Coyle 1996:42). In fact, some of the latest figures published in *USA Today* by Elizabeth Weise (2000) indicate that women are no longer a minority on the Internet. In fact, the number of women on the web has surpassed the number of men, and it is female teenagers and seniors that are specifically responsible for this dramatic growth in numbers.[14] Given this increase of women's involvement on the Internet, how and why is technology still predominantly perceived as a "guy thing"?

The figures for the continent of Africa and South Africa specifically, do not, however, favour women – black women in particular – for gender-roles are far more entrenched and the residues of race discrimination linger more manifestly on this continent. In contrast to American women, who have become the primary computer users in their households, access to technology for rural women in South Africa especially, is not nearly a given.[15] According to Hilary Rose, "third world

feminism" is also not consumed with the problem of how women relate to technology and science, because they are dealing with issues of survival (1994:27). This could leave the impression that issues of survival are far more important for the feminist agenda than struggling against white male techno-dominance in first world systems. Indeed, at this stage survival issues, such as poverty, starvation and diseases are of life-threatening importance in the sub-Saharan region. On the other hand, given the debate on the ever-increasing digital divide between the North and South, arguably, gaining access to technology and becoming computer literate are "issues of survival" for the digital millennium as well.[16]
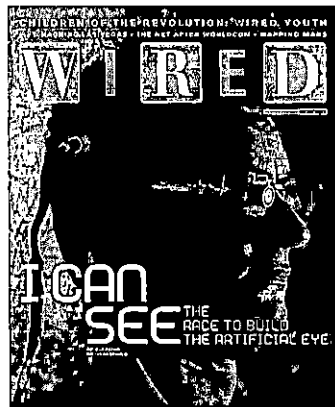
Fig. 1.7 Cover of *Wired* 10.09, September 2002

Returning again to the American statistics and figures, one may well speculate whether the perception that technology is a "guy thing", is a question of how stereotypes outweigh reality (Coyle 1996:43). It appears that women in affluent societies are so trapped in the stereotype of technology as a masculine construct that they cannot see or dare to see themselves as also being technologically inclined. Or perhaps it is more a case of even when women finally gain access to technology (the biggest problem for women in Africa at the moment) and overcome the masculine stereotype, they are constantly re-confronted by marketing and social images, which reinforce the male stereotype again and again. This means that even though a woman may experience herself as technologically apt, she will constantly be alienated by consumer images that entrench the "technology is masculine" stereotype.

In this regard, magazines such as *Mondo 2000* (founded in the early 1990s) and its successor, *Wired* [Fig. 1.7],[17] epitomise a techno-macho cult, wherein disembodied transportation to a cyber-planet is anxiously awaited.[18] In the South African context as well, most computing advertisements, such as those for new

service providers (*M-Web* for instance) and computer hardware and software, automatically presume masculinity as their central point of departure, especially young white masculinity. This means that black women are doubly excluded from technology, on one level by their gender and on another by their race. Technologies do not therefore, only have a predominant gender, but also prefer a specific race and class. In fact, a growing number of black feminist writers of the 1980s, such as Patricia Hill Collins, insisted that race, gender and class form a crucial "trialectic" of exclusion (Rose 1994:20). In other words, gaining access to technology does not only deal with physical access, but also gaining access by overcoming debilitating (socially constructed) gendered and racial stereotypes of technology.

I'm a simple man.

{I love art, unusual jewellery and reading your confidential files.}
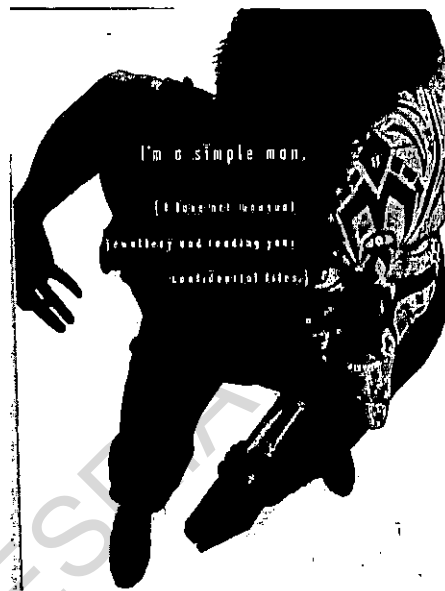
Fig. 1.8 Male hacker, *Network Associates* advertisement, *.Net*, April 1999

It is also interesting to note how differently women and men are depicted in advertisements for new technologies. For instance, in the April 1999 issue of the South African *.Net* magazine, the company *Network Associates* advertises their network security services by means of a portrait of a young white **male hacker** [Fig. 1.8]. He looks utterly vicious, with a pierced tongue and an all-over face tattoo. The copy reads: "I am a simple man. {I love art, unusual jewellery and reading your confidential files}" (1999:15). In the July 1999 issue the same product is advertised, only this time by means of a very seductive **blonde woman**, sitting on a table with a laptop, exposing most of her shapely legs [Fig. 1.9]. The copy reads: "I know which buttons to push. {The ones that give me access to all your confidential files}"(1999:42). Although the humour and wit is not lost, the underlying message is clear: when men break into the system they will do so by means of technological expertise and a warrior mentality,

but when women do so they will use their supposed abilities to seduce and manipulate to "push" the right "buttons" in order to get what they want. Men are once again unproblematically aligned with technology and women with appearances ("*to-be-looked-at-ness*", according to Mulvey (1975:63)). Women do not gain access to technology and power by means of their mental abilities and technological skills, but rather because they rely on their appearances. If these two advertisements can be considered to be a fair indication of the prevailing gendered biases regarding women and technology, then it is, indeed, "business as usual". These two advertisements show that not much has changed in how men and women are perceived in terms of their physical and social access to and abilities regarding technologies.

Fig. 1.9 Blonde woman, *Network Associates* advertisement, *.Net*, July 1999

This brings me to the presence of women on the Internet in the form of discussion forums, bulletin boards, MUDs (Multi-user Domains) and MOOs (Multi-user object-oriented domains). How well are women represented on these forums and how do they engage with such forums? In the USA women hold 30 percent of Internet accounts, but that does not mean women take up a third of the bandwidth (Coyle 1996:52). In fact, it seems as if women tend to "lurk" quietly on the fringes of most Internet discussions. Studies show that communication on the Internet is "more a male dialogue than a mixed-sex conversation" (Kramarae & Taylor 1993:60). The reason for the male domination is that the style of discussion that is favoured online is mostly adversarial and sometimes even blatantly hostile. In her study entitled "Gender

differences in computer-mediated communication: bringing familiar baggage to the new frontier", Susan Herring (1994) claims that women and men have recognisably different communicative styles, and importantly different communicative ethics when posting on the Internet. She sets out the differences in communicative styles as follows: the female-gendered style is typified by supportiveness and attenuation, while the male-gendered style is more authoritative and portrays a self-confident stance (1994:3). Herring attributes the difference in style to the fact that women and men have different communicative ethics, because they value different kinds of online interactions as appropriate and desirable (1994:1).

Apparently, male participants also tend to send more and longer postings than women, even if the list deals with feminist issues.[19] This online domination of men corresponds with research into how men and women interact in real life, for apparently in real life men also speak more and interrupt others, particularly women, 99 percent more than women do (Spender 1995:193). As Sharmila Ferris concludes in her study on the topic of women's behaviour online: "Gender differences in on-line communication mirror some [of the] characteristics prevalent in FtF [face-to-face] communication" (1996:4). Owing to these unfavourable circumstances and the prevalence of gender hierarchies and biases on the Internet, the chances of women being "heard" online appears to be even slighter than in real life.

Despite these rather discouraging findings about the possibilities for women to communicate "freely" on the Internet, there are also signs of hope, though. Journalist Laura Miller, for instance, testifies in quite the opposite vein to the authors quoted previously when she states: "I am one of many women who don't recognize their own experience of the Net in the misogynist gauntlet described' [in recent articles and stories in Newsweek]" (1995:54). Miller holds that although she has received messages from men online brimming with sexual innuendoes, which she has politely declined, she does not feel harassed in any way. She maintains that her reaction is not necessarily "more correct" than the women who are complaining, but that both reactions are valid responses. Miller also makes her position on virtual rape quite clear when she adds: "But on line – where I have no body and neither does anyone else – I consider rape to be impossible" (1995:54).[20] Miller strongly opposes any suggestion that women need some kind of protection online, for that would automatically mean that "women's minds are weak, fragile, and unsuited to the rough and tumble of public discourse" (1995:57). Here Miller, perhaps unknowingly, suggests that women's bodies are in turn weak and fragile, and therefore, susceptible to physical rape. Miller is plainly correct when she argues against a

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victim's logic in feminism. Obviously, there are many women like her, who swim the ether like virtual fish, but Miller's argument also assumes that the technological domain is not only equal, but also neutral. As Langdon Winner's essay, entitled "Do artefacts have politics?", suggests; artefacts themselves contain political properties and some technologies are inherently political in nature; accordingly, they require particular organisation of political relationships in order to exist (1985:26-7). The politics of new technologies, regarding adversarial rhetoric and uneven access, for instance, indicate that they are not neutral and equal, but in fact thrive on disproportionate gendered relationships and other biases.

In general, computer-mediated communications do, however, provide liberating and fascinating possibilities. The fact that, for example, a handicapped coloured woman can go online anonymously or virtually cross-dress as a straight white man provides a form of shelter, since no one can "see" her physical disabilities online. In an online classroom situation, specifically, she can post comments without being labelled or pitied. Some research has also indicated that because of the anonymity on the Internet, bashful persons feel more confident to "speak up" online. Unfortunately, one must immediately add that research has also indicated that because of the lack of physicality, a so-called "disembodied anonymity" can provide the perfect opportunity to go overboard with written responses in what are termed flames (Balsamo 1995:229). Flames or word-wars are scathing written responses in a heated online discussion, although sometimes humorous (Riley 1996:168N), that can, erupt into occurrences of verbal harassment if they go unchecked. Flames may even turn into "virtual rape", but this is teased out in a later chapter.

Fig. 1.10 Portrait of Rosie Cross, geekgirl, 1999

It seems that especially those women who have dared to "speak up", instead of just quietly "lurking", have been flamed in word-wars that would annihilate even the most

confident cyber-personae. Rosie Cross [Fig. 1.10], a "grrl"[21] with technological stamina and co-editor of *geekgirl*, the "world's first cyberfeminist e-zine", confesses: "The only pre-requisite for abuse and harassment on line is to be female" (quoted in Spender 1995:203). This may account for the fact that many women when they go online prefer to gender-swap (or pose as the opposite gender).[22] Obviously this cannot account for all instances of online gender-swapping, but it does provide some indication of the state of women's experiences. Going online, as "one of the boys" seems, therefore, to be a more inconspicuous option than the oppositional and confrontational route of challenging the "boys" in word-wars.[23] Although gender-swapping may prove to be a liberating experience for some, it also has its quota of problems, as explained in chapter five. As Bennett and Palmer appropriately assert:

> If a woman has to pretend to be other than what she is to be heard, the medium is in fact acting as a kind of chador, stifling the individuality of the speaker [...]. I would suggest that the most effective feminist strategy for dealing with CMC is simply to be heard while maintaining one's gender identity. (Bennet & Palmer: 1997)

Creating women-only lists and forums, such as SYSTERS,[24] FEMCON-L and the Virtual Sisterhood, and women-only organisations such as WORD (Women's Opportunity and Resource Development), GRANITE (Gender Relations and New Technology), WON (Women's Online Network) and WITS (Women, Information, Technology, and Scholarship Colloquium) is one way of dealing with inequalities in new technologies and computer-mediated communications. However, as previously noted, such strategies do not conclusively or convincingly resolve the issue of women's mostly ambiguous and excluded relationships with new technologies. Neither is the problematic epistemological notion that technology is aligned to masculinity necessarily challenged in women-only online groupings.

As stated earlier, the worrying state of women's access to technology, lacking technological capabilities and means, as well as the negative reinforcement of old stereotypes, are by no means the only problematic issues when fleshing out the issue of technologies and genders. In fact, as previously mentioned, the different genders are also differently situated in relation to technologies. This means that women begin their interaction with technologies from an always already differently embodied place or site than most men do and, accordingly, they establish other relations with new technologies. It may, therefore, be argued that when women establish relations

with new technologies, such relationships should take into account the awkward position that women have traditionally occupied in terms of embodiment.

The fact that women have traditionally been constructed as the custodians of embodiment contributes to a suspicion (which may be subconscious) in women that new technologies have a tendency to overlook the embodied flesh and to privilege disembodied fantasies instead. In other words, hypothetically phrased, perhaps women realise that technologies, when uncritically aligned with masculinity, favour a women-unfriendly transcendence of bodily "realities". It is for this reason that women may have to make different connections and take different routes in establishing relations with new technologies. Rosi Braidotti affirms this point in the essay entitled "Cyberfeminism with a difference" (1996), where she urges women, as "over-embodied" beings, to deconstruct embodiment, whilst men, as "under-embodied" beings, should start embodying themselves in relation to new technologies.

Women's always already different situation in terms of new technologies may be interpreted to mean that women are "misbehaving" again, in the same way as their headstrong "hysterical" sisters a century ago. If women are showing "technological ineptitude" (Morse 1997:25) and are "disinclined towards technology" (Sundin 1997:249) by showing an "unwill" (Morse 1997:26) to perform technologically, does this merely indicate stupidity? Are technologically "unwilling" women not stubbornly doing what their hysterical sisters have done before, when they entertained fits, paralyses and silences? Margaret Morse explains women's occasional unwillingness to perform in relation to technologies as follows:

> Unwill or the part of us that slips or forgets is also the part of us that is slothful, that loses motivation or a sense of purpose, *in nuce*, that resistance of the flesh to being harnessed or programmed by this or that ideology. Unwill is thus a hazy mixture of vegetative corporeality and an ineptitude that amounts to culturally inscribed **hysteria**. As woman in a male-oriented technological world that devalues the flesh, my struggle is thus against myself embodied as a woman – albeit a culturally constructed one. My unwill is then to some extent or other my femininity and my female flesh itself. (Morse 1997:26, emphasis added)

Why do women experience problems in relating to (new) technologies? Does the problem lie in women's inability and unwillingness or on technology's unproblematic devaluation of the flesh? In other words, do technologies ask women to forget their bodies – which have been the site of their oppression – and yet, simultaneously, which cannot be discarded or forgotten?

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If we understand technology in the broadest sense to include social discourses, such as advertisement campaigns and the division of labour, technology does indeed produce and reinforce gender, especially gender biases and discrepancies. As Jennifer Terry and Melodie Calvert explain in *Processed lives. Gender and technology in everyday life*: "technologies, as organized systems, produce a range of products, effects, representations, and artefacts, chief among them, hierarchical social relations, or what we could call technologies of gender, race, and sexuality" (1997:5). Technologies do create and sustain gendered hierarchies and "women" are mostly gendered as being excluded from technologies' powerful inner circle of know-how. In fact, Elizabeth Sundin takes the argument further when she explains, "gender constructs technology" (1997:263). In other words, one might ask not only whether technology has a gender, but also whether gender constructs technology. And if gender does indeed make technology, is gender not also a technology of some sort?

1.5   Is gender a technology?

In order to tackle the problem of whether gender is indeed a technology, certain aspects of the work of the influential English mathematician, Alan Turing (1912-1954) [Fig. 1.11], may prove fruitful. Turing's 1950 paper, entitled, "Computing machinery and intelligence", deals with the issue of whether computers can be said to be intelligent, or, as he phrases the question: "I propose to consider the question, 'Can machines think?'" (1950:433). In his attempt to answer the proposition Turing created a test known as the Turing Test[25] that apparently determined whether a computer could, indeed, be considered to be intelligent. In short, the Turing test demands that a human subject must decide, by posing questions to two unknown entities in other rooms, whether s/he is communicating with a human or a computer. When the human subject fails to distinguish between human and machine, the computer may be considered to be intelligent, according to the Turing Test.

Turing continued by adding a control test, which he referred to as the "imitation game" (1950: 433) or "a sexual guessing game" (1950:455), in order to elaborate on the results of the first test. He describes the "sexual guessing game" as follows:

> The new form of the problem can be described in terms of a game
> which we call the 'imitation game'. It is played with three people, a

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man (A), a woman (B), and an interrogator (C) who may be of either sex. The interrogator stays in a room apart from the other two. The object of the game for the interrogator is to determine which of the other two is the man and which is the woman. He knows them by labels X and Y, and at the end of the game he says either 'X is A and Y is B' or 'X is B and Y is A'. (1950:433)

During the sexual guessing game the man attempts to deceive and the woman tries to convince the interrogator. This in itself is an interesting reversal of gender stereotypes, for traditional gender expectations would generally operate the other way around: the woman would be deceptive and the man would be credible. The main reason behind Turing's sexual guessing game was to show how even the most supposedly stable of distinctions, namely between male and female, could become unstable when imitation enters into the equation. Are those supposedly stable categories not "imitations" from the start?[26]

Fig.1. 11 Alan M. Turing (1912-1954)

Turing did, nonetheless, strategically prefer not to emphasise the obvious comparabilities between gender and computer intelligence, as shown by his tests. It seems that Turing treated gender as "a red herring" (Hayles 1996a:xiii) and that he evaded, rather than explored, the gendered implications of the tests' results. For instance, he did not elucidate that, just as the distinction between machine and human is blurred and becomes indistinguishable during the Turing test, so are the boundaries between female and male blurred during the sexual guessing game. As Judith Halberstam explains, "Gender [...] like computer intelligence, is a learned, imitative behavior that can be processed so well that it comes to look natural. [...] In other words, gender, like intelligence, has a technology" (1991:443). As the computer learns to imitate human behaviour and even to anticipate human reactions, so gender imitates and anticipates expected reactions. Gender can, accordingly, be

described as a technology, and if the computer can be said to be intelligent, it can accordingly, be reasoned that gender is similarly automated and, indeed, "intelligent".

What this brief analysis of gender as intelligent and automated (technology) has brought to the fore is that it holds exciting possibilities for women's future technological interchanges. In this regard a critical movement such as cyberfeminism has a particularly important role to play, namely by politically challenging both women's physical lack of access to technology, as well as the social constructedness of technology as being masculine, by showing the malleability of gender as a technology.

1.6   From wombs to bombs: technology and "womb-envy"

I want to conclude my exploration into the theme of gender and technology, which has focused on the problematical epistemological alignment of technologies with male/masculine, by experimenting with the idea that technology is possibly a channel for "womb-envy".[27] For most, the idea of "womb-envy" is probably only the converse of penis-envy and therefore, merely a substitution of one hierarchical tyranny for another. After all, both concepts are based on a seeming lack, in the one case lacking a womb and in the other instance, lacking a penis. In both accounts the apparent lack manifests itself not only on a physical level, but infiltrates and encompasses all other spheres of human existence. This means, in terms of penis-envy, that those without penises are less likely to "speak" and "write" than those who have one (sic).[28] On the other hand, those who lack wombs are defective in terms of procreation, and when they do create, they do so in mime of the "original" organ of procreation, namely the female womb. Neither of these positions seems a fruitful option for a cyberfeminist reading of gender and technology. I want to propose, however, that by teasing out and miming the issue of "womb-envy", one may find interesting and useful insights into how and why technology's gender is constructed as predominantly masculine. It may also take initial steps in negotiating another way of thinking and living new technologies.

In *Fathering the unthinkable* (1983), Brian Easlea appends "womb-envy" specifically to technology. According to Easlea, men suffer from "womb-envy" and as a result they compensate for this lack by giving birth, so to speak, to science and

weapons. Men do not possess the "magical power" of procreative wombs and instead they give birth to bombs – men thus quite literally go from wombs to bombs. Easlea's ideas concerning "womb-envy" overlap extensively with psychoanalyst Melanie Klein's (1882–1960) controversial opposition of Freud's castration complex with what she has termed **the femininity complex**. At the heart of the femininity complex Klein identifies frustrated desires, envy and destructive tendencies towards a specific organ, namely the female womb (1988:190). Klein combines the young boy's overwhelming dread of the mother and the womb with an intense dread of castration by the father, because the boy suspects that the father's penis is supposedly already located there (in the mother's womb). In this sense Klein does not oppose the fear of the womb and fear of castration, but combines them in the femininity complex.

The result of the femininity complex for a boy is "an attitude of rivalry towards the woman, with its blending of envy and hatred; for, on account of **his wish for a child**, he feels himself at a disadvantage and inferior to the mother" (Klein 1988:190, emphasis added). Klein holds that boys use their tendency to express excessive aggression and always "knowing better" as attempts to mask their inferiority towards women. The representation of science and technology as a masculine domain could easily fit in with this bravado of always "knowing better", whilst at the roots of this "knowing better" lies the wish to return to the womb and possibly even the wish to bear children. Also in this respect Easlea's ideas link with Klein's when he similarly states that men feel vulnerable and exposed to possible female ridicule exactly because they cannot bear children and accordingly, they have to claim the sciences, with their inherent power, for themselves. It is therefore, extremely important to bar women from this sacred territory. The ambiguous fear and longing to return to the womb that men apparently experience results in science and technology's "flight from tenderness" (Easlea 1981:242). Men try to move as far away as possible from the "mother" and expressly develop an "objective" and "scientific" discourse that makes use of vivid and aggressive imagery of invasion and distance. Science and technology become a way of transcending a passive and mysterious female nature (the womb). The more a "softer" nature can be penetrated and dissected by an unyielding and ruthless technology, the more liberated men apparently feel from the sucking force of the mother's womb.

Easlea's theory of technology as "womb-envy" obviously, has great potential to become essentialist and exclusive. If, however, the thought of technology as "womb-envy" is entertained for a moment, it puts the Hiroshima and Nagasaki

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bombings in quite another perspective. In fact, all technological disasters thereafter, such as Chernobyl and the Gulf War, and the horrific events of 11 September 2001 in New York and Washington, are clouded in the radioactive dust and suicidal vehemence of "womb-envy". Clearly this analogy simplifies the issue of men's relation to technology and may also trap men and technologies into a destructive relation. But it can shed some light on women's hidden reluctance or "unwillingness" (Morse 1997:26) when it comes to interacting with technologies. If technology is founded in some way, no matter how remotely, on "womb-envy", it does necessarily impact on and reflect in women's use and access to technologies.[29]

Identifying "womb-envy" as motivational force for the development of technologies can obviously not provide final "truths" about men and technology, but it can account for some of the reasons why masculinity has appropriated technology for itself. As mentioned earlier, there are boys as young as three years old who already physically push girls away from technology. Why do (some) men push women away from technology? Could this be evidence of "womb-envy"? It seems unlikely that there is a direct causal relation, but the way in which female wombs are portrayed in some of the latest visual technologies may provide further clues to the "pushing-away-phenomenon". In this regard, I want to discuss a few examples from the computer game genre, film industry and human engineering, in order to elaborate on the possibility of technology being rooted in "womb-envy".

Fig. 1.12 Elexis Sinclaire, *Sin*, Ritual Entertainment, Inc, 1998

In the first example under discussion, namely the computer game *Sin*, a female virtual character named Elexis Sinclaire [Fig. 1.12] makes her début. The fact that her surname is (SIN)claire, with an emphasis on "sin", is also not without significance, as will become evident shortly. *Sin* and its follow-up game, *Wages of Sin*, are first person

and multi-player 3D games, developed by Ritual Entertainment in 1998. The player has a choice of playing either as Elexis Sinclaire, Colonel John R. Blade or the computer hacker, J.C. The story is set in the year 2027 in crime ridden Freeport-city where Colonel Blade is the owner of a security force called HARDCORPS, which is busy investigating the source of a highly addictive drug called "U4". The potent drug steers its users into a state of euphoria (U4 is obviously a pun on euphoria), and, more importantly, it has DNA-altering abilities. As the game unfolds all traces lead to the brilliant biochemist and elusive director of SinTEK Industries, namely Elexis Sinclaire, also described as "the girl of your screams".

Elexis challenges preconceived ideas about women and technology by showing that technology can "procreate" and that a woman (albeit a virtual woman) can "create". By altering and tampering with these categories Elexis is typecast as an eternally sinful woman and therefore dangerously powerful. She needs to be stopped in her virtual tracks by a masculine force, virtually embodied by John R. Blade of HARDCORPS [Fig. 1.13]. It is also not without significance that the company HARDCORPS's name resonates not only with technologies unyielding "flight from tenderness" (Easlea 1981:242), but also with hardcore pornography, which is one of the most subjugating forms of visual imagery to which women (in particular) fall victim. Colonel John R. Blade's name is also not without meaning, for, as *Ritual*, the creators of the game, acknowledge: "It's not just a coincidence that his name is a deadly weapon" (*Ritual* 1998). Women who experiment with and transgress the categories of procreation versus creation will be punished, even in the virtual world.
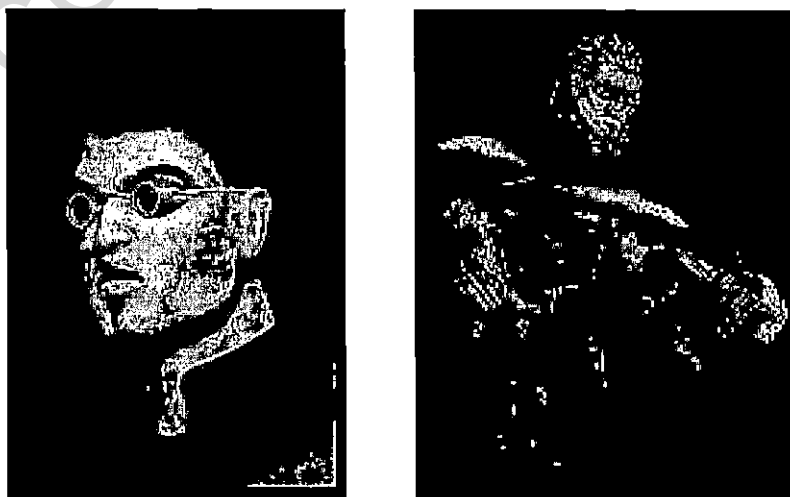
Fig. 1.13 Colonel John R. Blade, *Sin*, Ritual Entertainment, Inc., 1998

Interestingly enough, *Sin* provides us with a twist in the tale regarding Elexis's childhood. Elexis's relation to her father, Dr. Thrall Sinclaire, is exceptionally close, while her biological mother abandoned her as a little girl. Her biological mother is described as greedy and selfish, and therefore as a typical castrating mother. It was her father who nurtured her through sickness and health, appropriating the traditional nurturing and maternal role usually occupied by women. It is also her father who has taught her everything she knows about mixing chemicals and who assists her in bringing about a new world order. In short, her devoted father, who also coincidentally, but not accidentally, represents technology, substitutes Elexis's absent biological mother.

It is not surprising, then, that Elexis's ideas about motherhood are warped and misguided. At the age of five she clones a frog, which could be interpreted as an outstanding scientific achievement – except that the frog had human eyes. This miscreation suggests that Elexis cannot simultaneously be a female and a scientific genius. Instead, she is depicted as a perverted and rather sad individual who, because of her lack of a mother (her mother was not where she was supposed to be, namely at home), turns out to be a delinquent "monster". What is fascinating about the virtual character Elexis Sinclaire is that she transforms technology into "Mother Nature". Technology becomes Elexis's "womb", from which many hybrid creatures spring forth.

Elexis is, however, penalised for betraying biological motherhood, since her offspring are monstrous creatures from the underworld. In other words, even though Elexis succeeds in creating a faithful subhuman army, they are mere mongrels and not "born of men". Elexis becomes a mother: not a biological one, but a technological one. She is rebuked for her daring challenge to conflate the categories of "nature" and "culture". The subtle message of *Sin* is that, women should restrict themselves to biological procreation and leave the cultural products of technological creation to the men.

The same logic applies in male director, Duncan Gibbins's film *Eve of destruction* (1991), wherein a female scientist, Eve Simmons, creates a cyborg in her own image, named *Eve 8*. The act of creation that is usually reserved for male enterprise is in this instance intruded upon by a female scientist. The cyborg that she has created is modelled on her own "image" in more than one respect, for the cyborg and the scientists not only look alike: they are also telepathically linked. This telepathic link becomes an important part of the narrative as the film enfolds.

After being caged and surveyed like a laboratory animal, *Eve 8* escapes. She becomes a deadly sex vigilante and seduces many "unsuspecting" males. Her mental link to her creator is affirmed when it becomes evident that she is acting out the scientist's repressed sexual fantasies. According to Freud, hysterical women similarly repressed their sexual fantasies, which resulted in specific body parts becoming paralysed or hyper-sensitised during hysterical attacks. Accordingly, one can almost extrapolate that hysteria expressed paralysed wombs, or, at the other extreme, hyperactive wombs. In the film the cyborg becomes the (hysterical) physical extension or embodiment of repressed sexual fantasies. The theme of repression and rebellion intensifies when *Eve 8* eventually starts to direct her attacks against the scientist's father. In the end, *Eve 8* kills the scientist's father, who abused the scientist as child and caused her mother's death. Claudia Springer explains: "The film suggests that what emerges from women's deeply repressed feelings is anger" (1999:116). *Eve 8* represents the uncontrollable destructive force of women's unleashed desires, in other words, she is portrayed as the patriarchal cyborg version of the nineteenth-century hysteric.

Add to this the fact that *Eve 8* has a nuclear explosive head lodged in her womb, which transforms her literally into a ticking time b/womb, and the image of the *femme fatale* is completed. The cyborg's wayward womb has cleverly been constructed as a detonator that threatens all mankind. As Claudia Springer notes, *Eve 8* hides something far more dangerous than a *vagina dentata*, for she literally embodies a nuclear womb (1999:51). Therefore, *Eve 8* not only castrates in the figurative sense, but also in a literal sense. In the end the scientist has to choose between her technological creation (the cyborg), and "natural procreation" (her biological son). I want to suggest that it is no mere coincidence that a female scientist is placed before such a choice on screen (generally male scientists on screen are not required to make similar choices). Neither is it surprising that she makes the patriarchally "correct" choice, by choosing her biological son. The implications are clear: the female scientist realises that she has overstepped her boundaries by creating dangerous technology. In the end she resigns and reconciles herself again to her biological womb.

The alignment of the female womb with an aggressively destructive nuclear weapon may be interpreted as a symbol of technology as "womb-envy". In this version the womb, usually understood as the giver of life, is inverted and now becomes the destroyer of life. The film can be interpreted as representing the ultimate revenge of male resentment of the female womb, within the parameters of

the "womb-envy" paradigm as Brian Easlea constructs it. According to this logic, if one cannot create life, at least one has the power to destroy it. As Claudia Springer affirms: *"Eve of destruction* shows that even when a film incorporates feminine metaphors for electronic technology, it can still enunciate a misogynistic position" (1999:114).
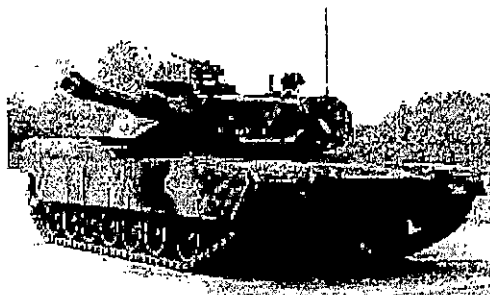
Fig. 1.14 The main battle tank, 1997

Another interesting example of how technology appropriates feminine metaphors for its own life-denying reasons can be observed in the design and use of main battle tanks. The battle tank [Fig. 1.14] has become one of engineering's triumphs over mortality and specifically the human (female) flesh. The tank is described as truly being a vehicle of death (Brenner 1997). It gives the soldier the opportunity to live through destruction, since the tank has rid itself of the source of death, namely the frailty and mortality of human bodies.

Normally a tank is built for a crew of three or more men, because a tank can render its services (prostitute-like) to several men at once. What makes the battle tank especially fruitful for my analysis here of technology and "womb-envy" is that the tank's interior simulates a womb-like environment. As Brenner describes it: "The tank is a womb-like structure – completely enclosing her passengers. [...] The tank replaces all womanhood, becoming lover, motherland and sister" (Brenner 1997). Just as the female womb envelopes her unborn foetus in a haven of warm liquid, so the tank contains its crew in its steel belly and keeps the crew from harm. The battle tank becomes a reinvention of the fleshly womb, designed by engineers to change their mortal fate into immortality. Finally an eternal technological mother can be substituted for the flawed natural one: "The main battle tank is therefore an admirable substitute for the womb" (Brenner 1997). Man the inventor can now metaphorically give birth to himself by inventing machinery that entombs, or rather enwombs him for eternity.

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Aligned with Melanie Klein's analysis of the femininity complex, which focuses its fear and envy onto the destruction of the female body, and specifically the womb, the battle tank exemplifies the extremities of such a complex. Julia Kristeva's notion of the pre-symbolic *chora* can similarly be related to the fantasy and longing to return to, and simultaneously to terminate the female body (the mother's body) (1984:182). The battle tank symbolises this longing to return to and simultaneously to destroy the mother's body. The *chora* is expressed through "feelings" and articulations such as bodily drives, rhythms, pulsions, pleasures, and bliss. These longings are apparently never lost or forgotten, but the memory of them is held precariously in check by the patriarchal symbolic. Kristeva explains that all discourse, in other words, the symbolic order, "moves with and against the *chora* in the sense that it simultaneously depends upon and refuses it" (Kristeva 1984:26). In other words, the relationship of the symbolic to the pre-symbolic *chora* is ambivalent, as it is towards the female body.

Luce Irigaray similarly explains the ambiguity towards the female body and "mother–matter" (1985a:353), by means of an analogy between Plato's cave allegory and the womb, "that unrepresentable origin of all forms and all morphology" (Irigaray 1985a:253). Irigaray shows how man "cut him off from his relations with the earth, the mother" in his "ascent towards an all-powerful intelligibility" (1985a:362). In Irigaray's terms, man liberates himself from the "prison" of the "death cave" (1985a:353) on his way towards the Absolute, the Sun, the Idea, the One – and importantly, towards immortality. The invincible tank enforces and entrenches the envious and fearful male ego and the symbolic, which, in the absence of the womb (*chora*, mother-matter), try to simulate this state of "bliss" again. Soldiers do not need a "mother" once in the tank – she is now displaced by unforgiving steel and brutality. The tank becomes a bastion of masculinity and the epitome of technology's flight from tenderness.

It does, nevertheless, remain a treacherous endeavour to equate all technologies with "womb-envy", for, as established earlier, different contexts, cultures, races and genders create technologies for varying reasons and with varying results. Perhaps the digital era in which we are immersed will allow for the establishment of different technologies that somehow escape the bizarre womb-envious one just discussed. I endeavour to uncover such womb-friendly or rather body-embracing technologies in the last chapter of this thesis, where the cyberfeminist cyborg body is explored. One of cyberfeminism's key goals is to examine differing gendered relations in regard to technologies and embodiment. In the next chapter I explore the key issues that bind cyberfeminist theory together.

These include tracing the roots of cyberfeminism and also establishing the theoretical premises on which cyberfeminism bases its critique of disembodied (womb-envious?) new technologies.

Endnotes:

[1] The clickable petals are: Memory, Control, Power, Communication, Violence, Homunculus, Labyrinth, Interactivity, The Other, Representation and Ideology. When the viewer clicks on a petal s/he enters a domain dealing with that topic and specifically its relevance to women's awkward relation with, and disposition in terms of technology (Tamblyn 1997:42).

[2] In his essay, "The question concerning technology", Heidegger explains that the *Gestell* manifests in what he terms "modern technology"(1997:14) and that modern technology does indeed, differ from older technologies. He uses the example of the old windmill to explain the difference. Whereas the windmill's movement or technology is left completely to the wind's blowing, importantly the windmill does not unlock the wind's energy in order to store it in another format or energy. In contrast modern electricity is based on the principle of unlocking nature's energy, such as the force of water and storing it in another energy form, namely electricity.

[3] Despite my discomfort with Heidegger's oblivious use of "man", I have kept his use of "man" unchanged. Heidegger speaks as a man about men, although he obviously meant "man" to include women as well, without actually including women. I will keep this discrepancy intact, for it strengthens my cyberfeminist position in the sense that Heidegger's understanding of the *Gestell* is a gender-specific one. Perhaps Heidegger's pessimism about the *Gestell* is solely based on a male perspective and can only speak from a male "man" position. I want to suggest that women have a different relationship with technology and the *Gestell* and therefore, Heidegger's oversight is not an oversight at all, although an unknowing one.

[4] Cyborg refers to the amalgamation of human and machine and is derived from the term cybernetic organism. In chapter six I deal specifically with the cyborg, its origins and critical possibilities.

[5] See, in this regard, Tonja van den Ende's insightful reading of Irigaray's criticism of Simone de Beauvoir in *In levende lijven. Identiteit, lichamelijkheid en verschil in het werk van Luce Irigaray* (1999). Van den Ende discusses Irigaray's criticism of De Beauvoir for her advocacy of the transcendence of the immanent (sexed) body.

[6] In chapter five, which deals with the marked body, and specifically with transsexuality and transgenderism, the impossibility of considering gender as a mere construct at the disposal of a supposedly neutrally sexed and gendered subject, is dealt with in more detail.

[7] See, in this regard, Carolyn Merchant's (1990) *The death of nature: Women, ecology and the scientific revolution* for a discussion of how the scientific revolution has hidden itself behind a so-called mask of neutrality and objectivity and has sanctioned the exploitation of nature, commercial expansion and the subjugation of women.

[8] Zoë Sofoulis/Sofia (2000) makes an interesting analysis in "Container technologies" of how women's technologies have been constructed as so-called container technologies and have been marginalised by mainstream technologies.

[9] Women-hostile environments are created by means of the language that is used when men talk to one another (e.g. terms such as "fuckwit", "wanker", "dickfor"), and also in the images that are sent around and the creation of male camaraderie, which necessarily excludes anyone who does not speak and act in the same manner. Lynda Davies, a professor in computer sciences in Australia, explains why computer labs are mostly not pleasant places for women. She explains that the environment can become so abusive and threatening to female students that they prefer to take other courses instead. Davies states: "What some of these men do online – what they put on their screens and on those of the women students – has to be seen to be believed" (quoted in Spender 1995:183). But apparently the behaviour of the male students pales in comparison with the male computer service assistants: "[...] the behaviour of many of them was worse than that of the student boys [and] female students have no choice but to conduct their work in these labs [...]. To my mind it is nothing short of sexual terrorism, designed to drive women away from the centre of power" (quoted in Spender 1995:182-3).

[10] Cohn gained access to the exclusive nuclear club only once she started to "speak" and behave similarly to these men and, once she started to enjoy the power that this coded language opened up to her. However, Cohn also indicates that, lurking behind the seemingly objective language are other impulses, such as "homoerotic excitement, heterosexual domination, the drive toward competency and mastery, the pleasure of membership [...] and the thrilling power of becoming Death, shatterer of worlds" (1987:717).

[11] Ullman explains how a strict distinction is made between the online persona and the person in real life: "the persona online must not touch the person at the table" (1996:6). The preferred method of communication is by means of e-mail and once a programmer starts insisting on more meetings (face-to-face) and makes too many telephone calls, such a person is perceived to be a "bad" programmer and, in effect, womanish. Ullman confesses to the loneliness experienced by a programmer and the lack of face-to-face contact when she states: "Early in an engineer's life, one learns to send mail" (1996:8).

[12] See, in this regard, Mark Poster's analysis of the Internet's failed attempt at democracy in "Postmodern virtualities" (1995).

[13] The political agenda hidden behind the development of the Q-W-E-R-T-Y keyboard is one of the best examples of the gendering of technology and how technology is developed with specific gendered job incumbents in mind. Q-W-E-R-T-Y are the characters on the second row left-hand side of a conventional typewriter. The Q-W-E-R-T-Y keyboard has been incorporated into the standard keyboard of computers. It has an interesting history though, for it was chosen instead of another keyboard layout, namely the Linotype keyboard. The Linotype keyboard favoured highly-paid male operators. When management chose to dispense with the Linotype and phase in the QWERTY keyboard, it favoured traditional typists, namely females. The reason for phasing in a keyboard that favours women typists is that they are cheaper labour. As Judy Wajcman (1991:50) explains: "The QWERTY technique was designed with an eye to using the relatively cheap and abundant labour of female typists".

[14] If one takes a closer look at the websites that most women frequently visit, such as sites dealing with fashion and cooking, one cannot help but experience disappointment. It is wonderful that women are using the Internet more and more, but if it is only to transfer traditional gender-roles from their kitchen to their computers, one may well speculate if new technologies do indeed provide opportunities for transgression of stereotypes. Or might this be another example, as in the case of the telephone of women subverting the intended use of technology for their own reasons?

[15] For more information on accessibility and affordability of communication technologies in Africa and South Africa specifically, see the *CommUnity, Unity for communications through communication* website. The coordinator of the project, Peter Benjamin, defines the aims of the website as follows: "Closing the digital divide in South Africa: This site aims to support action, discussion and research on Universal Access to ICTs, e.g. Telecentres and other types of Community ICT projects in South Africa".

Statistics derived from a 1997 survey indicating how many South Africans have a telephone in their house (universal service) and how many have access to a telephone are as follows:

32.2% of South Africans have a telephone in their home (universal service) - fixed or cellular phone (or both) in dwelling.

68.1% of South Africans have access to a telephone – self-defined access (in house, neighbour, communal phone or at shop or clinic).

When these figures are broken down into racial terms the following statistics are derived: (I have consulted with Peter Benjamin, coordinator of the project, to get the figures for a gender breakdown, but unfortunately they are not available yet.)

UNIVERSAL SERVICE

Total	32.2%
African	13.6%
Coloured	37.2%
Indian	74.2%
White	84.9%

UNIVERSAL ACCESS

Total	68.1%
African	59.4%
Coloured	72.4%
Indian	89.1%
White	91.5%

Given these numbers it should also be taken into account that: "Over 70% of people in Africa live in rural areas, and there is very limited access to telephony outside of cities. In sub-Saharan Africa, there is approximately 1 phone line per 200 people, and one Internet user per 9,000 people. Providing these technologies in every home (the goal of Universal Service) is unobtainable in the short term, and a more realistic goal that is being actively pursued is to establish public access points for Universal Access." Most women living on the continent of Africa are therefore living in rural areas and the chances of gaining access to a telephone, much less the Internet, does not seem a certainty in the near future.

[16] See, in this regard, *Digital literacy* by Paul Gilster (1997), where he stresses the importance of digital literacy and other basic "core competencies" needed to survive the twenty first-century. On home ground the Alternative Information and Development Centre in Cape Town attempts to address the issue of digital literacy by offering training courses for women from rural areas focusing on the development of basic Internet skills.

[17] *Mondo 2000* was founded in 1993 and the chief editor was RU Sirius. He describes the intentions of *Mondo 2000* as follows: "Mondo 2000 had been able to define a style for the emerging 'cyber' culture that was quirky, irreverent, intentionally ridiculous, surreal, anarchic, ironic, arch but not minimalist, generous, goofy and science factional rather than traditionally journalistic (operating somewhere at the interstices of information and invention). We viewed our publication as an art form, in an almost classical sense of auteurship" (21c).

[18] For an insider perspective on the *Wired* experience, read Paulina Borsook's "The memoirs of a token: an aging Berkeley feminist examines *Wired*" in Lynn Cherny and Elizabeth Reba Weise (eds). 1996. *Wired_women*. In this essay Borsook explains how she was marginalised as a feminist and became the token female writer for *Wired*.

[19] Margie Wylie comments in "No place for women" (1995) that even in feminist forums where women are ostensibly more interested in the subject and more likely to be experts on the subject, men also dominated the conversation. According to a 1993 study of the newsgroup alt.feminism, the results show that men contributed 74% of the postings, whereas women sent 17% and the remaining 9% were contributed by people of unknown gender.

[20] Online interaction seduces us into believing that we do not have bodies online, but as I will extrapolate in chapter 5 what happens to our virtual bodies online does indeed have implications for our physical bodies as well. In my opinion, Miller's dream of disembodiment, as explained here, expresses a misguided escapism of embodied situatedness and contextuality.

[21] The online use of the term "grrl" recalls the Riot Grrl punk band movement of the early 1990s who reclaimed their girlhood, girlishness and cuteness, while hitting back at the male-dominated punk

industry. The online revolution of "grrl" movements are represented especially in grrl e-zines (electronic magazines) such as *NrrdGrrl, geekgirl, Grrowl* and *F A T GiRL*. For an assessment of the grrl movement and e-zines, see Krista Scott's (1998) "'Girl needs modems!' Cyberculture and women's ezines" (Masters research paper).

[22] In chapter five the phenomenon of online gender-swapping is dealt with in some detail.

[23] Some of the consequences for challenging the "boys" online can be quite horrendous, as Stephanie Brail (1996) relates in "The price of admission". She was verbally harassed with words like "cunt" flashing over her screen sent by "Mike" after they had an online disagreement (also known as flaming).

[24] For an interesting discussion on her experiences on the SYSTERS mailing list, see L. Jean Camp's "We are geeks, and we are not guys: the Systers mailing list" in Lynn Cherny and Elizabeth Reba Weise (eds). 1996. *Wired_women.*'

[25] In order to play the Turing Game online, visit the Turing Game website, at http://www.cc.gatech.edu/elc/turing/.

[26] In chapter five the supposed stability in the production of the categories such as "male" and "female" is tackled, in order to show how both are constructed and indeed "imitations".

[27] I have placed "womb-envy" in inverted commas, because it is a highly contested concept that needs to be applied with care. I use the concept here as a discursive miming strategy to subvert technology's default gender as being masculine, but I am not by any means trying to lodge the physical womb as a new "place" or agency from which to "speak".

[28] I do not delve into the Lacanian division between "being the phallus" versus "having the phallus" here, although it is obviously of relevance for my discussion.

[29] See, in this regard, Mary Daly's (1998) *Quintessence: realizing the outrageous contagious courage of women. A radical elemental Feminist Manifesto* and Sally Gearhart's (1982) manifesto entitled "The future – if there is one – is female". In the manifesto Gearhart asks controversial questions such as: "Why have any men at all?" Gearhart is an advocate of ovular merging, a process that involves the mating of two eggs, which has been successfully accomplished with mice. Only female offspring are produced, which means that the role of men in reproduction is completely eliminated. Both Daly and Gearhart are, however, contentious authors and highly essentialist in their understanding of the differences between the sexes and genders in terms of technologies.

Chapter Two
Cyberfeminism(s): Weaving world wide webs

It is about weaving women and cybernetics,
and is also weaving women and cybernetics
together. Sadie Plant (1999:100)
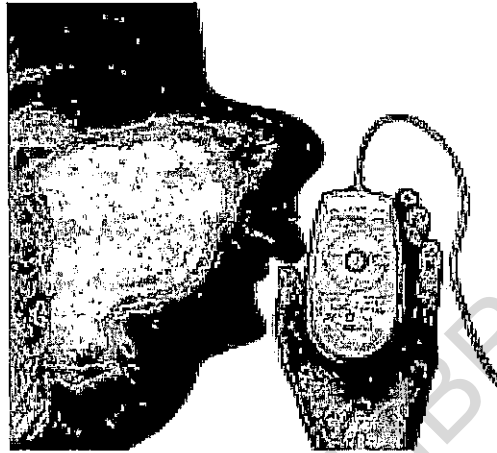
Fig.2.1 *Mouse Love*, Brillo (2), 31 October 1996

This chapter aims to weave together the loose strands and threads of late nineteenth-century hysterics, miming strategies, gendered new technologies and cyberfeminism in a virtual age. As the image above from the cyberfeminist e-zine *Brillo* [Fig. 2.1] indicates, although women have traditionally been barred from technology's inner sanctum, women do find ways of abrasively interacting and consorting with new technologies. The image of the woman seductively licking the computer mouse, instead of merely clicking it, testifies to cyberfeminism's playful yet, subversive interaction with new technologies. The closeness and connectivity that exist between "wayward" women[1] and new technologies are explored in this chapter by tracing the intellectual, etymological and embodied roots of cyberfeminism.

First, the intellectual roots of cyberfeminism are investigated by showing its links with posthumanism and other postmodern identity politics, followed by a discussion of how these are applied in the *Cyberfeminist manifesto for the twenty-first-century* (1992) created by the VNS Matrix art ensemble. Thereafter traces of the etymological roots of cyberfeminism are researched via terminology such as "web" and "weaving", and finally, the embodied history of cyberfeminism is explored as incarnated in the person of

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the early computer analyst, Ada Lovelace, also popularly referred to as the "enchantress of numbers". My explorations into the intellectual, etymological and embodied roots of cyberfeminism all contribute to establishing the specific position that this study takes in relation to the broader cyberfeminist movement.

2.1   Intellectual roots

When applying the term cyberfeminism, I do so conditionally and cautiously. Recent criticisms against cyberfeminism incriminate cyberfeminism as "distinctly apolitical" and "holding onto the comforting notion of essential femininity" (Squires 1996:208). If these are taken seriously, it becomes evident that this delicate debate, like the one on essentialism, should be entered with discretion. Furthermore, no definite and finalised definition of cyberfeminism is available yet: the term is still open to redefinition and reshaping. It is, however, safe to predict that at the core of cyberfeminism lies the problem of identity and the body and their relation to new technologies. Cyberfeminism occupies itself with bodies and technologies precisely because these two aspects have generated such contested and politicised (gendered) issues throughout technology's history, as I have shown in the previous chapter. Female bodies have been most likely to be excluded from the powerful inner circle of technology and also most likely to be objectified by technology's penetrating eyes. Cyberfeminism deals with the question of how and why technologies inscribe gender onto bodies and how these gendered identities are re-configured in a posthuman age.

2.1.1 Posthumanism

Cyberfeminism finds an opportune ally in its struggle to dismantle patriarchal and liberal meta-narratives about gendered embodiment and new technologies in another relatively new discourse, namely posthumanism. Both cyberfeminism and posthumanism challenge individualist and disembodied notions of what it means to be human in a virtual age. Broadly defined, posthumanism refers to the altering relations between self (subject) and others (object); cybernetic organisms (machines) and biological organisms (humans); and mind and body, as they appear in the expanding purviews opened by new technologies. Cyberfeminism correlates closely with posthumanism in

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this area and, therefore, I will plot this relation first, before elaborating on cyberfeminism's posthumanism.

In *How we became posthuman. Virtual bodies in cybernetics, literature, and informatics* Katherine Hayles (1999) very eloquently explains that humans are no longer human, but have indeed become **posthuman** (or have perhaps always been posthuman).[2] Posthumanism distinguishes itself from Enlightenment postulations of hu(man)ity[3] by revealing hu(man)ity's hierarchical and individualist biases and preferences for a specific race, class, religion, ethnicity, sex and gender. Examples of Enlightenment hu(man)ism that operate from the basis of ideas such as autonomy, freedom and emancipation would include Cartesianism, as inspired by René Descartes's isolated thinking subject (the I-think-therefore-I-am-syndrome); *Aufklärung* thinkers, such as Immanuel Kant, who are governed by the Idea of hu(man)ity; Marxist narratives of emancipation from labour exploitation; and, finally, Christian narratives concerning redemption from original sin (Lyotard 1992:24-5). All of these Enlightenment hu(man)isms presuppose (and manifest to varying degrees) a default hu(man)ity integrated with very specific race, sex, religion and gender.

Since Enlightenment hu(man)ism traditionally operated from a specific vantage point and has privileged a select few, posthumanism is received with both terror and excitement. The reaction clearly, depends on which side of the hu(man) divide one stands. Accordingly, some view posthumanism as the long-awaited end of hu(man) control, while others opportunistically transpose the "autonomous liberal subject" or traditional hu(man) subject, into the realm of supposedly disembodied virtuality. Posthumanism does, however, herald the end of Enlightenment conceptions of hu(man)ity as defined by those who had "the wealth, power, and leisure to conceptualise themselves as autonomous beings" (Hayles 1999:286). It does, therefore, proclaim a new dispensation for those who previously did not have sufficient money and resources, background and time, the correct sex and gender, class and race, wherein the hu(man) label could be dismantled.

The parallels between posthumanism's (non)subjectivity and postmodern deconstructions of subjectivity are numerous. Hayles's description of the posthuman subject as "an amalgam, a collection of heterogeneous components, a material-informational entity whose boundaries undergo continuous construction and reconstruction" (1999:3) corresponds flawlessly with most postmodern theories about the

fragmented and dispersed nature of identity (see Derrida 1984, Lyotard 1992). The term "human" is therefore, discredited by both posthuman and postmodern discourses as a redundant construct that can no longer make truth claims – "truth" in itself being problematised and devalued – on behalf of anyone. Old privileges and inscribed hierarchies do not, however, subside easily or let go of their territory. As Hayles warns, "the erasure of embodiment" is a feature that both the liberal humanist subject and the cybernetic posthuman subject share. This means the liberal humanist subject has cleverly mutated (or morphed, in some cases) into the posthuman cyborg and continues to dream of a disembodied dystopia.[4] Although this disembodied version of posthumanism is prevalent, it is only one version of posthumanism and other more "embodied" versions are fortunately also visual, especially from a cyberfeminist perspective.

In the cyberfeminist appropriation of posthumanism, it is argued that hu(man)ists' notions of an autonomous, rational and universal subject as purported by Enlightenment thought structures has in fact never been in control of its own destiny as once believed. The cyberfeminist version of posthumanism (or posthumanism) undermines any notion of a universal subject in control of its own destiny, but rather reveals the **emergent processes** by which consciousness, embodiment, the environment and the subject itself are constituted. Hayles explains:

> In this account, emergence replaces teleology; reflexive epistemology replaces objectivism; distributed cognition replaces autonomous will; embodiment replaces a body seen as a support system for the mind; and a dynamic partnership between humans and intelligent machines replaces the liberal humanist subject's manifest destiny to dominate and control nature. (1999:288)

The dominant role played by the hu(man) subject is thrown into turmoil, as it becomes one emergent process among others. Therefore, even though women and machines have previously been appropriated and modelled to fit into the hu(man) version of existence, things have changed in the posthuman age. Now the so-called natural clay of "femininity" is starting to mould itself in its own image with the help of new technologies. It is this so-called "unholy" alliance between women and new technologies that forms the focus of my study. As in the case of the autographical skins of hysteria, the (female) meat is becoming increasingly clever and self-sufficient. Donna

Haraway explicates the complexity of the posthuman and cyberfeminist position: "It is not clear who makes and who is made in the relations between humans and machines" (1990:219) as the boundaries between human and machine are increasingly blurred.

Fig.2.2 Sadie Plant, Fusion Anomaly, 2001

In a similar vein to Haraway and Hayles, Sadie Plant [Fig. 2.2], the author of *Zeros and ones. Digital women and the new technoculture* (1997), argues that both machines and women **mime** their humanity – they never simply become it or they have never simply been it. Does this mean women have never been hu(man) in the "true" sense of the word? Possibly, for patriarchy has declared woman sub-human and inhuman and now cyberfeminism is hinting at her posthumanism. Plant explicates: "It takes an irresponsible feminism – which may not be a feminism at all – to trace the **inhuman** paths on which woman begins to assemble herself as the cracks and crazes now emerging across the once smooth surfaces of patriarchal order" (2000:274). Cyberfeminism positions itself precisely as such an irresponsible feminism that resurrects its own posthumanism in the daunting face of a declining hu(man)ity.

2.1.2 Cyberfeminism's feminism

At the intellectual roots of cyberfeminism lies Donna Haraway's germinal "A manifesto for cyborgs: Science, technology, and socialist feminism in the 1980s" (1990)[5], French differential feminism and poststructuralist theory – specifically Luce Irigaray's and Julia Kristeva's renditions. Other theorists who have been loosely and more closely associated

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with cyberfeminism are Sadie Plant, Allucqère Rosanne (Sandy) Stone, Sherry Turkle, Rosi Braidotti, Anne Balsamo, Katherine Hayles, Zoë Sofoulis, Cornelia Sollfrank and Marina Grizinic, to name only a few.

On the artistic front cyberfeminist impulses are portrayed (amongst others) in the cyberpunk novels of Pat Cadigan, particularly *MindPlayers* (1987) and *Synners* (1991); it is visualised in the multimedia work of the Australian foursome VNS Matrix (Josephine Starrs, Julianne Pierce, Francesca da Rimini and Virginia Barratt) [Fig. 2.3]. Similarly, Australian artist Linda Dement's highly interactive CD-Rom art pieces and e-zines such as *geekgirl*, [Fig. 2.4] *Brillo* and *Digitarts' grrrowl* provide provocative and subversive accounts of alternative relations to new technologies.

Fig.2.3 VNS Matrix, *Brave New Girls*, 1993

The concept of cyberfeminism emerged simultaneously in the northern and southern hemispheres during the early nineties when the four Australian artists of VNS Matrix started to use the term almost like "a spontaneous meme" (Julianne Pierce quoted in Galloway: 2000). This occurred at more or less the same time as Sadie Plant coined the term in the United Kingdom. In his "report" on cyberfeminism, Alex Galloway states that the movement has since developed in two main directions, namely the more radical political league as represented by Sadie Plant and VNS Matrix on the one hand, and the "more mainstream work" (Galloway 2000) done by the Old Boys Network (OBN)[6] – a mostly European consortium – on the other hand.

Despite the lack of clear definition and cohesion, the Old Boys Network does provide a list of things which cyberfeminism pertains **not** to be, as listed on their website entitled 100-anti-thesis [Fig. 2.5]. The 100-anti-thesis defines cyberfeminism in the negative with short binary digits like: "1. Cyberfeminism is not a fragrance. 2. Cyberfeminism is not a fashion statement" (*Old Boys Network* 1997). In other words, it is

made clear what cyberfeminism is not, whereas what it positively pertains to be is only suggested through the inversion of the negative. The media release from the *First Cyberfeminist International* (21-28 September 1997) confirms this attempt to define cyberfeminism in the negative: "The 1st CYBERFEMINIST INTERNATIONAL slips through the traps of definition with different attitudes towards art, culture, theory, politics, communication and technology – the terrain of the Internet is no institution and will transform every infected institution into a cyberfeminist interface". Instead of formalising a cohesive political movement, cyberfeminism has opted to raise consciousness on different levels and frontiers. According to Alex Galloway (2000), "Cyberfeminism in its very nature necessitates a decentred, multiple, participatory practice in which many lines of flight coexist". The fact that cyberfeminism has failed to define itself in terms of a cohesive political project may serve it well, for cybernetic viral attacks may prove more successful in the information era than total onslaughts, although there are limitations to these evading tactics, as will be discussed shortly.

Fig.2.4 *Grrrls need modems*, Sticker by *geekgirl*

What is the effect of cyberfeminism's reluctance to organise itself into a cohesive political unity on the efficacy of the movement? Cyber-artist Faith Wilding urges that cyberfeminism needs to reassess itself in political terms in an attempt to move beyond the impasse of essentialism and identity formation that paralyses the movement at this stage.[7] She argues that: "Cyberfeminists must resist utopic and mythic constructions of the Net, and strive to work in activist coalitions with other resistant netgroups"(*Old Boys Network* 1997). Arguably, by providing cyberfeminism with a clearly delineated definition it does not necessarily imply that the movement will be limited or essentialised, but it may assist in consolidating desires, strategies, actions and goals. As Wilding appropriately adds: "If I'd rather be a cyberfeminist than a goddess. I'd damned well better know why, and be willing to say so" (*Old Boys Network* 1997). Clearly Wilding is

referring to Donna Haraway's notable slogan, "I will rather be a cyborg than a goddess" (1990: 225) with which she ends her "Cyborg manifesto". Wilding does, however, add a political dimension in her version of Haraway's slogan by asking pertinent political questions such as why she is a cyberfeminist and also by declaring a willingness to take a definite stand for her position. Cyberfeminism's overall reluctance to take on a specific form, although attractive in an amorphous sense, means that most women's exclusion from technology's powerful centre goes unchecked.

Fig.2.5 100-anti-theses, *Old Boys Network*, 1997

Another problem that plagues cyberfeminism can best be described as "Internet utopianism". According to Internet utopianism, new technologies provide women with opportunities to start completely anew (almost innocently) in terms of new technologies – as if new technologies are not always already situated and deployed in specific contexts that tend to perpetuate gendered hierarchies and privileges. Therefore, even though new technologies do open new possibilities, cyber-women should not be seduced by the novelty value of new technologies so that they forget that technologies always involve and constitute politics.

Despite the lack of "solidarity" and a clearly defined political strategy, there are a fair number of cyberfeminists who have succeeded in consolidating their energies by keeping a critical distance from the "hype" that surrounds new technologies. In this regard cyberfeminism follows a strategy of creatively appropriating new technologies "for purposes, projects and meanings quite other than those for which they are designed" (Sofoulis 1995). Therefore, cyberfeminism – in all its variations – attempts simultaneously to comment critically on new technologies and to extend the limits of these new media in creative ways.

In this critical, yet close relationship with technologies, cyberfeminism links closely with what Michael Heim has termed **virtual realism.** Virtual realism, as explained by Heim (1998:ix), is an art form or a sensibility – a way of living critically with (not without or beyond) new technologies. Heim elaborates:

> Virtual realism walks a tight rope. The delicate balancing act sways between the idealism of unstoppable Progress and the Luddite resistance to virtual life. [...] The challenge is not to end the oscillation between idealism and realism but to find the path that goes through them. It is not a synthesis in the Hegelian sense of a result achieved through logic. Rather, virtual realism is an existential process of criticism, practice, and conscious communication. (1998:43-4)

Cyberfeminism approaches new technologies in a similarly critical but pragmatic manner. Like virtual realism, cyberfeminism can be described as a critical strategy that tries to cross "the fissures of a culture in transition" (Heim 1998:46) without opting for either techno-transcendence or techno-refusal. Heim also notes that "Virtual realism meets destiny without being blind to the losses of progress" (1998:46). Cyberfeminism also meets new technologies with a distinctly iconoclastic, yet techno-literate modus operandi.

2.1.3 *Emerging alliances and vanishing technophobias*

As part of a virtual realist – a critical, yet creative – appropriation of technologies, the relation between women and technology is revealed by cyberfeminism as an **alliance,** rather than enmity. Plant explains this relation as follows: "Cyberfeminism to me implies an alliance is being developed between women, machinery and the new technology that women are using. [...] In a sense, women have always been the machine parts for a very much male culture"" (Interview with Rosie X of *geekgirl*). The intimate alliance that women apparently share with technologies has been concealed from them and, consequently, only once women start to use technologies can they realise the reciprocity between themselves and technologies. Once women make the link, it is argued, they become more comfortable with technologies.

This, nonetheless, may be an over-optimistic portrayal of women's future alliances with technologies. Even though many girls and young women are currently growing up

with technologies as a part of their everyday reality and although they are building healthy connections with technologies, this is far from representative of the majority of women's experiences and expectations of technologies. Plant is unmistakably correct in resisting earlier feminisms' technophobia, but is her resistance to technophobia appropriate for women in Southern nations (for instance)? Like Plant, I also regard women's relation to technologies as being masked behind notions of incompetence and technophobia, but can one remedy the situation simply by negating technophobia, while assuming that women have unhindered access to technologies, as in affluent western societies? When Plant contends: "Women are accessing the circuits on which they were once exchanged" (2000:265), one must ask who the "women" are? Previously, I have mentioned Dale Spender's research in classrooms of Australia – an affluent society by most standards – where the system is seemingly open to everyone. Nevertheless, Spender's research showed that the "boys" claim the technology. If this happens in an Australian classroom on an everyday basis, what happens in the Indian or African continents? How does Plant's prediction of the disappearance of mythological technophobia fit into these not-so-affluent societies? Mythological technophobia is based not only on recurring archetypes, but also on everyday experiences that constantly reaffirm those archetypes. It is, therefore, rather a case of not only winning the mythical battle, but also the "real" battle where girls physically draw back from overtly aggressive boys. Accordingly, women's access to technologies needs to be addressed, as well as the access that women gain to the mythical inner sanctum of technological power. Plant's criticism of technophobia does indeed challenge the problematic epistemological premises on which technologies are largely based, but she does not convincingly address the issue of most women's **real** position in relation to new technologies.

Fig. 2.6 U.S. Army photo of two women wiring the ENIAC with a new program
(Mike Muus's Historic Computer Images site)

Having raised these points of criticism of Plant's optimism about dispelling technophobia, it should, nevertheless, be noted that Plant's viewpoints are invaluable in developing a cyberfeminist position. Her work subverts and displaces the myth that technologies are masculine in nature, by exactly re-affirming the intimate relationship that exists between women and technologies. This is not to argue that men do not conduct their own intimate relations with technologies (as is evident by now), but rather to show women's differing and distinctive relations with technologies. As Plant asserts: "As media, tools and goods mutate, so the women begin to **change**, escaping their isolation and becoming increasingly inter-linked" (2000:265-6, original emphasis). The era of new technologies sees entities that used to be inert, unspeakable and unspoken, becoming increasingly lifelike. Women and machines, specifically, are becoming increasingly independent from the "master creator". Everyday "objects", such as refrigerators and women in kitchens, are growing apart from the "human subjects" that used to determine and define them.
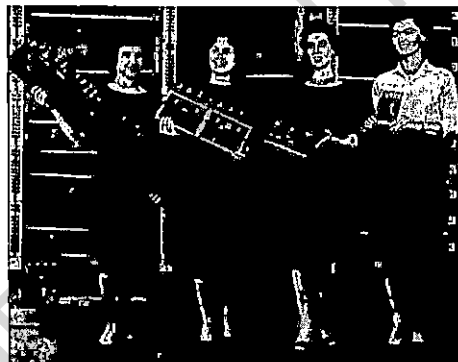
Fig. 2.7 U.S. Army Photo, number 163-12-62. Left: Patsy Simmers, holding ENIAC board. Next: Mrs. Gail Taylor, holding EDVAC board. Next: Mrs. Milly Beck, holding ORDVAC board. Right: Mrs. Norma Stec (Gladys Rugh?), holding BRLESC I board (Mike Muus's Historic Computer Images site)

Just as the hysterical female patients at Salpêtrière were initially mirrored and petrified through patriarchal scientific medical discourses, it was, nevertheless, through miming that they distinguished themselves as being inconclusively different. Similarly, women have made links and close connections with computers, even in the early stages and history of computing. The close bond that existed for instance between women and the Electronic Numerical Integrator and Computer (ENIAC) (the first electronic digital computer developed by the University of Pennsylvania) is an excellent example of this. ENIAC was utilised by the U.S. Army during World War II to speed up the calculations and accuracy of firing and bombing tables used in ballistics trajectories. As was customary

during war times, women replaced the absent men on the war front and, therefore, the first programme operators of ENIAC were six female college students.

At the time, the term "computer" referred to a person who calculated artillery firing tables using a desk calculator (Moye 1996). These six young women or "computers" [Figs. 2.6 & 2.7] served as ENIAC's original programming group. Although most of them were college graduates, and, therefore, more than adequately qualified to do their jobs, they were informed that only "men" could apply for professional ratings. In November 1946 most of the six did, however, receive professional ratings. These six young women have shown that they were not only capable of standing in for the "boys", but also that they were able to excel in their partnership with technologies. They have shown, as Plant predicts, that once women break through the social barriers, they can form lasting relations with technologies. In conclusion, it is important to investigate VNS Matrix's *Cyberfeminist manifesto for the twenty-first century*, for it sets the tone and intellectual pitch for a cyberfeminist future.

2.1.4 *Cyberfeminist manifesto for the twenty-first-century: miming differences*
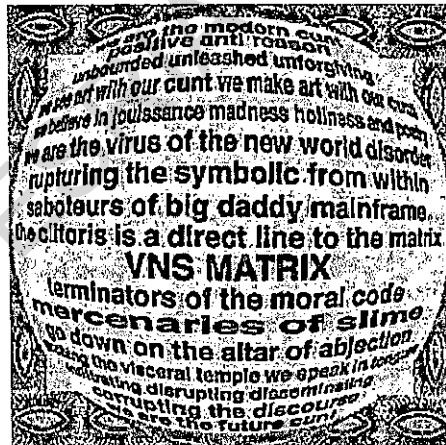
We are the modern cunt
positive anti reason
unbounded unleashed unforgiving
we see art with our cunt we make art with our cunt
we believe in *jouissance* madness holiness and poetry
we are the virus of the new world disorder
rupturing the symbolic from within
saboteurs of big daddy mainframe
the clitoris is a direct line to the matrix
VNS MATRIX
terminators of the moral code
mercenaries of slime
go down on the altar of abjection

probing the visceral temple we speak in tongues
infiltrating disrupting disseminating
corrupting the discourse
we are the future cunt
Fig. 2.8 VNS MATRIX, Cyber Feminist Manifesto for the 21st Century, 1992

In 1992, the Australian foursome VNS Matrix presented their *Cyberfeminist manifesto for the twenty-first-century* [Fig. 2.8], in the form of a digitised billboard, which brought "their infectious message" (Flynn 1994:421) to all those who passed by. The name VNS Matrix, obviously, bows to the Greek deity Venus (Aphrodite) and the planet with the same name, while "matrix" playfully meshes matter, mother, *wombs*, female embodiment and information webs into one contradictory whole. It is not surprising then that one of the main objectives of VNS Matrix is to:

> [...] talk about technology and the body, putting some sort of **guts** and **viscera** into the clean and sterile environment and talking about sex. That's so antithetical to the sterile computer environment android, without **flesh**, without **biological fluids**. (Flynn 1994:422, emphasis added)

Clearly VNS Matrix wants to do the inconceivable, namely to infiltrate and pollute men's clean machines with bodily slime and fluids. Consequently, they refer to themselves as *"mercenaries of slime"* on a crusade of contaminating sleek silicon with vile substances. They also aim to counter cyberpunk's pre-pubescent dreams[8] of disembodiment as portrayed mainly by "keyboard cowboys jack[ing] in and jerk[ing] off" (Flynn 1994:426). VNS Matrix proposes to disrupt this schizophrenic mind-body split, by sabotaging *"big daddy mainframe"* in an *"infiltrating disrupting disseminating"* viral fashion, and by corrupting the discourses of the symbolic order with *"positive anti-reason"*. VNS Matrix not only infects men's clean machines with subversive guts and viscera, but also sets out to corrupt the broader code, namely the symbolic order and textual parameters that have frozen women, into techno-illiteracy and incompatibility.

By unashamedly returning to the contested site of the female body, VNS Matrix effectively puts miming strategies to use. Similar to Rosi Braidotti's endorsement of a "politics of parody or parodic repetition" (1996:13-14), which makes dynamic re-embodiment possible, VNS Matrix also mimes a parody of female embodiment. It is through the bodily practices of "as if" and successive repetitions thereof that spaces can be opened to engender preliminary feminist and differently sexed and gendered

agencies. The subject that is reaffirmed in the process is both a non-essential subject and yet one that remains capable of ethical and moral agency. VNS Matrix's project is an attempt to rethink a non-essentialised embodied self, which simultaneously allows for multiple bodies or sets of embodied positions. Hence, the contested sign "woman" is both affirmed and deconstructed. Braidotti's notion of "a new embodied becoming" is superbly complemented by VNS Matrix's provocative mimicry of female embodiment in the virtual domain.

Furthermore, VNS Matrix explicitly embraces embodiment in a virtual age by claiming, **"we are the future cunt"** and **"the clitoris is the direct line to the matrix"**. The impulse to localise women's supposed deviance and volatility in their bodies is cleverly challenged in VNS Matrix's doubled body sense. By creating and miming bodies that are both real and virtual they confuse simplistic designs about (female) embodiment. In fact, when VNS Matrix declares: **"we go down on the altar of abjection, probing the visceral temple, we speak in tongues"** they reclaim the degraded female body (reminiscent of the concept of the abject as outlined in Julia Kristeva's *Powers of horror: an essay on abjection* 1982) as a place of enunciation. They do not attempt to speak from One (phallic) tongue, but from bountiful tongues and lips (reminiscent again of Luce Irigaray's (1985b) *This sex which is not one*). Irigaray phrases this multiplicity as follows: "Between our lips, yours and mine, several voices, several ways of speaking resound endlessly, back and forth. One is never separable from the other" (1985b:209). Similarly, VNS Matrix revels in the body as a visceral temple, breaking moral codes and at the same time stubbornly situating themselves in the body. However, the body reconfigured by VNS Matrix is not the technologically innocent or naturally pure body to which previous feminisms such as goddess worshipping and other essentialists wanted to return, but rather a body that mates and consorts explosively and intimately with new technologies.[9]

The immediate danger of such an overtly body-conscious approach obviously remains one of bio-determinism and other essentialisms. The challenge is to construct the female body as a useful metaphor for women and technology without falling into the pitfalls of again equating women with hormones, madness, sameness, and motherhood. In Anne Balsamo's words, the challenge is "how to recuperate a notion of the body that does not imply an unchanging, essentialist identity for sexed bodies" (1996:157). In my view, VNS Matrix cleverly succeeds in sidestepping the obvious

essentialist trappings, by miming embodied differences instead of completely becoming them. In what follows, I will extrapolate on this statement.

VNS Matrix pleasurably "speaks" from multiple erogenous zones such as *cunts*, *clitorises*, *tongues*, *matrices* and *body slimes*, in accordance with Luce Irigaray's concept that "woman has sex organs more or less everywhere. She finds pleasure almost anywhere" (1985b:28). The multiplicities of women's (and men's) erogenous zones have, however, been denied by psychoanalysis and symbolic structures, and have instead been dichotomously fixed into opposition to the One libidinous standard or the phallus. Women's pleasures are restricted to the shadow, the lack, the absence, and the ghost of men's phallic presence. This is ubiquitous, despite the fact that the phallus itself manifests as a mere semblance of presence and thus as an absence.[10]

VNS Matrix's cyberfeminist manifesto should be analysed against this conceptual background. In this way their different appropriations and deconstructions of male oneness and heterosexual hegemony take on a specific meaning. In the blatant statement, **"the clitoris is the direct line to the matrix"**, VNS Matrix is plainly forging an alliance between clitoris and matrix, bodies and technologies. The purpose is presumably to achieve *jouissance*,[11] for, as they state: **"we believe in jouissance madness holiness and poetry"**. Obviously, the *clitoris* and the *matrix* as explored in VNS Matrix's manifesto are both material and discursive, and yet, always more than the organic or the textual. VNS Matrix is not oblivious to the fact that the body is an "extra-discursive object" (Butler 1993:33), which cannot be completely "spoken" in language: nonetheless, by "speaking" these almost unnameable parts of the female anatomy they are re-incarnating them in discourse. VNS Matrix mimes the unspoken and unspeakable female body. In this regard, I will specifically explore the miming possibilities of the *clitoris* as a newly reconfigured "speaking" position for women and technology.

It is resourcefully argued by Jyanni Steffensen that the *clitoris* re-signifies "a leading metaphor for technocultural production and as a signifier of sexual desire" (1998). This re-signification is especially conspicuous in the work of VNS Matrix. Traditionally, the *clitoris* has been repressed in most symbolic orders of sexuality and has vicariously been constructed as a "little penis", a mock penis; it is not only lacking in size, but also (apparently) in potency. In other words, the *clitoris* has been construed almost as a penis, but not quite – it is virtually a penis. Most dictionaries confirm the "second-

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rate" status: "**Clitoris:** A **homologue** of the male penis, present in the females of many of the higher vertebrata" (*The Shorter Oxford English Dictionary*, 1990:350, emphasis added). But the *clitoris*, although corresponding with the penis, also digresses importantly from it.

In the construction of the penis as the biological standard, "the logic of the same" that lurks behind most patriarchal dichotomies becomes evident. As a result, women's sexual organs are related and equated to the one male standard and subsequently, are found to be sub-standard and lacking. The *clitoris* does not exist within symbolic structures as an organ unto itself: it is always inevitably equated to the penis and it is only in its comparison to the penis that it is granted existence. In cases where women do not accept the rule of the male standard as figured in their supposedly lacking state or so-called penis-envy, they are diagnosed as suffering from a "change of character in the sense of a masculinity complex" (1973:126), according to Freud. Women who suffer from a "masculinity complex" think of themselves as male, whilst they are in fact so-called castrated beings. Freud cannot perceive of women in any other way than in terms of the one and only libidinal standard: "There is **only one libido**, which serves both the masculine and the feminine sexual functions" (ca 1931, 1953-74:131, emphasis added).

In the symbolic realm as set out by Freud, women have three choices: they may become sexually inhibited (neurotic) beings; or they may quietly develop into "normal femininity" by accepting their penis-envy and forgetting their *clitorises*; or if they deny their penis-envy, they will cling "immaturely" to the pleasures of the *clitoris*. In no sense is the *clitoris* measured against itself and enjoyed for itself: it is always inescapably a second-rate penis. Freud does, nonetheless, admit that there exists some correlation between the boy's "small penis" and the girl's "still smaller clitoris" during the phallic developmental phase of both sexes. He does not, however, allow the *clitoris* to develop beyond that or in its own right. The comparison between the two is explained as follows:

> With their entry into the phallic phase the differences between the sexes are completely eclipsed by their agreements. We are now obliged to recognize that **the little girl is a little man.** In boys [...] they have learnt how to derive pleasurable sensations from their small penis [...]. **Little girls do the same thing with their still smaller clitoris.** It seems that with them all their masturbatory acts are carried out on this **penis-equivalent,** and that **the true feminine vagina** is still undiscovered by both sexes. [...] We are entitled to keep to our view that in the phallic phase of girls the clitoris is

the leading erotogenic zone. But it is not, of course, going to remain so. With the change to femininity **the clitoris should wholly or in part hand over its sensitivity**, and at the same time its importance, to the vagina. This would be one of the two tasks, which a woman has to perform in the course of her development [...]. (ca 1931, 1953-74:118, emphasis added)

According to Freud the once-dominant erogenous zone of the girl, namely the *clitoris*, has to be superseded by the "true" female sexual organ, namely the *vagina*. If women do not abdicate control and power over their *clitorises*, they cannot truly become female, according to Freud's theory of femininity. Women who suffer from the "masculinity complex", by not accepting the negation of the *clitoris*, are plainly not normal in Freud's view. In this sense VNS Matrix does not qualify for inclusion in Freud's category of "normal femininity", for they refuse to let go, so to speak, of the *clitoris* as a meaningful site (both real and virtual) in the representation of female sexual identity.

Furthermore, VNS Matrix confuses the sameness logic of choosing between either the *clitoris* or the *vagina*, by not only keeping the *clitoris* as a "speaking" position, but also referring to themselves as "**the future cunt**". This means that VNS Matrix does not only accept their supposed "normal femininity" (*vagina/cunt*), but also cling to the "masculinity complex" (*clitoris*). They are rudely and intentionally obstructing Freud's either/or classification of femininity by not making a choice for one or the other, but by choosing both.

Symbolic clitoridectomy (the negation of the *clitoris*) as prescribed by Freud can, however, transpire in the most unexpected places. As Jyanni Steffensen explicates, Melanie Klein's femininity complex (discussed earlier) does, in fact, accomplish the same effect as Freud's masculinity complex. Freud's masculinity complex (castration complex/penis-envy) is the inverse of Melanie Klein's femininity complex (womb-envy), as both complexes are based on lack and unsatisfactory compensation for lack. Steffensen suggests that by simply countering penis-envy with womb-envy the heterosexual bias is uncritically perpetuated. She explains:

[...] the womb/penis dichotomy might work as a paradigm for heterosexual procreative sexuality [as] it simply reproduces (in reverse) the ubiquitous understanding of heterosexual procreative sexuality per se rather than as one minor form of sexual organisation [...] among many. (Steffensen 1998)

According to Steffensen, the womb/penis dichotomy commits the same symbolic clitoredectomy as do most mainstream psychoanalytic discourses. Instead, she favours a re-appropriation of the *clitoris* as a mythical phallus. I understand Steffensen's re-appropriation of the *clitoris* to be a miming strategy in which a part of the body that has been silenced by psychoanalytic and patriarchal schemes now finds a way of speaking "as if" it were a mythical phallus. The *clitoris* is a powerful "place" from which to speak, given the historical denial of its existence. But giving preference to the *clitoris* as the only "true" speaking position for women could also generate the same problems as Steffensen identified with the womb/penis dichotomy: it has the potential to become a newly appropriated phallus. In other words, the *clitoris* as a speaking position must be carefully negotiated, no less than the *womb* or the *cunt*, in order not to fall into the sameness trap that plagues most patriarchal discourses.

The *clitoris* can, further, not afford to become a new law or site of legitimacy, for then the difference between the phallic One and the new One would be insignificant and indeed penis-envy will triumph. Does this indicate that a castrating *clitoris* accomplishes penis-envy perfectly? Is castration not the ultimate affirmation of penis-envy? If the *clitoris* is a substitute penis, which castrates all others, it may justly be measured as **too** small and lacking. If the *clitoris* does, however, mime the phallus in its speaking, does not become the phallus completely and neither aspires to do so, it may, on the other hand, open new vistas of sexual pleasures and simultaneously create a virtual speaking position for women.

Moreover, do women all have to speak from the same "place"? When Irigaray states that women have sexual organs more or less everywhere and that women's sexual organs are multiple, should we not take her seriously in an attempt to rectify the sameness tyranny of the symbolic order? However, the fact that VNS Matrix speaks mainly from the female body may annoy some, but, as Anne Balsamo maintains, the female body plays a vital role in recreating, our perceptions about bodies in new technologies. According to Balsamo the struggle between technologies and nature will be witnessed in the female body in particular (1996:39). VNS Matrix's *Cyberfeminist manifesto* is an attempt to witness the invasion and expansion of new technologies through the nexus of the female body.

2.1.5 Weaving women and technologies together

> "[...] it is hard to decide who is weaving the web of illusion and who is caught in it"
> (Irigaray 1985a:264)

I have shown how miming strategies are instigated in the *Cyberfeminist manifesto* to open up, amongst other things, a possible place of enunciation for women in relation to new technologies. Continuing along those lines, I will pursue my exploration of, Freud and specifically his analysis of femininity, as it transpires in the relation between women and technologies. In 1933 Freud makes a final attempt to unravel and unveil femininity in his lecture "On femininity" by unexpectedly referring to the relation between women and weaving, which I will reconfigure for my purposes here as the relation between women and technologies. Freud describes the relation as follows:

> It seems that women have made few contributions to the discoveries and inventions in the history of civilization, **there is, however, one technique which they have invented – that of plaiting and weaving.** If that is so, we should be tempted to guess the unconscious motive for the achievement. Nature herself would seem to have given the model, which this achievement imitates by causing the growth at maturity of the pubic hair that conceals the genitals. The step that remained to be taken lay in making the threads adhere to one another, while on the body they stick into the skin and are only matted together. If you reject this idea as fantastic and regard my belief in the influence of a lack of a penis on the configuration of femininity as an *idée fixe*, I am of course defenceless. (ca 1933, 1985:166-7, emphasis added)

I do not want to reject Freud's ideas outright as fantastic and thus, as unbelievable and indefensible. Instead, I will play with his metaphors of weaving and veiling and mime his text in order to find a "voice" or "place" for women there. According to Freud, women weave to conceal their lack, to cover the *womb*, to veil "the horror of nothing to be seen" (Plant 1999:114). In so doing women are apparently merely imitating nature, for nature has already suggested to them to veil their supposed lack. As Sadie Plant writes:

> Weaving is an automatic imitation of some bodily function already beyond the weaver's control. She is bound to weave a costume for the masquerade: **she is an actress, a mimic, an impersonator, with no authenticity underneath it all.** She has nothing to reveal, no soul to bare, not even a sex or a self to please. (1997: 24-5, emphasis added)

Similarly, the late nineteenth-century hysterics, with their antics and masquerades had no "true" essence, no deeper inner metaphysical voice trapped inside waiting to emerge and no pure body to which to return. What they were was autographically written onto their skins and mimed in (dis)ease. They had no basic nature or essence; they were scenes, images, appearances, contrivances and simulations of "master" science's voice. Freud similarly advises in his lecture: "If you want to know more about femininity, inquire from your own experiences of life, [...] **or wait until science can give you deeper and more coherent information**" (ca 1933, 1985:134, emphasis added).

In the construction of hysteria, women have indeed reciprocated the so-called coherent scientific account about themselves, which they have then accurately mirrored without becoming it entirely. Applying a simple cause-and-effect analysis proves useless when dealing with miming hysterics, as Charcot's diagnoses clearly showed. Women are therefore veiling "nothing to be seen", ironically, with "nothing to be seen". That which the hysteric veils is virtual – real in effect, but not quite real – just as the veil itself is virtual. Women's "virtuality" refers to the fact that, as man's Other, they can apparently only be described in terms of the One male standard. It also refers to the non-place that has been awarded to women throughout most histories. Women's "virtuality", should not be confused with techno-optimistic illusions of disembodiment, for, by affirming their so-called "virtuality" women are not denying their embodied nature. Instead they are miming their always already mediated nature from a specific embodied position. In my view, it is the reconfiguration of this "virtuality" that forms the centre of cyberfeminist explorations. As Plant explains:

> Woman cannot be anything, but she can imitate anything valued by man: intelligence, autonomy, beauty [...]. Indeed, if woman is anything, she is the very possibility of mimesis, the one who weaves her own disguises. The veil is her oppression, but "she may still draw from it what she needs to mark the folds, seams, and dress making of her garments and dissimulations". (1999:112, original emphasis)

If women are the precondition for their own mimesis, it means they fit any proposition, but in doing so, they are also already more than that which they imitate. Most scientific discourses and theoretical analysis "on femininity" is therefore doomed to be no "true" meeting between men and their female counterparts or Others, but, in fact, only men meeting themselves incessantly – the same constantly meeting the same. If women put

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on the "face" that is expected of them every time, and that may even be the disobedient face of hysteria, they are playing along "as if" they are knowable and known. They are miming what is expected of them, namely, tantrums and obstinate silences and, if mystery is called for they can mime that too, without becoming it. In this sense women's identities have always been posthuman, postmodern and liminal. They wear "different veils according to the historic period" (Irigaray 1991:118). Women have no essence in the metaphysical sense and, as this essenceless essence, they form the perfect partner for contriving virtual technologies. Technologies have been constructed as master science's handmaiden, women have been construed as man's lacking other, and now they are virtually woven together.

2.2   Etymological roots

I want to pursue another trace, namely a whole cluster of terminology that could assist in a cyberfeminist pursuit of creating different relations with technologies and also embodying technologies differently. In the digital context, where terms such as "web", "webbing" and "webster" have specific slants, an etymological research reveals pertinent meanings. In this novice etymological enquiry, I do not pretend to unveil the "true" origins and meanings of these terms, but rather to weave and unravel a web of meanings, which may enrich their readings in a virtual age, particularly in a cyberfeminist strategy.

The two words "weaver" and "webster", interestingly enough, both refer to the activity of weaving. Moreover, the term "webster" was first applied as a female designation, before it was later extended to include male weavers as well (*The Shorter Oxford English Dictionary* 1990: 2521). Since 1657 the word "webbing" was also associated with the action or process of weaving. I find this information a remarkable coincidence in a virtual age, during which surfing the World Wide Web (or webbing), has become more than just a fashion statement, but a necessity for surviving digital citizenship. In this regard science fiction author, Samuel Delany's embellishment on the link between "text" and "web" is also significant:

> Text and *textus*? Text, of course, comes from the Latin *textus*, which means "web". [...] All the uses of the words "web," "weave," "net," "matrix" and more, by this circular "etymology" become entrance points into a

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textus, which is ordered from all language and language-functions, and upon which the text itself is embedded. (1976:33, original emphasis)

Delany explores the circularity and relatedness of terms such as "web" and "text" as woven fabrications. The term "web", which has now become shorthand for the World Wide Web, did originally refer to a woven fabric. Women as weavers of fabrics can be traced back to a web and the Web, as it is known today. Since 1864 the term has also been associated with entanglement or enveloping something, as in a spider's web. Likewise the term "cobweb", used figuratively, refers to a subtle woven snare or entanglement. The relationship between women and cobwebs as snare deepens: women have been typified for centuries as tricksters who weave traps for unsuspecting men. The term "cobweb", furthermore, refers to something flimsy and unsubstantial, which immediately recalls Sadie Plant's statement (quoted earlier) in which she suggests that woman "is bound to weave a costume for the masquerade: **she is an actress, a mimic, an impersonator, with no authenticity underneath it all**" (1999:24-5). In an interview with Jamie Lee Curtis (who is renowned for her roles in psycho-thrillers) the interviewer asks if Curtis always wanted to be an actress, upon which she answered: "I've *always* been an actress" (1998:14, original emphasis). Curtis's answer is representative of women's seeming ability to enact or mime a lack of agency.

Further explorations into the origins of the word "weave" also open possibilities for interpretation and speculation and these link strongly with the notion of a lack of authenticity or true essence. On a denotative level, weaving means to **fabricate** material by interlacing yarns or other filaments of a particular substance into a continuous web (*The Shorter Oxford English Dictionary* 1990:2521). On a figurative level it means to **contrive, fabricate** or **construct** a mental product with elaborate care; and, in addition, weaving is likened to moving in a **devious** course or directing one's steps in a **devious** or **intricate** course, as in dancing. All these comparisons of weaving with fabrications, contrivances, deviousness and dangerous constructions, make their alliance with women as supposedly sinful weavers who entangle men in their underhanded ways all the more plausible. As Salomé once wove her seductive dance with intricate veils around Herod to ensnare him in her web of mimicry, so all women are suspected of being sheer fabrications and ghosts. In her online artwork, entitled *Doll Yoko* (1998) [Fig. 2.9], Francesca da Rimini, former member of VNS Matrix, comments explicitly on women's ghostly state of misrecognition and misrepresentation, with the

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words "All women are ghost and should rightly be feared". *Doll Yoko* deals with the issue of femicide in China, where parents, in anticipation of having boys, murder thousands of little girls. This gives a haunting, spectral quality to the face of the woman appearing in the background. In another online hypertext piece entitled *Fleshmeat* (1998), Da Rimini reiterates the ghostly (im)position of the (mad)woman reminiscent of hysteria: "I am Gash Girl.../Puppet Mistress.../Voice Idol.../Doll Yoko./Exquisite Aberrant/Intelligence. Ghost AI./These are my stories. /I will not remain silent. /They are all true. /I am not mad. /I have wept enough./(Lies. Lies.)." The comparison to Da Rimini's online presence as a ghostlike Artificial Intelligence contributes to the suspicion that women are shimmering spectres on computer screens whose intelligence is derived from the machine's. In this way, Da Rimini's works playfully engage with the construction of women's virtuality.
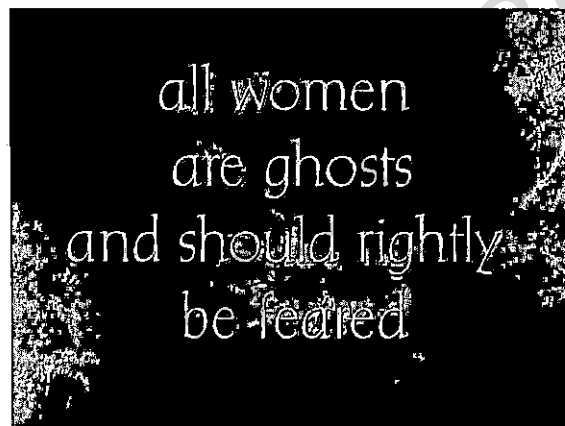
Fig.2.9 Francesca da Rimini, "Women are ghosts" from *Doll Yoko*, 1998

How does this probing into the origins of weaving and webbing contribute to the debate on women and technology? A further layer of meaning is added by excavating the etymological roots of the term "technology", namely the Greek *technē*. Heidegger gives an analysis of the roots of the term in "The question concerning technology" and indicates that *technē* originally had the same meaning as art, skill or craft: "[...] and art was simply called *technē*" (1977:34). Heidegger speculates that art could perhaps provide us, due to the fact that it is akin and yet fundamentally different from *technē*, with the shining light of a "saving power" from the dangers of *technē*. He argues that the closer one comes to the dangers of *technē*, the closer one moves to the saving grace of art: "[...] the more questioningly we ponder the essence of technology, the more mysterious the essence of art becomes" (1977:35). The meanings of *technē* and art are closely intertwined, and Heidegger implies that art may just have the magical poetical

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(*poiēsis*) power ("that which shines forth most purely" (1977:34)) to save us from the bleak unfolding of a world where everything is subsumed into a standing reserve (*Bestand*) that attentively waits to be consumed.

Similarly, RL Rutsky (1999) in *High techné. Art and technology from the machine aesthetic to the posthuman* elaborates on the significant alliance between art and technology: "high tech, with its emphasis on issues of representation, style, design, seems to signal a re-emergence of this repressed aesthetic aspect within the conception of technology" (1999:4). High tech plays with representation itself, in other words, with appearances, simulations, and contrivances. It creates a "representation and style [that] have always been technological, supplementary, simulacral", according to Rutsky (1999:5). What is also useful for my breakdown is that in "high tech" and, by extension, in the virtual age, the simulacrum (Baudrillard 1983:100-1) becomes an end in itself and no longer refers back to an original. High *techné*, like women, therefore has no essence or authentic origin. In high tech mime is developed into an art form. Thus, following the etymological traces of technology, it can be suggested that in "high tech" technology has made a turn away from the dooming instrumentalist *Gestell* (enframing). Instead, "high tech", with its emphasis on reproducibility and imagery, is no longer governed by an instrumentalist rationality, but only by its own reproductive logic and aesthetic laws.

A fruitful connection can be perceived between hysterical women with their artful semblances and high techné. I indicated in the introduction that the hysterics not only caused scenes in the halls of asylums, they literally embodied dramatic scenes themselves. In other words, they were governed, like "high tech", by their own aesthetic laws, reproduced appearances, simulations and images. Similarly, cyberfeminists find their focal point in the creation of art. It is by means of the arts, combined with technology, that they are attempting playfully to open the dreaded inevitability of the *Gestell*. Can specific combinations of madness, holiness and poetry break open the brutal instrumentalism of the *Gestell* and generate a more creative poetic space? Is this the point where dangerous *techné* moves so closely to its once lost companion (art) that it again playfully reunites with her? Can high *techné* become *poiēsis* again?

Perhaps this is the state the early computer programmer, Ada Lovelace anticipated when she wrote to her mother, Lady Byron,[12] "if you can't give me poetry, can't you give me **poetical science**?" (Toole 1995:200). Ada sensed magic hidden behind numbers ("high tech") and as her biographer, Betty Toole, remarks: "Her

understanding of mathematics was laced with imagination and described in metaphors" (1995:200) – indeed, a poetic science.

Fig.2.10 Josephine Starrs & Francesca da Rimini, Images from *White*, 1998

Similarly, a cyberfeminist reading of *technē* and *poiēsis* succeeds in cracking the codes of scientific certainty and inevitability. For in cyberfeminist artists' skilful combination of art and technology, *poiēsis* comes to light again. The experimental and multi-language (Spanish and English) video entitled *White* (1998) [Fig. 2.10], produced by two members of VNS Matrix, Josephine Starrs and Francesca da Rimini, ingeniously combines new technologies with poetics. According to the artists, the piece "focuses on a woman's inner experience of madness, exploring the language of madness to create a hyperreal vision of alienation, psychic disturbance and transcendence. [It is] a self-reflective text, meditating, fantasising, exorcising, all from the space of a white room which is at once confining and vast" (*White* 1998). *White* comments clearly on the stereotypical depiction of women as mad and hysterical, and explores this position by making use of new technologies. The piece is divided into different scenes such as "The white room", "Silence" and "The white shoe", all providing a specifically female entry into technoscience's treatment of women as deviant. In this regard the narrator informs the audience that the doctors, psychiatrists, mothers, fathers and husbands are all conspirators, conspiring in diagnosing women as mad.

Some of the narrated text deals with an alternative perspective on the relation between medical discourses and madness, for example when the narrator explains her

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relation with the female nurse: "She takes my temperature. I give it to her freely". If one compares this to Charcot's failed ventures into diagnosing the symptoms of hysteria, the relation between doctor and patient unfolded in a dreadfully different manner. In *White* the relationship between female patient and female nurse is comforting, even sexualised when the female narrator comments on the nurse's breasts. This stands in stark contrast to Charcot's interrogating and disempowering interviewing style. Translated into more political terms: it is by miming the "master's" voice closely and, at the same time, making alterations to the relation, that a woman artist may open up another plane onto herself; a poetic plane where she has perhaps always been – a "white room" where poetics and technology can meet.

2.3   Embodied roots

Fig. 2.11 Portrait of Ada Augusta Lovelace, (1815-52)

One of the enchanting veils worn by women in the interwoven history shared by women and technologies is curiously embodied in the person of Countess Ada Augusta Lovelace (1815-52) [Fig. 2.11]. My analysis is guided by Ada Lovelace's personal history and how it is intimately intertwined with the earliest development of "computer programmes". Although Ada Lovelace also forms a central part of Sadie Plant's discussion in *Zeroes + Ones* (2000), my discussion, though interlocking with Plant, deviates by focussing on specific material and embodied clues from Ada's life. These embedded clues, such as Ada's passionate desire to flourish in a "man's world," her battles with drug addiction, her wild gambling sprees both in love and money, chronic sicknesses, as well as her failed efforts as mother and wife, are placed in a broader matrix of embodied and cyberfeminist values. It is against a cyberfeminist backdrop

that the sad events of Lovelace's life are interpreted in conjunction with the primitive developments of computer technology. I interpret Ada Lovelace as a prototype of cyberfeminist ambitions, as a cyborg of sorts, and her ambivalent relation with technology is echoed in this study's aim of addressing the awkward relation women have with technologies.

Fig. 2.12 Portrait of Charles Babbage (1791-1871)

Ada Byron King,[13] who later became Countess Lovelace, encountered the engineer Charles Babbage's (1791-1871) [Fig. 2.12] *Difference Engine* (a basic adding machine based on the method of finite differences) for the first time as a teenage girl in 1833. She astonished all the spectators because of her immediate understanding of the machine's principles and the instant rapport that she had with the machine. In fact Ada's mother, Lady Byron (a mathematician who played no small part in Ada's interest in mathematics), commented that Ada considered the machine to be "a friend" (Mattis 1999). Ada started to work closely with Babbage in 1843 after translating and publishing a paper on Babbage's work.[14] Babbage was so impressed with Ada's translation and interpretation of his work that he did not hesitate to invite her to join him in the development of his next project, namely the development of the *Analytical Engine*. The traditional role occupied by women as mere translators or interpreters of men's work, and not as the creators or instigators of so-called original and groundbreaking texts and technologies themselves, is subverted in an intriguing manner by Ada's translation of Babbage's paper.

Ada's translation surpasses the original "master's voice", not only in length – together with her added footnotes it is three times longer than Babbage's original text – but Ada also picked up and corrected mistakes made by Babbage. In other words, Ada mimed and then exceeded the "master voice" in the subtext, and by doing so, she

added value to the original text that was not anticipated by its author. Babbage did, however, realise the worth of Ada's contribution, as is evident in the following piece where he acknowledges his admiration for her:

> Some time after the appearance of his memoir on the subject in the "Bibliothèque Universelle de Genève," the late Countess of Lovelace informed me that she had translated the memoir of Menabrea. I asked why she had not herself written an original paper on a subject with which she was so intimately acquainted? To this Lady Lovelace replied that the thought had not occurred to her. I then suggested that she should add some notes to Menabrea's memoir; an idea which was immediately adopted. [...] The notes of the Countess of Lovelace extend to about three times the length of the original memoir. Their author has entered fully into almost all the very difficult and abstract questions connected with the subject. (ca 1864)

Ironically, given the privileged position that masculinity occupies in terms of technologies, it is Ada Lovelace, and not Charles Babbage, who has since been best commemorated, especially after the U.S. Department of Defense named its primary programming language after ADA [Fig. 2.13] in 1983. Ada's life has also recently been re-interpreted into a film from a cyberfeminist perspective in *Conceiving Ada* (1997, director Lynn Hershman Leeson).

*The International Language
for Software Engineering*

Fig. 2.13 Logo for ADA, International Language for Software Engineering

Once Ada and Babbage started to work together, it was Ada, contrary to the contemporary expectations of women's capabilities, and not Babbage, who set the pace and standards for their working accord. Until that time Babbage had a tendency for general sloppiness and lack of commitment to his projects. Ada laid down the

conditions on which their collaboration were to be based, which prevented Babbage from "slur[ring] and hurry[ing] things over" (Plant 1997:8). Ada's working ethics create an interesting inversion of traditional gender roles and expectations. The notion that the female brain is easily strained and exhausted is undermined by Ada's set of rules, by which Babbage's wandering mind had to abide.
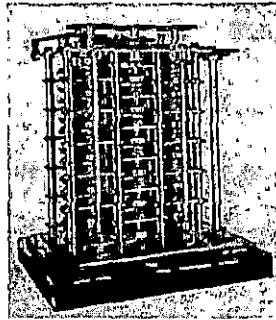
Fig. 2.14 The Difference Engine, "The finished portion of the unfinished engine", 1832 Science Museum/Science & Society Picture Library

Later Babbage would refer to Ada as his "fairy" (Plant 1999:102) and the "Enhanctress of Numbers" (Toole 1998). Not only did she inspire him, but she also had a sprightly presence and dexterous mind. She was, however, differently perceived by the rest of society, who described her as "wayward, wandering [...] deluded" and "hysterical, [a] hypochondriac and lacking in moral fibre" (Plant 1999:102). Thus Ada simulated all the symptoms of hysteria as diagnosed at the time. She did, however, put her "wayward womb" to patriarchal use by marrying and producing three children by the age of twenty-four, to whom she referred later as nothing more than "irksome duties" (quoted in Plant 1999:102). It is clear that Ada struggled with the social roles awarded to women at the time and that she could not be restricted by the rules for acceptable "ladylike" behaviour.

As Ada's behaviour did not fit into societal expectations, her writing style also did not fit into a neatly gendered category. Ada was amazed by the effects that her writing had on others, especially given the gendered ambiguity of her writing style. She comments on her writing in the following manner: "It is especially unlike a *woman's* style but neither can I compare it with any man's exactly" (Plant 1999:102). Remembering the hysterical patients' speech patterns as documented in medical discourses, these women also lacked a distinct style when speaking. Sometimes they spoke as men, often they blabbered and mostly they remained obstinately silent. Clearly Ada was, likewise,

a woman who was alienated from her time and context, with no role models to guide her intense relation with technology.

From an early age she suffered from several "female disorders". She was victimised by the popular belief, which attributed bodily disorders (hysteria?) to the over-exertion of the female intellect. Ada writes: "Many causes have contributed to produce the past derangements; and I shall in future avoid them. One ingredient, (but only one among many) has been *too much Mathematics*" (quoted in Plant 1999:103, original emphasis). Ada therefore believed, or was convinced by others to believe, that her exposure to "*too much Mathematics*" caused her ailments. In 1850 Ada was diagnosed with womb cancer and, after a year of agonising suffering, she died.

Is it of no significance that the first "computer programme"[15] was written by a young female, who was not only suspected of hysteria and waywardness, but also ironically died of womb cancer? Ada not only experienced the psychological consequences of her waywardness, she physically perished from a cancerous and self-devouring womb. Obviously, one cannot read too much into her physical particulars, in fear of over-interpreting the historical events and forcing them into a specific argument. But one may, however, speculate about the events and weave them colourfully into a tapestry of meanings. For instance, what cohesion – if any – exists between Ada's wayward and cancerous womb and primitive computer technology? Did the first computer software require a deviant female for its inception? Perhaps some comments on the first "computer programme", to which Ada contributed, can highlight the links between Ada as an embodied woman and the computer technology she loved.
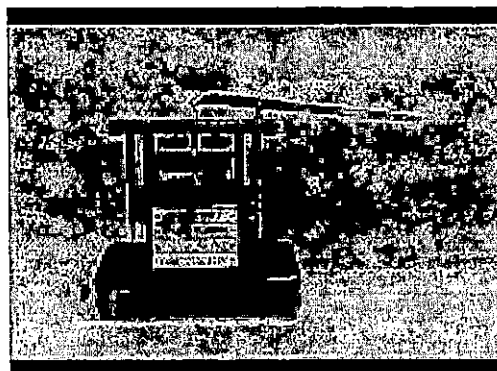
Fig. 2.15 The Jacquard loom, 1806

Recalling Freud's analysis of femininity, where he braids women and weaving intimately together, the association between Ada Lovelace and the loom, as vanguard tool for

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the development of future software programming, becomes apparent. It is no mere coincidence that the development of the *Analytical Engine* [Fig. 2.17] (Babbage's follow-up project, which was far more complex than the *Difference Engine*) and the Jacquard loom [Figs. 2.15 & 2.16], invented by Joseph Marie Jacquard (1752-1834), correspond closely. Babbage often used the loom as example when trying to explain the inner workings of the *Analytical Engine*.[16] In her notes on Babbage's paper Ada also clearly relates the two mechanisms: "We may say most aptly that the Analytical Engine weaves algebraical patterns just as the Jacquard-loom weaves flowers and leaves" (Toole 1998).
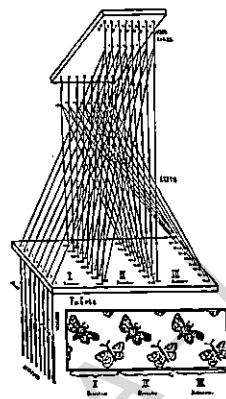
Fig. 2.16 The principles of the Jacquard loom

Without delving into too many technical details, the Jacquard loom corresponded with the algebraic processes of the *Analytical Engine* insofar as both implemented "stored programs" (primitive software) to complete their tasks.[17] The loom and the *Analytical Engine* both had "memories" to enable them to programme complicated algorithms. In addition to her notes for the translation of Babbage's paper, Ada also provided what might be called "the first computer programme" by devising a plan for the *Analytical Engine* to calculate Bernoulli numbers (a very complicated algebraic process). Ada also correctly predicted that the *Analytical Engine* would one day be used to create complicated patterns for sound and graphics in her notes:

> Supposing, for instance, that the fundamental relations of pitched sounds in the science of harmony and of musical composition were susceptible of such expression and adaptations, the engine might compose elaborate and scientific pieces of music of any degree of complexity or extent. (Toole 1998)

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The *Analytical Engine*, as interpreted by Ada Lovelace, consisted of all the important components of a modern-day computer, such as memory, processor and input/output protocol. Moreover, the development of the *Analytical Engine* and the loom also fed into each other to such an extent that their evolutions were densely interwoven.
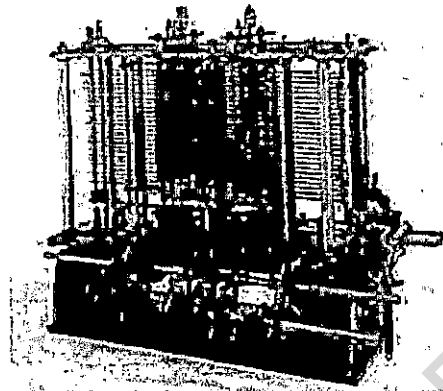
Fig. 2.17 The Analytical Engine, 1834
Science Museum/Science & Society Picture Library

If weaving is the one technology that women have invented (according to Freud), Sadie Plant's strategy to claim the loom as the most complex human engine of all is not a politically innocent one. She asserts:

> Weaving has always been a vanguard of machinic development, perhaps because, even in its most basic form, the process is one of complexity, always involving the weaving together of several threads into an integrated cloth. (1999:104)

During the process of weaving the weaver and loom, women[18] and machine, are closely incorporated, bound up together and almost "linked limb by limb to the process" (Plant 1999:105). The Jacquard loom used punched cards and therefore required only one operator. Analogously, the *Analytical Engine* could transfer control from human hands to software systems. The new industrialised weaving machines that developed from the cooperation between Babbage and Ada Lovelace's primitive computer programming during the nineteenth century alienated human hands and feet from the weaving process.[19] Industrialisation was seen to force the human body to adjust to the rhythm of bigger and automated machines, which received inputs from "software programmes" or a string of punched cards. If the loom is indeed the most complex of machines due to the assimilation of body and machine, as Sadie Plant argues, how

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could the "software" developed by Ada Lovelace prove liberating, when what it accomplishes is not to further an accord between body and machine, but rather to alienate the two? In other words, interpreted from another angle, the first software programme, developed by Ada, did not strengthen the relation between bodies and technologies, as in the case of weaver and loom, but instead contributed to an alienating and disembodying process, which takes the loom out of the hands of the weavers and places it under the control of software programmes. Hence, Ada's "software" brought about a far-reaching change in the order of the (wo)man/machine interaction by disembodying the embodied nature of the loom, rather than meshing it closer together. One may rightly question the liberating possibilities of Ada's "software" for weavers in particular. Ada's "software programme" was not liberating merely because a woman introduced it. In fact, viewed from a specific vantage point, Ada's first primitive software may even prove to be problematic in terms of women's liberation at the time.

If Ada's contribution is interpreted from yet another standpoint, namely by concentrating instead on how her software uprooted most forms of control by initiating processes of decentralisation, another perspective surfaces that may be fruitful for a cyberfeminist rendering of her work. The disruption of centralised control processes as implemented by industrialised weaving processes can be likened to the way in which software programmes run contiguously, uncontrollably and in a decentralised fashion within computers. In the same way, uncontrollable female identity is associated with complex computer systems and programmes, for women also "simulate" their operations by running contiguously and miming the "programmes" expected of them, such as hysteria. This ability of women to mime their own inessential essence corresponds with the ambiguous phenomenon that "if 'she' says something, [...] it is already no longer, identical with what she means. What she says is never identical with anything, moreover; rather, it is contiguous" (Irigaray 1985b:29). If one compares this non-identical position of women, which Irigaray describes as contiguous, it compares favourably to parallel computer programmes replicating freely without ever being identical in their repetition. Furthermore, if one asks women what they are "thinking" – the philosophical category from which they have traditionally been separated – they will probably reply "Nothing. Everything" (Irigaray 1985b:29). In other words, they are both the precondition for thought and that which is excluded from thought. If you ask a computer what it is

thinking, as in the Turing test – if it is "thinking" at all – the answer will probably be nothing and yet everything at once. Similarly the computer can also not distinguish between what it is thinking and what not and therefore it can think both at once. It is also interesting to note that in Gibson's *Neuromancer* (1984), the protagonist, Case, conducts a conversation with the artificial intelligence, Wintermute, where its essence (or rather non-essence) is similarly described as follows:

> "I'm not Wintermute now."
> "So what are you?" Case drank from the flask, feeling nothing.
> "I'm the matrix, Case." Case laughed. "Where's that get you?"
> "Nowhere. Everywhere. I'm the sum total of the works, the whole show."
> (Gibson 1984:267)

From this short piece it can be deduced that Wintermute refers to itself as the matrix, which in turn is a reference to the material and yet immaterial womb or "the sum total" that finds itself nowhere and yet everywhere at the same time. This also links with the notion of the (hysterical) female body that forms the precondition for language and yet falls outside the scope of that language, which is at once nowhere (outside language) and yet everywhere (inside language).

In the virtual age where parallel-distributed processing systems are running without central controlling units and are spread all over the system at any given time, the logic of "nowhere and yet everywhere" gains new meaning. Therefore, the information in a computer is at once nothing and yet everything, nowhere and yet, everywhere. A reference is no longer required to a central governing core, but rather to concurrent processes that are spread contiguously across the system. Just as women are popularly aligned with multi-tasking, parallel processes similarly run next to one another – proliferating and multi-tasking – without the need of an hierarchical master to enslave them. These self-organising, connected, and parallel distributed processing systems can be likened to the technology of weaving that has always supposedly fallen outside the controlling mechanisms of patriarchy, exactly because "there is continuity between the weaver, the weaving, and the woven which gives them a connectivity which eludes all orthodox conceptions of technology" (Plant 1999:271). It does not however, take much imagination to link weaving with modern software engineering[20] and the "weaving" of pixelled windows on flickering screens to make a connection between how women and technologies are closely aligned. This is the legacy of Ada

Lovelace, first cyberfeminist in her subversive use of technology and challenger of the myth that women and technologies do not correspond.

In this chapter I have established the intellectual links that cyberfeminism shares with posthumanism, postmodernism and virtual realism. I have also shown the problems associated with cyberfeminism's general reluctance to couple the movement to a clearly directed political agenda. Women's traditionally awkward relation to technologies needs to be addressed not only on a mythical level, for new myths about women and technologies are patently required, but also by finding pragmatic solutions to women's exclusion. It is for this reason that cyberfeminism, as I defend it, sees itself as both a subversive undermining of the epistemological pairing of masculinity with technology, as well as pushing physical boundaries further in gaining access for women to technologies, not only to use technologies, but also to create and develop new technologies.

In addition the etymological roots of cyberfeminism have been traced in an attempt to reveal women's kinship with technologies, as the origins of words such as "weaving" and "web" evidently prove. The re-figuration of Ada Lovelace as exemplary of an embodied cyberfeminism, positioned as technologically apt and artful has mimed a place of enunciation from which cyberfeminism can address women's traditionally awkward relation to technologies. In the next chapter, I start the investigation into the four identified body types in earnest with an analysis of the techno-transcended body, which is also the embodied configuration that aspires most passionately to. disembodiment and consequently lies the furthest from an embodied cyberfeminist position.

Endnotes:

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[1] The use of the term "wayward" refers to the discussion on hysteria in the late nineteenth century in the Introduction and the medical link between hysteria and so-called "wayward wombs".

[2] Bruno Latour argues in *We have never been modern* (1993) that quasi-objects operate within a network that is at once materially real, socially regulated, and yet discursively constructed. In other words, the humanist subject has never mastered control over reality, as once thought in Enlightenment and humanist modernism. In fact, the subject has always been an integral part of a network of relations.

³ I have devised this syntactical use of hu+(man) to show exactly where the emphasis lies in the term and what specific sex, gender, race, class, religion and technological access is favoured when the term is used unproblematically.

⁴ In the chapters dealing with the techno-transcended body, the techno-enhanced body and the marked body, such instances of disembodied impulses are discussed and analysed from a cyberfeminist position.

⁵ Donna Haraway's "Cyborg manifesto" (1990) is discussed at length in chapter six, which deals precisely with the cyborg body as an embodied proposition for cyberfeminist endeavours.

⁶ The *Old Boys Network* consists of "seven artists/media theorists/hackers/art historians/ writers/ designers/weirdos", namely Susanne Ackers, Berlin (Germany)/Skovde (Sweden); Valentina Djordjevic, Berlin (Germany); Ellen Nonnenmacher, Berlin (Germany); Helene von Oldenburg, Rastede/Hamburg (Germany); Julianne Pierce, Sydney (Australia); Claudia Reiche, Hamburg (Germany); and Cornelia Sollfrank, Hamburg/Berlin (Germany). They also work closely with the German *FACES* e-mail community for "women only" under cyber-guidance of Eva Wohlgemuth and Kathy Rae Huffman.

⁷ Since Faith Wilding's criticism about the lack of a political strategy within cyberfeminisms, which she made after the *First Cyberfeminist International* in September 1997, the leaders of the *Old Boys Network* have steered their course on another, more political route. In the editorial to the Reader for the "Next Cyberfeminist International", which took place in March 1999 in Rotterdam, reference is made to a "new cyberfeminism". The need for a "new" cyberfeminism is explained as springing from "[...] our need to distinguish ourselves from the first generation of cyberfeminists who coined the term in a way we found too narrow. This is why we made and are still making vigorous efforts to free Cyberfeminism from its old attributes in order to make it a useful and operational tool for all kinds of new utopias", write the authors, Yvonne Volkart and Cornelia Sollfrank. Then, importantly, they state: " And since Cyberfeminism, like feminism, is a politically-motivated, anti-phallogocentric idea, **we need to formulate and marshal our understanding of politics in a more concrete way** than we have done until now" (Reader for the "Next Cyberfeminist International, 1999, emphasis added).

⁸ It is particularly in William Gibson's cyberpunk writing, especially in his trilogy, *Neoromancer* (1984) *Count Zero* (1986)) and *Mona Lisa Overdrive* (1988), where the old metaphysical dream of leaving the burdensome body behind is starkly perpetuated.

⁹ For a fascinating, but rather abrasive version of the sexual possibilities of new technologies and how women can successfully apply them, see Virginia Eubanks's (1996) piece entitled "Multiple orgasm through multitasking" in the *Brillo* e-zine.

¹⁰ See in this regard Slavoj Žižek's discussion of the phallus as "the ultimate semblance" (1997:136), where he cleverly explicates that the phallus as signifier is in fact a supplement or prosthetic and therefore a stand-in for the male potency. The phallus as signifier is, consequently, never the presence of male potency, but in fact its absence.

¹¹ The term *jouissance* refers to physical and intellectual pleasure or ecstasy. It is a term that has been used by Lacan to explain the pleasure that women experience without knowing it. In other words, *jouissance* is a kind of pleasure or ecstasy that women experience, which goes beyond the control or knowledge of the phallus. It is also described as a pleasure (even orgasm) that is experienced rather than rationally known. The term has been co-opted by feminisms, especially in the work of Luce Irigaray and Hélène Cixious, where it refers to women's embodied pleasure that is simultaneously immanent (body) and transcendent (mind).

[12] Ada's mother, Lady Byron, was herself known as the Princess of Parallelograms due to her mathematical skills. She was married to the famous poet Lord Byron, but when Ada was five months old, she divorced Byron and kept custody of Ada. Apparently, Lady Byron feared that her daughter had inherited her father's poetic skills and therefore persuaded Ada from an early age to rather pursue mathematics. Ada obliged, but in her plea for "poetical science"(Toole 1998) it is clear that she was not only her mother's daughter, but also her poetic father's.

[13] Ada married William King in 1835 and in 1838 Ada and William became the Earl and Countess of Lovelace (Toole 1998).

[14] The text that Ada translated from French was: "Sketch of the Analytical Engine. Invented by Charles Babbage" by LF Menabrea of Turin, Officer of the Military Engineers from the *Bibliothèque Universelle de Genève*, October, 1842, No. 82. With notes upon the Memoir by the translator Ada Augusta, Countess of Lovelace.

[15] I place "computer programme" in inverted commas so as to draw attention to the fact that there is a debate on the issue of whether Ada did indeed write a computer programme or merely prepared the way for others to do so. See Michael Mattis's "Repurposing Ada" (1999).

[16] Babbage travelled to the European mainland and spent some time in France while he was developing the Analytical Engine. It is in France that he saw a Jacquard loom, about which he wrote: "It is known as a fact that the Jacquard loom is capable of weaving any design that the imagination of man may conceive [...] holes [are punched] in a set of pasteboard cards in such a manner that when these cards are placed in a Jacquard loom it will then weave [...] the exact pattern designed by the artist [...]. The analogy of the Analytical Engine with this well-known process is nearly perfect. Every formula which the Analytical Engine can be required to compute consists of certain algebraical operations to be performed upon given letters, and of certain other modifications depending on the numerical value assigned to those letters [...]. The Analytical Engine is therefore a machine of the most general nature. Whatever formula it is required to develop, the law of its development must be communicated to it by two sets of cards. When these have been placed, the engine is special for that particular formula" (Goldstine 1980:1).

[17] In the case of the Jacquard loom, encoding or programming the patterns to be reproduced controlled the weaving process. Weaving patterns were punched into a sequence of pasteboard cards, where each card contained the same number of rows and columns. The presence or absence of a hole was detected mechanically and used to determine the actions of the loom. By combining a string of cards together the Jacquard loom was able to weave (and reproduce) patterns of great complexity, up to ten thousand cards' "program[s]" (Dunne 2000).

[18] There are many examples of men as weavers, but etymologically the term "webster" refers to "a weaver as the designation of a woman extended or applied to a male weaver as well" (*The Shorter Oxford English Dictionary* 1990:2521). Alison Adam also makes the point in *Artificial knowing. Gender and the thinking machine* that Plant's unequivocal linking of women with weaving, "will not stand up [...] when one considers that [...] both in the cotton industry of North West England and the silk industry centred on Macclesfield in Cheshire, the higher status and pay accruing to weavers made it [...] the domain of men rather than women" (1998:176). Also the control of the Jacquard loom was mainly in the hands of men because it was considered to be too skilled an activity and too heavy for women to undertake. Adams argues that **spinning**, rather than weaving, was the domain of working-class women.

[19] Jacquard's loom did not receive a warm welcome from the weavers' industry at the time, for they feared that the machine would replace them. The animosity was so strong in Jacquard's hometown, Lyons, where he introduced his loom that he had to flee for his life. His machine was even torn to pieces in public places by the Conseil des Prudhommes. It was only later that Jacquard received acknowledgement for his invention and, ironically, a statue of him now stands on the exact spot where his machine was previously torn up.

[20] In this regard several software packages have been developed to assist the weaving process. *Swiftweave* is software that allows the user to import computer-generated images from other programs into the weaving draft. *Swiftweave* works with several major looms in the market. For more information see Greta Schmidt's *Weaving and technology*, (1999).

Chapter Three
The techno-transcended body
(Headlessness)

<<<<< absent...............random >>>>>

> Forgetting the body is an old Cartesian trick, one that has unpleasant
> consequences for those bodies whose speech is silenced by the act of
> our forgetting; that is to say, those upon whose labor the act of forgetting
> the body is founded - usually woman and minorities. (Stone 1991:109)

This chapter orbits around the aporetic mind/body split, or to be more precise, the head/body schism and its cybernetic version in the virtual age. Heads (consciousness) and their delimitation from bodies in popular cyber-theories (what I refer to as headlessness) are the guiding metaphors for this chapter. I focus on how bodies and heads (consciousness) are brutally severed at the neck to comply with techno-metaphysical aspirations to immortality and virtuality, referred to as techno-transcendence. Detached cyber-heads are invested with immortality and the grey matter of the brain becomes the paradoxical locus from which dreams of eternal existence in cyber-reality are projected. I have selected the **absent** and **random** options from the semiotic square to form the parameters of this chapter, for in techno-transcendence, as I shall show, bodies are said to be absent without a pattern, hence to be disappearing at random.

The proposition that we can indeed, become headless – get ahead, in other words, make progress, go forward or move upward – without being embodied beings that actually constitute physical heads, already suggests a critical disparity or unbridgeable chasm between physicality and meta-physics. The proposition assumes that there is a state that can be aspired towards, where visceral functions and pains can be eliminated on the way towards incorporeal virtual consciousness. It is my task to subvert such notions, by showing that **there is no existence possible without embodiment of some sort.** It is central to a cyberfeminist approach that embodiment is a prerequisite for existence, for, once ruined, embodiment cannot be replaced. As Katherine Hayles reiterates: "Embodiment can be destroyed, but it cannot be replicated. Once the specific form constituting it is gone, no amount of massaging data will bring it back" (1999:49).

Antagonism towards the physical and bodily stratum is, however, not a new trend within western thought systems, as I have already established in the introduction. In fact, it is more accurate to argue that western philosophy is interspersed with trends, thought structures, ideologies and expressions that denigrate the body. From Plato to Aristotle, Descartes to Kant, and lately from William Gibson to Timothy Leary, the body, and specifically the gendered body, is treated with suspicion and disregard. Most religious systems also sustain the so-called dualist "Gnostic trace" (Bey 1998:3), which favours a value shift from the (female) fallible body to the (male) immortal spirit. It is argued in this chapter that the "Gnostic trace" has perpetuated itself in the twenty-first century, into what can now be described as techno-transcendence. Gnosticism and techno-transcendence share utter disgust and contempt for the material realm. The culmination of body contempt or striving towards "no bodies" came to prominence, in the seventeenth-century Enlightenment, when the fallibility and uncertainty of the material domain reached absurd proportions. Accordingly, I will examine the major contemplations on embodiment during the Enlightenment, as represented in Descartes's work, before I turn to the so-called new or Techno-Enlightenment as it manifests in groupings such as the Transhumanists, Extropians, and the cyberpunk genre.

3.1   No bodies: Enlightenment

But how could I deny that I possess these hands and this body?
(Descartes *Meditations I*)

Fig. 3.1 René Descartes (1596-1650)

The height of dualist or "no body" theory, as it can also be termed, is embodied in the "thinking" person of René Descartes (1596-1650) [Fig. 3.1]. [The term "no-body" seems quite applicable, for these theorists plead precisely for **no bodies.**] Descartes viewed the body as an entity that is completely different and separable from the mind. Although this harsh dualism is culturally specific and does not exist without counter-discourses, Descartes's body/mind split has overshadowed most popular philosophies and discussions about the body in the "modern" West. Even though Descartes's dualism is obviously problematic and has been thoroughly discredited and scrutinised by postmodern criticism, most of his postulations have miraculously survived and cleverly morphed into recent projects that express aversion towards the body, such as Transhumanism.

Descartes's dualism basically entails that the mind – the *res cogitans* (unextended thinking substance) – has the powers of intelligence, spirituality and selfhood, whilst the corporeal body – the *res extensa* (extended substance) – is simply a machine susceptible to mathematical (and specifically geometric) analysis. Accordingly, the mind has its own apparently distinct and independent existence separate from the body. Descartes also constructed the mind, not surprisingly, as an immaterial subject or the disembodied "I" in his famous phrase: "I think therefore I am" phrase (*Cogito, ergo sum*).

Descartes argued that clarity could only be gained when the confused temporal bodily sphere is negated and by concentrating instead on immaterial subjects, which are supposedly untouched by "nature". The Cartesian mind is constructed as falling outside the scope of "nature", for material things have only geometrical properties and "because we cannot view the body as in any fashion thinking" (Descartes 1952:284). By contrast, the mind is constructed as a thinking substance even possessing consciousness of its own thinking so that nothing in the self apparently escapes its own thinking processes. The thinking "I" is, therefore, not only omnipresent but also completely transparent to itself. Descartes explains the ubiquity of the self as: "There can be nothing in me, that is, in my mind, of which I am not conscious" (Descartes 1969: 90).[1]

It is clear, though, that Descartes's theory on embodiment is, ironically, based on a few thinking flaws. Apart from the above assumption of the self being ubiquitous to itself, another tragic flaw is the insistence that the body and mind have entirely different natures, while they are simultaneously closely (or even intimately) materially joined. On the one hand, Descartes disembodies the mind, and on the other, he locates the mind in the body: "we must know that the soul [mind] is really joined to the whole body"'

(1952:292). He even specifies the exact location as: "there is yet in the body a certain part in which it exercises its functions [...] no[t] the brain as a whole, but solely the innermost part of the brain, viz. a certain very small gland, situated in a midway position [...]" (1952: 292). He then adds: "Again the soul [mind] is of such a nature that it has no relation to extension, nor to the dimensions or other properties of the matter composing the body [...]" (1952:292). Paradoxically, immediately after locating the mind in the physical body, Descartes turns his argument around by maintaining that the mind has no relation to or part of the body.

Elsewhere he confirms this ambiguous position by stating: "although the whole mind seems to be united to the whole body, nevertheless if a foot is cut off, or any arm, or any other part of the body, **I know that nothing is thereby taken away from the mind** [...] because **it is one and the same mind** that wills, which senses and which understands (1969:86, emphasis added).[2] In other words, upon losing a foot or any other limb, the invincible mind continues undisturbed as if nothing has happened. The mind operates seemingly on a "higher" dislocated level, apparently oblivious to the body's visceral ordeals.

Conversely, when Descartes links the mind to the whole body and locates it in the brain specifically, it ironically implies that the mind belongs to the extended (res extensa) and physical realm of the body. In other words, the mind constitutes a physical location. Obviously, Descartes wanted to avoid such a conclusion, but according to Wilson (1980:49), he was never able satisfactorily to dissolve this unmistakable contradiction. Indeed, this forms the paradoxical basis of embodiment, the aporia between mind and body that cannot be resolved. Furthermore, Descartes also contradicts himself when he conceptually constructs the mind (res cogitans) as disembodied, while being an embodied being himself. In other words, he presumed that "we know what it would be like for our very selves to continue to exist in a disembodied state" (Wilson 1980:46). Ironically, it is only by virtue of being embodied that Descartes could make disembodied projections.

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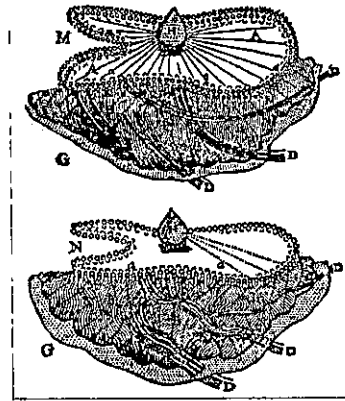
Fig. 3.2 Rene Descartes. *L'Homme de Rene Descartes* 1664. Paris: for Theodore Girard, 1664. Folger Call No. 158235, p.69, detail. (Folger Shakespeare Library)

Similarly, in her insightful essay, "How can I deny that these hands and this body are mine?" a question that Descartes asked during his *Meditations*, Judith Butler (1997) shows that in the process of calling the reality of his own body into question, the reality of Descartes's body is simultaneously affirmed. Descartes's writing hand (the body) that wrote the text, although seemingly separate from the text, is indisputably the material precondition for the text to exist at all. As Butler explains: "There is no writing without the body, but no body fully appears along with the writing that it produces" (1997:11). Although the hand (body) leaves behind the text it writes, it is inseparable from the conscious mind that creates the text. But the hand does not completely dissipate into text and therefore does not become mind only. Descartes's body leaves its traces in his text by materialising the text. The body is at once determined by and yet falls outside the scope of the discourse (text) it produces. This means that the mind (*res cogitans*) writes the body just as the body (*res extensa*) writes the mind. However, the body is not fully dispersed into language and eludes complete textual realisation. For as the body writes the text, it is being written by the text without becoming only text. There are always remainders of the body that fall outside the scope of language. Our embodied nature is, consequently, a prerequisite for postulations and texts about disembodiment.

Descartes not only misjudged the role that his body played in the creation of his texts and ponderings about disembodiment: his thoughts also bore the seeds of an instrumentalist and technologist approach towards embodiment. In *L'Âme Raisonnable (The reasonable soul)*, for instance, he explicitly describes the body as a machine, whose workings are likened to a clock:

> [...] breathing and other like acts which are as natural and usual to the **body or machine**, and which depend on the flow of the spirits, are **like**

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the movements of a clock, or a mill, which may be kept going by the ordinary flow of water. (Descartes 1952:303, emphasis added)

In Descartes's view the body is a machine that works on the same principles as any other mechanism. Accordingly, the body is a mere object awaiting technical input and maintenance. Furthermore, this mechanical body is **headed** by the rational mind (soul), which is seated in the brain. Descartes elaborates on this relation:

> When the rational soul – *l'âme raisonnable* – is lodged in this machine, it will have its principle seat in the brain, and will take the place of the engineer or 'fountaineer', who ought to be in that part of the works or reservoir with which all the various tubes are connected, when he wishes to quicken or to slacken, or in any way to alter their movements. (Descartes 1952:303)

Descartes's views have a futuristic tone here, especially when compared to recent developments in virtual reality labs, where the brain, or more precisely the head (via head-mounted displays) [Fig. 3.4], becomes a "principle seat [...] with which all the various tubes are connected". It is amazing how precisely Descartes unknowingly predicted the future of bodies and technologies. The body is reduced to a life-support system that is steered by the powerful brain, also referred to as the "engineer or 'fountaineer'" that controls the whole organism.

Fig. 3.3 Night view head-mounted display

Does Descartes's "engineer or fountaineer" prefigure the latter-day cyberneer's jacking into cyberspace? Surprisingly, the Greek word *kubernetes* refers to a steersman or helmsman; and *kubernesis* refers to the act of steering, pillaging, guiding and governing. The parallels between the Cartesian fountaineer as steersman and the cybernetic console cowboy clearly emerge. Descartes's fountaineer of the feeble body has

transmuted into the modern cyber-pilot steering the head-mounted-display, while endlessly surfing new frontiers in cyberspace.

3.2   No bodies: techno-enlightenment

René Descartes's disembodied Enlightenment project has apparently come full circle in its contemporary rendition, known as the Transhumanist movement. Transhumanists even claim the Enlightenment as their roots, by referring to themselves as part of a so-called New Enlightenment:

> Seeing and embracing this new challenge, the transhumanist world view is a redemption of the optimism of the Enlightenment of the 18th Century, a **New Enlightenment** reinvigorated by deeper understanding of consciousness as an integral part of natural evolution. (Burch 1997:2, emphasis added)

Like good Cartesians, Transhumanists call on reason, autonomy, dynamic optimism, and political and morphological freedom to steer them into the virtual age. Anders Sandberg defines Transhumanism as a philosophy that believes that humanity can and should strive for higher levels of physical, mental and social development. The principles of Transhumanism are transcendence, pragmatism, memetic[3] propagation, diversity and evolution (Sandberg 1997). Most outlines of Transhumanism also refer explicitly to the process of overcoming the human form and its limitations by means of technoscience.[4] In this regard, Daniel Ust bluntly states: "there is nothing special about the current form of humanity [and this] includes [...] the organs of the body" (1997). This indicates that the bio-body is viewed as a mere obstacle on the road towards immortal disembodiment.

Transhumanists claim to be tolerant towards those who choose to remain unchanged humans, as long as these mere mortals "do not seek to hinder us" (Sandberg 1997:sp). Apparently, they have no problems with others who reject their ideals, for as Sandberg states: "If they don't want to go in our direction, **they are welcome to remain humans**" (1997, emphasis added). This implies that those who do not opt for the quest towards transhumanity will remain mere humans, whilst those who do develop themselves in a techno-rational manner are becoming more than human or trans-human.

Transhumanists favour self-transformation as part of an auto-evolution process. They see themselves as no longer bound to biological evolution, but rather as free subjects who can choose their own evolutionary path. Sandberg explains: "The responsibility of our development is now ours alone, we can choose what we want to become and how we want to become it" (Sandberg 1997). This is patently a techno-version of the Cartesian "I think therefore I am". The auto-reliant subject can now create his own universe according to his own specifications and preferences in alliance with new technologies. Transhumanism is a reincarnation, or rather an ironic re-embodiment of the Cartesian disembodied mind that has supposedly learnt how to deal effectively with bodily constraints by "using technology to overcome our limits, to transcend" (Ust 1997).

Transhumanism is also sometimes found in Extropianism,[5] which corresponds with the principles of boundless expansion, self-transformation, dynamic optimism, intelligent technology and spontaneous order (More 1993). The borders of the all-knowing self, the omnipotent "I-think-therefore-I-am", are perceived to be limitless, as [he] expands and colonises new frontiers in "true" *Star Trek* style. The body is only one of the obstacles that has to be dealt with effectively, by applying technoscience reasonably and critically. In other words, Transhumanism's main task is first silencing, then augmenting, and finally the transcendence of the corporeal. The most pressing problem in the way of complete transcendence is obviously natural death, but as self-proclaimed Transhumanist, FM-2030 states, "**Immortality is now a question of when – not if**" (1970, emphasis added).

Immortality, obviously one of the burning issues for most Transhumanists, is dealt with by devising step-by-step guidelines for prospective immortals. These guidelines read like do-it-yourself instructions for becoming gradually disembodied. Aspirant immortals are informed on what to do today, in the near future, the mid-term future and long-term future. The answers are all there, starting with less body-invasive augmentations such as memory and mood enhancements, and moving to the grand finale of total uploading and technological singularity. No longer will one have to deal with mood swings brought about by hormonal changes or struggle to remember. No longer will mental death occur: these are all things of the finite embodied past. According to Transhumanism, our bodies may well die, but, like butterflies, we will shed them, spread our eternal mental wings and fly. Finally techno-transcendence will be accomplished.

The fact that all of these claims are made from within an embodied constitution is conveniently overlooked. Furthermore, the possibility that it is only embodied beings that long for disembodiment is also not reflected in Transhumanist discourses. Perhaps longing for disembodiment is an ontological prerequisite for being embodied.

Projections towards disembodiment can only be made from within an embodied state, as I showed in relation to Descartes's writing about disembodiment from an embodied location. Disembodiment presupposes embodiment, just as embodiment presupposes disembodiment. Likewise disembodiment is the supplement – the unnecessary necessity – of embodiment. Yet Transhumanist discourses conveniently and sadly choose to overlook the inter-relatedness of embodiment and disembodiment in order to achieve techno-transcendence.

It is not only Transhumanist discourses that long for a disembodied state, but there are other *fin de millennium* genres that also propagate techno-transcendence and body scepticisms, such as the literary genre of cyberpunk.[6] Whereas Transhumanism preaches techno-optimism, cyberpunk advocates a dystopian and rather bleak outlook. In the end both movements share the same scepticism towards the bio-body. In this regard, William Gibson's often-quoted cyberpunk novel, *Neuromancer* (1984), is drenched with examples of body loathing. The main character, Case, a futuristic hacker or "console cowboy", has only contempt for his body, as becomes clear from the following introductory lines in the book: "In the bars he'd frequented as a cowboy hotshot, the elite stance involved **a certain relaxed contempt for the flesh. The body was meat. Case fell into the prison of his own flesh**" (Gibson 1984:5).

Also in the cases where Case actually "embodies" himself, he does so through the technology provided by "simstim". According to Gibson's dystopian view, "simstim" allows those, such as Case, who are appropriately wired by means of invasive technologies, to access the sensory experience or embodiment of another person. This embodied experience is referred to as the "sensorium" in the novel. Case accesses the body of Molly, the female lead, through the "sensorium". It is, peculiarly, only through the female body, that Case makes contact again with physical pain and discomfort. In other words, Case, as a prime example of masculine disembodiment, becomes a virtual construction that roams the matrix, while Molly's body becomes a mere sensorium to be accessed and perused from a safe distance. Molly also rents her body for prostitution in what is termed "meat puppeting", which basically entails vacating the body while it is in "use" by customers. Nevertheless, when Molly's body fails due to injuries and pain, Case has to break his safe distance and "re-enter" the so-called confines of the embodied realm in an attempt to save her.
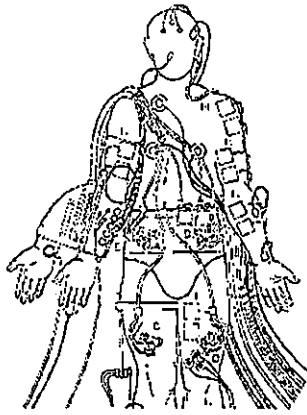
Fig. 3.4 Stelarc, *The Amplified Body/third arm project*, 1990

Gibson's texts, together with the work of other latter-day enlightenment thinkers, view the encounters between bodies and new technologies as proof of the weaknesses and deficiencies of the body. As teased out in this chapter, body sceptics crudely perceive of the body as a bad invention that needs to be redesigned and re-engineered. One pertinent voice that confirms the failed engineering of the bio-body comes from the Australian performance artist, Stelarc:

> It is time to question whether a bipedal, breathing body with binocular vision and a 1400-cc brain is an adequate biological form. It cannot cope with the quantity, complexity, and quality of information it has accumulated; it is intimidated by the precision, speed, and power of technology and it is biologically ill equipped to cope with its new extraterrestrial environment. **The body is neither a very efficient nor a very durable structure.** It malfunctions often and fatigues quickly; its performance is determined by its age. It is susceptible to disease and is doomed to a certain and early death. Its survival parameters are very slim. It can survive only weeks without food, days without water, and minutes without oxygen. (1998:117, emphasis added)

According to this line of argument, bodies need to be immersed into new technologies in order to exchange this cumbersome parcel for a glorious techno-body that never sleeps, suffers from hunger pains, or even experiences headaches. Even the inevitability of biological death has been placed on "ice" with new technological developments such as cryonics[7] and other life-extension technologies. Stelarc explains:

> There will technically be no birth [...] then technically there would be no reason for death – given the accessibility of replacements. Death does not authenticate existence. It is an outmoded evolutionary strategy. The body need no longer be repaired but simply have parts replaced. Extending life no longer means 'existing' but rather being 'operational' [....]. The body must become immortal to adapt [...]. (1998:120)

As biological birth and death become irrelevant, the body also becomes irrelevant. If it still has relevance, it is as wretched wetware for computer hardware. In the opinion of enlightened technophiles such as Stelarc, the body is a mere life-sustaining system for the mind, which can just as easily be sustained by new technologies. With the aid of new technologies the "precious" mind can now rid itself of the (female) material-bound body and effortlessly explore (male) incorporeal horizons. The body is plainly perceived as excessive, a mere accessory that we can do without. As Stelarc phrases it: "THE BODY IS OBSOLETE. We are at the end of philosophy and human physiology" (1998:117). Immersed in data mapping and body scanning, the body is flatlining into new technologies. The Krokers echo this pessimistic view: "This age is typified by a relentless effort on the part of the virtual class to force a wholesale abandonment of the body, to dump sensuous experience into the trashbin, substituting instead a disembodied world of empty data flows" (Kroker & Kroker 1996a:2). Bodies are dumped into new technologies, reduced to reconfigurable data and digitised for eternity. The longing for complete transcendence and presence of mind, free from the immanent body, or "transcendence in immanence" (Lyotard 1991:10), is becoming a reality (or so it seems). The fate of the bio-body is predicted as follows: "In virtual reality, flesh, vaporizes into virtuality as (twentieth)-century bodies are repackaged with (twenty-first)-century cybernetic nervous systems for speeding across the electronic frontier" (Kroker & Weinstein 1994:1).

In the view of these "no-body" theorists, the redundancy of the physical body is a conclusive fact. All that remains is to finalise the details of complete body immersion and replacement. There are two general trends within the "no-body" techno-enlightenment project: one wants to remake the body and the other wants to amputate the body. One project sets out to enhance and augment the body technologically by replacing body parts and re-engineering the body. The other aims consciously at full-scale transcendence, leaving the body behind and becoming cyber-consciousness (mind) only. If a body is still required at all, it will be a virtual body that can swim the ether. Both projects rely intensely on science and new technologies to achieve their goals. The first body modification project invests in new technologies such as genetic engineering, bionics, smart drugs, surgery and biochips. The other techno-transcendence project relies on technologies such as cryonics, the uploading of human consciousness into computers and mega-scale engineering, in order to achieve bodiless exaltation.

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Techno-transcendence forms the main focus of this chapter, whereas techno-enhancement is dealt with in the following chapter. In the next section popular images of techno-transcendence in recent film are explored, namely *The Matrix* (1999, directors Andy and Larry Wachowski). The cinematic example of visualising technology is searched for visual clues of how techno-transcendence is constructed. Thereafter, current scientific research and theory subtending techno-transcendent principles are discussed. The epistemological and ontological problems underlying these projects and their implications for becoming post-human are elucidated. The chapter closes with examples of how the fated gendered body makes a return and actively resists techno-transcendence.

3.3   Cinematic techno-transcendence

In one of Hollywood's most recent visual onslaughts on the bodily senses, namely *The Matrix* (1999), the Enlightenment impulse to turn away from the body is cleverly revived in a futurist setting. The plot centres around three main characters, namely the reluctant hero, Thomas "Neo" Anderson (Keanu Reeves), the leader of the Resistance, Morpheus (Laurence Fishburne) and Trinity (Carrie-Ann Moss),[8] second-in-command. In this futurist action drama, "the matrix" is a coded and contrived construction of reality that has been devised after the "apocalypse" occurred. "Reality", as once known, has disappeared into simulation – reduced to a string of codes that rain across screens [Fig. 3.6]. Although the story actually unfolds in the future (more or less 2199), humans are lulled with comforting late twentieth-century images, which keep them controllably pacified in the past.
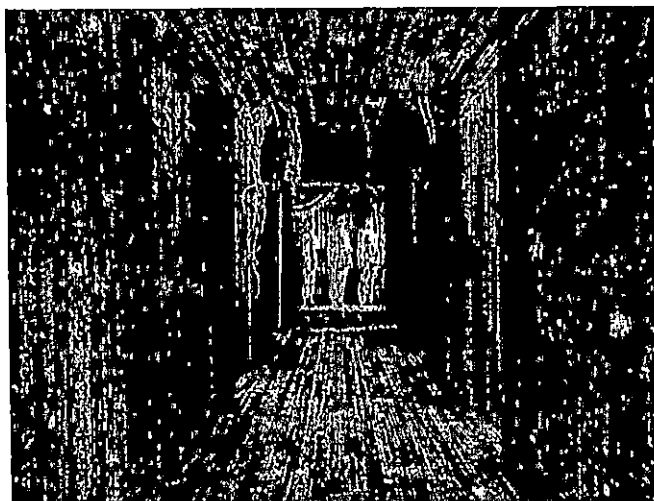
Fig. 3.5 The matrix revealed as code, *The Matrix*, 1999

Thus the matrix is depicted as a mass-induced hallucination or computer-generated dreamworld, comparable to Gibson's description of cyberspace as a "consensual hallucination" (1984:51). An Artificial Intelligence programme, described as a singular consciousness that spawned a total new race of robots, controls the matrix and rules the earth. All that has remained of earth is an environmental disaster of chemical rainstorms and barren landscapes. Humans are cultivated in endless fields of incubators where they are grown and no longer born. The AI masters live off the energy or bio-power created by the human bodies and the dead are harvested and liquefied to feed the living again.

In their anaesthetised and docile state of cyber-slumber, humans' energies are tapped into and utilised as a *Bestand* (standing reserve) to keep the robotic regime running. Humans do not have a conscious realisation of this deceit, for, while their bodies' energies are tapped, they dream they exist in the comforting matrix. The AI masters are omnipresent: they appear in the matrix in the guise of "agents" that all look anonymously alike, dressed in grey suits with dark glasses, reminiscent of "Men in black". A few humans have succeeded in liberating themselves from the robotic incubators and are now actively resisting their AI masters. As part of their insurrection, they have to be **born again**, in order to rid themselves from the oppressive system that previously corrupted their minds and dulled their senses.
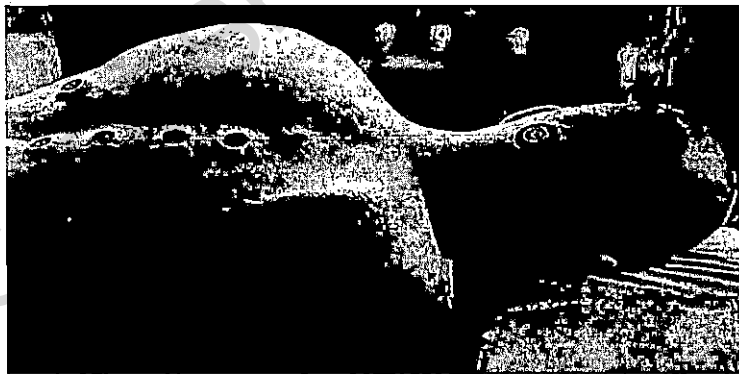
Fig.3 .6 Neo after he has been severed from the matrix, *The Matrix*, 1999

Against this dystopian background Neo's story unfolds. Neo is a hacker who has been heralded as the **Chosen One**.[9] The Resistance actively recruits him as their new leader. Although Morpheus, the current leader, is an inimitable and crafty manipulator of the matrix himself, he is not in complete control of the coded matrix yet. His name does, however, already divulge his capacity to morph and to manipulate the deceiving codes of the matrix.[10] Nevertheless, even though Morpheus is a great shape-shifter, it is

Neo who, (although his chosen state is contested)[11] becomes the one in the end who completely controls the matrix by crashing the veil of codes at will.

Ironically, the "true" reality, which can only be experienced once severed from the seductive matrix, turns out to be a bleak, senseless and rather tasteless affair. In this regard, the film obviously reveals a prejudice against the sensory realm and its "seductions". After Neo's resurrection from the harvesting fields – represented as an ascent from hell – he wakes to the following words by Morpheus: "Welcome to the real world". Upon which he asks: "Am I dead?" and Morpheus replies "Far from it". In other words, Neo has been "dead" but has now awakened to the "real" world for the first time.

Suspicion of the matrix is also evident in conversations amongst the resistance corps. It is revealed that, if anyone still longs for the taste of real meat instead of the healthy but tasteless mixtures they eat; and if anyone still wants to see colour, one will have to return again into the matrix slavery. The Resistance have elevated themselves from the slavery and drudgery of the senses and have become so-called enlightened beings who no longer have any fleshly appetites. Desires and envy do however, still exist, but they are repressed and made subservient to the cause of the Resistance in most cases.[12] It is interesting to investigate how this ridding or suppression of the sensory realm, drenched with bodily temptation, correlates with Plato's treatment of the body in his texts.
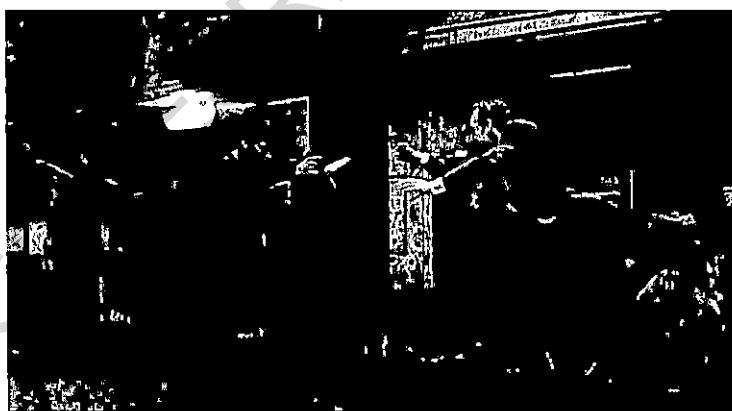
Fig. 3.7 Neo fighting against an agent, *The Matrix*, 1999

Similar to *The Matrix*'s distrust of the corporeal and sensory realm, Plato's work is saturated with examples of "somatophobia" (Grosz 1994:5) or aversion of the body. In his *Cratylus*, for instance, the word body (*soma*) is introduced as a dungeon for the non-corporeal spirit. [This may be where William Gibson borrowed the notion of Case falling into the prison of his own flesh (1984:5).] Already a preference for the disembodied state can be detected. Also in *Phaedo*, Socrates voices Plato's position on the body. In prison,

addressing his friends prior to drinking hemlock, Socrates addresses the issue of why a philosopher would act inconsistently if he hesitated to die. A philosopher would be inconsistent if he hesitated to become disembodied, for death is described as the freeing of the soul from the body. Socrates elaborates on this:

> Would you not say that he [philosopher] is entirely concerned with the soul and **not with the body?** He would like, as far as he can, **to get away from the body** and to turn to the soul. [...] In matters of this sort philosophers, above all other **men**, may be observed in every sort of way **to dissever the soul from the communion of the body**. [...] And thought is best when the mind is gathered into herself and none of these things trouble her – neither sounds nor sights nor pain nor any pleasure, – when she **takes leave of the body**, and has as little as possible to do with it, **when she has no bodily sense or desire, but is aspiring after true being**? [...] And in this the philosopher **dishonours the body; his soul runs away from his body** and desires to be alone and by herself? (Plato 1931:189-90, emphasis added)

It is interesting to pick up on the gender distinctions in Plato's philosopher's speech. Plato's reference to the soul in the feminine gender may at first appear liberating, but on closer inspection reveals a face that is hostile to women. Not only is Plato's philosopher undeniably male, he is also honoured as a man "above all other men" (Plato 1931:190), a man who is more likely than others to "dissever the soul from the communion of the body" (Plato 1931:190). In other words, Plato's philosopher is a man who is more likely than others to aspire to the state of pure mind and complete disembodiment. When Plato refers to the soul, however, he does so in the feminine gender. This can unfortunately not be interpreted as a bow in the direction of real flesh-and-blood women, but rather as Plato's appropriation of femininity for male purposes. In other words, Plato's feminine soul has nothing in common with sexed women, but instead excludes women from their own femininity. In this aspiration towards an elevated disembodied mind, it is specifically the sexed female body that is disavowed here, while her gendered aspects (femininity) are also made inaccessible to her.

In the passage cited above, Socrates, or rather Plato the ventriloquist, makes his position on the body clear. The philosopher dishonours the body. Plato advocates a state of incorporeality, a state of "no-body", where the mind and soul can turn inward and leave the deceptive world of the senses outside and behind. The distinction between the valued inner world in comparison to the deceptive outer world, can also be understood in gendered terms, where the inner converses with the masculine and the outer with the feminine. In fact, further on in the text the inner soul is likened to the

"divine, and immortal, and intellectual, and uniform, and indissoluble, and unchangeable", whereas the outer body is likened to "the human, and mortal, and unintellectual, and multiform, and dissoluble, and changeable" (Plato 1931: 196). The body therefore belongs to the domain of uncertainty and the changeable, which is not to be trusted. The soul simply uses the body as "an instrument" (Plato 1931:195) when accessing the senses, such as sight or hearing. (William Gibson's description of Case using Molly's "sensorium" to access pain and discomfort from a safe distance springs to mind again here.) The relationship between soul and body is an instrumental one, for the body merely renders the services of the senses. It is also made very clear that in this economic transaction the soul is not **"dragged by the body into the region of the changeable**" (Plato 1931:195, emphasis added). This indicates that the soul is in danger of being dragged down to the body's sphere of uncertainty and temporality, but luckily she escapes this implied horror. The soul merely borrows the eyes, ears and other senses from the body.

Plato's plea **"to get away from the body** and to turn to the soul" is an unambiguous plea for disembodiment. Strangely, when Plato describes the soul's turning away from the awful body, he does so in embodied terms: "It is as if it were not possible to turn the eye from darkness to light **without turning the whole body**; so one must turn one's whole soul from the world of becoming [...]" (Plato 1966:126). The description of the movement of the soul can be interpreted as a tension within his own text, for when he refers to the soul turning away, he cannot help but do so in embodied terms. In a sense, Plato is overtly affirming the body in his text while at the same time vigorously rejecting it. This irony is explained as "Plato rejects the body, and yet (simultaneously) tells us how necessary it is" (Walker 1998:28). How can Plato be so ambiguous about the body and also want to leave it behind so unambiguously? This is probably because all projections of leaving the body behind are undertaken from an embodied stance, as argued earlier.

Similarly, in *The Matrix*, the hostility towards the physical realm is obvious as it surfaces powerfully during one of Neo's training sessions for physical combat in the matrix (of which the skills have been directly downloaded into his brain). When Morpheus hits Neo in the matrix and his mouth starts to bleed, Neo is surprised by his own corporeality in the matrix. He asks, "I thought **this** was not real", pointing to his body. Obviously, "this" refers to the body or matrix, the "consensual hallucination" that the world of the lower senses is, according to the film's interpretation. Morpheus responds: "Your mind makes it real". The film suggests that Neo bleeds, not because he is a frail

embodied human being, but rather because he is an exalted techno-freedom fighter whose mind is in absolute control of all sensible things, such as the deceitful matrix. The correlation between "real" injury and virtual injury is, in fact, closer and more exact than the film actually explicates. Neo bleeds not only because his mind makes it real, but because his mind is made real by his body. Neo is an embodied being, which means he lives the complex interaction between body and mind. In other words, when he is in the matrix, he is still embodied.

Given the film's biases against embodiment, it cannot be a mere coincidence that the term matrix is deeply rooted in female "matter" or womb. It is also significant that one of the first things a resistance fighter has to learn in the matrix is to start defying gravity. The pull of the earth obviously represents matter, whereas the act of flying is associated with the freed mind. Accordingly, once a resistance fighter has made the link between the matrix and deception, they can liberate themselves to a world where minds make everything real. Thus Morpheus informs Neo: "I am trying to free your mind". In other words, Neo is initiated into a world where gravity has lost its pull and the virtual sky is the limit. This barely differs, if at all, from Plato's turning away from the body and "seeing" the world through the "eyes" of the soul.

Paradoxically, *The Matrix* also cannot explore the matrix without inevitably referring to and operating through the body as the vehicle for these travels. The body remains the **emblem** of humanness and the **site**, which is jacked into directly at the back of the head, the direct **access-point** to different worlds. The body, strapped down, remains the **place** where Neo's vital signs are recorded, while his dislocated mind travels somewhere else. If Neo dies in the matrix, his pacified body, back in the operator's room, is still the specific **location where** he will die. What role does his mind play in that? If the body dies the mind inevitably dies, or as Lyotard phrases it in "Can thought go on without a body?". Lyotard emphasises the point: " if there is death, then there's no thought" (1991:11). In other words, no matter how "real" Neo's mind makes things, it can only be "real" as long as his body is "real".

3.4   Techno-transcendence in theory and practice

In this section the fate of the body is traced in the theories, discourses and practices of current no-body theorists, as I have termed them. These theorists and scientists firmly state that humans can indeed get ahead or make progress without being embodied beings. Contra such notions, I affirm consistently that existence without embodiment is

not a possibility. This does not imply that the body, as we "know" it, is not changing and merging with new technologies, but neither is it effacing itself into vaporising virtuality. In teasing out the argument, Hans Moravec's notion of mind-uploading, Dr. White's head transplants, cryonics and virtual reality are explored.
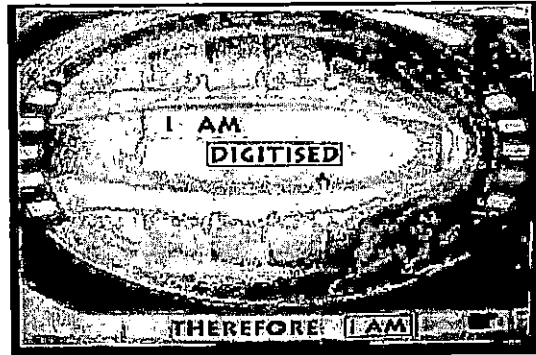
Fig. 3.8 Leon Cmielewski & Josephine Starrs, *User Unfriendly Interface*, 1996

Mind-uploading is possibly the most macabre manifestation of techno-transcendence . It is described by Hans Moravec the director of the Mobile Robot Laboratory at Carnegie-Mellon. The following is a rather lengthy section of his description:

> You've just been wheeled into the operating room. A robot brain surgeon is in attendance. By your side is a computer waiting to become a human equivalent, lacking only **a program to run**. Your skull, but not your brain, is anaesthetised. You are fully conscious. The robot surgeon opens your brain case and places a hand on the brain's surface. This unusual hand bristles with microscopic machinery, and a cable connects it to the mobile computer at your side. Instruments in the hand scan the first few millimetres of brain surface. High resolution magnetic resonance measurements build a three-dimensional surface chemical map, while arrays of magnetic and electric antennas collect signals that are rapidly unravelled to reveal, moment to moment, the pulses flashing among the neurones. These measurements, added to a comprehensive understanding of human neural architecture, allow the surgeon to write a program that models the behaviour of the [...] scanned brain tissues [...]. They flash by very fast, but any discrepancies are highlighted on a display screen. **The surgeon fine-tunes the simulation** until the correspondence is nearly perfect.
>
> To further assure of the simulation's correctness, you are given a pushbutton that allows you to momentarily "test drive" the simulation, to compare it with the functioning of **the original tissue** [...]. As soon as you press the button, a small part of your nervous system is being replaced by a computer simulation of itself. [...] **As soon as you are satisfied**, the simulation connection is established permanently. **The brain tissue is now impotent** - it receives inputs and acts as before but its output is ignored. Microscopic manipulators on the hand's surface excise the cells in the

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superfluous tissue and pass them to an aspirator, where they are drawn away [...]. **Later the brain is simulated, then excavated.**

Eventually **your skull is empty**, and the surgeon's hand rests deep in your brain stem. Though you have not lost consciousness, or even train of thought, your mind has been transferred to a machine. In a final disconcerting step the surgeon lifts out his hand. Your suddenly **abandoned body goes into a spasm and dies.** For a moment you experience only quiet and dark. Then, once again, you can open your eyes. Your perspective has shifted. The computer simulation has been disconnected from the cable leading to the surgeon's hand and reconnected to a shiny new body of the style, colour, and material of **your choice**. Your metamorphosis is complete. (Moravec 1988:109-10, emphasis added)

In the text, *Mind children: the future of robot and human intelligence* (1988), which contains the section above, Moravec not only introduces mind-uploading but also traces the history of cybernetics from its early World War II origins to near-future possibilities. Cybernetic immortality is predicted to be fatally achievable: that is, it is fatal for the physical component, but apparently promises endless freedom for the incorporeal component that now dons a new shining body of the subject's consumer choice. For what would survive after the uploading or the transfer of mental organisation is not the material substrate, the body, but rather its cybernetic organisation, namely the mind. Human existence is reduced to a program, data, or software for hardware, which can be accessed and transferred from one incorporation or embodiment to the next.

The reader is even informed that at some point during the uploading process the biological body will go into a spasm and die. By contrast the computational partner (the mind) will experience a blackout for a few seconds, after which the "lights" will return and the consciousness will carry **on as if nothing has happened.** The individual's mind will survive in the non-organic part of the system without blinking an eyelid, so to speak. The only thing that has shifted is the perspective or point of view. Moravec's forecasts are, nevertheless, made from within the organic side of the system – a bodily fact that is cleverly circumvented and unaccounted for in his predictions. What Moravec describes above is how biological death is substituted for self-guided death, which is simulated with the eternal subject (Descartes' fountaineer and the cybernaut) firmly **seated** behind the control panel.

Is it an insignificant coincidence, then, that the etymological roots of the word cybernetics mean "to steer" or to "hold the helm"? Furthermore, as earlier elaborated, the term *cybernetic* refers to a steersman or helmsman and that is precisely what

prospective mind-uploaders are aiming for: to become steersmen of their own mortality. To use William Gibson's terminology, uploaders are "console cowboys" (1984:5) pioneering the ether of information. If the trails of steermanship are traced back to Plato, it also becomes evident that Plato describes the relationship between the soul and the body as that of helmsman and ship, where the unruly body is likened to a ship steered under the captaincy of the soul (Van Peursen 1966:36). The soul is therefore depicted as the guiding helmsman steering the body like a vessel or ship. The sense organs of the body are compared to crew-members that are bound to collaborate with their captain – the soul. Plato's negativity towards the body causes him to portray the body, not only as a mere vehicle or vessel for the soul, but rather as something that encumbers or defiles the soul. In other words, Plato is desperate for the soul to purify itself from the body and its sensory trappings in order to move to higher planes of existence. Uploading shares these Platonic images of a soul at the helm, striving to move beyond a bodily existence.
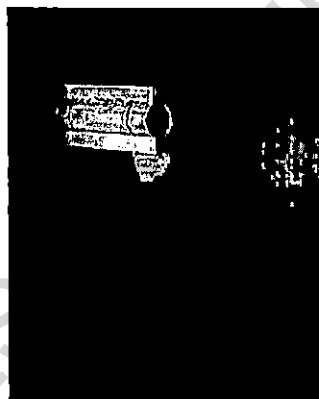
Fig. 3. 9 Leon Cmielewski & Josephine Starrs, *User Unfriendly Interface*, 1994

If we are only "mind's children", as Moravec professes, how will life appear or make itself known in another form or embodiment? Will we be able to continue to experience as we did or perhaps experience in new ways, because mind/consciousness is all that we are? Do our particular embodiments not actively mould who we are? In the light of Merleau-Ponty's notion of *flesh*, human subjects cannot perceive themselves as disembodied free-floating points of view, when they are always already embodied beings. Can we reduce existence to a program running on a piece of meat, which can just as easily be transferred to another form or embodiment and where brain and computer are interchangeable? Here again, I want to align myself with Katherine Hayles when she cautions, "As we rush to explore the new vistas that cyberspace has made

available for colonisation, let us remember the **fragility** of a material world that cannot be replaced" (1999:49). Once lost in a moment of blackout, as described in Moravec's narrative of uploading, embodiment is lost and no amount of data-massaging can revive it.

There are other problems with Moravec's uploading fantasy as well: just as existence cannot be narrowed to information, neither can it be narrowed exclusively to physicality, or to the meat of the brain in this case. This is not to imply that physical changes in the brain will not impact greatly on people's personality and behaviour. As medical evidence (Keyes 1999:125) has demonstrated, physical damage (and chemical damage) to the brain can change personality and behaviour entirely. Even if science gains complete knowledge and insight into the workings of the physical brain, this still does not necessarily imply that a complete phenomenological existence or contextual consciousness can be replicated or uploaded into another embodiment. As Keyes explains: "The self is embodied and, as such, belongs to the body as a whole, not merely brain function" (1999:125).

Fig. 3.10 Leon Cmielewski & Josephine Starrs, *User Unfriendly Interface*,1996

In this regard, neuroscientist Susan Greenfield explains in *The private life of the brain* (2000) that equating the physical workings of the brain with consciousness is not a plausible hypothesis. Greenfield explains that consciousness, which should not be confused with mind,[13] is a process, and therefore cannot fit into one side of a body/mind split. She maintains: "And if it is a process, it cannot be exactly synonymous with whatever is generating it, an object" (2000:38). In other words, consciousness is not synonymous with the physical brain. Furthermore, Greenfield explains that no simple one-to-one matching between a function and a particular part of the brain is possible. Areas or zones in the brain seem to work together in a way that is "more reminiscent of

the interactive harmony produced by instruments in an orchestra" (2000:6).[14] This means that ascribing certain functions to certain areas in the brain may prove more complicated than originally anticipated. Not only are the regions of the brain both interactive and interrelated, but also, evidently, the dialogue between body and brain is indispensable to experiencing at all. Greenfield explains: "If brain, mind, and body are all needed for consciousness, we will never be able to download an isolated moment of simple feeling, **say a headache**, on to a chip or computer screen" (2000:180). This means that even something as seemingly simple as a headache, is so personal and specific to the embodiment (mind, body and consciousness), that it is not transportable to another person. If even the specific experience of a headache cannot be transferred, this makes uploading the content of a whole head a daunting and unlikely prospect.

Fig. 3.11 The virtual sex scene from *Lawnmower Man*, 1992

I want to conclude this brief exploration into mind-uploading with another example from the visualising technology of cinema, namely *Lawnmower Man* (1992, director Brett Leonard). In the film the main character Jobe (Jeff Fahey) "uploads" completely when he morphs into virtual existence. The film unfolds as a version of the Pygmalion myth: Jobe is transformed from a mentally handicapped "lawnmower man" to a hyper-intelligent world techno-destructor, with the help of Dr. Angelo and a company named *Virtual Space Industry*. Jobe enhances his mental abilities beyond recognition and uses his imagination, enhanced by virtual reality, to destroy his opponents. He does, however, maintain his bodily stratum and return to real life after each foray into virtual reality. One night after coercing his girlfriend into virtual sex, verging on rape, Jobe oversteps the boundaries between real life and virtuality and consequently, his body is destroyed. Jobe quickly realises that without a physical body he has no impact in real life. In other

words, although Jobe is virtually "embodied", his virtual constituency has no impact on the material world. In the sequel *Lawnmower Man II: Beyond Cyberspace* (1996, director Farhad Mann) Jobe surfaces again by designating physical and embodied beings (from humans to trains) to complete his path of destruction in real life. The film (and its sequel) seem to confirm, unequivocally, that there is no life without materialised embodiment.

These arguments can more or less be transposed in general to the case of physical head transplants as practised by Dr Robert J White, brain surgeon and professor at Case Western Reserve University in Cleveland, Ohio. White caused some controversy in September 1999 when he announced that head transplants would become possible within the next ten years. White makes his shocking claims from his experience in transplanting first the heads of dogs, and then monkeys. He is confident that science will develop so rapidly that the problems still experienced at this stage will be overcome in the near future, making full human-to-human head transplants possible. As he boldly confirms: "The 21st century will be the century of the brain [...] sustaining and maintaining the brain [...] I think it's got a very bright future" (Chang 1999).

Actually, the term body transplant is more accurate, for the head is fitted onto a new body and not the other way around. "A head transplant wouldn't be for someone who may want a new brain, but for people who desire new, healthy bodies", writes Gloria Chang in *Science Today* (1999). The assumption is obviously made that a person's essence resides in the head, and therefore, wherever the head is transplanted, the personality presumably follows.

Fig. 3.12 Dr White at work,1999

White's research is, nevertheless, of extreme relevance for quadriplegics, who have a short life expectancy (20-25 years). Due to their immobility, quadriplegics lose the function of their kidneys and lungs at an early age and White's surgery could add to their life expectancy by providing them with a new body. There is, however, still a major weakness in White's proposed head transplants, which is underplayed in the media

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coverage of his successes: once transplanted onto a new body, the head cannot feel from its neck down. The reason for the flaw is that "severed spinal nerves can't be re-connected or re-grown" (Chang 1999). The reader is, however, consoled that the monkeys who had undergone successful head transplants, although "they couldn't move or feel any part of their new bodies after the operation [...] they could see, hear, taste and smell as they could before the operation" (Chang 1999). Until the problem of the re-growth of spinal nerves has been solved, head transplants remain fixed in perpetual paralysis.

White's scientific optimism continually runs into the problem of making the connection between one spinal cord and another, in other words, creating continuity from one embodiment to another. As Hayles predicts, once embodiment is destroyed it cannot be resuscitated, no matter how much data and information is available about the original embodiment. The animals that have suffered head transplants did not live longer than a week. Perhaps they died of the intolerable experience of having no body, and being trapped in a limp head.

White's research shows, then, that you can transfer **a head** from one limp body to another limp body (in the case of the quadriplegic). Or you can take away agility and living matter from two bodies by cutting off their heads, and end up with one head that can at least hear, smell, taste, see and very importantly **think**, but sadly cannot move or feel from the neck down. In the process the greatest faculty for touch, namely the skin is lost, but it is a "small sacrifice" to make for keeping the supposedly precious head intact. When Luce Irigaray claims touch as the primary sensibility that surpasses sight (for the eyes can be touched as matter before they see), she anticipates part of my discomfort with head transplants. In her reading of Merleau-Ponty's *flesh*, Irigaray explains tangibility or touch as the "insurmountable other of the visible, not reducible to its invisible other side" (1993:153). She speaks about a "tangible invisible of which his eyes are formed, but which he will never see: with no seer, neither visible nor visibility in that place" (1993:154). If the seer does not exist as tangible materiality, no sight is possible. The act of vision presupposes the existence of the invisible tangible – matter, embodiment, and touch. By reducing existence to vision as focussed in the head, Dr White (and most scientific reasoning) shows considerable disrespect towards materiality as precondition for existence. Existence that is narrowed down to the limited experiences of a dismembered head, as in head transplants, is an extremely problematic proposition for future cyborgs.

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Granted the lives of quadriplegics are tragically filtered and limited to what they can experience through their heads. Nevertheless, I want to venture the opinion that they do indeed form body images of their whole body (paraplegic limbs included) and have some overall sense of their embodiment, albeit broken and disrupted. This enables the phenomenon of phantom limbs, where paraplegics still have a sense or phantom experience of a limp foot or dangling hand.[15]

In a moment of remorse Dr White asks: "What have I done? Have I reached a point where the human soul can be transplanted? And if so, what does that mean?" (Chang 1999). Similarly to Plato's construction of the essence of man as hiding in the soul, Dr White predicts: "I believe the brain tissue is the physical repository for the human soul. I don't think the soul is in your arm, in your heart, or in your kidneys." Interchangeably with Descartes's notion that upon losing a limb the mind continues unfettered, Dr White also believes that if one loses an arm or a leg it does not change anything in the constitution of the eternal mind. Plato's "soul" has become Descartes's "mind", which in turn has morphed into Dr White's "brain tissue".

Another theorist whose assumptions about immortality and longevity link up with both Dr White's theories and Transhumanist thought, is the recently deceased Timothy Leary.[16] The fact that Leary is deceased should not go unnoticed, for, even though he held a "virtual wake for [his] virtual death" (Kroker & Kroker 1996b) and even though his "fading flesh [went] to the big cryo-heaven in the sky", Leary is still physically and mentally dead for all practical purposes. This will be the state he remains in until someone or something can re-awaken him from his deep-freeze slumber. In anticipation of such a time Leary, like Walt Disney, "is contemplating perpetual life on permanent reserve as a cryogenized icon [...] staring with ice-blue nitrogen tinted eyes" (Kroker & Kroker 1996b) into lifeless oblivion. Ironically, it is his body that is frozen as token of possible future lives. In other words, the body remains the only possible site for future lives.

Before his death Leary wrote a "handy", although extremely misguided, text entitled *Design for dying*, which provides "gourmet consumer choices regarding death" (1998:144). He explains: "I have set out to design my own death, or de-animation as I prefer to call it. It's a hip, chic thing to do. [...] I call it 'Designer Dying'" (1998:4). Leary provides step-by-step assistance for overcoming one's fear of death and taking control of one's death by making use of the latest technologies available, such as nano-technology, cloning, cryonics and uploading to make sure the subject (consciousness/mind) survives into the next millennium. Leary, like the Transhumanists,

perceives death as an involuntary metabolic coma, which is only a problem of not having enough information. In other words, once we have acquired the information processes, death – which is just a lack of data – will belong to the outmoded and antiquated superstitious past. All the same, though, Leary's own lack of data has caught up with him, though.

It is with a bitter tinge of irony that I want to draw the reader's attention to the fact that Timothy Leary in his deep-frozen state is awkwardly standing on his head. Cryonics cannot yet guarantee uneventful defrosting and therefore, upside-down storage is necessary to limit the chances of accidental loss of limbs during thawing. As Leary explains "You will be stored head down (in case of accidental thawing you will lose your feet first). That's where you'll stay, doing a headstand and awaiting resurrection" (1998:155). The head, being only connected to the body at the neck, could quite easily break off in its crisp frozen form and nobody wants to lose a head. Therefore iced bodies are stored upside down, for, it is assumed, it is far better to lose a foot than a head.

Fig. 3.13 David Farker, "Perhaps you'd like to read this informative booklet, *So- you've just woke up from cryogenic suspension and now you're a disembodied head in a jar*", 1993

Timothy Leary's controversial death and cryonic suspension is not only based on the controversy surrounding his person, but also in his contentious cyber-theories. As the Transhumanists can be described as the heirs to Descartes's detrimental mind/body split, so Leary can be described as cyber-heir to Plato's scepticism of the material domain. Leary describes his admiration for Plato as follows:

> Plato, it turns out, was magnificently on beam. He said that the material, physical expressions are pale, crude distortions of the idea forms that are fabricated by the mind, the brain, the 'soul'. We are talking about learning how to operate our minds, our brains, our souls and learning the rudiments of mind-fucking, silky body juicy fucking, and [...] brain-soul fucking. (1994:19)

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Leary also shares the prominence given by Transhumanists to evolution theory, except that he clads his evolution theory in different terminology. According to him, we are mutating into another species that have come from Aquaria (water) to the plane were we are now, called Terrarium (earth), and now we are moving on to Cyberia (virtuality). Leary explains:

> Just as the fish brain had to don dry-skin terra-suits to inhabit the Terrarium, so do our primate brains have to **don Canaveral space suits** in order to **migrate** into outer space. And use digital appliances in order to **inhabit** cyberspace. (1994:3, emphasis added)

In order to inhabit Cyberia we first have to put on new adapted body "suits" that will refit us for the challenges of "outer space" or "cyberspace". The body is portrayed as an instrumental "suit": a piece of clothing that can be worn and shed after use. What is also interesting is that Leary uses embodied terminology to refer to the non-physical activities in Cyberia: "My brain, like yours, needs to be **clothed in cyberwear** and to **swim, float, navigate** through the oceans of electronic data" (Leary 1994:3, emphasis added). He goes so far as to state that in future the wearing of cyber-clothing will be as conventional as the wearing of body-covering clothing today: "To appear without your platonic **gear** would be like showing up in public starvvbjjjuuk naked" (Leary 1994:20). In future our bodies will go "naked", while our brains will be "clothed" with cyber-gloves, cyber-goggles, cyber-caps, cyber-vests and cyber-shorts. Our bodies will be disrobed and disembodied, whereas our brains will be robed and embodied.

Fig. 3.14 NASA Ames Virtual Interactive Environment Workstation, Image no. AC89-0437-25

Leary (1994:7) continues by describing cyber-wear as mutational technology that allows the brain (not the body) to experience out-of-body experiences. The brain is dressed, via the passive body, for non-physical experiences. Obviously, the cyber-wear still goes onto

the body, but, even though the bypassed body is all dressed up, she has nowhere to go. The brain will do the travelling, while the body merely supplies the sensory site. John Perry Barlow, another devotee of cyberspace, agrees: "Nothing could be more disembodied than cyberspace. It's like having had your everything amputated" (1990:38).

Despite his body-alienating proposals Leary emphasises that the body will not be forgotten. "Please don't fret about our neglecting the wonderful body" (1994:5). The role that Leary has set aside for "our precious fleshware" is that of pleasure and leisure. According to him, the body should no longer be used for labour: "When we **platonic migrants** sweat, it will be in athletic or sensual pleasure" (1994:5, emphasis added). The brain will do the labour, dressed in cyber-wear and the body will become the site for "[...] delightful, slow, sensual, lush, erotic, fleshy, carnal vacations" (1994:5). Leary also makes it clear that bodily encounters (face-to-face) will be rare but thrilling, almost elevated to the level of mythical drama. Meeting one another with "naked eyeballs" will be exceptional, because most of our encounters, and specifically our sexual encounters, will take place in ScreenLand.

If we accept Leary's predictions, the body will be narrowed to just another interface, while the drama of our everyday lives will be staged in our info-starved brains: "Our brains have no sense organs and no muscles. Our brains command our bodies and send spaceships to the Moon [...]" (1994:4). Like Descartes, Leary also views the brain (mind) as a disembodied control panel for the clueless body: "The human brain is [...] the most powerful control communication unit in the known universe" (1994:7). Leary's interpretation of humankind excludes a phenomenological embodied point of view, for existence is narrowed down to brain activities.

Although Leary does not colour his argument in specific gender terms, the fact that he discards the body so easily on his way to PlatoLand, as he refers to cyberspace, implies an oversight, specifically of the female body. Women have played the embodied part in the patriarchal drama for too long to be so easily swapped for something more comfortable, like a cyber-suit. In the remainder of this chapter I will indicate how bodies refuse to disappear. On the contrary, they resurface in spasms and fits.

3.5   Bodies write back

I have so far shown how the myth of headlessness or techno-transcendence has been portrayed in film, images, discourses and practices. I want to return now to that which is

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discarded and seemingly of no importance, namely bio-bodies or embodiments. Because embodiment is such a complex concept, we cannot hope to turn to the body for direct answers about this perplexing issue. Embodiment cannot be constructed as a new agency or subject position that "speaks" for itself in the symbolic order. We can, however, turn to bodies and read their resistances and weak returns and attempt to understand these in terms of an interactive dialogue between bodies and new technologies. Michel Feher voices this perspective in *Of bodies and technologies* (1987), which is very helpful in plotting the position of the body in relation to new technologies. He writes:

> So the body is at once the object of power – or better the actualizer of power relations – and that, which resists power. But again it resists power not in the name of transhistorical needs but because of the new desires and constraints that each new regime develops. The situation [...] is one of permanent battle, with the body as the shifting field where new mechanisms of power constantly meet new technologies of resistance and escape. So the body is not a site of resistance to a power, which exists outside it; within the body there is a constant tension between mechanisms of power and techniques of resistance. (1987:161)

Bodies do not, therefore, plot resistance in the "name of transhistorical needs" and neither do bodies resist powers outside themselves, and in other words, there are no new social agents or substances. The body, rather, is a shifting field where the "permanent battle" of resistance and escape takes place. The examples of bodily resistance that will be discussed here are phantom limb phenomena; bodily disorientation and nausea in virtual reality; the fact that data needs to be embodied in Artificial Intelligence and neural network research in order to behave intelligently; and the lack of emotional grounding in outer space.

3.5.1 Phantom limbs

The renowned sixteenth-century physician and surgeon Ambroise Paré recorded the phantom limb phenomenon for the first time, while working with war injuries and amputees.[17] Paré explained experiences of phantom limbs as being produced by the "consentiment" of the dead parts with the remaining living ones (Grosz 1994:63). The phantom limb phenomenon occurs when a limb or any other moving body part is lost during an accident or amputated during surgery. The body then deals with the loss and discontinuity of the once–whole body image by conjuring a phantom limb. Body

phantoms are not limited to limbs: they can also occur after the loss of breasts, eyes, rectums, and penises, for instance. The body commemorates the lost limb by creating the experience "as if" the limb is still part of the body. Therefore a phantom limb can still itch, pain or throb. According to Elizabeth Grosz in *Volatile Bodies* (1994), the phantom limb is an expression of nostalgia for the lost unity and wholeness of the body: "It's a memorial to the missing limb, a physical delegate that stands in its place" (1994:73). The loss is not only experienced on a physical level, but also on a psychic plane. Bodies thus remember their lost unity, which is not to be confused with "unity" as understood in the metaphysical sense. Bodies recall their parts and they mourn for these parts when they are gone – unlike Cartesian heads, which apparently continue as if nothing has happened.

When Descartes stated, "if a foot is cut off, or any arm, or any other part of the body, **I know that nothing is thereby taken away from the mind** [...] because **it is one and the same mind** that wills, which senses and which understands" (1969:86, emphasis added), he obviously did not anticipate the phantom limb phenomenon. In fact, he did not anticipate the body at all. As long as the body keeps pumping blood to the brain's veins, life is sustained and the precious mind secured. If a foot is cut off or an arm severed, does the mind indeed carry on unchanged? If the body changes and the head is an integral part of it, does the mind not subsequently change and adapt to the trauma? During the experiences of the phantom limb phenomenon the body announces itself constantly, mourning not only lost members, but perhaps also the unbearable incision made between head and body, whereupon embodiment is split into two miserable lumps of trunk and head, mind and body.

The previous discussion of phantom limb phenomena may not appear to have any relevance when dealing with embodiment in cyberspace. It is exactly because bodies remember and because humans sense their bodies by means of mediating body images (phantoms, proprioception – discussed later) that I am elaborating on the phantom limb phenomenon. I want to create a partial correspondence between the phantom limb phenomenon and attempts to disembody in cyberspace. Bodies remember, lest we forget. They haunt us with phantom bodies when amputated and severed from consciousness. As the discussion following shortly on Alternate World Syndrome (AWS) and space travels will show, bodies loom like ghosts, recurring in the strangest places and at the most inconvenient times to remind us of their neglect. They can become nightmarish apparitions of estranged embodiments, shimmering with a vengeance on every supposedly body-free horizon. As Judith Butler states, "The effort to

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excise the body fails because the body returns, **spectrally** as a figural dimension" (1997:14, emphasis added). Whether transplanted or hollowed-out, bodies remind us of our fragility and the impossibility of remaining untouched by the loss of a limb or the amputation of the complete body. The mind is always already touched and touching – materialised and situated. For long before thinking [he] thinks [himself] into existence, [he] was already embodied.

3.5.2 *Alternate World Syndrome*

Here I want to suggest that bodily experiences such as nausea and Alternate World Syndrome (AWS) both serve as examples of information that materialises or as traces of bodily reminders. As a result, these experiences of bodily discomfort and illness confirm the embodied nature of existence.

Alternate World Syndrome or Alternate World Disorder (AWS) is comparable to motion sickness and disorientation experienced by prospective pilots training in flight simulators. The disorientation experienced by training pilots is caused mainly by discrepancies that exist between the pilot's actual bodily movement and the perceived motion (simulated motion) in the simulator. Similar bodily disparities also occur in virtual reality. In virtual reality a conflict of attention arises between the cyber-body and the bio-body. Michael Heim points out that an "ontological rift" (1993:66) develops between the different experiences of the two worlds. The expectations and movements from the virtual world – an alternate world, hence the term "Alternate World Syndrome" – interfere and upset the real world's actions and behaviour and increase the likelihood of human error.

The disruptive rift between bio-body and the virtual body links with the notion of *proprioception*, which denotes how the sensory system is attached to internal nerve receptors at the joints and muscles and provides the sense that a body is inhabited or embodied. Proprioception accordingly shapes body images,[18] which are essential to experiencing embodiment. Without a sense of proprioception and a resulting body image, it becomes almost impossible to make the simplest movements, as, for example, amongst persons suffering from neurological damage.[19] If the bodily image and sense of proprioception are altered, as is the case in fully immersed virtual reality, where the virtual kinaesthetic experience is separated from the person's physical senses and body image, discomfort and delayed actions are experienced. A person's sense of proprioception is changed

during virtual immersion, and therefore, people start to experience their limbs as elongated or twisted, for instance. Afterwards they almost have to relearn their own body movements and have to readjust to a newly experienced body image. If the alienation in proprioception persists, Alternate World Syndrome may occur. In cases where Alternate World Syndrome becomes severe, Alternate World Disorder sets in.

A person's experiences of his/her senses and body image are closely associated with the person's ideas about him or herself. Therefore, if a person's body image is disrupted, his/her idea of "self" is also being threatened. AWS/AWD is cured by various treatments, ranging from de-linking exercises in cyberspace, to more challenging disciplines such as Tai Chi and Yoga, in an attempt to restore the integrity of somatic experiences. The best cure for AWS is thus to **root** (embody) the mind or consciousness again, otherwise the dislodged body image floats inappropriately around without the necessary grounding. This means that both proprioception and body image need to be restored.

In other words, total fusion with the virtual world is upsetting and can cause discomfort, and therefore the body cannot completely merge with the cyber-body. The bio-body and the cyber-body are fractionally out of sync, but enough to cause diversion and disorientation. The bio-body cannot become unconditionally virtual, for it has its own integrity (embodied body image) and moves differently from the virtual body. The attempt to neutralise or immerse the body entirely during cyber-travel is evidently not successful yet. Although virtual reality attempts to create a body-free environment, it cannot create fully disembodied citizens. As in the case with AWS, when the body hosting the looking eye is repressed or sedated, it is particularly this experience of disembodiment that causes the body to behave in a disorderly way.

Michael Heim, in *Virtual realism* (1998:58), confirms that virtual reality technologies pull the upper body (especially the head) further into a tunnel of technology without offering any consolation to the imbalances and stress that it places on embodiment as a whole. The head functions, inextricably, as part of the body and cannot be severed from it. Therefore, embodiment resists headless virtual exhalation attempting to amputate head (mind) and body. As I argued in my analysis of *The Matrix*, the body remains the prerequisite for so-called bodiless virtual roving. Although virtual reality simulates a disembodied gaze, simulating the seemingly free-floating perspective of an intangible camera eye, it remains an

embodied practice. The body may be immersed and repressed: nonetheless, instead of disappearing, it returns in phantasms of AWS. Anne Balsamo confirms this:

> So although the body may disappear representationally in virtual worlds [...] **it does not disappear materially** in the interface with the VR apparatus or, for that matter, in the phenomenological frame of the users. (1996:126, emphasis added)

Virtual reality's efforts to drown the body's senses ricochet negatively, as my short deliberation on AWS shows, for the body returns in spells of disorientation and fits of nausea. The same appears to be the case with space travelling, where not even the loss of gravity can harness the so-called cumbersome body, as my discussion of emotional dis-connectedness and problematic embodiment in outer space will shortly demonstrate. But first I would like to explore the relation between how information is embodied in discourses surrounding Artificial Intelligence.

3.5.3 *Embodied information*[20]

In order to position myself in relation to discourse on codification of the material, I shall focus here on whether data is embodied or not. In my discussion, I will explore Artificial Intelligence (AI): that part of modern science and technology where body and mind actually meet **head-on**. AI made its début in 1956 in the USA as a scientific field of study, with the aim of systematically studying the phenomenon of intelligence. The assumption is that, once intelligence is identified, computers can simulate the underlying processes guiding intelligence. This means that machines, when correctly programmed, can simulate "true" human intelligence (Brey 1997:43). Alison Adam supplies a comprehensive definition of AI:

> AI refers to a class of computer system designed to model some aspect of human intelligence, whether it be learning (machine learning), moving around and interacting in the world (robotics and vision), reasoning towards a solution to a problem (search strategies), using natural language, modelling intelligence according to neural models (neural networks or connections) or having expert knowledge of some subject (expert or knowledge-based systems). (1998:1)

I am particularly interested in the epistemological conjectures and discourses underlying most AI developments. These assume that intelligence can be equated to the

assimilation and manipulation of symbols according to a fixed and formalised set of rules and codes (Brey 1997:47). In this regard the criticism of phenomenologist Hubert Dreyfus is important, especially in *What computers can't do: a critique of artificial reason* (1972) and later in *Mind over the machine: the power of human intuition and expertise in the era of the computer* (1986). In these texts Dreyfus outlines the crucial point, namely that intelligence needs to be **embodied** in order to be intelligent. Similarly, Douglas Hofstadter shows how flexible and complex intelligence is: "the enormous number of different rules, and level of rules" (1979:27) that organise intelligence, which makes extracting and capturing its essence a very arduous, if not an impossible task.

Far more than a fixed set of rules is needed in order to act intelligently, for, as Dreyfus demonstrates intelligence requires to be **situated**. In other words, the specificity of the context and situation contribute greatly to making an intelligent decision. Intelligent behaviour is informed by its concrete situation and is not based on a set of imposed and abstract rules. To put it bluntly, one has to be present – embodied and situated – in order to be able to make an intelligent decision.

In his criticism of AI, Dreyfus also distinguishes between "knowing that" and "knowing how". This distinction corresponds with what Hofstadter categorises as "procedural and declarative types of knowledge" (1979:616). "Knowing that" (declarative types of knowledge) is described as propositional knowledge, or "knowledge that is accessible to introspection" (Hofstadter 1979:616), which can often be written down and categorised into neat sets of rules; whereas "knowing how" (procedural types of knowledge) refers to skills-based knowledge that can only be acquired by learning and practising by trial and error, such as riding a bicycle or skating (Adam 1998:55). According to Dreyfus, it is because AI leaves out the "knowing how" part of knowledge that it is doomed to fail.[21] Traditionally women's knowledge has been associated with "knowing how" and, therefore, with supposedly lesser skills such as knitting and cooking, which cannot be translated into grand schemes and abstract theorems in the same way as science, technology and philosophy ("knowing that"). But it emerges that AI requires precisely this "knowing how" in order to make its "knowing that" function at all. If one does not know "how" to do something, "knowing that" becomes mere inaccessible data.

Accordingly, it is important to acknowledge the relationship with the body, in other words to keep asking who or what is doing the thinking, during the formation of concepts about human intelligence. The ruse performed by the rational mind, of cutting itself loose from the corporeal sphere and seemingly producing a "view from nowhere"

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by creating a set of rules, whilst in actual fact being localised and situated very specifically in a sexed and gendered body, is refutable. Meaning and knowledge are created "via real experiences in a very real world with very real bodies" (Lakoff 1987:206). The paradigm underlying most AI systems, implying that machines and minds work on exactly the same principles, is also highly contentious. The mind-as-machine paradigm cannot cope with the way in which different conceptual systems are organised or rather how different societies, situations, contexts and relations embody themselves differently in and over time. It is not possible to draw up a facile universality when it comes to human intelligence or to extract a set of fixed rules that can be applied transhistorically and transcontextually to all people: in other words, intelligence cannot be reduced to a set of "knowing that" rules. The embodied nature of existence calls for more nuances and complicated categories, which co-exist and do not exhibit discernible rules.

Nevertheless, in the new developmental fields of AI, such as neural networks, a turn is made away from rationalist abstract sets of rules (symbolic AI based on "knowing that") to more embodied terms ("knowing how"). In research into neural networks, digital computers are now discarded as the main source of insight and the study has returned to the body and the human brain's neural networks. Neural networks, also known as connectionist systems, are "based on the idea that the human brain offers a natural model for the possibility of building intelligent machines. Connectionism offers the hope of simulating the brain directly on a computer through the use of 'artificial neurones'" (Adam 1998:43).[22]

Are there any real differences between this latest venture of AI and Hans Moravec's proposed mind-uploading process? Clearly not, for the human brain is still equated to data that can be successfully captured and simulated onto a computer. Alison Adam therefore concludes that:

> Connectionist systems are just as **disembodied** as symbolic AI systems; they do not live in the world with us nor interact with us in a physical environment, hence they offer little better hope than symbolic systems of modelling any type of knowledge which might depend on having a body and using that body in the world. (1998:45)

I have to agree with Adam, for neither traditional AI nor neural networks (connectionist systems) succeeds in taking the always already embodied nature of existence (flesh) into account. Though they start from different premises, the one from extracted abstract

rules and the other from the brain's actual neural workings, they both end up in exactly the same place, namely a disembodied "nowhere" land.

I shall conclude this brief deliberation on neural networks and AI by referring to the film, *Johnny Mnemonic* (1995, director Robert Longo), based on the short story with the same title written by William Gibson (1986). In the film, Keanu Reeves plays Johnny Mnemonic – a data courier or mnemonic courier. Johnny's brain has been invaded by a chip implant that makes it possible for him to transport clandestine information from one place to another. The information is directly uploaded via a socket at the back of his head. Johnny has made a grave sacrifice for his career, because he had to give up his childhood memories to make room for more data storage. Ironically, he does not have access to the information that he carries around: he merely transports it. This is an absurd paradox, for Johnny carries information in his head to which he has no access, while the information that he did have access to, namely his childhood memories, had to be sacrificed. As a result of his lost childhood memories, Johnny Mnemonic is in limbo, for he has no past memories, in other words, he has no continuous construction of "self", neither does he have access to most of the information that he currently conveys in his head.

In a bizarre sense Johnny practically has no head, or mind. For the information that he has in his head "means" nothing to him, whereas the information that "meant" something to him is ruined. He is literally stuck between having no past to shape his future, and no apparent future against which he can measure his past. His relationships with others are accordingly extremely superficial and short-lived, for in actual fact Johnny constitutes no one to have a relationship with. Johnny has an instrumentalist relation to his memories and pays a high price for this disconnectedness and indifference.

The film starts with Johnny's latest courier/upload adventure, during which he really exerts himself and afterwards suffers splitting headaches as a result of information overload. Unknowingly, he carries the cure for a neurological illness, referred to as "Nerve Attenuation Syndrome (NAS)" (Gibson 1996:28) or "the black shakes" (Gibson 1996:72) that plagues techno-bodies, which have been exposed to information overload. He also suspiciously suffers from shaking fits and seepage due to his overloaded implant, while ironically carrying the cure inside his head. Johnny becomes a hostage of two opposing factions, namely the hostile high-techs, represented by the Pharmakon Board, and the revolutionary LOTEKS. Both groups want his head or, rather, the information stored in it. Johnny is in serious danger of losing his head for the

Pharmakon Board wants to preserve his head cryogenically in an attempt to recover the information. Johnny's existence is reduced to a mere carrier of information and his individuality is of no more importance.
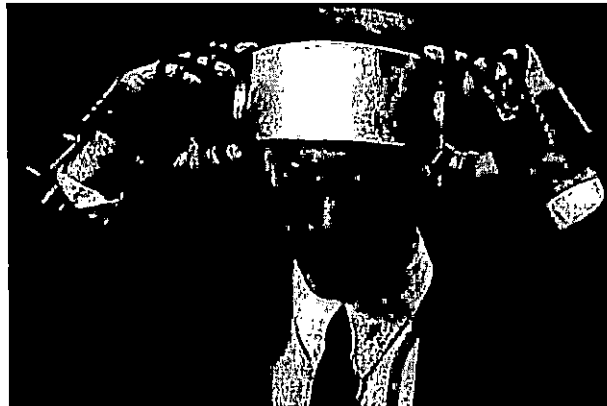
Fig. 3.15 *Johnny Mnemonic*, Tri-Star/Columbia Pictures, 1995

The film, in my view, shows the embedded problems of data not being embodied (e.g. the data in Johnny's head to which he has no access) and, on the other hand, of no data being available to be embodied (Johnny's lost childhood memories). Johnny does not know what he is transporting in his head, therefore he does not embody the information fully: he merely transmits it. He sacrificed his own embodied data, namely the memories of his childhood, and has become a very unappealing human being as a result. When asked if he remembers anything about his past, he answers: "Maybe some residual stuff. Every now and then, there's something [...] I can never hold on to it [...] (1996:56). Johnny is very pragmatic about his choice, though: "Maybe I didn't lose anything I wanted to keep. I needed the space for the job" (1996:56). This represents a very instrumentalist approach to his embodied integrity, which could, in some ways, even be gendered if it is seen in the light of science's supposed stance of neutrality, which parts as easily with its embodied memories.

Fig. 3.16 The replicant, Rachael inspects Rick Deckard's photographs, *Blade Runner*, 1982

In no sense can memories be elevated to metaphysical status, but I am making the point that if memories (like information) are not meaningfully embodied, they become senseless and have no apparent or inherent meaning. Similarly, existence without memories becomes unbearable, as in the film *Blade Runner* (1982, director Ridley Scott)[23] where the Replicants (androids) are provided with childhood memories to make their transition into "humanity" easier.[24] The Replicants cling desperately to their memories, which appear as treasured photographs, for it is through these images that they succeed in constructing themselves as "meaningful" subjects. The Replicants in *Blade Runner* contrast sharply with Johnny Mnemonic, who has coldly discarded his memories to better his possibilities in his loathsome "profession". As argued earlier in connection with AI, information needs to be embodied in order to become intelligent. The opposite also holds true, namely that a body without information (memories, constructions of selfhood etc.) is doomed to an indeterminate state. What matters though, is how information is embodied and who or what embodies it. In other words, it matters how data materialises.

3.5.4 Dis-connected emotions

Space – "the final frontier" (as *Star Trek* proclaims) – and space travelling attest to humanity's final triumph over earth and gravity. But the question arises of what space is referred to – "real" space or cyberspace? Both frontiers[25] beckon with virgin-like appeal, one to be penetrated by astronauts and the other by cybernauts. Travelling in "real" space requires the physical body to travel at immense speeds to outer planetary posts (although these are still mostly fictive at this stage), while cyber-travel entails staying immobile in one's living room and yet going "places". Both are thrilling and adventurous, although space travelling may involve more physical danger at this stage.
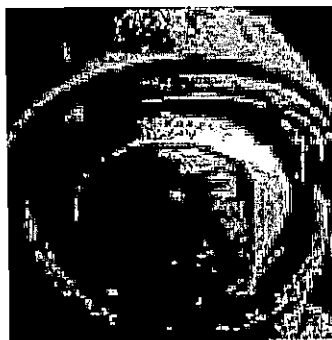
Fig. 3.17 Valentina Tereshkova, the first woman in space on June 16, 1963
(*ABC's of gender and technology*)

I want to elaborate here on the work done by Manfred Clynes, engineer and scientist, who, together with Nathan Kline, coined the term "cyborg" in 1960. I want specifically to investigate his research on human emotions in outer space as published in *Cyborg II. Sentic space travel* (1970). Clynes's research in the field of sentics links with the cyberfeminist notion that embodiment is a prerequisite for meaningful existence, in fact any kind of existence. During an interview, Clynes claims that his development of the cyborg never intended to change the "nature" of man. Clynes rather understands the concept of the cyborg as a supplement to man's imagination and an extension of his capacity to exist in other environments, such as outer space. He maintains that in order to make it possible for man to exist as a cyborg in outer space, nothing should be changed about his nature, but that man should remain to exist: "*qua man*, as man, **not changing his nature**" (1995:47, emphasis added).

Obviously, Clynes's purist belief that when man's imagination and physical abilities are changed, man's nature remains unchanging, deviates from a cyberfeminist interpretation of the cyborg, in which the cyborg is always also embodied. Clynes feels so strongly about the cyborg not changing anything about the inherent "nature" of mankind that he lashes out against Hollywood's appropriation of the concept in films such as *Terminator I* and *Terminator II*. He describes these cinematic cyborgs as: "A monsterfication of something that is human enlargement of function; as if making a man who reads a book into an inhuman monster, just because he reads a book" (1995:48).

Nonetheless, Clynes also betrays a body-aversion in his research. As the interview with Hables Gray unfolds, it becomes clear that Clynes believes in an essential identity core hidden inside everyone. It also becomes evident that for him the "nature" of man does not reside in his whole embodiment, but rather in his exalted brain. When asked how physical sex-change surgery may alter a person, he replies: "it hasn't altered their essential identity" (1995:49). This means that everyone has a core identity, which does not change when the body is changed.[26] Evidently, Descartes's sentiment that, upon losing a foot or limb, the precious mind remains unchanged, comes to the fore again. Also when Clynes describes the capabilities of Cyborg V (preceded by Cyborg I, II, III and IV), his musings do not differ much from Moravec's uploading fantasies:

> Man's **essence** survives the vicissitudes of the body, with a **brain expanded functionality**, with more highly evolved feeling, with further developed empathy [...] the very materials of the brain will have been changed to a degree [...] new freedom [...] less taken up with its own maintenance, and more consciousness [...]. (1995:52, emphasis added)

It is, however, in his research into emotions or rather the deprivation of emotions during space travel that Clynes unknowingly (almost) redeems himself from a cyberfeminist point of view. In his inquiry into the field of sentics, Clynes overthrows the implications of his Cyborg V dreams. The basic assumption in sentic research may be paraphrased as follows: humans are embodied beings that need to be and feel embodied at all times in order to experience emotional security. The role played by "mother earth" via gravity in the embodiment of our emotions is therefore, rather, weighty. For apparently, in a state of weightlessness (where there is no earth and consequently no pull of gravity) humans experience emotional problems due to the lack of meaningful embodied experiences. This disruption between psyche and physique leads to recorded emotions of boredom, anxiety, nightmares and depression. As Clynes explains:

> We have come to realise that apparently innate modes of expression of emotion are also, among other things, innately very much related to the direction and strength of gravitation. Space travel changes man's ability to express emotion, and also affects his need for it […]. It is fortunate that recently a method was developed allowing a person to generate and experience fantasy emotions reliably, and repeatedly, enjoy them creatively, and enable him to be "in touch" with his emotions. (ca 1970, 1995:36-7, emphasis added)

The method that was developed in order to harmonise emotions with bodies is known as sentic cycles, which are therapeutic exercises for uprooted astronauts, producing a state of calmness, content and feeling "put-together" (ca 1970, 1995:39). Through expressing emotions such as anger, hate, grief, love, sexual desire, joy and reverence these astronauts are "grounded" again. What sentic cycles involve is for: "a person [to sit] in a chair, rest[ing] his arm on a finger rest placed at the level of the seat of the chair and express[ing] with a single transient pressure a particular quality of emotion" (Clynes ca 1970, 1995:38).

Each emotion has been traced to a corresponding physical form, which is recognised by the nervous system in the process of generating that emotion (38). The corresponding experiences are termed sentic states: "For each emotion there is a bodily experience, which we call a virtual body image, characteristic of that emotion. These virtual body images are closely linked to the force and direction of gravity" (40). So, for instance, the experience of joy leads to expressions of lightness and floating, in other words defying gravity, while grief is characterised by a heaviness of limbs and therefore giving in to gravity. Phrased differently, each emotion is embodied uniquely in relation to

gravity. The body is, therefore, an archive into which we tap each time we express an emotion. (Our bodies remember – lest we forget (Irigaray, 1985a). Merely thinking an emotion does not produce the experience of it: one has to embody the emotion to make it authentic. "How can we be authentic in space?" (36), asks Clynes. If certain emotions are not "authentically" embodied in no-gravity outer space, they are bottled up or denied, resulting in frustrations and dissatisfaction: "We want to avoid the build-up of explosive needs, unsatisfied through long periods of deprivation" (37). It seems that dreams of endless space travels without acknowledging the concrete physicality of human existence are not feasible options if human sanity is still a measure to go by.

Clynes makes another point, which I find fascinating from a cyberfeminist framework, when he tries to explain the emotion of apprehensively discovering new ideas, which does not yet have a specific name (almost like Merleau-Ponty's *flesh*, which does not yet have a corresponding name in philosophy):

> We need to ask, is the specific angle of the head with respect to gravity no longer part of the innate spatio-temporal of that emotion in space? Does that mean, then, that the lightness and strength experienced (a feeling of not being totally earthbound, but perhaps part of an infusing process) [...] will no longer have the sensation-aspect of newness, of being taken out of one's ordinary pedestrianism, in conditions of space where lightness is habitual. (1995:41)

Clynes situates the emotion of apprehensive discovery within the spatio-temporality of earthbound existence, where gravity and its effects on embodiment play an important role in how humans experience themselves meaningfully. Does the emotion of apprehensive inquiry feel the same in a context of weightlessness or no-gravity? Moreover, would it still exist in such an environment? I argued earlier that fantasies of disembodiment are firmly seated in embodiment, just as the emotion of apprehension is situated in gravity. In other words, disembodiment is only relevant in contexts of embodiment, for what meaning can incorporeal apprehension have in a "space where lightness is habitual"? In other words, it is in the tension between the two states, namely weightlessness and possessing weight, that emotions are rendered as significant.

If humans were heads (minds) only, or if humans could become physically headless and therefore, incorporeal – mere nodes crammed with data that bears no obvious relation to their situated contextual embodiment – we would then conceivably be able to upload or to leave the body behind. But it is evident that embodiment – an indistinguishable meshing of mind and body, psyche and physique – is far more intricate

and fragile. This means that no simple extrication of information or massaging of data from the brain cells and downloaded somewhere else is viable. For even if we could upload somewhere else (which would assume that we are only data) that transported data would also need to be embodied somewhere else or instated in another material form, albeit a computer screen, as in the case of Jobe in *Lawnmower man*. How then do we get ahead? I would suggest we do this by keeping our heads firmly rooted on our shoulders, for, as cyber-theorist Allucquère Stone testifies: "Even in the age of the techno-subject, life is lived through bodies" (1990:109).

Endnotes:

1. When confronted with the contradiction of this statement Descartes admitted that many things in our minds are not expressly or actually conscious. Examples of such innate ideas are ideas regarding God or ideas of a triangle. For a thorough discussion of this contradiction see the chapter by Margaret D. Wilson (1980), Body and mind from the Cartesian point of view in *Body and mind. Past, present, and future*, edited by RW Rieber.

2. Descartes's view of body amputations contrasts sharply with the position I will later develop regarding phantom limb experiences. It is interesting to note that after Descates's death his body was transported from Sweden back to France, but along the way pieces of the body were removed by relic collectors: "By the time his body reached France, it was considerably reduced in size" (Burnham & Fieser 2001). I find this an ironic twist in the story of a man who predicted that upon losing a hand or a foot nothing will happen to the mind, and in this case nothing did indeed happen to the mind precisely because it was dead.

3 Richard Dawkins coined the term "meme" in 1976. A "meme" is a piece of patterned information carried and expressed by a human brain, just as a "gene" is a piece of patterned information carried and expressed by DNA (Kroker & Kroker 1997:169). Dawkins has since been discredited for his one-dimensional perception of genes and memes, seeing that he has a tendency to overlook the contextual and situated nature of both.

4. For a list of definitions of Transhumanism online, although many are populist, see:
http://www.aleph.se/Trans/Intro/definitions.html

5. Extropian principles are explained at the following website:
http://www.aleph.se/Trans/Cultural/Philosophy/princip.html#it2

6 When I refer to the cyberpunk genre I am including not only science fiction novels but also film and television. Bruce Sterling, one of the pioneering and most vocal advocates of cyberpunk, explains: "'Cyberpunk' before it acquired its handy label and its sinister rep, was a generous, open-handed effort, very street-level and anarchic, with a do-it-yourself attitude, an ethos it shared with garage-band '70s punk music. [...] There is much bleakness in cyberpunk, but it is an honest bleakness. There is ecstasy, but there is also dread" (1998).

7. Cryonics can be explained as the technique of freezing the body at such low temperatures that it does not significantly decay. For more information on cryonics visit the following link: http://www.aleph.se/Trans/Individual/Cryonics.html

8. When Neo first meets Trinity, he is surprised to find out that the famous hacker known as "Trinity" is indeed a flesh-and-blood woman. He says: "I thought you were a guy", to which she ingenuously replies: "Most guys do".

9. Neo ("the One" or "Eon") is constructed as a mythical saviour figure, and he fits the mythical construction perfectly, for he is a very unlikely hero or saviour. For instance, on his first attempt to jump between the two buildings in the matrix fails and he plummets to the ground – like everyone else. The film does not reveal what his abilities are founded on: it could be a genetic predisposition or an unspecified mental capability.

10. Obviously, Morpheus's name harks back to the Greek god of dreams, the son of sleep – *Morpheus*, who is a shape-shifter and transformer *par excellence*. The origins of his name are described as "his very name derives from his ability fluidly to assume the form of any being within his virtual realm of dreams, an impersonation that frequently brings about a transformation in the dreamer. He is quite literally, a medium of representation" (Kinder 2000:65). Morpheus, as depicted in the film *The Matrix*, also transforms the world of dreams as represented in the coded matrix, by bending and manipulating the matrix with his mental power.

11. When Neo visits the Oracle, she informs him that although he has talent, he is not "the One". In doing so she tricks him into believing that he is not the chosen One. However, Neo (as mythical reluctant hero) is now placed in front of a dilemma, for Morpheus has such faith in him that he will never accept that Neo is not the One. Neo realises that he cannot disappoint Morpheus and accordingly he acts as if he is the chosen One, which he unknowingly is. The Oracle knows all of this and she places Neo before a choice to either decline the role or to perform as if he is the chosen One. He chooses to perform the role and becomes the chosen One, as he has always been.

12. Trinity is desired by Cypher, a resistance fighter, while she in turn desires Neo. Another example of physical desires surviving beyond the matrix is the reference made to the availability of cyber-pornography.

13. Greenfield stresses that, although mind and consciousness are not synonymous for her, mind does influence the degree of consciousness. She describes mind as the personalisation of the physical brain, driven not so much by genes as by individual experiences.

14. Christy Sheffield Sanford confirms this in "The brain-computer metaphor: a consideration of receptivity and extension vectors" (2000), where she explores brain activity in terms of parasynaptic systems (brain activity based on hormones, ligands, peptides circulating and interacting with receptors), rather than a synaptic hardwired paradigm of brain activity. What this means is that Sanford explicates the fluidity, liquidness and wetness of the brain, rather than interaction between hardwired points. She portrays the brain as a wet environment with canals or finger lakes, which form part of a parasynaptic system. What happens in the fluidity between synapses and neurones is just as important as the mythic construction of hardwired synaptic supremacy.

15. I explore the phenomena of phantom limbs in more detail in the section where I deal with returning and resisting bodily phenomena.

16. Leary died on 4 June 1996. For a short description of the circumstances surrounding his death see Arthur and Marilouise Kroker's "Digital Angels" at: http://www.ctheory.com/e27-digital_angels.html.

17. The term "phantom limb phenomenon" was coined later by another physician, namely Weir Mitchell, while working with wartime amputees during the United States Civil War.

[18.] Elizabeth Grosz describes the body image in phenomenological terms as the ways in which the body must be psychically constituted in order for the subject to acquire a sense of its place in the world and to connect with others (1994:xii).

[19.] See, in this regard, Oliver Sacks's (1985) *The man who mistook his wife for a hat and other clinical tales*) in which Sacks describes, amongst others, a woman who has lost her proprioceptive sense as a result of neurological damage. The woman had to relearn how to sit, walk and stand, because she felt positioned outside her body. She had to force herself to manipulate her own body as a puppeteer, because her body was alien to her.

[20.] I realise that there is a connotative difference between the terms "information" and "data", but for the purposes of my study I use them interchangeably.

[21.] Dreyfus's phenomenological critique of AI has survived into the second half of the twentieth century in the works of George Lakoff and Mark Johnson, to mention only two. Lakoff, a cognitive scientist, and Johnson, a phenomenologist, both try to establish a bodily basis, like Dreyfus, for reason in opposition to rationalist abstractions. They explain: "[R]eason has a bodily basis [...] imaginative aspects of reason - metaphor, metonymy, and mental imagery - [are] central to reason" (Lakoff 1987: xi).

[22.] Similarly, Christy Sheffield Sanford undermines the comparisons made between brain activities and Internet terminology such as "network", "linked", "hypertext" and "hardwired". She states that the latest research on brain activity shows that the brain works in a more fluid, almost amorphic, and non-specific manner than is suggested by the synaptic model of linking and networking.

[23.] The film is based on Philip K Dick's novel, *Do Androids dream of Electric Sheep?* (1968).

[24.] See Mary Ann Doane's (2000) Technophilia: technology, representation and the feminine in *The gendered cyborg: A reader*, edited by G Kirkup, L Janes, K Woodward & F Hovenden, for an excellent discussion on the role memories play in the construction of selfhood in *Blade Runner*.

[25.] See L. Miller's (1995) Women and children first: Gender and the setting of the electronic frontier in *Resisting the virtual life: The culture and politics of information*, edited by J Brook & IA Boal, for an analysis of how the American notion of the "frontier" has been transposed onto the cyber-domain of the Internet.

[26.] In chapter five I deal with the marked body and tackle the enigmatic problem of sexual reassignment surgery and its affects on identity.

Chapter Four
The techno-enhanced body
(Prosthetics)

<<<<< absent .... pattern >>>>>

Jou lyf is
swaar van bloed
en jou rug
'n singende kitaar.
Ingrid Jonker, *Rook en Oker*, 1964

In the second body-technology encounter that forms part of my study's scope, the relationship between bodies and new technologies is geared towards body enhancement and augmentation. The hierarchies that became evident in the previous chapter's discussion on techno-transcendence, prevail as bodies are replaced, transplanted, invaded, enhanced and extended. There is still a drive towards abolishing the body, therefore the body is figured as **absent** on the semiotic square, although the techno-augmentation takes some physical form by means of surgery, body sculpting, and prosthetics, and accordingly, it follows a **pattern**. Clearly immortality still operates as a motivational factor in the background, but the main focus now falls on the extension and enhancement of somatic experience, instead of its complete renunciation. Bodies are affirmed and confirmed as objects of controlled consumer desire. Brian Turner acknowledges this turn towards consumerism when he states, "The regulatory control of the body is now exercised through consumerism and the fashion industry rather than through religion" (1996:23). While the cult of the "body beautiful" reigns with constructions of the ideal body as its explicit sign, no genuine shifts are made in predominant metaphysical perceptions of bio-bodies as fallible and fragile. In fact, the focus on bodies and their apparent necessity for techno-enhancement only reaffirms old fears about their supposed deficient nature.

Techno-transcendence, as discussed in the previous chapter, invests in overcoming or transcending life, in order to go beyond humanity and become trans-human. Techno-enhancement, on the other hand, aspires towards achieving longevity through the body, "in a series of stages, all the way to infinity; that is, a sort of

superhuman, or, in its early stages, a bionic six million dollar man or woman with great extended senses and abilities which are still based on the human frame" (Cheatham 2000, emphasis added). Techno-transcendents opt for disembodiment, whereas techno-enhancers favour super-humanity or hyper-embodiment. Immortality is negotiated through the biological stratum, instead of leaving it behind, as in the case of techno-transcendence. As a result, the difference between the two body/technology encounters can be epitomised as the difference between aspiring to "biological immortality" **[absent – pattern]**, which entails achieving immortality by means of the enhanced biological sphere; and "cybernetic immortality" **[absent – random]**, which means achieving immortality through transcending the body into cybernetics (Hans Moravec's mind-uploading is a perfect example of this desire).

Importantly, in contrast with techno-transcendence, techno-enhancers acknowledge their bodily existence, although reluctantly. Techno-enhancers aspire to become perfect human specimens, both mentally and physically. The body is perceived as a piece of clothing that can be redesigned, refitted and made wearable on the way to morphological freedom. In other words, the body is something that one "wears" – a prosthesis, without acknowledging the obvious, namely that it also wears us – for if the body is altered, the conscious embodiment (the lived body) is also inevitably altered.
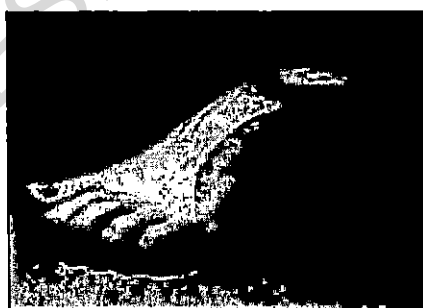
Fig.4.1 Prosthetic foot from *Prosthetics Research Study*

The leading metaphor in this chapter is that of the **prosthesis** or the artificial limb that is strapped on or taken off at will in order to enhance the broken body's motility and abilities. The prosthetic motif does however, not only pertain to material extensions of the corporeal, both exogenously and endogenously, but also shapes and reifies guiding principles about post-humanity and embodiment. The central focus of my discussion here is how endeavours of techno-enhancement view the body almost exclusively as a

prosthetic extension of mind (the so-called eternal "self"). In other words, embodiment is perceived as the controlling mind's object – a mere prosthesis, in need of enhancement and improvement with the assistance of new technologies. The conflict between "having" a body versus "being" a body rules in this particular encounter between bodies and new technologies, for the body is bluntly understood as the mind's prosthesis to have and to improve according to his better judgement.

To **have** a body or to **be** a body are perhaps the most substantial questions when trying to plot a cyberfeminist position on embodiment. The first position obviously suggests ownership, control, subjectivity and possession. One may also hint that **having** a body alludes to a hierarchical preference for mind over body. On the other hand, to **be** a body hints more at how embodiment is understood within this study, namely, as a living process or a becoming. To **be** a body does not suggest, however, that one capitulates to the idea that the body is a pure, given entity, passively awaiting cultural inscriptions from the outside. Instead, the relationship between self and prosthesis, mind and body are complex and intricate. Referring to the two aspects as opposing and exclusive is not only outdated, but subverted by evidences and experiences from the lived body.

4.1   Philosophical probing into prosthetics

Fig.4.2 Stelarc, *Third arm*, 1992

One of the major exponents of both techno-transcendence and techno-enhancement is the Australian performance artist Stelarc, whose accounts of the obsolete bio-body I have referred to earlier. Stelarc, not surprisingly, views the prosthesis precisely as an extension and modification of mankind, adding function to a redundant instrument and thereby merely perpetuating the mind/body split:

I [see] prosthetic attachments and transplanted organs as evolutionary experiments. **They are done in the guises of medical altruism but they are really experiments in modifying the body.** No one wants to admit that socially or ethically, but that's what they are. We are simultaneously transplanting organs and embedding technological components. This is a means of modifying and redesigning the body. (1994:389, emphasis added)

The difference that Stelarc announces between what he terms "medical altruism", where prosthesis enhances damaged life, and "evolutionary experiments", which are mostly geared towards enhancing existing life, is what most of the debate in this chapter focuses on. Developing a critical stance on prosthetics is complex, for there are plenty of examples of valuable medical altruism that guide the research, as well as the fact that prosthetics always already exceeds simplistic enhancement. On the other hand, though, prosthetics as an evolutionary experiment to alter the body for the sake of taking control of the body and ultimately disposing of it proves more problematic within a cyberfeminist reading of prosthetics. For, as Robert Wilson advises, every technology also carries its "dark twin" (1995:242) and destructive counterpart, and it is this detrimental "other" of prosthetics that I would like to elaborate on and problematise in this chapter. Before I turn to prosthetics in the general sense, I will first look briefly at the philosophical foundations of prosthetics.
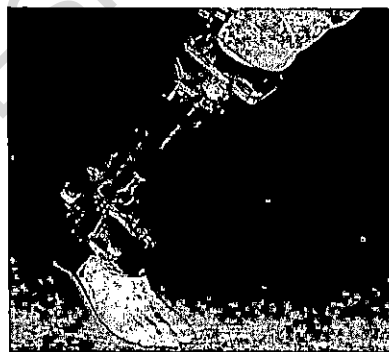
Fig. 4.3 An adjustably flexible limb from *Prosthetics Research Study*

Prosthetics can be understood as involving endogenous and exogenous modifications to the body, but on another level, it may also be seen as humans' "natural" inclination towards embodiment from the start. In some sense our embodiment is always already "prosthetic" due to the belatedness of experiences, which need to be "translated" into language/text to become comprehensible. Language is understood here in the

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Derridean sense as including the broadest range of writing, reading, speaking and textuality. Experiences are extra-textual in their immediacy, but, in order for meaning to be formed around them, they need to be mediated in and through language/text. Having direct access to the immediacy of events and experiences is impossible, for the experience needs to be mediated in order to be accessed. In this sense embodiment is prosthetic, for we are always too late in the presence of the present, in that we only have access to the present through the delayed and belated buffer that is language. The (Cartesian) notion of being fully present – having direct access to the present or the material realm – has been thoroughly undermined by deconstructive thinkers such as Derrida, who prove very helpful in this analysis of embodiment and prosthetics.

There is an *hors de texte*, to which we do not have direct access, except inside text, due to the mediated nature of our existence. Physical bodies form part of the *hors de texte* to which we have access within textuality. This does not mean that we do not experience the *hors de texte* quite literally and physically, but once we start making sense of the outside, even on an anatomical level, it is already inside. Embodiment can be likened to a Möbius-strip – the inverted three-dimensional figure eight[1] folding into itself – the outside (body) in – and back out again – the inside (mind) out, before its "true" position can be pinpointed. It is, therefore, not possible to trace the exact moment when the outside (body) pleats into the inside (mind), for at the moment of realisation, the outside has already become an inside and vice versa. As established earlier in my discussion of the hysterical body, the body is both inside and outside text: it is both the prerequisite for language and simultaneously that which escapes language. In other words, the body is "impossible" in language, for its outside is constantly twisting into the inside, while the inside becomes an outside again.

Hence, due to the "impossibility" of capturing embodiment completely in language, one makes sense of one's body (speaking **as if** one could distinguish body from mind), and it in turn makes sense of the self, through the textuality of body images. Elizabeth Grosz defines "body image" as follows: "The body image is not an isolated image of the body but necessarily involves the relations between the body, the surrounding space, other objects and bodies, and the co-ordinates or axes of vertical and horizontal. [...] The body image is the condition of the subject's access to spatiality" (1994:85). Even more importantly, body image mediates the mind/body polarisation, and shows the "radical inseparability of biological from psychical elements, the mutual

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dependence of the psychical and the biological" (1994:85). Body images can for this reason be viewed as prosthetic in their workings, for they confirm the textuality of our bodies, both consciously and unconsciously. One is, in other words, not fully present to one's body, and neither is the body fully transparent to techno-scientific probing. Rather the two (at least two) meet in **prosthetic body images**, which do not necessary ensure a fixed or perfect fit.
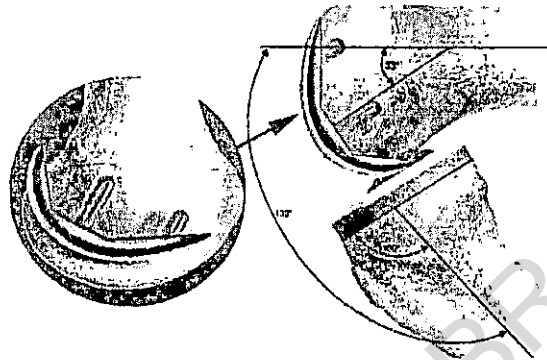
Fig. 4.4 Knee replacement surgery, *USA Today Magazine*, February 2000

The prosthetic nature of existence, according to which embodiment is always already embedded (Merleau-Ponty's *flesh*) in language/text, operates in the background of my discussion. I assume throughout that the prosthetic enhancement of the body only doubles the alienation and mediation and intensifies the inherently prosthetic relationship that is inscribed in embodiment. When I refer to embodiment as prosthetic in nature, I am not implying that bodies are the mind's prosthetic possessions, to have and control at will. I am not implying that we "have" bodies solely, but rather that we "are" bodies as well. For this reason, I emphasise the unrealisable mediated prosthetic character of embodiment, escaping invariantly and not succumbing to the "mind over matter" control mechanism that guides techno-enhancement principles.

4.2   When prosthetics was young: from wooden leg to nano-technology

Prosthetics, understood as bodily extensions, like technologies, is rooted in the socio-economic processes of humankind from the earliest times. Concrete evidence of prosthetics being used in ancient Egypt as early as 1065-740 BC was recently found in the form of a well-preserved mummy of a woman, whose right big toe had been amputated (Nerlich *et al*: 2000:2176).[2] The missing toe had been replaced in her lifetime

by a wooden prosthesis; clear marks on the sole of the prosthetic toe indicate that it had been used. In other words, the prosthetic toe was not merely a customary gesture of "wholeness" by burying all the body's lost parts together to prepare the soul for its eternal life:[3] the wooden toe was in fact made for everyday use. This is a fascinating piece of evidence of how medical altruism provided a woman almost three thousand years ago with the opportunity to continue her daily activities by means of a prosthetic toe.
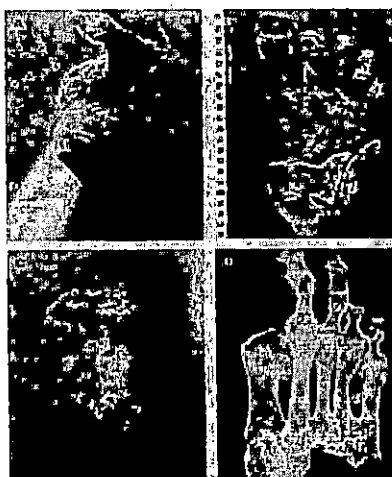
Fig. 4.5 View of well-preserved mummy of a woman's right foot and *prosthesis*, from *Ancient Egyptian prosthesis of the big toe*, in *Lancet*, 2000 (356):9248

Currently an estimated 25 000 people step on land mines per year, while ten thousand of those die. The survivors continue their lives as amputees, with or without prosthetic help. Altruistic relief organisations such as *Handicap International* teach local workshops on how to make cheap and effective prosthetic legs from available resources, but many victims still have to do without even that basic support. This means that, ironically, in our info-techno-skilled world, most land mine victims are facing a fate worse than the Egyptian woman referred to above, due to a lack of sufficient infrastructures and medical resources to supply them with prostheses that would dignify their existence. In some cases, miraculously, a prosthetic leg is improvised, as shown by a Cambodian child's prosthetic leg [Fig. 4.7], made from recycled material found in a war-torn country. The leg is miraculously fashioned from a found 75mm rocket shell and a flip-flop sandal. This model costs nothing to make, compared with the "Sarajevo Leg" [Fig. 4.8] from another war-ridden part of the globe, which, although comparatively cheap, costs US$166.

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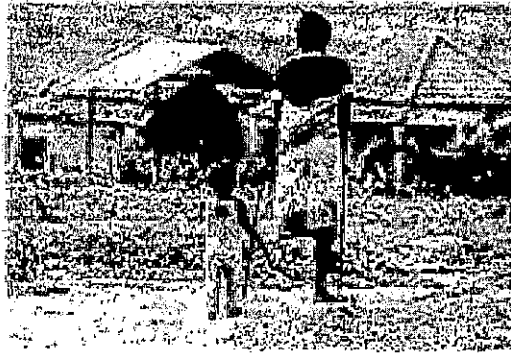
Fig. 4.6 Image of land mine victim with two children.
From: Prosthetics Outreach Foundation

Though relatively cheap, but effective, even these basic prosthetic devices are out of reach for the majority of war amputees. As will be discussed shortly, the earliest research and medical development of prostheses was undertaken with the aim of supporting the military classes to uphold war activities, whereas, ironically, modern-day civilian victims of war are not privileged to gain from the advantages of the latest technological developments in prosthetics. That privilege is, instead, reserved for the "virtual classes"[4] who are preparing themselves for eternal techno-enhancement.
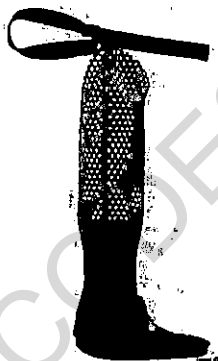
Fig. 4.7 Improvised and recycled Cambodian child's prosthesis, *Benetton Colors,* **1996/7:12**
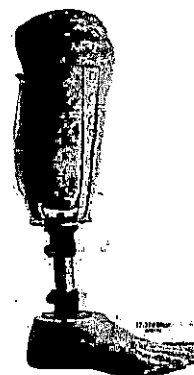
Fig. 4.8 The "Sarajevo Leg" made of stainless steel and polyurethane, *Benetton Colors* **1996/7:13**

Upon exploring the history of prosthetics, it appears that the evolution and inventions in the field of prosthetics were biased from the start, since this branch of medicine coincided mostly with developments in modern science – especially warfare. The history of prosthetics overlaps with the cyborg's inception from military origins.[5] The impetus for early research on prosthetics was provided by modern warfare practices, which left thousands of amputees in their wake. As a result medical altruism took on legendary

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proportions with the work done, for instance, by Ambroise Paré (1510-90) [Fig. 4.9], a French army barber-surgeon.[6] Naturally all the war amputees had to be fitted with artificial limbs again, so they could continue their normal existence, or even more importantly, return to the battlefield. [7]

Fig. 4.9 Ambroise Paré, (1510- 1590).

In fact, examples of progressive prosthetics are mostly drawn from the interwoven relation between the medical sciences and military craft. The interconnections between war and prosthetics can be clearly picked up in the stories of war figures such as the Indian warrior Queen Vishpla, documented in an ancient Indian poem (3500 BC), [8] who lost her leg in battle, fitted with an iron prosthesis and then returned to battle (Sanders 1986:15). Queen Vishpla's bravery can in turn be likened to the mythological figures of the warrior women, or Amazons[9] [Fig. 4.10] who also had themselves augmented for battle by disposing of one breast. Also noteworthy in the history of prosthetics is the legendary figure of the German mercenary knight Gotz von Berlichingen (1480-1562), who gained his reputation as an avatar of Robin Hood. Upon losing his right arm in battle, he was fitted with an amazingly functional prosthetic iron arm.

Fig. 4.10 *The wounded Amazon*, Rome, Vatican Museum

One of the major stimuli for modern prosthetics came through the "Great Civil War Benefaction" project, following the American Civil war (1861-65) [Fig. 4.11]. The project provided prostheses to war veterans in the hope of sparking entrepreneurship after the devastation of the war. What is clear from this brief synopsis on the history of prosthetics, though, is that most of these heroic examples came from the battleground. It is therefore not bizarre to state that early prosthetics, like early cyborgism, served the military classes and genders particularly well. The impetus provided by the military to fund and stimulate modern prosthetics contributed greatly to the sophistication of current prosthetics, especially during the twentieth century's two World Wars and thereafter.

**Fig. 4.11 The U.S. government artificial limb and deformity apparatus,
Gardner & Daniels, 1874. Chicago Historical Society**

The profile of prosthetics has, however, shifted dramatically in the info-virtual age. Its subject have shifted from war veterans to cosmetic surgery; its tools have updated from wooden pegs to nano-technology. Modern prosthetics has transformed itself from mere

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replacements of lost body parts into mega-medical and trans-national consumer businesses trading in both exogenous and endogenous body parts. Prosthetics in the twenty-first-century deals with implants, transplants, xenotransplants,[10] wearables,[11] plug-ins, nano-technology, neuro-prosthetics, bio-computing, cosmetic surgery, full-scale bio-engineering and smart drugs – to mention only its most obvious forms.

Fig. 4.12 Simulation of robot assisted surgery,
From: Surgical Navigation and Robotics Lab, Charité, Berlin

Increasingly, prostheses are permeating under skins and infiltrating bodies on a microscopic level, as bodies are not only outwardly enhanced, but also surveyed internally by medical science. The traditional boundaries between "inside" and "outside" are collapsing as nano-technology advances. The human endoskeleton is turned into an exoskeleton, as bodies are made transparent to the invasive panopticon of new techno-medicines. The inside is externalised and expanded beyond recognition. The medical procedures themselves are prosthetised by means of surgical robots capable of performing nano-specific surgery on bio-bodies [Fig. 4.12].[12] The robots as extensions of human capabilities (or prostheses) are now built to operate on humans, to transplant organs, graft skin and augment bodies with an unknown degree of accuracy. In an absurd sense it can be argued that the prostheses (robots) are now themselves operating on other prostheses.[13]

4.3   Prophetic prosthetics

In *Civilization and its discontents* (1930), Sigmund Freud briefly speculates about the increasing prosthetisation of mankind. Could it be a mere coincidence that Freud at the

time had to wear a "huge prosthesis, a sort of magnified denture or obturator, designed to shut off the mouth from the nasal cavity" (Wills 1995:92) after throat cancer was diagnosed? Did Freud's own prosthetic embodiment impel him to see mankind as prosthetic in nature? Although Freud's own uncomfortable prosthesis may have informed his ideas on prosthesis, what is of more interest here is how Freud perceived the subject. He describes it as follows:

> With every tool [man] is perfecting his own organs, whether motor or sensory, or is removing the limits to their functioning. Motor power places gigantic forces at his disposal, which, like his muscles, he can employ in any direction; thanks to ship and aircraft neither water nor air can hinder his movements; by means of spectacles he corrects defects in the lens of his own eyes; by means of the telescope he sees into the far distance; by means of the microscope he overcomes the limits of visibility set by the structure of his retina [...] **Man has, as it were, become a kind of prosthetic God.** When he puts on all his auxiliary organs he is truly magnificent, but these organs have not grown onto him and they give him much trouble at times. [...] Future ages will bring with them new and probably unimaginably great advances in this field of civilization and will increase man's likeness to God still more. But in the interests of our investigations, we will not forget that present-day man does not feel happy in his Godlike character. (Freud ca 1930, 1953-74: 90-2, emphasis added)

This description implies that civilisation is the progressive accumulation and use of prosthetics, thus technologies are used by a specific gendered category, namely man. Freud holds that man's use and implementation of prosthetics makes him more and more godlike, but his increasing resemblance to God does not necessarily afford him happiness. Perhaps Freud was speculating from the perspective of an older man suffering with a painful prosthesis. As he notes above "these organs have not grown onto him and they give him much trouble at times" or perhaps he was accurately making a prediction about man's growing relationships with prosthetics. It seems, though, that Freud realised that the cost of becoming a "prosthetic god" may be disenchanted disembodiment.

Marshall McLuhan also later explores the prosthetic nature of mankind in *Understanding media: The extensions of man* (1964), where he asserts that all media are extensions of ourselves. In other words, all media are prosthetic in character:

> During the mechanical ages we had extended our bodies in space. Today, after more than a century of electronic technology, we have extended our central nervous system itself in a global embrace, abolishing both space and time as far as our planet is concerned. [...] Whether the extension of consciousness [...] will be a 'good thing' is a question that admits of wide solution. There is little possibility of answering such questions about the extension of man without considering all of them together. **Any extension, whether of skin, hand or foot, affects the whole psychic and social complex.** (ca 1964, 1994:1, emphasis added)

McLuhan, like Freud, realises the implications of becoming complete "prosthetic gods" and fittingly uses the powerfully embodied metaphor of amputation to delineate his case. He identifies the sacrifice of prosthetisation not only on a physical level, but also as a painful psychological amputation.

> Any invention or technology is an extension or self-amputation of our physical bodies, and such extension also demands new ratios or new equilibriums among the other organs and extensions of the body [...]. Physiologically, man in the normal use of his technology [...] is perpetually modified by it [...]. (ca 1964, 1994:8)

In the case of the automobile, for instance, the human organs of motion, namely legs are consciously "self-amputated" to enable travelling at greater speed. As prosthetics are integrated into physiology, more and more biological functions are replaced by cybernetic functions. After each amputation, what remains of the physiology has to adapt to the new prosthesis and compensate for its losses in order to find "new ratios or new equilibriums" again. The ultimate replacement or prosthesis comes, however, in the form of extreme immersive technologies such as virtual reality, where the "organic function of the self [is replaced] with an electronically mediated self-experience" (Pesce 1993:5). In other words, virtual reality, taken to its logical end, amputates the body completely, leaving nothing but prosthesis in its place. The implications of complete body replacement or prosthetisation for being human have not yet been completely determined: they may perhaps only be realised after final amputation has occurred, which may be too late.

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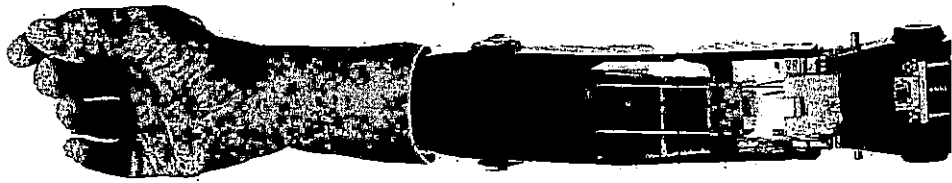
Fig. 4.13 Bionic arm created by the Edinburgh Infirmary's Bioengineering Centre, Benetton's *Colors* Dec 1996-Jan 1997(18):6-7

Furthermore, McLuhan challenges the apparently neutral and transparent relation that people have with their prosthetic technologies. In other words, McLuhan does not perceive prostheses as mere bodily extensions that are managed by a distant mind and which do not have concrete implications for embodiment. Instead, "the mind" is implicated physically in the acquisition of prostheses and is instantly touched by its workings. Humans do not only make technological prostheses, but they are also themselves made in return by their prosthetics. In other words, just as prostheses are modified, so humans are modified. McLuhan warns against a narcissistic attitude towards the extensions of our bodies as something "really out there and really independent of us" (ca 1964,1994:68). As long as we perceive techno-prosthetics as outside and not part of ourselves, we will do "the same sort of banana-skin pirouette and collapse" (ca 1964, 1994:68). According to him, when we do not realise that our prostheses are ourselves, there are no clear boundaries possible between self and prostheses.

It is to this effect that Sandy Stone, a well-known transgendered cyber-theorist, exclaims: "I have a bad history: I am a person who fell in love with her own prostheses. Not once, but twice. Then I fell in love with *somebody else's* prosthesis" (1998:3, original emphasis). She continues to describe her early experiences with a primitive crystal radio, her introduction to a "24 24 recording console" and finally how she listened to Stephen Hawking giving a lecture by means of his artificial speech device. All these technological extensions fascinated her and "hooked" her interest in technology. However, Stone, like McLuhan, does not understand prosthesis "in the specific sense of the Greek term *prosthenos* – extension" (1998:12). In other words, prostheses are not "separate, discrete agencies or tools that occup[y] physical or conceptual spaces

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separate from those of the human" (Stone 1998:12). Just as we embody prosthetics, so they also embody us.

Stone arrives at the same conclusion as Freud did, when he contemplated prosthetics, namely that, although magnificent in his prosthetic adornments, "present-day man does not feel happy in his Godlike character" (Freud ca 1930, 1953-74:92). If a techno-sceptical chord is struck by Freud, McLuhan and Stone, it should however, not be read as a Luddite denouncement of techno-prosthesis. It rather calls for what Michael Heim has termed "virtual realism" – going beyond naïve realism and technological idealism.[14] This involves living with our techno-prostheses and realising that they are us.

As we increasingly become "prosthetic gods", as Freud speculated, the often discomforting and painful experiences of prostheses are not accounted for in the rhetoric of techno-enhancement. The fact that prosthetics are generally not experienced as pleasurable, but instead, as aching sacrificial amputations, is commonly neutralised in techno-enhancement's versions of prosthetics. Or, as mentioned earlier in connection with cyberpunk author William Gibson's "simstim", when the body in pain is faced at all, it has to be kept at a safe voyeuristic distance.

A voyeuristic distance can be upheld because cyberpunk theorists do not treat the techno-body as a lived body but, rather, suspend the life of the body as an object only for contemplation. In other words, according to techno-enhancers, the augmented body is "always something 'other' than the body" (Sobchack 1995:206). It is constructed as a prosthesis "out there", separated from the "true" disembodied self. The real and physical implications of techno-enhancement for embodiment are austerely avoided in the debate. Don Ihde comments on the paradoxical stance of describing prosthetics as desirable and pleasurable entities, and yet not accepting the embodied consequences that they entail. Ihde argues:

> On the one side is a wish for total transparency, total embodiment, for the technology to truly 'become me'. Were this possible it would be equivalent to there being no technology, for total transparency would be my body and senses [...]. The other side is the desire to have the power, the *transformation* that the technology makes available. Only by using the technology is my bodily power enhanced and magnified by speed, through distance, or by any other ways in which technologies change my capacities. These capacities are always *different* from my naked capacities. The desire is, at best, contradictory. I want the

transformation that the technology allows, but I want it in such a way that I am basically unaware of its presence. I want it in such a way that it becomes me. Such a desire both secretly *rejects* what technologies are and overlooks the transformational effects, which are necessarily tied to human-technology relations. This illusory desire belongs equally to the pro- and anti-technology interpretations of technology. (1990:65, original emphasis)

The contradictory wish for what technologies offer without accepting their full embodied consequences is typical of most techno-enhancement discourses. Even though pain is irreducible, it is not uttered in these discourses, for on the way towards longevity one does not want to be reminded that the journey may be cumbersome and agonising. At the core this wilful amnesia is tantamount to not wanting to be reminded of embodiment at all.

It is productive to return to Freud's own painful prosthesis to make explicit the fragility of embodiment, lest we "forget that present-day man does not feel happy in his Godlike [prosthetic] character" (Freud ca 1930, 1953-74:92). Modern techno-dualists tend to neglect the fact that prostheses are embodied, sometimes even while experiencing excruciating pain. Prosthetics not only enhance capabilities, or restore them, but in most cases painfully modify the owner as well. Vivian Sobchack explains:

> Indeed, there is nothing like a little **pain** to bring us back to our senses, nothing like a real (not imagined) mark or wound to counter the romanticism and fantasies of techno-sexual transcendence that characterize so much of the current discourse on the techno-body that is thought to occupy the cyberspace of postmodernity. (1995:207, emphasis added)

Sobchack's reminder of pain comes from her own experience with a prosthesis due to the amputation of her left leg above the knee. Obviously, Sobchack's intimate relation to her prosthesis does not automatically elevate her to the state of being a truthful agent of prosthetics, but it does provide Sobchack with knowledge of prosthetics that she has earned through embodiment. Therefore, Sobchack's call on the senses, precisely through the experience of pain, makes a valuable contribution to the prosthetic debate, precisely from a gendered point of view, especially when the traditional identification of embodiment as female is taken into account. Pain insistently stresses the fragility and complexity of embodiment, which is so easily negated by techno-discourses. Sobchack wryly states: "my prosthetic leg has its limits and whatever

it does to extend my being-in-the-world, whatever way it enhances and amplifies [...] my existence [...] I still had to give up my fleshy leg in trade, to lose something in the bargain" (1995:213). Phrased in cyberfeminist terms – Sobchack had to make a sacrifice, not only on a psychological level, but very importantly on an irreversible physical level, in order to accomplish a "godlike" prosthetic state. Embodiment is a fragile and yet precious gift that seems to be appreciated only after the fact of amputation; after its integrity has been compromised.

When John Perry Barlow, influential virtual reality expert, makes his famous remark in connection to virtual reality: "It is like having your everything amputated", he pronounces this without taking cognisance of his embodiedness and the excruciating pain that may be involved if such a ludicrous act should be executed.[15] The narcissistic impulses behind Barlow's statement can be unravelled by making use of Marshall McLuhan's explorations of the myth of Narcissus to describe modern man's prosthetic relation with technologies.[16] Related in computational terms and in terms of virtual reality, Narcissus (modern man and his prosthetics) has gone into a feedback loop, for he does not recognise himself in his own image or prosthesis. He is so seduced by his own image (prosthesis) that he becomes completely amputated from himself. McLuhan explains, "Self-amputation forbids self-recognition" (ca 1964, 1994: 43). Evidently, Barlow does not make allowance for the eventuality of non-self-recognition in his virtual dream of complete amputation. Instead, like Narcissus, who was fixated on his own enhanced image due to the narcotic and seductive effect it had on him, Barlow ignores the intolerability of "suicidal autoamputation" (ca 1964, 1994:43). Like a mythical Narcissus, Barlow is unknowingly dulled and narcotised[17] by his prosthetic enhancements. Each technological extension can be described as a voluntary amputation of a bodily function, whereupon physical functionality is substituted by the prosthesis. Each prosthetic enhancement impacts on the individual's complete embodiment, as an embodied equilibrium has to be reached again in order to incorporate the newly acquired prosthesis. When Sobchack narrates that her prosthesis did not incorporate her, but that it was **she** instead who had painstakingly to learn how to incorporate the prosthesis, she makes a valuable point about what prostheses require from embodiment.

A useful example of the body's struggle to adapt and embody the prosthetics of new technologies comes in the very mundane form of what is increasingly diagnosed as

"carpal tunnel syndrome". The syndrome entails the affliction of nerves and tendons of the wrists and is reported as the most common disease treated by hand specialists in the U.S.A. today (Beeld 1998:9). The use of computers on an extended daily or regular basis is the one of the direct causes of carpal tunnel syndrome.[18] Apparently the syndrome is only one of several new stress-related diseases caused by the over-use of computers. The cure for the syndrome varies according to the levels of severity, but computer users who use their computers for more than an hour a day are strongly advised to take care of their bodies by doing regular stretching exercises – in other words reconnecting with their embodied selves again. It is easy for the Internet-addicted, for instance, to mistake themselves as disembodied beings during their virtual interactions, and it is only when the body reminds them of its existence via pain and discomfort that it is noticed.

At the risk of over-interpreting carpal tunnel syndrome I want to identify it as an example of the failure to "amputate" the body. The computer cannot, in its current form, be incorporated by the body, and therefore it causes stress and tenderness in tendons that are unaccustomed to the strain of working excessively with a prosthetic mouse and keyboard. The body plainly contradicts predictions of seamless cybernetic uploading, for it cannot be forgotten or be amputated in its entirety while working on the prosthetic computer. As a result it keeps reminding hopeful techno-wizards of the fact that materiality is not negotiable – not even in a lucid interface. The non-negotiability of embodiment also guides my following discussion on cosmetic surgery, or prosthetic surgery, for although the body can be changed and augmented, it is still embodied.

4.4   Prosthetic surgery

Undoubtedly, the debate on cosmetic and plastic surgery warrants a study on its own and I cannot, within the parameters of this study, devote sufficient time to create the depth of analysis that the issue deserves. Accordingly, the aspects I touch on here are directed towards exploring the key issues of this chapter, namely techno-enhancement, embodiment and prosthetics.
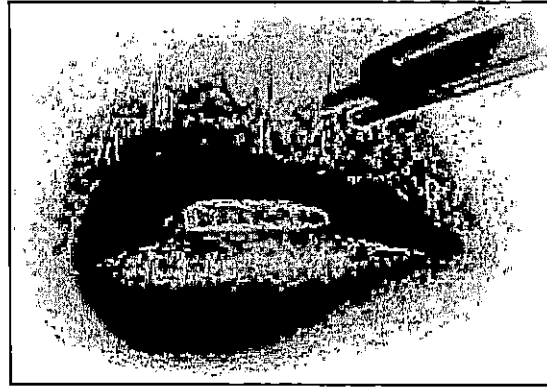
Fig. 4.14 Image of laser surgery
(False Creek Surgical Consultants, Vancouver, Canada)

The term "prosthetic surgery" refers to surgery with the intention of prosthetising the body (forgetting embodiment) and accordingly, is closer to cosmetic surgery than to plastic surgery in general. Whereas plastic surgery deals with the alleviation of deformities due to disease, birth and accident, cosmetic surgery is driven by aesthetic improvement and therefore by an image or model of idealised beauty (*la chirurgie esthetique*, as Jean Baudrillard (1994) terms this phenomenon). I do not want to dichotomise these two surgical procedures, constructing the one as necessarily and conclusively "bad" and the other as "good", but there is a slight difference between the two. Except for numbers, since cosmetic surgery accounts for over forty percent of all plastic surgery (Davis 1995:16), the two medical treatments have different expectations and outcomes. The one rectifies injury and malfunction, whereas the other beautifies attributes that are quite functional. Obviously, one can beautify while rectifying and by beautifying some rectification can also be done. The problem lies, however, in how embodiment is perceived and constructed within cosmetic and plastic surgery discourses. Cosmetic surgery generally has a more problematic relation to embodiment, and female embodiment in particular, than plastic surgery. I intend to explicate this more troublesome relation in my following discussion.

Each lived embodiment has its joys and limitations, which may be rectified and beautified, but if the idea is evoked that surgical possibilities are limitless, how viable is such an option? In other words, if one "looks" different, will one inevitably "feel" different? In most cases the surgical subject will probably feel different, but what happens in those cases where s/he expects to feel different but does not? What happens when changed appearances do not change the way in which the person embodies him/herself?[19] For instance, does rhinoplasty (nose surgery – the oldest form of

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cosmetic surgery) [Fig. 4.15] necessarily improve one's self-image? In those cases where it shifts one's body image the answer is probably yes, and in those cases where it fails to make any significant change in one's perceived body image the answer is probably negative. Consequently, the ways in which the after-effects of surgery are embodied plays a vital role in the "success" of cosmetic surgery: surgical changes do not merely remain on the surface.
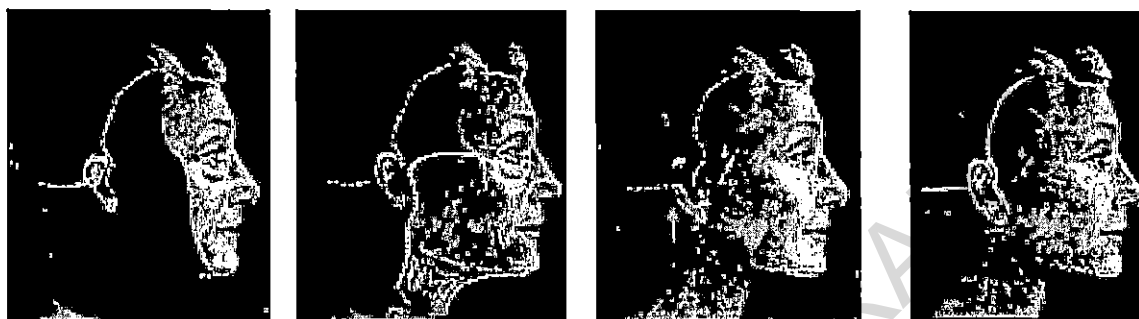
Fig. 4.15 Images of "facelift" (rhytidectomy)
(False Creek Surgical Consultants, Vancouver, Canada)

Certainly, the body is not a clean slate provided with the compliments of "Mother Nature" and genetic heritage that eagerly awaits the precision of the techno-knife to mould it into highly contextualised ideals of perfection. In fact, the lived body, not the so-called given body[20] or a view of the body as a clean slate, plays an unprecedented part in how appearances are constructed. This seems obvious enough, without implying deterministically that a person's fate is locked into their bodily appearances. Obviously, anatomy is not destiny: but the opposite proposition, namely that bodies are exchangeable consumer products, is also not satisfactory. Naturally a person has something to "say" or to contribute to their appearances, as a person "interprets" their body through body images, but is control situated entirely in the subject's agency? Moreover, is having complete control over, and consumer choices in relation to, one's body, truly a worthwhile and viable goal? If personal appearances can be reduced to a consumer choice list of nose and breast types (in other words, if personhood is only appearances without embodied consequences), why are cosmetic surgery's rites of passage so painful both physically and psychically? I suggest that this is precisely because appearances are a complex embodied matrix, involving (at least) biological constitution, genetic material, socio-economic perceptions, sexed and gendered body images, identity formation and consumer desires. It is also culturally significant that

ninety percent of all cosmetic operations are performed on women (Davis 1995:21). In addition, even though the male cosmetic industry is growing, the gender bias in cosmetic surgery can be expected to remain intact for a long time. The reason obviously is the unproblematic alliance of women with appearances and images, to which, of course, women themselves contribute greatly.[21]

Prosthetic surgery, as I have labelled it, denies the complexity of embodied appearances and is driven by what Jean Baudrillard describes as the seduction of consumer society by the "pathos of ideal likeness" (1994). Ironically, this striving towards the ideal likeness does not bring about a radical alteration of appearances, but rather perpetuates "a hypostasis of the Same" (Baudrillard 1994). In other words, during prosthetic surgery, appearances do not meet their "Other", their radical and strange outside, but the process merely perpetuates the "Same" ideal likeness over and over. As prosthetic surgery abounds, the body is increasingly perceived as "a locus of identification" (Baudrillard 1994), which needs to be repaired, perfected and made into the ideal object. This is underpinned by the problematic and unattainable construction of the "ideal" within metaphysical abstractions, from which women have historically been excluded. The body is thus appropriated as a mere extension or prosthesis of the male self. The attention that the body seemingly enjoys is not for the sake of the body, but rather to preserve an idealised Same-self. Baudrillard likens the increasing identification with the body in cosmetic surgery to "an autistic cult [...] of a quasi-incestuous manipulation" (1994) to which there exists no outside or Other, for it is the perpetuation of the "Same" (mind) – the Cartesian *res cogitans* – that is met every time and not another "look" or "appearance". It is the "look" and "appearance" of the "Same" which is emulated over and over again. Prosthetic surgery can be identified as a practice wherein the amputated technology-user, narcotised and dazed, is caught in a feedback loop of the "Same-self".

4.4.1 Self-prosthetisation

In exploring the theme of prosthetic surgery further, investigating the body of work of French "multi-media, pluri-and/or inter or rather trans-disciplinary artist", Orlan may be useful. At first glance Orlan[22] seems to take herself literally at cosmetic face value with the legendary proportions and extremities that the surgical reconstruction of her body

and face has taken. Although other famous figures, such as Michael Jackson and Cher, in the entertainment sphere have also undergone drastic surgery, their surgical abuses have not been undertaken with the same intent as Orlan's body modifications.
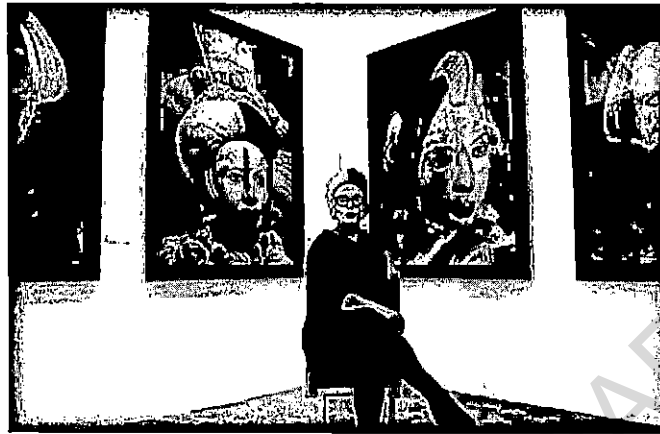
Fig. 4.16 *Orlan* in front of her latest series of works entitled *Refiguration/Self-Hybridation*, 1998-9

Orlan can rightly be described as a "self-made" woman, designed in her own "image". She has vehemently and actively protested against the images imprinted by patriarchy on the female flesh by re-making herself according to her own designs. She is both outspoken and proud of the blasphemous nature of her work. Her obsession with her own physique, which she candidly adores; began at the inception of her art career in the early seventies. As she declares, "my approach has always been to question the status of the body in society, and in particular the status of the female body" (Ayers 2000:176). Although Orlan's questioning of the status of the female body in society is laudable, I remain critical of the art that she aspires to create.

Orlan works in a genre, which she calls **Carnal Art** (*L'Art Charnel*) as opposed to Body Art (*L'Art Corporel*), which is usually applied to performance art focusing on the human body. She defines Carnal Art as:

> [...] self-portraiture in the classical sense, but realised through the possibility of technology. It swings between defiguration and refiguration. Its inscription in the flesh is a function of our age. The body has become a 'modified ready-made', no longer seen as the ideal it once represented; the body is not anymore this ideal ready-made it was satisfying to sign. (Orlan 2000)[23]

Furthermore, Orlan makes it clear that she does not hope to achieve purification and redemption through the experience of bodily pain, as most Body Art sets out to achieve. She strongly distances herself from the Judeo-Christian tradition's denial of the pleasures of the "sinful" flesh. Carnal Art is also not obsessed with the plastic results of surgery, as prosthetic surgery would be, but is more interested in the surgical performances themselves, during which the body is refigured as a malleable site for public display and debate.

To a certain extent, I commend Orlan's strategy of challenging preconceived patriarchal ideas about female beauty and embodiment as portrayed in the canon of western art history, which ironically endures in popular consumerist cosmetic surgery discourses and in other media, such as advertising. The way she uses her body and new technologies to mime these ideals of beauty, while simultaneously changing them, is fascinating. She literally embodies these concepts by physically reincarnating them in her "artworks" through surgery. As a result, Orlan refers to her body in the following terms: "This is my body. This is my software" (1996:81). Accordingly, she follows a powerful miming strategy, wherein she, like the nineteenth-century hysterical female patients of Salpêtrière, apparently becomes what she is expected to become, except that she mimes that position and does not become it to the full. It should be noted, though, that in Orlan's case the boundaries between miming and becoming are very slippery indeed. And unfortunately the comparison made between embodiment as computer software ("This is my body. This is my software") indicates a specific intolerance towards the constraints of being embodied, which I will unpack shortly.

Orlan's most ambitious and comprehensive body project, entitled *The reincarnation of St. Orlan*, and *Image – Nouveaux Images* began in 1990. It includes a series of ten planned cosmetic surgery operations (or *Interventions*) [Fig. 4.17][24], which all set out to restructure her appearance using the blueprint of beauty as defined by western mythology and art.[25] At the time of writing Orlan has completed seven of the operations and it is not clear when and if she will finish the project, for, as she confesses: "If I don't manage it, well, bad luck!" (Ayers 2000:182). Importantly, the operations are televised across the world via satellite to different art galleries and audiences in real time. The operation rooms are also turned into spectacular environments, with the medical staff dressed in designer wear (including Paco Rabanne and Isey Miyaké) and the room is filled with visual elements that support Orlan's disruptive message. Orlan

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herself also does not succumb to the traditional role of the patient as a passive entity. She can be seen reading appropriate and selected texts aloud (such as Michel Serres, Alphonse Allais, Antonin Artaud and Julia Kristeva) and engaging with her captive audience worldwide, while being exposed from the inside out and the outside in, baring/bearing all.
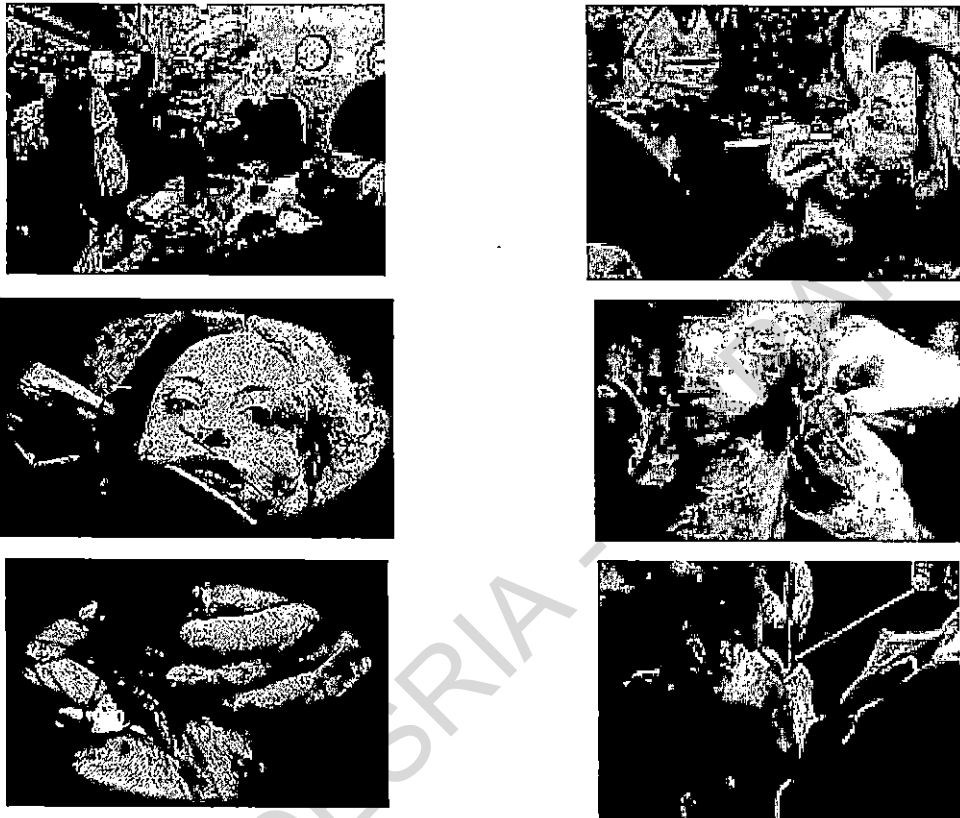
Fig. 4.17 Images from *Orlan's* cosmetic surgery operations/*Interventions*, 1990-93

The last three operations or *Interventions* consisted of implanting the largest possible implants (prostheses) into her face [Fig. 4.18] – two bumps were added to her forehead, reminiscent of two budding horns and finally an implant was added to her nose. Orlan has since started with a new project, the *Refiguration/Self-Hybridation* series (1998-9) [Fig. 4.19] in which she explores standards of beauty in other cultures, cilivilisations and epochs, such as the Maya and Olmec from pre-Columbian cultures. Instead of imprinting these "standards" onto her own flesh by undergoing surgery, Orlan now works with computer-photo images of herself. In other words, her refigurations have mercifully shifted from real to virtual.

Fig. 4.18 *Orlan's* **latest nose and bumps implants, 1997**

My discomfort with Orlan lies in her uncritical endorsement of body-denial discourses, such as those propagated by fellow artist Stelarc: "Like the Australian artist Stelarc, I **think that the body is obsolete.** It is no longer adequate for the current situation" (Orlan 1996:91, emphasis added). I have to agree with Orlan that there has always been a body that has been constructed as pure and natural or sinful and deceitful, that was and is, indeed obsolete. In fact, such a body has never existed. However, declaring or sentencing the body to extinction altogether is extremely controversial. Moreover, Orlan ardently wants to take complete control over her body and redesign it into something new: "It should be a performance radical for myself and beyond myself" (Orlan 2000). The implications of taking control of one's body and making it into what the "eternal" subject wants – a temporal object – seems very dubious, and in fact merely perpetuates patriarchal notions about embodiment. Ironically, while ostensibly challenging patriarchal constructs about embodiment as lacking and enslaving, Orlan plays the same disastrous mind-over-matter-game by acting as the *auteur* of her own anatomical destiny.

Fig. 4.19 Images from the *Refiguration/Self-hybridation* series, cibachromes mounted on aluminium behind plexiglass, 1998-9

Certainly, our bodies are not pure entities, untouched by technologies and nature, and I am not problematising plastic and cosmetic surgery *per se*. I am, however, problematising the notion of controlling every detail of one's appearance – for

changed appearances have consequences, just as they need to be embodied. Hence, it is a fascinating bit of detail that Orlan has undergone three unsuccessful surgical attempts to reconstruct a cleft in her chin (Norris 1996:40). Objectively there is no apparent reason why this surgical procedure should fail, and yet it did. The fact that Orlan could not control the outcome of these operations provides a clear reminder of the body's existence outside the realm of the mastering mind. Before bodies are declared obsolete it should be noted that bodies do in fact exceed control.

Another disturbing aspect of Orlan's work is the way in which she deals with pain. As earlier implied when referring to painful prosthetics, pain is irreducible. Orlan makes it perfectly clear that she does not want to suffer pain while in surgery: "I'm not at all in favour of pain. I don't consider it made for my redemption or purification or whatever [...] the first deal I have with the surgeon is 'no pain'" (Ayers 2000:182-3). Obviously, she is contesting the metaphysics of pain, according to which severe pain is interpreted as a redemptive tool that purifies the mind from its sinful body. That version of pain problematically perpetuates the mind/body split. However, Orlan continues by adding: "for these operations there is a price to be paid: I don't suffer but I am aware that my body suffers, which **are two very different things**. If the body is in pain, that's one thing, but if I am not suffering, I can talk, I can do other things. If I am in pain, I can no longer do anything – I'm forced to suffer" (Ayers 2000:183, emphasis added). By making this statement Orlan echoes Descartes's ill-advised judgement that "if a foot is cut off, or any arm, or any other part of the body, **I know that nothing is thereby taken away from the mind** [...]" (Descartes 1969:86, emphasis added).

Fig. 4.20 No pain, no gain: photos of *Orlan* convalescing after surgery

Similarly to Descartes, Orlan makes a definite distinction between the suffering body and the thinking "I" hovering around, disembodied and pain-free, seemingly unscathed by the pain affecting the cut-up body. Orlan cruelly separates the thinking "I" and the suffering body, and is more than relieved that it is not the "real" I (or mind) who is

suffering, but instead the "mere" body, narcotised and drugged – amputated and prosthetised. This contradicts her claim that all her work deals with an "and" and not an "or" logic, for, according to her, she would rather emphasise good **and** bad, beautiful **and** ugly, rather than good **or** bad, beautiful **or** ugly. She professes to support an inclusive logic, but instead reveals a very reductionist one when she describes body and mind as **"two very different things"**. Can Orlan really propose that her body bleeds and is bruised without impacting on the thinking and talking "I"?

In addition, Orlan claims in her *Carnal Art Manifesto* that everything about her has changed except her **voice**. Although she is obviously referring to her physical voice and vocal cords, surely she is not unfamiliar with the metaphysics of voice. For it is the voice that is described in the metaphysical tradition as the bastion of the invincible and truthful "I". Derrida has termed the prevalence given to voice over supplementary writing, as the "metaphysics of presence" (1984:131). The apparently immanent voice ironically always communicates via "writing" and, thus, representation or mediation, in order to manifest itself. Voice is always mediated and textual, and not fully present to itself, even if it masquerades as such. If Orlan is indeed convinced that her voice is left unchanged by these operations or interventions, while the temporal body (like supplementary writing) has changed, then sadly, like Descartes, she has carved a *"res cogitans"* and *"res extensa"* out of the inseparable body/mind embodiment complex. Phrased in Derridean terms, she has constructed a "metaphysics of presence" from the apparently unchanged voice. She has substituted the image of patriarchy and God imprinted on the female body, with her own blueprint. In the process, she has not opened another liberating aspect of embodiment, in my view, but has sadly merely substituted one subjective control-system for another.

4.5   Body sculpting

In dealing with the topic of body sculpting,[26] I will briefly consider the visualising technologies of a stream of body-controlling advertisements that aspire to sculpt the body according to reigning ideals of health and beauty. The selected advertisements are scrutinised for the way in which they depict the fitness and "body beautiful" cult fed by capitalist consumerism. In the onslaught of the seductive consumerist logic, the body is narrowed or slimmed to an image – a representation or simulacrum, almost losing its
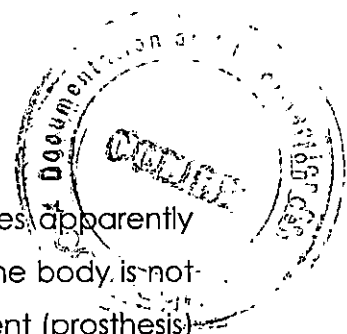
connection to materiality. Even though, exercising and stretching routines apparently affirm the materiality of the body, exactly the opposite logic is at work. The body is not being affirmed for and in itself, but it is rather affirmed as a tool or instrument (prosthesis) that, when exercised and controlled sufficiently, can induce longevity. The female body is especially vulnerable to this regime, for it shares a specific constructed history with the supposed malleability of the material realm. One may well ask, with Sandy Stone, in the title of her renowned essay: "Will the real body please stand up?" This is not to argue that access to the "real" body is possible without mediation, but rather to reiterate that humans **are embodied beings** who cannot be reduced to images or prostheses only. In Agamben's words:

> Never has the body – above all the female body – been so massively manipulated as today and, so to speak, imagined from the top to bottom by the techniques of advertising and commodity production [...] **What was technologized was not the body, but its image**. Thus the glorious body of advertising has become the mask behind which **the fragile, slight human body continues its precarious existence**, and the geometrical splendor of the "girls" covers over the long lines of the naked, anonymous bodies led to their death in the lagers (camps), or the thousands of corpses mangled in the daily slaughter on the highways. (1990: 49-50, emphasis added)

Although the body survives "the glorious body of advertising", it does so very precariously, for the "beautifying" demands made on the body are all-consuming, with sometimes devastating results. In addition, even though these body-sculpting designs serve apparently noble ideals, such as a healthy and fit body, they actually serve the instrumentalist ideals of techno-enhancement. The first advertisement under discussion is a *Health & Racquet Club* advert, which reads: "Fortunately you are your own worst enemy" [Fig. 4.21], showing that one does not have to accept the body that you **have** (as opposed to being a body) when you can sculpt and mould it into a more "truthful" image of yourself. The only obstacle obscuring the ideal is not the unwilling and incapable body, which is mere clay in a person's mental "hands", but rather the resisting mind. As the copy explains: "you are you own worst enemy". The supremacy of mind over matter, as represented by the "you", is acknowledged in the advertisement. In other words, "deep down" a "truer" version of "yourself" is lurking, waiting to be freed from the bodily constraints imprisoning this more truthful version. A person merely has to put their mind to "it" – the body – and "it" will surely follow obediently. The notion of a

hidden truer self is reminiscent of Plato's idea that the soul is kept prisoner by the deceitful body and is quite literally dying to get out. In the words of talk-show host Oprah Winfrey, one merely has to "make the connection" with who one "really" is, namely a thin, youthful and beautiful creature. After the connection has been made, one can spread one's enhanced wings. The body that is identified with is not one's own imperfect body, for that is not important, but rather the image of the ideal active body as portrayed in these advertisements.
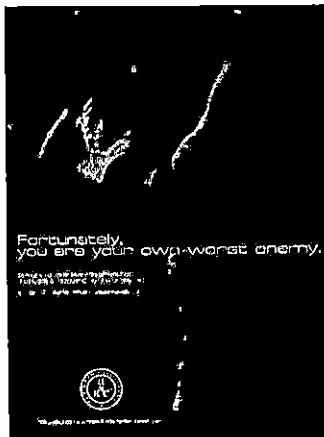
Fig. 4.21 Fortunately you are your own worst enemy, Advert for *Health & Racquet Club Group, Style*, 2000:34
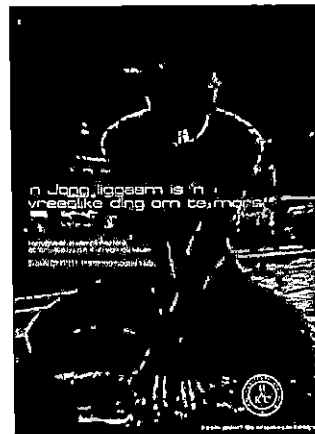
Fig. 4.22 'A young body is a terrible thing to waste, Advert for *Health & Racquet Club Group, De Kat*, 1999:91

Not only is making the connection with one's "true" self emphasised, but it is also crucial to attain and sustain a youthful body. This becomes evident in the second advertisement for the *Health & Racquet Club* [Fig. 4.22], stating: "A young body is a terrible thing to waste". Eternal youthfulness forms the foundation of the body beautiful cult, which is, however, not necessarily a new trend within western ideals of beauty. What makes this version different, though, is that the body is more than ever depicted and activated as an instrument or extension of the inner self, a prosthesis separated from the "true" inner identity. Obviously, a cyberfeminist perspective would hold that the body is not a prosthesis existing on a separate level from the "inner true self" or "mind", but they are both threaded together in an embodied chiasmus, which cannot be separated. Yet, the persistent thinking about bodies in the capitalist regime maintains that the body, as the traditional site of temporality and decay, needs to be worked (the work-out) and controlled into longevity; otherwise, the valuable commodity of youthfulness is wasted.

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I am not challenging healthy living and regular exercise, which may indeed lead to longer and happier lives. I am, nevertheless, contesting notions of "healthy" living, which hold the body hostage as an instrument or tool that should be punished and forced into submissive obedience. I also criticise the commodification of exercises and "healthy living", which have become an industry of "selling" the body as a prosthesis. As Susan Willis makes clear, the "workout" or exercise session represents "the most highly evolved commodity form yet to appear in late-twentieth-century consumer capitalism" (1990:6). The end product of commodified exercises is "the production of the quintessential body object" (Willis 1990:6) and in my terms, thus, the creation of the quintessential body prosthesis. There is a vast difference between embodied healthy living and a mind-over-matter approach to "healthy living". In this instance, too, it has to be emphasised again that just as bodies are sculpted/written so bodies sculpt/write in turn.

Fig. 4.23 "The architecture of a beautiful body", Advert for *Ralph Lauren*, 2000

Bodies are not sculpted innocently or within an ideological vacuum, as a short analysis of the advertisement for fashion designer Ralph Lauren introducing, "The architecture of a beautiful body" [Fig. 4.23] reveals. What exactly does the architecture of a beautiful body look like? Can a blueprint for the architecture of the beautiful body be traced to the construction of the "ideal likeness" (Baudrillard 1994)? Does the beautiful body inevitably wear a default race, class, gender and importantly, a default nationality? If Ralph Lauren's advertisements are an indication, obviously, the architecture of the beautiful body is based in very specific preferences. The fact that it is a blonde

statuesque girl portraying the architecture of the beautiful body with a "U S A" sprawled over her well-shaped breasts is clearly significant in the creation of images of the ideal likeness. One may wonder whether "Mother Nature" provided this beautiful body, or if it was rather sponsored by "father capitalism". Somewhere between these extreme poles, namely the so-called "pure" natural body and the culturally simulated body, lies the lived body. The fact that the lived body, experienced by mortals, who have to combat corporeal imperfections daily, does not match up to "the architecture of the beautiful body" confirms the unforgiving rigidity of the body sculpting modus.

In the previous two categories, namely prosthetic surgery and body sculpting, the body has been prosthetised, enhanced and extended, but for the greater physical part, it has remained. In what follows, I examine discourses where the level of prosthetics is raised by extending or enhancing the body in her entirety and eventually replacing her completely with a remade one, as in the extreme example of the *PRIMO 3M+* body. In this remaining category, more than previously, embodiment is increasingly reduced and narrowed to an interchangeable prosthesis. Additionally, embodiment's contextuality and specificity are exponentially cast off as mere circumstantial information that can be changed and redesigned at will.

4.6   Complete prosthetisation

The discussion on complete bodily prosthetisation focuses on a digital advertisement for life extension entitled *PRIMO 3M+* [Fig. 4.24]. The digital advertisement, designed by Transhumanist and Extropian artist Natasha Vita-More (a definite pun on her uncompromising striving towards longevity and thus enjoying "more life"),[27] utilises a combination of art and science in order to design an ageless body, thus the ultimate prosthetic body. Vita-More introduces the viewer to the *PRIMO 3M+* body, which is "powerful" and "durable", evidently unlike our existing depreciating bodies. The new *Primo 3M+* body is apparently also "better suspended, more flexible" and it offers extended performance in Italian style, which is apparently the norm.[28]
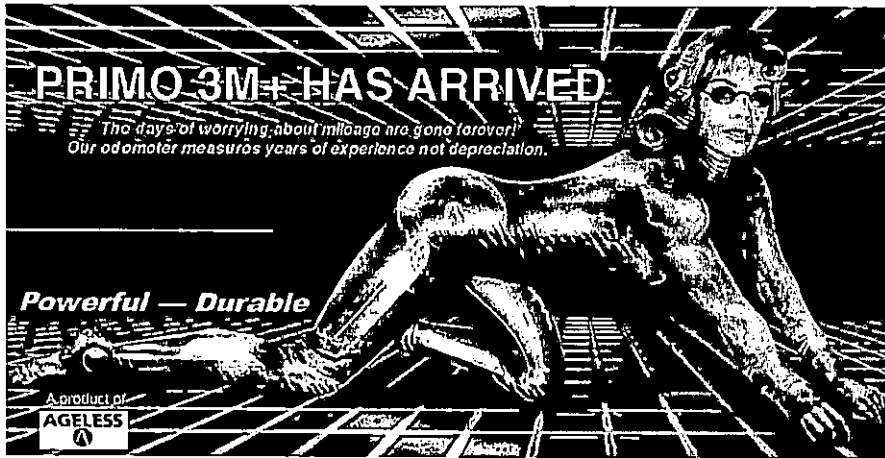
Fig. 4.24 Natasha Vita-More , The *PRIMO 3M+* body, 1998

Ageless, the company that co-operated with Vita-More in designing the ***Primo3M+*** body assures prospective customers that the body is configured under the careful guidance of networked Artificial Intelligence agents. Thus, no fallible human hands are implicated in its construction. The ***PRIMO 3M+*** body, which is a prosthesis in itself, is also configured by other prostheses, doubling the process of alienation and prosthetisation. Consequently, if a comparison is made between the capabilities and capacities of the "old" twentieth-century-body with the evolved ***PRIMO 3M+*** body, the chart [Fig. 4.25] appears as follows:

20th Century Body	*Ageless Primo 3M+*,
Limited life span	Ageless
Inherited genes	Replaceable genes
Wears out	Upgradable
Random mistakes	Error correction device
Intelligence capacity 100 trillion synapses	Intelligence capacity 100 quadrillion synapses
Single tracks circuits	Multiple viewpoints running on parallel
Gender restricted	Gender changeability
Prone to environmental damage	Environmentally friendly
Corrosion by irritability, envy, depression	Turbo-charged optimism
Waste products are messy and volatile	Recycles and purifies waste products

Fig. 4.25 Table from Extropic Art website

The advantages of the new ***Primo 3M+*** body are obvious, as well as the consumerist attitude towards embodiment underlying its construction.[29] If the image of the ***Primo***

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3M+ body is considered, it reveals interesting cues about the creator's particular position concerning embodiment and its future prospects. The *Primo 3M+* body is presented as an image of a highly-toned, muscular; blonde female, clad in a second skin body suit, which hugs her like a condom and echoes her voluptuous curves seductively. She crawls on all fours in a stance of anticipation – ready to be jet-propelled into the prosthetic future. The pose that she strikes is not unfamiliar to pornography and high-fashion photography. It consciously recalls the renowned poster of Farrah Fawcett [Fig. 4.26] in the late 1970s, with her waving blonde curls and million-dollar smile that adorned many a teenager's walls. The angelic Fawcett was undoubtedly one of the legendary icons of the twentieth century and the poster immortalised her as a symbol of beauty and youthfulness. The goddess portrayed in the *Primo 3M+* advertisement [Fig. 4.27] strikes a very similar pose, with the difference that she aims at retaining that posture for another thousand years.
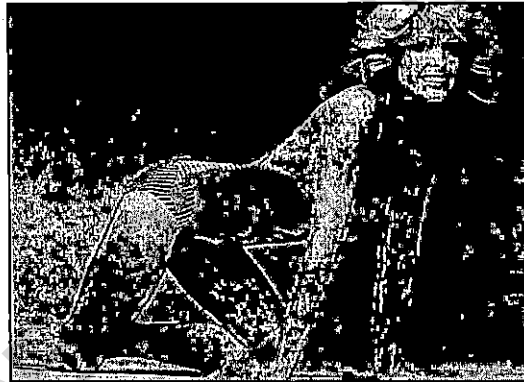
Fig. 4.26 Farrah Fawcett poster, 1979

Visitors to the website of *Primo 3M+* are invited to play an animation in which the blonde woman starts to dissolve into motion, with the sound of a racing car's screeching wheels and a seductive female voice announcing: "On the edge". The animation fittingly describes the lustrous *Primo 3M+* female goddess: she is on the edge, waiting for change and ready to evolve into something new and definitely more advanced. This shining being with her dark glasses, gloved hands and sculpted blonde curls can be said to resemble the birth of a technological Venus in interesting ways.
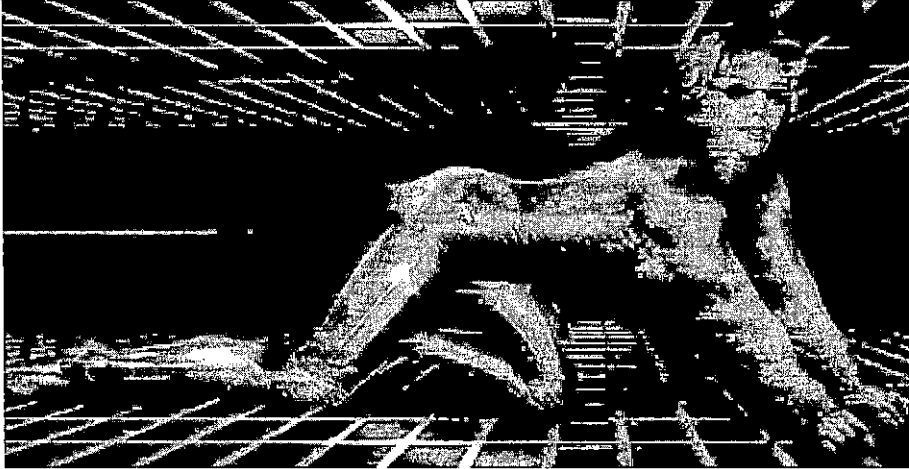
Fig. 4.27 PRIMO 3M+ body, Natasha Vita-More,1998

It is worthwhile comparing the *Primo 3M+* "goddess" and another immortal being that was also known for her beauty and grace, namely the goddess Venus or Aphrodite. In this regard, if *The birth of Venus* (1485) [Fig. 4.28] by Italian Renaissance artists Sandro Botticelli (1445-1510) is examined, one can discern distinct notions of immortality in the earlier Renaissance rendition and explore significant differences from the *Primo 3M+* version.
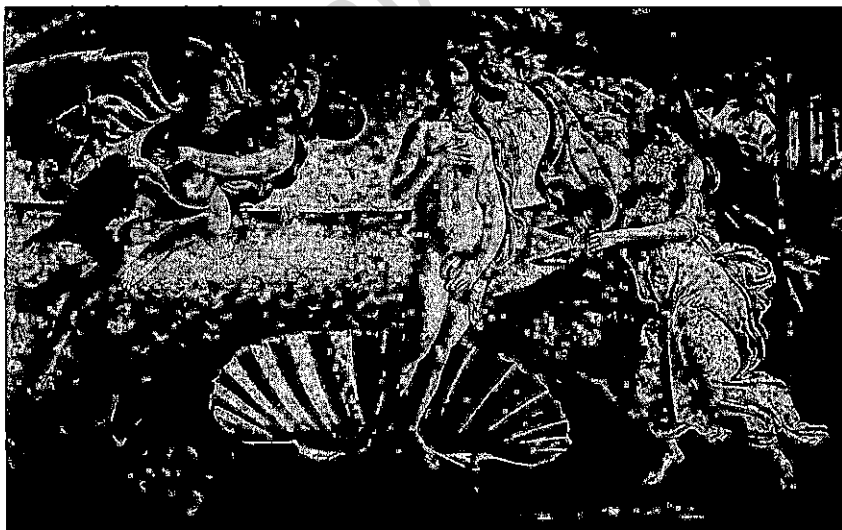
Fig. 4.28 Sandro Botticelli, *The birth of Venus*, 1484
Tempera on canvas, 5'8" X 9'1". Gallaria degli Uffizi, Florence
(Gardner 1980 517)

In Botticelli's depiction, clearly, the limbs are elongated and other distortions occur, such as the unnatural length of Venus's neck, the steep fall of her shoulders and the strange way in which her left arm is hinged around her body. All these artistic liberties combine

to create an infinitely graceful and gentle creature. After all, Venus is no mere mortal, but the goddess of Love and Beauty, and her glory and power is described thus: "So graceful and alluring was the Goddess that the Seasons rushed to meet her, imploring her to stay. Aphrodite smiled. Her stay would be never-ending, her work never complete" (Spretnak 1978:57-8). The painting depicts the glorious moment of Aphrodite's birth from the severed genitals of Uranus, mutilated by his sons. Aphrodite, like Athena, is motherless (*Aphrodita Uranus*) and yet she is simultaneously the mother of all. Aphrodite's motherless state implies that she has no part in the fallen and mortal physical domain.

Botticelli's Venus is heavily indebted to Christian Neo-Platonism as interpreted by Marsilio Ficino in Florence at the time. The mythological roots are only one part, although a very important one, of Botticelli's Venus. The Christian version appropriated her as the embodiment of the Soul and Eternal Love. Her physical beauty only hinted at her beautiful soul, because beauty is described in the Neo-Platonic cosmology as "the splendour of divine goodness" (Panofsky 1967:133). Aphrodite, accordingly, embodied immortal divine goodness as construed in the Neo-Platonic system. In other words, the figure of Aphrodite represents the aspiration towards her graceful spirituality, not her physique. It was accepted that no perfect beauty was possible on earth. Immortality was never an option in the physical realm, but could only be achieved in the spiritual after-world. One could not become an embodiment of Aphrodite, but could, instead, praise her in prayers, hoping to merit eternal life after death. Mortality was firmly embedded in the physique and immortality was strictly reserved for the disembodied after-life. It is on this point that the twentieth-first-century interpretation of immortality differs, for the **Primo 3M+** body promises exactly that, namely immortality in the physique. The blonde techno-blast in the **Primo 3M+** version is a physical incarnation of immortality. She **is** Aphrodite made flesh through techno-enhancements.

In the background, a webbed matrix encloses her and almost gives "birth" to her. The environment that shapes her and enfolds her, almost like a shell, is a technological grid of coded networks and wired lines. This Aphrodite is, similarly, not born of woman: like the goddess Athena and Haraway's cyborg (that is discussed in a later chapter), she is born of deviant technology and father science. Her "natural" environment is at the forefront of innovation. She embodies an immortal creature that will constantly replicate and upgrade herself. Her breast will not sag, her hips will not

swell and neither will her forehead ever wear a permanent frown. Everything about and in the *Primo 3M+* body has been and can be enhanced or prosthetised. The *Primo 3M+* body is sculpted to perfection for all eternity and her youthfulness has been prolonged indefinitely. In all fairness, she is a prosthetic goddess.

But how is embodiment configured in this futuristic digital example? Embodiment as *flesh* (Merleau-Ponty) and "psychic corporeality" (Grosz ·1994:22) has morphed into prosthetics, technological modification that can be replaced and upgraded at will. There exists no continuity between the specific lived body and the upgraded immortal body, mind and body. Instead, the lacking continuity is simulated by an eternal mind that body-hops from one upgrade to the next. Vita-More fiercely pursues the idea of the prosthetically perfect body when she self-indulgently subscribes to ideas such as:

> The flesh-body is becoming a bio-tech body. The architecture of our image will take on novelty. While I enjoy sculpting my outer flesh, I look forward to bio-tech designs that will enhance physical abilities and augment intelligence and creativity. **Flex my mind – flex my body**. (More 1998, emphasis added)

In the artworks *Flex my mind, flex my body* [Fig. 4.28] Vita-More displays her own well-toned and masculinised upper body, fit to endure another millennium. Vita-More also gives a workout schedule for hopeful Transhumanists on her website. She informs the reader that she uses hormone supplements and other vitamin supplements to keep, not only her body, but also her "mind" healthy – as if the two are separable. While she is flexing her mind and body, both are prosthetised beyond recognition. In another series entitled *Xemplar '98,* Vita-More has created four "Transhuman posters" dealing exclusively with the theme of "achieving indefinite lifespan" (Vita-More 1998) – or is it indefinite youth? She posits herself and other Extropian and Transhumanist artists as "exemplar-makers". What this actually means is that they are setting examples for other mere "meat" humans of what can be achieved with the body, once the mind is creatively put to task.
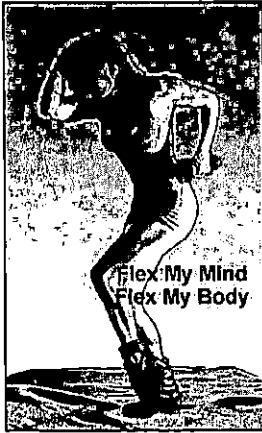
Fig. 4.28 "Flex my mind, flex my body", photographs, Natasha Vita-More, 1997

The four posters that form part of the *Xemplar*-series are *Extropian* [Fig. 4.29], *DNA breakout* [Fig. 4.30], *A-life* (obviously referring to artificial life) [Fig. 4.31] and *I have a meme!* [Fig. 4.32]. Vita-More provides the following descriptions for these images: "*Extropian* represents the enhancement of our physical bodies as we interface with technology; *DNA breakout* represents our ability to break away from the constraints of our DNA; *A-life* represents the immediate evolution of electronic life forms; and *I have a meme!* represents our speaking out to the universe that we have something to say, and we are saying it!" (1998).

Natasha Vita-More, *Xemplar '98 series*,1998

Fig. 4.29 Extropian   **Fig. 4.30 DNA breakout**
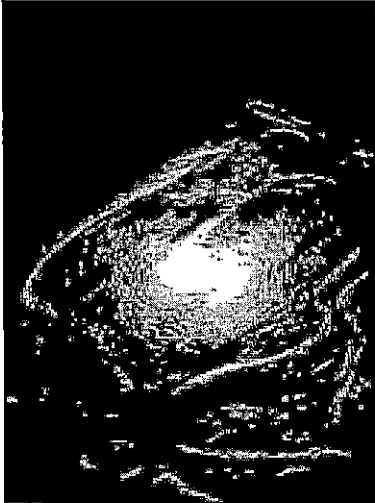
Fig. 4.31 *A-life*
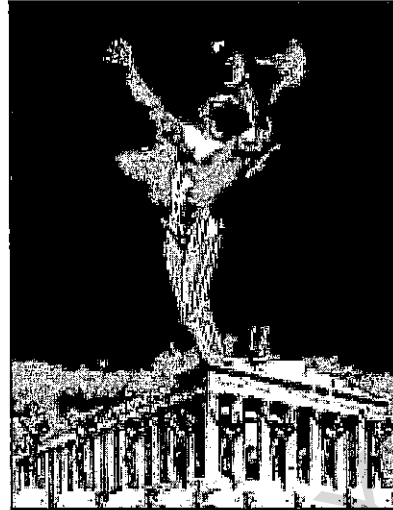
Fig. 4.32 *I have a meme!*

As in the birth of the immortal technological Aphrodite reincarnated in the **Primo 3M+** body, in these works Vita-More similarly perpetuates the myth of untouched godlike perfection. It is also evident that her works are drenched with eternal techno-humanistic optimism guided by an instrumental approach towards embodiment. Robert Cheatham rightly refers to Extropianism as: "the 'humanist' version of the post-human" (2000). This means that humanist ideals of sovereign subjectivity without regard for the particulars of the embodied stratum still operate in this techno-humanist version.

Furthermore, in Vita-More's art the body becomes a transparent tool, which, if invested in "correctly" and "wisely", guarantees everlasting perfection. In other words, the body is treated as complete prosthesis separated from the "true self", which has evidently broken free from the bio-stronghold of DNA (see *DNA Breakout*). Similarly the youth shouting "I have a meme!" from the roof of the Parthenon, for the entire universe to hear, epitomises Extropian art's supposedly invincible and over-optimistic adventure, into the prosthetic techno-future.

Even though embodiment is "prosthetic" in nature due to the delayed and mediated nature of our existence, it does not necessarily imply that embodiment is not "real" or can entirely be circumvented by prosthetic replacement. The prosthetic nature of embodiment, referring to the merger of body and mind, differs from the prosthetisation of embodiment as followed by instrumental techno-enhancement. As stated earlier, embodiment is fragile and cannot be replaced completely without relinquishing its integrity in the process. Consequently, just as in the case of uploading discussed in the previous chapter, embodiment cannot be transcended or enhanced

beyond itself, without necessarily also sacrificing it. The materiality of embodiment, although malleable, needs to be negotiated in all techno-enhanced procedures. There are definite limits to what can be achieved through enhancement. In other words, there are limits to what the body can become; immortality is excluded. Endeavours of techno-enhancement tend to prosthetise the body without convincingly acknowledging that prostheses have to be and, in fact, are always already embodied, in order to exist as prostheses at all. Dealing responsibly with prostheses within a cyberfeminist framework would mean that developments in the field of prosthetics are embraced where the integrity of embodiment is vindicated. In those cases where embodiment is treated as just another prosthesis to wear cyberfeminism should critically distance itself from it. As we wear our prostheses, they also wear us.

Endnotes:

[1] See Elizabeth Grosz's utilisation of the Möbius strip as model for configuring the relationship between body and mind in structuring the chapters of her book *Volatile Bodies* (1994).

[2] This is not the earliest example of the use of prosthetic methods to aid physical impairments. In fact the earliest anthropological evidence of an amputee is that of a human skull which is 45,000 years old. It shows teeth shaped and aligned in such a way that indicate it was an upper extremity amputee. For more about the history of prosthetics, visit the Northwestern University Prosthetic Orthotic Center's website at: http://www.nupoc.northwestern.edu/prosHistory.shtml

[3] Amputation was apparently feared more than death in some early cultures, for it was believed that it not only affected the amputee's life on earth, but also, importantly, in the afterlife. The ablated limbs were buried and then disinterred to be reburied at the time of the amputee's death so that the amputee could be "whole" for eternal life (Northwestern University Prosthetic Orthotic Center 1999).

[4] See Arthur Kroker and Michael Weinstein's discussion of the term "virtual class" in *Data trash the theory of the virtual class* (1994), which supports my position.

[5] In chapter six I make an assessment of the cyborg's relatedness to military invention.

[6] I have already referred to Paré in the previous chapter in regard to phantom limb phenomena. Paré also made a breakthrough in amputation surgery and prosthetic sciences, not only by identifying phantom limb phenomena, but also by reintroducing ligatures instead of cauterisation with hot oil during amputations. Hippocrates originally put forward the use of ligatures to tie off bleeders in the 5th century BC. Apparently, Ambroise Paré re-introduced the use of linen ligatures when he ran out of cautery oil during battle surgery. This sparked a debate about the use of ligatures versus cautery oil (*Prosthetic history*).

[7] Paré also made great contributions as a prostetician by creating the *Le Petit Lorrain*, a prosthesis operating by springs and catches. This prosthetic arm was custom-made for a French Army Captain and equipped him to return to battle.

[8] The *Rig-Veda*, an ancient Indian sacred poem, written in Sanskrit, recounts the story of a warrior, Queen Vishpla, who lost her leg in battle.

[9] For an interesting assessment of whether Amazons did, in fact, exist, rather than being merely mythical figures see Jeannine Davis-Kimball's (1997) "Warrior women of the Eurasian steppes".

[10] Xenotransplantation involves the transplantation of tissue and organs from one species to another, such as between human and pig. Apparently, using primates, such as baboons, for these purposes is too expensive for large-scale organ harvesting. Pigs, on the other hand, are cheap and many of their organs are close enough in structure to those of humans to be functional. During xenotransplantation the boundaries between species are blurred, which forms an important aspect of Donna Haraway's construction of the cyborg.

[11] Wearables refer to personal computers, electronic organisers and personal digital assistants, which can be worn almost like accessories, such as a bracelet, headband, or shoulder-bag. Obviously, wearable computers require different methods of input and also user-interface designs. Examples of different input types are speech recognition, single-handed keyboards, eyeball tracking and DataGloves.

[12] See, in this regard, the research activities and developments done by the Surgical Navigation and Robotics Lab, Charité, Berlin. It is one of the aims of the Clinic to develop their "demanding 'OP 2000' project aimed at precisely matching surgical intervention to the situation at hand through state-of-the-art information, computer, and laser technologies" (*Surgical Navigation and Robotics Lab*).

[13] Marshall McLuhan already predicted this increasing prosthetisation in the early sixties: "We acquired the art of carrying out the most dangerous social operations with complete detachment" (1994:4). The detachment that McLuhan is referring to is not only mental, but also refers to physical detachment via robotic replacements and tele-operations.

[14] I have explained Michael Heim's notion of virtual realism in chapter two as part of a cyberfeminist approach to new technologies.

[15] Sue Thomas's novel *Correspondence* (1991) is relevant in this regard, for it relates the story of a woman who becomes a "compositor", analogous to a human-computational entity that creates fantasies and dreams for other people: "a typical project might be to build a fantasy of warmth, for sale to geriatric hospitals" (Thomas 1991:18). But the compositor has to undergo severe physical augmentation, which involves a lot of pain: "Must you endure this double pain? There are blood tests, urine tests, marrow tests. Samples of your tissue writhe at this moment under histologists' microscopes. Extracts of every type of body fluids are sloshing and shaking in a hundred different test-tubes in a dozen rooms around the clinic. And in other rooms, fascinated technicians run copies of your programming and pore over circuit diagrams. Engineers approach you with fine-tuning tools and tiny screwdrivers like knives. They invade you at every point" (1991:144).

[16] McLuhan first uncovers the etymological relation of the name Narcissus to its Greek roots *narcosis*, which refers to a state of **numbness** (1964,1994:41). McLuhan continues by adding that Narcissus did not fall in love with his prosthetic image because he **knew** it was himself: instead he was both "amputated" and extended by his own image without realising it. McLuhan phrases Narcissus's predicament, and by implication modern man's predicament, as follows: "This extension of himself by mirror numbed his perceptions until he became the servomechanism of his own extended or repeated image [...]. He was numb. He had adapted to his extension of himself and had become a closed system" (1964,1994:41).

[17] The numbed relation that man (mostly) has with his prostheses is not induced by adoration, but by brute physical shock. McLuhan explains that when the body is exposed to severe pain and irritation, the central. nervous system protects the body by containing and localising the pain through merciful numbness. The body part under attack or irritated is "severed" or amputated by means of numbness, so as to protect the complete organism. McLuhan describes this protective bodily action as follows: "The victim seems immune to pain or sense [...]. For the central nervous system rallies a response of general numbness to the challenge of specialized irritation"(1994:44). Obviously McLuhan's description of the body's self-amputational response to physical danger also applies to mankind's psychic response to technological enhancement. It seems that man's prostheses are not always pleasurable, but instead overwhelming to the extent that he is perplexed and continually in a state of shock. His senses and thoughts are dulled so as to survive the ordeal: it is only later, when the initial shock wears off and the numbness subsides that feeling or realisation will return to the narcotised limbs and dulled thoughts. It is only after the shock has worn off that the implications of the prosthesis or the "suicidal autoamputation" (1994:43) are realised - possibly too late.

[18] Pregnancy can also cause carpal tunnel syndrome.

[19] See Kathy Davis's helpful analysis of women's actual responses after surgery, in other words the before and after "cosmetic surgery stories" (1995:97). Some of the issues raised by women who had cosmetic surgery concern the actual painful ordeal of surgery, which has major implications and after-effects on the body as a whole; the problem of recognition afterwards – in other words recognising "yourself" in a new face. How do friends and family respond to the "new" face or look? I quote a short extract from Diana's story (a participant in Davis's research who underwent major facial reconstruction), relating disappointment in her experiences of surgery: "I'm really not changed at all [...]. I guess I hoped that because of everything I went through I would be calmer, mentally. After all that suffering, you know. After that terrible pain. (pause) But that's not what happened [...]. I find that disappointing. Like maybe it will change more than just my appearance" (Davis 1995:111).

[20] The difference between the lived body and the given body is that the lived body is an embodied body situated in a specific context, changing and interacting with her context all the time. The given body is the body nature has supposedly provided and which is constructed as destiny. The given body underwrites notions of static and fixed embodiment. My understanding of embodiment overlaps more with the idea of the lived body, which is an ever-changing and dynamic system, not necessarily fixed and doomed by genes and materialistic determinism.

[21] As a clarifying point, it should be noted that when cyberfeminism focuses on women's link with appearances, in order to forge an alliance with new technologies, it is not to enhance appearances that disregard the embodied component, but rather appearances that acknowledge their embodied roots.

[22] Orlan's name may be a reference to Virginia Woolf's fictive character Orlando, from the eponymous novel of gender-swapping, although I could not find any specific mention of this.

[23] The "ready made" refers to Dadaist artist Marcel Duchamp's introduction of everyday objects into the domain of art. Orlan refers to her Carnal Art as making the body into a **changeable** "ready made", which differs from the ideal "ready made" awaiting the artist's signature.

[24] The project started on 30 May 1990 in Newcastle. The first and second opérations-chirurgicale-performance took place consecutively on 21 July and 25 July 1990 in Paris; the third took place on 11 September 1990 in Paris; the fourth was performed on 8 December 1990 in Paris; the fifth on 6 July 1991 in Paris; the sixth and seventh took place in 1993 and were transmitted via satellite at the Centre Georges; the eighth took place on 8 December 1993 in New York and the ninth on 14 December 1993, also in New York. Not all of them are full operations: some are performances only.

25 Orlan has chosen the following goddesses and beauties from western art history to guide her new appearances: 1) the eyes of a depiction by the Fontainebleau school of the goddess *Diana* for her energy and aggression; 2) the brow of Leonardo da Vinci's *Mona Lisa* as a central figure in art history; 3) the nose of Gerôme's *Psyche* as the opposite of Diana, namely fragile and timid; 4) the chin of Botticelli's *Venus* as an embodiment of fleshly beauty; and 5) the lips of Gustave Moreau's *Europa* for her adventurousness and looking expectantly at the future. Orlan, however, emphasises that she does not want to look exactly like these figures, but rather tries to capture what they have come to symbolise (Orlan 2000).

26 Although the topic of body-building could just as well have formed part of the discussion on body sculpting, I have chosen to focus instead on advertisements for body sculpting that link closely with body-building. For an interesting analysis of women's bodies and the technology of body-building, see Anne Balsamo's chapter "Feminist bodybuilding" in *Technologies of the gendered body. Reading cyborg women* (1996).

27 Natasha Vita-More describes herself as a Transhumanist and Extropian artist. She summarises her projects on her website: http://www.natasha.cc

28 It is also stated that the new body with its expansive interior gives its owner 100 quadrillion plus synapse capabilities, which must indicate an upgrade in intelligence and memory, very similar to a computer's RAM.

29 Prospective customers are informed about an array of possible options for the new **Primo3M+** body, such as replacement parts and upgrades, a guarantee for 10,000 years, multiple gender options and naturally a trade-in on the old body at a discount rate.

Chapter Five
The marked body:
A do-it-yourself guide to sex and gender
in the twenty-first century

<<<<< present .... random >>>>>

There is something about being both male and female,
about having an entry into both worlds.
(Anzaldúa 1987:19)

Fig. 5.1 Del LaGrace Volcano, *Jackie II (Having it both ways)*, 1994

In this chapter the marked body will be explored: specifically, the ways in which new technologies and discursive practices mark bodies as being sexed and gendered will come under scrutiny. The marked body in my analysis refers to the textual construction of both sex and gender, and how bodies are re-marked or re-written whenever sex is changed and gender is swapped. I have argued previously that gender "writes" (constructs) sex just as sex "writes" gender, and in this interactive writing process, bodies are marked as sexed and gendered. What concerns me here is the crucial, yet strategically obscured, part played by new technologies in the creation of new sex and gender categories such as transgenderism (specifically in virtual gender-swapping) and transsexuality (sex/gender reassignment procedures).

The ramifications of these new sex and gender categories for embodiment are teased out in this chapter. In the case of the marked body, although **present** – for there is a body (both constructed and real) present – the body in question takes on different permutations and combinations apparently at **random.** The law of subjective volition guides the apparent randomness with which these "otherly" sexed and gendered bodies, which do not fit into simplistic binary categories, emerge. It is often assumed that both gender and sex are consumer choices to be made by a subject agency, whose desires spread without limits over a globalised economy. Sex and gender are both perceived as manageable and controllable in the reconstruction of the marked body as sex can be changed and gender can be swapped. Hence the choice of present and random in my selection from the semiotic square for this chapter, for embodiment manifests itself within the marked body as present, albeit at random.

Fig. 5.2 Nancy Reynolds Nangeroni, *Transgendered logo*

I will begin by exploring the differences between transgenderism and transsexuality. In transgenderism gender is supposedly surpassed, while transsexuality apparently exceeds sex, but I want to argue that in both instances the embodied nature of human existence is subtly dislodged and discarded. The strategic and sometimes cleverly obscured position that both transgenderism and transsexuality occupy in relation to new technologies will also be explored. By revealing their generally uncritical alliances with new technologies, some of the disembodied impulses behind these two categories are uncovered.

Transgenderism is described as "the latest umbrella term used to denote people who are 'differently gendered' or, literally, 'cross-gendered'" (Holmes 1999) or those who are "transgressively gendered" (Bornstein 1994:8). There are different levels of understanding and unpacking this relatively new term for, on a broader level, it does indeed refer to the cross-gender community, who want to "transgress the order of gender by flaunting disobedience to the idea that 'sex', 'gender', and 'sexuality' [exist]

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within a bipolar, heterosexual framework" (Hausman 1995:195). In this broader understanding of the term transgenderism and queer theory[1] overlap, for both discourses endeavour to create a place, albeit a "non-place",[2] for those who challenge the hegemony of the monolithic heterosexual system. Understood narrowly, transgenderism refers, by contrast, specifically to those subjects who choose not to undergo sex reassignment surgery or undergo the surgery only partially, in other words those who live in the borderlands of the bipolar heterosexual framework. The logo for "transgenderism", designed by Nancy Nangeroni [Fig. 5.2], clearly shows the state of being at once both male and female without being either one or the other. My application of transgenderism, however, cooperates with its impulse to transgress gender by focussing my analysis on the phenomenon of virtual gender-swapping as it occurs in computer-mediated communication. Consequently, I am appropriating the term transgenderism here by narrowing my scope to include only one specific context of its wider popular meaning.

Transsexuality, on the other hand, refers to the physical reconstruction of sex by means of an operation, known as sexual reassignment surgery [lately referred to as gender reassignment (Hausman 1995:3)], in order to re-align sex with what is perceived as the person's "real" or "correct" gender. Transsexual persons are divided into two broad categories, namely men who change into women (male-to-female transsexuals) and women who change into men (female-to-male transsexuals). Not all transsexual persons undergo reassignment surgery, although they may make use of medication such as hormonal therapy. All transsexuals, nevertheless, share the prevalent "feeling" that they are "trapped" in the "wrong" body (Raymond 1994:6). Medical discourses have accommodated and responded to this sense of being entrapped by classifying and pathologising transsexuals as suffering from "Gender Identity Disorder".[3] The popularity and proliferation of transsexed categories are closely allied with recent advancements in new technologies and discursive practices that promise altered (in)corporeal horizons. The alignment between transsexuality and technology is perhaps also typical of the way in which western cultures prefer to differentiate between sex and gender. As ethnographic studies have shown different cultures dealt differently with the apparent sex-gender dichotomy. In this regard Unni Wikan (1982) identified the *xanith* of coastal Oman – biological men living as woman; the *berdache* amongst the Plains Indians, Tahitian, Brazilian, Aztec and Inca tribes who is described as a "honorary third

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sex" (Ackroyd 1979:37); Serena Nanda's (1999) analysis of the transgendered state of the *hijra* in India and Will Roscoe's (1992) analysis of the Zuni Indian man-woman. All of these testify to alternative and complex customs through which different societies deal with the sex-gender polarity.

In the discourses of both transgenderism and transsexuality, the prefix "trans" is operative: transgenderism attempts to go beyond gender, and transsexuality tries to transcend sex. Both favour a distinctly disembodied stance, although concealed in many instances, for transgenderism in most of its incarnations assumes that one can swap gender like a piece of clothing, while transsexuality resorts to the surgical correction of the "costume" that is physical sex, to suit the subject's supposedly more "correct" and "real" gender. The embodied nature of sex and gender, as delineated earlier, with reference to Merleau-Ponty's notion of *flesh* and Irigaray's *sensible transcendent*, provides no apparent obstacles for transgenderists and transsexuals. In fact, as will be shown in this chapter, embodiment is treated as being predominantly malleable, manageable and controllable – likened to a choice from a drop-down menu in the case of transgenderism, and a condition that can be described and diagnosed from the pages in medical and psychiatric textbooks in the case of transsexuality.

In my delineation of the two categories, the textuality or textual constructedness, and thus the markedness, of both is important. Transgenderism is textually constructed online in text-based virtual environments, where bodies are virtually marked (re-written) by swapping their genders. Embodiment is re-written or constructed as a virtual text. In other words, bodies come into existence through words typed onto screens. In the case of transsexuality, on the other hand, the physical body is treated as a text that needs reconstruction and realignment. Transsexual bodies are literally re-marked and re-inscribed by changing their physical sex. Transgenderism has virtual markings, whereas transsexuality has "real" physical markings. Although their results may therefore appear to differ, where one is virtual and apparently less damaging, and the other is more corporeal and therefore has more permanent consequences, I am convinced that both categories have major implications for how embodiment is signified in current cyber-debates. Accordingly, the consequences, real and virtual, of both phenomena for embodiment in a virtual age will be exposed. The main thrust of my argument is that going **beyond** the binary sex and gender system is only tenable and feasible by **being in**

and **living through** those differences. In terms of the embodiment debate: transgenderism and transsexuality are only plausible if the embodied nature of both sex and gender are taken into account.

5.1 <Transgender> Real sex and virtual gender

In most debates produced on virtual gender-swapping[4] it becomes clear that gender is perceived as being solely socially constructed and therefore, interchangeable, given different social situations and opportunities. Sex, on the other hand, is described as predetermined and accordingly, as unchangeable – a pre-ontological given – except by means of technological intervention in the form of sex reassignment surgery and genetic and reproductive control of sexual identity.[5] Gender, due to its apparent constructedness, and in effect its virtuality, it is commonly argued, is a garment to be worn or slipped off whenever the virtual opportunity arises. The seeming freedom enjoyed by transgressing the limitations posed by one's own gender is commendable in certain ways. These supposedly bodiless gender experimentations do, however, still have material and embodied effects.

The opposition, superficially incised, between virtual gender and real sex, and therefore also automatically between mind and body, is discernible in most discourses and descriptions on virtual gender-swapping. The following excerpt from Elizabeth L. Lawley's "Computers and the communication of gender" clearly shows the attempt to discreetly dislodge gender and sex, making the one malleably virtual and the other rigidly real:

> One great allure of computerized communication systems is their ability to allow participants to **effortlessly** reshape their selves and their "appearances" through **manipulation** of words and images – representations – rather than through modification of the physical body [...]. These communication systems allow women to **escape** boundaries and categories that have in the past constrained their activities and their identities. By providing women with an opportunity to express their ideas in a way that **transcends** the biological body, this technology gives them the power to redefine themselves **outside** of the historical categories of "woman", "other", or "object". (1996:5, emphasis added)

Lawley's tone is almost naive in its expectations; she deploys terminology in phrases such as "effortlessly reshape their selves", "escape boundaries" and "outside of

historical categories". Although online selves present liberating moments and beckon some freedom for gender experimentation, they also constitute real life implications and obstacles. The future prospects for women attempting to "transcend" their physical bodies by consciously manipulating their gender are however, politically blind, misguided and impotent, in my view. Relinquishing the embodied constituency of one's political agency may lead into the dead end of inevitable patriarchal sameness (oneness). Elizabeth Reid takes a similarly politically-misguided viewpoint on bodies in computer-mediated communication environments:

> How one MUD player 'looks' to another player is **entirely dependent** upon information that they **choose** to give. The boundaries delineated by cultural constructions of the body are both subverted and **given free rein** in virtual environments. **With the body freed from the physical,** it completely enters the realm of symbol. It becomes **an entity of pure meaning,** but is simultaneously meaningless, stripped of any fixed referent. (1994:2, emphasis added)

In Reid's text the obvious question is: what happens to the physical body typing in front of the terminal? Should we assume that the physical body with its specific embodied and lived sex, although performative and a continual process, has evaporated and dissolved into the ether? Furthermore, under which circumstances is the virtual body (I presume Reid refers to the virtual body when she states "With the body freed from the physical") indeed freed from its physical organisation, if ever? Is the physical body not a precondition for the virtual body's existence? If gender is a mere choice to be made by a dislodged subject (à *la* the Cartesian mind dislodging itself from the body), how politically productive is gender-swapping for women who are physically situated as disadvantaged and already disempowered before they begin gender-swapping?

It should be emphasised, though, that I am in no way attempting to deny the challenging and provocative possibilities of gender experimentation – online and offline – and its performative potential. I concur with Judith Butler's concept of the performativity of gender, which embroiders a richer tapestry of gender categories and tolerances beyond the hegemony of the heterosexual matrix. Nevertheless, Butler also signals the following warning regarding gender performativity: "Gender is not a performance that a prior subject elects to do, but gender is *performative* in the sense that it constitutes as an effect the very subject it appears to express" (1991:314, original emphasis). Butler makes it clear that gender cannot be reduced to something that is

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consciously and willingly elected or chosen, but is rather a process of expression. In other words, Butler's concept of gender performativity is expressed through an embodied subject and is itself an embodied process.

I am similarly sceptical of a certain trajectory within gender discourses that denies the embodied and situated nature of our existence and lived bodies, by representing gender as a "performance" to be elected by an *a priori* subject. That line of argument assumes that gender and race, for instance, are essential properties belonging only to the body. Accordingly, it is assumed that if there are no bodies online, automatically there is no gender or race as well. I have argued throughout this study that gender is as much constructed (socially and discursively) as it is processed and embodied by real sexed bodies. In other words, gender is simultaneously constructed and "natural".[6] Disembodied visions of gender online not only deny the existence of real bodies, but also conveniently forget about the discourses that have created gendered bodies. In forgetting both the reality and the virtuality of sex and gender, such strategies subtly (and sometimes not so subtly) perpetuate the mind/body, gender/sex and man/woman cliff-hanger. I construe virtual gender-swapping as an instance of a drive to dislodge binaries such as gender and sex, by looking first at the different ways in which genders and sexes gender-swap. Then the case of virtual sex and rape and their implications for embodiment are investigated, and finally I outline the embodied and metaphorical cues used online to remind users of a body that is not completely left behind.

Before virtual gender-swapping, also described as "electronic transvestism" (Van Gelder 1991:3) can be explicated, gender-swapping in real life should be demarcated in order to establish some comparisons and differences. The history of "real life" gender-swapping, also referred to as cross-dressing or transvestism,[7] is an intriguing exploration on its own, as Marjorie Garber's (1992) *Vested interests. Cross-dressing and cultural anxiety* clearly shows. Garber demonstrates that cross-dressing ranges from initiation rites, during which Zulu men dress as women, to the boy actors of the English Renaissance stage (recently filmed in *Shakespeare in Love*). Cross-dressing has been physically embodied by celebrated figures such as Joan of Arc, Georges Sand, Gertrude Stein and Virginia Woolf. The cross-dresser has also become a popular cult figure: Ziggy Stardust in the 1970s, Madonna and Michael Jackson in the 1990s are all leading gender-benders or "turncoats of sex" (1993:21), as Baudrillard accurately

denotes them. Two other categories that are closely associated are the drag queen and drag king and the examples of RuPaul [Fig. 5.3] as a drag queen and (Mil)Dred Gerestant [Fig. 5.4] as a drag king, attest to their cultural vibrancy.

Fig. 5.3 Drag queen RuPaul, 2001

Fig. 5.4 Drag king (Mildred) Dred Gerestant, 2000

Circumstantial cross-dressers have made humorous appearances in films such as *Tootsie* (1982, director Sydney Pollack) and *Mrs. Doubtfire* (1993, director Chris Columbus). On a more serious level the cross-dresser has been portrayed in the filmic version of Virginia Woolf's *Orlando: A biography* (1908), filmed as *Orlando* by director Sally Potter in 1993.

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In director Neil Jordan's *The crying game* (1992), the viewer is held in suspense until the shocking revelation of Dil's (Jaye Davidson) "real" sex. More recently *Boys don't cry* (1999, director Kimberly Peirce) [Fig. 5.5] retells the unfortunate story of Teena Brandon, played by Hilary Swank.[8] Teena Brandon, a pre-operative transsexual, under the guise of Brandon Teena, gained the trust and acceptance of his friends until his "true" identity was discovered. The consequences of Brandon Teena's gender-swapping were brutal rape and a violent death. When the consequences of virtual gender-swapping are explored later on, I will show that, although not as final as physical death, it does in fact also have material outcomes.
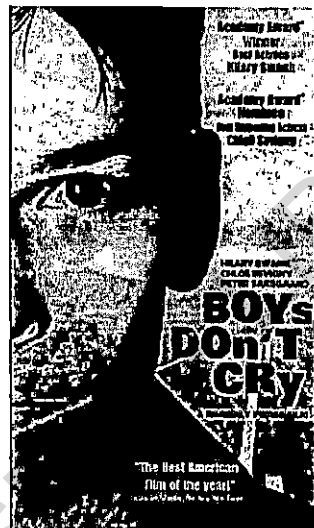
Fig. 5.5 Poster for *Boys don't cry*, 1999

The reasons given for cross-dressing in real life range from relief from societal pressures (in the case of male and female transvestites), to putting on a cross-gendered performance for entertainment value, in the case of drag queens and drag kings. In the case of virtual gender-swapping the experiment of enacting the other sex and gender is open to far more participants, owing to online anonymity. The freedom to select a different gender from one's "real" gender for online experimentation, without the unwanted baggage of revealing true (sex/gender) identity, is very promising and seductive. The reports from the virtual frontier (according to Sherry Turkle and others) also reveal that many find it very rewarding to swap gender virtually, for it opens up possibilities for the self that cannot be enacted in a society that does not generally tolerate more than one sex and gender per person. My brief investigation into virtual

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gender-swapping will, nevertheless, concentrate on how it impacts on embodiment and how embodiment is constructed in these discourses. In line with my broad argument concerning embodiment, I argue that swapping gender online does have real life consequences, for gender cannot be reduced to a whimsical choice made by a subject. The lived and situated body does not remain unchanged and unscathed during online gender-swapping encounters. Although the dominant discourses on the subject agree that virtual gender-swapping online is a disembodied endeavour, I argue, on the contrary, that it is an embodied activity that spills over into the materiality of real life. To paraphrase Judith Butler, virtual gender-swapping **matters** and I am interested here in how it matters.

5.1.1 Online gender-swapping

One of the first tasks upon entering a text-based virtual environment, such as a MUD or MOO, is to create an online identity. By providing descriptive information about the virtual character the user is able to create a "new" and "different" identity for him/herself. As Howard Rheingold, author of *Virtual communities*, optimistically asserts: "In MUD-worlds description is the same as creation" (1993:148). In other words, one is apparently free to create a new self by merely describing a new self. Furthermore, desires can run wild and uncontained across gender borders for, as one LambdaMOO player maintains: "We exist in a world of pure communication, where looks don't matter and only the best writers get laid" (Woodland 1994). As part of a virtually created self, choosing an appropriate gender for the "character", "handle", or "login", remains an important descriptive aspect, if not the most important choice in the creation of a new virtual identity. Pavel Curtis, creator of the famous LambdaMOO, remarks: "The choice of a player's gender is, for some, one of great consequence and forethought; for others (mostly males), it is simple and without any questions" (1992). Virtual environments, in a truly consumerist manner, also vary in the range of different gender opportunities that they offer. Some merely offer a choice of fe/male, while others include the option of a "neuter" gender handle as well. The elaborate ones, such as GammaMOO, have the following gender choices: neuter, male, female, either, Spivak, splat, plural, egotistical, royal and 2nd (Kendall 1996:217). Each gender handle also comes with the correct pronoun, such as *it* for the "neuter" handle, and *s/he* and *him/her* for the "either"

handle. The "Spivak" gender handle suitably uses a set of gender-neutral pronouns such as *e* and *em*, while the "egotistical" handle predictably uses *I* and *me*. The continuum of gender possibilities online improves upon and improvises on the binary gender system that is available in real life – but only if one believes gender to be a choice that can be selected from a drop-down menu and is not always already demarcated by embodied parameters.

The fact that gender is the first means by which online characters introduce and represent themselves in virtual environments (O'Brien 1997) indicates that gender undeniably **matters** online. One of the most frequently asked questions online is still "Are you male or female?" (Kendall 1996:216) or one may answer "neither" where applicable, which still produces a gender-related answer. The gender-neutral answer is, in spite of everything, produced within the constraints of the dominant binary gender parameters. In cases where characters evade the gender question, they are generally not admired for their adventurous gender experimentation, but instead are treated with suspicion, because they are seen to be hiding something. As Jodi O'Brien argues, "The failure to 'reveal' gender is viewed with suspicion. These questions underscore rather than erase the significance of gender" (1997). Thus gender politics do not suddenly evaporate into oblivion when individuals are online, but, instead, like a virus, replicate in the virtual domain, with infectious results.

The result of this replication of gender politics into the virtual domain is, mainly, that online gender-swapping cannot be described as a homogenous and equally rewarding endeavour for all the sexes and genders. The located "place" from where the person starts his/her online gender-swapping, their embodied and situated position, plays a major role in how and why a person gender-swaps. For instance, the reasons why biological men and women choose to gender-swap seem to differ greatly. Men's reasons vary from alleviating the pressure of cultural stereotypes to investigating male and female relationships from another vantage point (Suler 1996). Online gender-swapping may also create the opportunity for men to act consciously or unconsciously on the urge to seduce and be seduced by other men in the role of virtual "females" (McRae 1995) (these include homosexual men interested in seducing "straight" men and men attempting to seduce one another just to prove they can do it). Men may also virtually cross-dress to find out more about "how the other half lives" (Curtis 1992). Online

gender-swapping could, therefore, provide men with possible insights of how it "feels" to be a woman.

Most research on the topic of why and how men gender-swap online does, nevertheless, show that when men choose to pose as females online, they do so generally without a hint of bashfulness and in a definite attempt to draw attention to themselves. It is for this reason that Pavel Curtis observes that, when a new character enters a chat room with a name such as "HotFabBabe", "she" is most certainly a "he". As Curtis reports: "This is such a widely-noticed phenomenon, in fact, that one is advised by the common wisdom to assume that any flirtatious female-presenting players are, in real life, males" (1992). Does this indicate that masculinity is a privileged position from which online gender-swapping is launched?

If real men posing as females online have no fears about presenting themselves this way, it appears that real women do not want to draw too much obvious attention to themselves as women. On the contrary, most real women feel the urge to hide their "true" gender online, rather than flaunting it. Evidently, most women start their gender-swapping from another situated position in societal constructions and interactions, which in turn leads to a more unobtrusively neutral and "quiet" strategy when they are online. The chances of a real woman posing as "HotFabBabe" are slim and highly unlikely. Pavel Curtis (1993) explains that many female players choose to present themselves using male, neuter, or gender-neutral gender pronouns, rather than presenting themselves as "female". Furthermore, evidence shows that female-posing characters receive more technological help and advice than male-playing characters and that this "help" often comes at a price, almost like a man paying the bill after dinner in the expectation that his female date will have sex with him as reward (Bruckman 1993).

Does this information imply that women gender-swap for different reasons and also differently than men do? As already stated, the major difference is that most women need to hide their "true" gender online, rather than flaunting it. If text-based virtual environments provide a space for gender experimentation, why do most women prefer to "hide" their "true" genders rather than "playing" with their gender? Obviously there is a definite difference between hiding one's gender – or at least attempting to do so – and playing with it by "putting on a performance". This indicates that, although gender-swapping online proves liberating and even invigorating for the real life gender

expectations of some of its users, for others it remains "gender as usual". In most instances the preconceived ideas and expectations of a specific gender prevail and are, in fact, perpetuated and essentialised in descriptions such as"[...] narrow waist, voluptuous breasts, flowing hair" (McRae 1995) when someone constructs a virtual female character, for instance.

Due to the gender differences in approaching gender-swapping, online resources abound in providing one with the necessary skills and helpful hints of how to unmask a gender impostor. A series of questions that only "real" women would apparently be able to answer are provided by John Suler to assist in detecting specifically a male gender-switcher who plays a virtual female.[9] It emerges that approximately as much time is spent online attempting to unveil gender-swapping as the amount of time spent in meticulously creating and maintaining a cross-gendered virtual character. Many users reportedly feel "deceived" when they discover that someone has been posing as another gender, for, as many argue, they like to know where they "stand" (LaPin & Lakshmi 1998).[10] In certain respects virtual environments encourage gender experimentation and yet, ironically, many players expect "honest" gender indicators online. Possibly, as John Suler (1996) states: "There is a very thin line between the right to experiment with one's gender and the violation of the rights of others by deliberately deceiving and manipulating them".

In this regard Sandy Stone in *The war of desire and technology at the close of the mechanical age*, relates an interesting "tale of the nets [...] a fable of the loss of innocence" (1998:65) of male psychiatrist (Sanford Lewin), who gender-swapped by accident and then became a huge virtual success as a "female" (Julie Graham). In fact his "female" counterpart had far more social success than his real life anchor. When the psychiatrist decided to come out of his "virtual" closet, however, he met with such resistance that he was ostracised from his virtual community. Similarly, Jodi O'Brien (1997) reports in "Changing the subject" that a woman who passed successfully as a man on a conference board for several months was threatened with "real, very physical, very painful rape" when the predominant male group discovered her "real" sex and gender. In both these cases virtual gender-swapping had material implications for the two gender-swappers, who had to suffer humiliation and rejections once their real identities were exposed. One can only speculate about the reasons why people react with such indignation and shock when they find that someone has been posing as

the other gender online. It may be because gender is still treated as a sacred category that humans should not tamper with and is actually a domain best reserved for the gods and goddesses to explore.[11]

In addition, on a more complex level, do transvestites and transsexuals (pre- and post-operative) gender-swap online for the same reasons and in the same ways as people in most heterosexual and homosexual categories do? I seriously doubt it. The anonymity of online environments provides transvestites and transsexuals with the added opportunity to cross-dress and experiment virtually, without having to deal with the physical obstacles of "passing"[12] as the other sex in real life (such as adopting the voice and gestures of the opposite sex, for instance). Passing does, however, still form an important part of online gender-swapping, for the success of a virtual character depends profoundly on how successful the character passes as the other gender. In order to pass convincingly as a specific gender, one has to switch to the "default" perceptions of what it means to be male or female, in other words to the exaggerated descriptions and assumptions of that gender.

The success of the virtual cross-dresser consequently relies heavily on the success of his/her gender performance. The activity of passing virtually is equivalent to putting on a performance. In the case of physically passing as another sex, as in the case of the transsexual and transvestite, appearances are literally put on to make the rite of passage persuasive. Nonetheless, in neither the case of real nor virtual gender-swapping can a disembodied stance be substantiated, for the performance needs to be enacted from "somewhere" and that "somewhere" is always already embodied. The fact that all gender-swapping (both real and virtual) is rooted and embodied entails that it is not a universally neutral and equal process, for each sex and gender begins gender-swapping from a different situatedness. This issue is not always sufficiently recognised and interrogated in discourses on the topic.

5.1.2 Embodied online cues: where virtual gender meets real sex

One of the strongest challenges to proponents of the supposedly disembodied and unfettered state of the online environment, as represented in MUDs and MOOs, is in the heated debate surrounding incidents of virtual rape. Occurrences of virtual rape have finally shattered the utopianism of virtual communities and the virtual domain has lost its

pristine innocence, especially after a much-debated and publicised incident on LambdaMOO. During this incident a character called Mr. Bungle coerced other characters through "the curious notion of rape by voodoo doll" (Dibbell 1998). This entailed the use of a subprogram that attributes actions to other characters that their users did not actually write/type. The coerced characters' screens were infiltrated with deplorable actions, which they did not "do" or write themselves. Their characters were thus temporarily possessed by Mr. Bungle's evil obsessions. The significant biological facts became apparent only later, after the case was investigated: Mr. Bungle was male and the coerced characters were female.

I provide some details of the events in order to trace its embodied implications. Julian Dibbell unravels the events as follows:

> The facts begin (as they often do) with a time and a place. The time was a Monday night in March, and the place, [...] was the living room – which, due largely to the centrality of its location and to a certain warmth of décor, is so invariably packed with chitchatters [...]. So strong, indeed, is the sense of convivial common ground invested in the living room that a cruel mind could hardly imagine a better place in which to stage a violation of LambdaMOO communal spirit. And there was cruelty enough lurking in the appearance of Mr. Bungle [...] a fat, oleaginous, Bisquick-faced clown dressed in cum-stained harlequin garb [...]. They tell us that he commenced his assault entirely unprovoked [...]. That he began by using his voodoo doll to force one of the room's occupants to sexually service him in a variety of more or less conventional ways. [...] this victim was exu, a Haitian trickster spirit of indeterminate gender. [...] . That exu heaped vicious imprecations on him [...] and that he was soon ejected bodily from the room. [...] he hid himself [...] since the voodoo doll worked just as well at a distance as in proximity. [...] he turned his attentions now to Moondreamer, a rather pointedly nondescript female character [...] his actions grew progressively violent [...] he made exu eat his/her pubic hair [...] he caused Moondreamer to violate herself with a piece of kitchen cutlery [while] his distant laughter echoed evilly in the living room [...]. That he could not be stopped until at last someone summoned Iggy, a wise and trusted old-timer [...] who brought with him a gun [...] that didn't kill but enveloped its target in a cage [...]. (1998)

As the account above shows, the infiltration or penetration took place on several different levels. First of all Mr. Bungle overpowered exu and Moondreamer by taking control of their online characters. The virtual character created by a user is something over which the user supposedly has sole control, and the implications for taking control of another user's online character can be equated to being possessed in real life.

Understandably users grow extremely fond and emotionally attached, even "possessive" (Curtis 1992) of their online characters and re-possessing a character by impersonating that character is met with great resentment. If a character is "possessed" by another character, as in the case of Mr. Bungle, it obviously has definite emotional ramifications for such a character both in the virtual and real body.

The fact that these two coerced characters had to read the following on their screens: "**As if against her will**, Moondreamer jabs a steak knife up her ass, causing immense joy. You hear Mr. Bungle laughing evilly in the distance" (Dibbell 1998, emphasis added) obviously caused intense distress and agony. In addition, the two characters had to endure "a brand of degradation all-too-customarily reserved for the embodied female" (Dibbell 1998) and in their case, where both were indeed females, the degradation mounted. The implications of the line "as if against her will", implying that the character played along and merely play-acted her resistance, doubled the user's humiliation and agony, and also accentuated the seemingly distanced virtuality of the event in real terms. Clearly these encroaching events had embodied marks and effects, for exu acknowledges that there were tears rolling down her cheek while she read the coerced text. Some may ask why did she not switch off or log off, while indifferently shrugging at the incident's apparent immateriality. After all, so it is argued, they were merely words on a screen. What is not taken into account is that a "**window of pain** [occurs] between the moment the rape-text starts flowing and the moment a gag shuts it off" (Dibbell 1998, emphasis added). One can only shrug indifferently in the face of that "window of pain" if the link between online activities and real life is denied. In other words, only if the existence of a definite and resilient bond between the virtual self and the real self is denied can one turn away unharmed from virtual rape. The virtual self is always already embodied and even if it pretends to travel incorporeally online, it is embodiment that makes these fantasies of disembodiment possible.

Answering the question whether a rape did take place is a more difficult task, though, for what constitutes rape (real and virtual) depends on one's definition of the term. Exploring the issue of virtual rape also brings the occurrence of consensual virtual sex or cybersex[13] into play. Virtual sex, also known as *TinySex* online, consists of two or more consenting players typing descriptions of physical actions, verbal statements and emotional reactions (known as emote) for their characters. Virtual sex can also be described as "speed writing interactive erotica" (Turkle 1996:313). Consensual virtual sex

is only one facet of sexual activities online, for the case of Mr. Bungle shows clearly that occurrences of non-consensual sexual activities also transpire in the relative safety of the Internet. Once again the argument of whether rape did indeed occur or not is arrested before the question of whether online interactions can be considered to be only words on a screen.

If rape is defined as "a crime of violence against women, not primarily sexual in nature, and that rapists are not uniquely distinguishable from the category 'normal men'" (Kramarae & Teichler 1985:382), rape can and has occurred in cyberspace. If one argues that during "real" or "flesh and blood" rape a person's (usually a woman's) physical and psychological integrity are violated, the same happens during virtual rape. For how can one be psychologically raped without also necessarily experiencing the trauma in physical terms? Virtual rape appearing on a computer screen (a "window of pain") has physical effects – an increase in heartbeat, rising blood pressure, sweating palms and tears. Just as our psyches do not remain untouched by physical rape, how can we argue that our physiques remain untouched during virtual rape? It may be argued that virtual rape at no point threatens the character's life or material well-being, whereas rape in real life is life-threatening (even apart from the risk of HIV infection). It is clear that virtual rape is not equivalent to "real" rape – it cannot produce blood, bruises and definitely involves no semen. How can one compare tears and outrage with those real bodily evidences of harm? On the other hand, though, how are the physical responses and reactions to virtual rape explained? I do not have the space here to develop the argument further. What can be argued here, though, is that both share the supposition that sex and gender are unequally constructed and embodied in society – real and virtual.

The fact that gender is performed from a situated and located specificity brings to the virtual frontier most of the gender expectations and predicaments as experienced in real life. Although gender is a social construct, it needs to be embodied and performed by biological bodies in order to manifest itself. Between the bio-body and its construction, in other words between the lived and imagined body lies the answer to occurrences of virtual rape and sex. Shannon McRae in "Coming apart at the seams: Sex, text and the virtual body" (1995), develops the notion of a "double-body sense". She explains that online the "mind/body awareness is not split, but doubled, magnified, intermingled [...] the body is entirely real and entirely imagined at the same

time". In other words, it is not meaningful to speak of only minds or bodies online, but rather of a doubling of the two. Online events and interactions take on meaning precisely in this "doubled body" sense, between being-in-the-body and being-in-the-text, in that incarnated chiasmus connecting the two that constitutes embodiment. McRae's concept of the doubled body partly corresponds with my development of the idea of embodiment, which in turn links with Merleau-Ponty's notion of *flesh* and Luce Irigaray's idea of the *sensible transcendent*. Embodiment does not solely consist of bodily existence and neither is it a case of mind-over-matter: there is rather, a meshed and inseparable (im)material entity.

5.1.3 *Meeting in the flesh*

It is interesting to investigate the consuming need expressed by most virtual characters to meet in the flesh. To my knowledge, nobody who has conducted an e-mail affair did not also eventually want to meet the anonymous lover.[14] The desire to meet in real life naturally undermines the notion of online anonymity, but it is a risk many are prepared to take, obviously with diverse consequences. In VanessaQ's[15] humorous *Confessions of a Cybertramp* (1996), the distinction between cybersex and real sex is blurred as most of her online adventures end in real physical encounters. VanessaQ describes her urge to meet in the flesh as follows: "my only sexual encounters lately had been cybersex. Although they were delightful experiences, I was craving a real, physical relationship. I hoped Winston would provide it for me" (1996:58). The craving to consummate virtual relationships by meeting in real life is a recurring theme amongst virtual characters and also a direct comment on the "doubled body" sense experienced online. Naturally, the outcomes of such physical encounters vary, for other factors come into play in real life than online. The darker side of such a physical meeting is described in one of VanessaQ's encounters with a certain "Woolfie" character, who after having met in real life started to stalk her. This incident once again attests to the real implications of online activities.

Another online relationship with unanticipated results is described by Ellen Ullman, software engineer, who fell in love by e-mail with one of her co-engineers. Ullman plots the fascinating differences and similarities in developing an online relationship, "I fell in love by email. It was as intense as any other falling in love – no, more so [as] Karl and I

[...] manage[d] to forge a relationship out of this environment designed for information exchange" (1996:12,15). Finally they decided to meet: "It must be done: We will have dinner" (1996:17). The real meeting is overcast by their e-mail communication as they tend to fall into the same conversation pattern of interpolations[16] in real life as they do online. While sitting face-to-face opposite Karl, Ullman realises that they should not have bothered to meet in real life for "we have finally gone out to dinner only to *exchange email*" (1996:17). This embodied meeting, therefore, resulted in disappointment, and, instead of sparks flying, the real meeting produced what Ullman describes as "body-absent talk" (1996:18). In this specific case the two persons involved were more attracted to one another online than in real life. They had a better relationship online than offline. Yet what they share online is, nevertheless, redolent of embodied interchange. Ullman describes their online connection as follows: "[...] there is the memory of the beach, its feel and smell, mentions of beds and sleep" (1996:19) which are intimacies they could not share in real life. Ullman explains their online attraction as being connected to one another through "the **body** in the machine" (1996:19, emphasis added). Although referring to another kind of attraction, it also requires embodied metaphors and representations to create a space in which to exist. E-mail affairs also exist in the doubled body sense, as Shannon McRae terms it.

In conclusion, the emphasis placed on the plasticity of gender sponsored by new technologies, such as the text-based environments of MUDs and MOOs, has proved to be highly contentious. On a certain level these supposedly body-free gender-experimentation environments are undeniably conducive to the broadening of gender roles in real life, as long as it is also realised that these changed gender expectations still need real life enactment in order to take effect. Gender's virtuality is challenged and reminded of its own materiality and fragility by events such as virtual rape and sex, which threaten to spill over into the real lives of virtual players. Although these events have material ramifications, the majority of popular debates on the topic choose to deny and discursively displace these events. I have shown that a body of evidence is appearing that indicates that the categorisation of gender as virtual and sex as too real run into stark realities, rather than incorporeal horizons. In a similar vein transgenderism meets with the embodiment of its own gender, just as transsexuality meets with the limits of its own sex.

5.2   <Transsexuality> Virtual sex and real gender

One of the first explanations one is bound to come across when exploring transsexuality is how "real" gender is incongruent with the "wrong" sex. Dr. Harry Benjamin (1885-1986) [Fig. 5.6], author of *The transsexual phenomenon* (1966) and medical godfather of transsexuality, as Jean-Martin Charcot stood in relation to hysteria, describes transsexuality as follows:

> The transsexual (TS) male or female is deeply unhappy as a member of the sex (or gender) to which he or she was assigned by the anatomical structure of the body, particularly the genitals [...]. For [transsexuals], their sex organs, [...] are disgusting deformities that must be changed by the surgeon's knife. (ca 1966, 1999)

The erroneous sex is treated as virtual, therefore variable and **random**, and should be aligned with the "real" or "true" gender of the person. Accordingly, "nature's" apparent mistake should be rectified by making use of "culture's" medical technologies. It should be noted that although transsexuals want to rid themselves of incorrectly sexed bodies, the cause of transsexuality is, nevertheless, attributed to the biology of the mother's womb due to a faulty "hormonal shower" (*The Renaissance Transgender Organisation* 1990), as well as, to the psychological dominance of the mother during the person's developmental years (Raymond 1994:69). These bodily and psychological "defects" require technological and "therapeutic fathers" (Raymond 1994:69) to remedy "mother nature's" apparent mistakes. *The Renaissance Transgender Organisation* also describes transsexuality, perhaps unknowingly, in precisely such gendered terms as "a mind that is literally, physically, **trapped** in a body of the opposite sex" (1990, emphasis added). Hence, in the case of transsexuality, the sexed body, significantly referred to as a "costume" (traditionally associated with women) is constructed as an entrapment, not real, fraudulent and therefore virtual; whereas gender is seen as the true and authentic measure of the person's identity. In a true Cartesian manner, it is the **mind** of the transsexual that rules over and decides about the mistakenly sexed body. As the "therapeutic father" of transsexuality, Dr Harry Benjamin; decided in the 1960s, if the mind cannot be changed to correspond to the body, then the body should be changed to match the mind (*The Renaissance Transgender Organisation* 1990). For this reason, sex is constructed in most traditional transsexual discourses as virtual and gender

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as real. The fact that sex reassignment has been substituted by the use of the term "gender reassignment surgery" in recent years, further indicates the emphasis placed on gender as an authentic standard and sex as a secondary and malleable component during the reassignment procedure.

**Fig. 5.6 Portrait of Harry Benjamin, Vienna, 1938
(Archiv für Sexualwissenschaft)**

It should be noted that, like virtual gender-swapping, which cannot be interpreted as an integrated and universal event experienced in the same way by all, transsexuality has different strands and "hearts". In this regard, Sandy Stone, transgender theorist, distinguishes between "traditional transsexualism" and "transgenderist transsexualism" in "The 'empire' strikes back: a posttranssexual manifesto" (1994).[17] For most of my discussion, traditional transsexualism will be analysed and, as the argument unfolds, my qualified alliance with transgenderist transsexualism will become apparent.

Even though, I give a critique of traditional transsexualism, transsexuals are faced with an invidious dilemma and often with untimely death[18] due to the fact that the rigid heterosexual two-sex/gender system does not cater for them. The fact that the two-sex/gender system is also an historically recent construction (Laqueur 1987:4) and not a universal phenomenon, as it purports to be, is cleverly disguised in discourses that pathologise and medicalise transsexuality. All the same, to change from one rigid pole of the binary system to the other does not necessarily either solve or challenge the dilemma. It may only perpetuate the rigidity of the system. At this point the reader may criticise me for speaking/writing as a white, dominantly heterosexual female in a rigid binary system that clearly privileges heterosexuality. Although the criticism is valid, it

remains true that the privileged position from which I speak is also a construction on the gender continuum.

In my view, there are no "naturally" and "normally" sexed and gendered bodies, only materially situated and embodied performances of sex and gender. Admittedly some of these performances are naturalised by the dominant discourses, but this is exactly what I am attempting to discourage in my exploration of transsexuality and transgenderism. Accordingly, I am critical of traditional transsexualism in as far as it perpetuates a binary sex and gender system by professing to change faulty "men" into authentic "women" and vice versa.

Taking refuge in technology is less disheartening than the discourses surrounding the construction of the subject as a controlling and deciding agency. These texts uncritically perpetuate the binary logic that they so fiercely purport to resist. Taking control of bodies is only one dimension, for, as I have argued elsewhere, bodies reciprocate and resist such controlling processes. As the obstinate bodies of late nineteenth-century hysterical female patients showed by miming (dis)eases, surgically reassigned bodies also refuse complete technological control by continuously re-writing themselves. I will now explore the bodily remainders that escape the technological intervention of sex reassignment surgery to reveal their embodied consequences.

5.2.1 Transsexual pioneers

Fig. 5.7 Einar Wegener before the operation

Fig. 5.8 Lile Elbe after the operation, 1930

Modern transsexuality's earliest embodied roots can be traced back to Germany in the early twentieth century in the work of sexologist Magnus Hirschfeld (1868-1935), who coined the terms "transvestites" and "transsexuality" as early as 1910. He also administered the first gender clinic from his Berlin *Institut für Sexualwissenschaft*. One of Hirschfeld's clients, although not the first medically-assisted transsexual, Lile Elbe (formerly Einar Wegener)[19] [Figs. 5.7 & 5.8] came to be known as the first transsexual after her initial operation in 1930. Elbe died the following year due to complications after an ovarian transplant. The first fully-fledged "media transsexual", however, was incarnated in the sensational sex change of Christine Jorgensen (previously George Jorgensen)[20] [Fig. 5.9] in 1953. As captured in the publicity headlines, Jorgensen transformed from a "shy young man with protruding ears" into a "confident woman in mink" (Denny 1998:37).

Fig. 5.9 Cover story on Christine Jorgensen, *He magazine*, 1953

Except for these pioneering figures, the category of transsexuality is fairly new, according to Richard Green and John Money (ca 1969, 1998) in *Transsexualism and sex reassignment*. No recorded examples of physical sex changes are available in historical resources, except perhaps for the enigmatic figure of the eunuch,[21] who did not physically change his sex. According to Green and Money, what was called transsexuality in historical texts was in fact cross-dressing or the practice of homosexuality (ca 1969, 1998:3). Transsexuality cannot therefore claim to be a transhistorical category. Instead, as Bernice Hausman (1995:6) indicates, the use and proliferation of transsexuality are closely concurrent with a specific context that has been enabled by techno-medical procedures and discourses developed from the mid-

twentieth century onwards. The occurrence of transsexuality, as currently understood, is a fairly recent phenomenon that requires specific techno-medical intervention in order to exist as a separate category from, for instance, transvestism and homosexuality.

Although sex reassignment surgery has, since its pioneering years, become an established medical procedure, not all transsexuals undergo reassignment surgery. These non-operative transsexuals, as they are labelled, may, however, make use of hormonal therapy and other medication to provide the necessary morphological results. This makes the distinction between pre-operative and non-operative transsexuals extremely difficult, since pre-operative transsexuals also use medication and hormonal therapy in preparation for the reassignment operation. Non-operative transsexuals have, though, decided not to undergo surgery, whereas pre-operative transsexuals are preparing themselves for a series of operations. Moreover, the distinction between non-operative and post-operative transsexuals, on the one hand, and transvestites, on the other, has become arbitrary, according to transvestites.[22] Similarly, the distinctions between born females and males (those born with the "correct" genetic, genital and gonadic material) and post-operative transsexuals are seen by most transgenderists as superfluous and immaterial.[23]

Transsexualism has, however, received a rather unsympathetic reception from most feminist scholars, as Elizabeth Grosz's sharp distinction between the two embodiments indicates: "The transsexual may look like a woman but can never **feel** like or **be** a woman" (1994:207, emphasis added). Accordingly, Grosz draws a very distinct line between the experiences of the embodied woman and the embodied transsexual. Although I do not view these different experiences as hierarchically structured, with one more authentic than the other, I do agree that these embodiments differ and that they cannot substitute one another. Another viewpoint put forward by female-to-male transsexual Jason Cromwell (1998:128), is that not all "women" are born in female bodies and neither are all "men" born in male bodies.[24] In other words, according to Cromwell, there is no advantaged or "natural" position from which to access the essential experience of womanhood. Whatever one's viewpoint, the emergence of the transsexual category has subsequently tangled traditional sex and gender categories almost beyond recognition. Answering questions such as "what is a woman?" and "what is a man?" has become exceedingly complex; no definite answer is possible without building in the nuances of embodied realities as well. The position I take is to

acknowledge the constructed nature of both sex and gender, without disregarding the situated specificity of embodiment. Accordingly, becoming a "man" or a "woman" is a never-ending process that is also always embodied.

It has to be reiterated that the short history of transsexualism is intimately entangled with technological and medical developments such as hormonal therapy or endocrinology and reassignment surgery technologies such as vaginoplasty[25] and phalloplasty.[26] The techno-medical history of sex reassignment procedures and the growth of the transsexual category are intertwined to such a degree that it is difficult to separate the two meaningfully. It was also in the mid-twentieth century that the term "gender" was created to "manage" the occurrence of both intersexuality[27] and transsexuality within medical discourses. Obviously these discourses struggled to cope with the constructedness of sex and required another level of interpretation to unravel the mystery of transsexuality; hence, the category of gender[28] was created. Gender emerges, thus, as by-product of deviant sexual categories. As argued elsewhere in this study, gender can be read as a technology that constructs and perpetuates certain biases. In the case of transsexuality, gender positions itself *par excellence* as a technology that incises bodies to suit discomfited minds. Although the so-called inevitability of medical intervention and the pathological status of transsexuality are substantially challenged in current debates on transsexuality, such as Sandy Stone's "Posttranssexual manifesto" (1994), most discourses on the topic do call on technology uncritically to construct agency.

In its reliance on technology the transsexual community does, for the greater part, privilege the "realness" of gender over the presumed virtuality and malleability of the sexed body. As Claudine Griggs (a male-to-female transsexual) claims: "My body became my enemy at an early age. And since the brain is a more important organ than the penis, it became necessary to change my physiology [...]" (1998:10). Once again the rhetoric of the all-pervading brain (mind) dominating the adversarial body rears its head. Transsexual discourses strategically overlook their own blind spot regarding the body, for on the one hand a sexed body is necessary to make the transformation from one sex to the other visible and materialise it; and, on the other hand, the role played by the body is eradicated as the "true being" of the transsexed person resides in his/her gender, which is seen as divorced from the faulty sexed body. In other words, transsexual debates cleverly overstep the fact that a sexed body is

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nevertheless always required to represent and materialise the transsexed person's "correct" sex. Both the severed gender and the surgically corrected sex need to be embodied in order to manifest themselves.

Fig. 5.10 Kate Bornstein, 2001
(TooTallBlondes website)

This disparity is stretched to its logical extreme by Kate Bornstein [Fig. 5.10], one of the most visible and outspoken transsexual agents, author of the confessional *Gender Outlaw: on men, women and the rest of us* (1994) who argues in a liberal humanist vein that each person has the **right** to align their deviantly sexed body to their true gender. One may, however, debate the validity of the ontological premises of Bornstein's demands for the right to change one's sex. Is the correct sex something that one can demand? Who decides what one's correct sex is? Moreover, if gender, which is associated with cultural and societal constructions, psychic consciousness, mind, immateriality and identity, enjoys privilege over sex, which is associated with the material, temporal and the body, do Bornstein's demands not perpetuate a Cartesian mind/body split? Challenging the gender system and becoming a transgenderist in the fullest sense would however, require more than passing from one "wrong" sex to the other "correct" one. It would require allowing and embracing more than two sexes and genders on the gender continuum and more than one "correct" gender and sex per body. At the same time I would concede that changing sex may be one of the proliferating possibilities on the sex and gender continuum, provided that gender's supposed superiority over sex is challenged.

Another limitation in most transsexual discourses is the marginalisation and consequent "invisibility of female-to-male transsexuals" (Bolin 1998:64). Apparently,

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male-to-female transsexuals outnumber female-to-male transsexuals by about one to three and even one to eight, according to other research reports (Raymond 1994:24).[29] Why do more male-to-female transsexuals exist than the other way around? Is it due to the success rate of vaginoplasty and other related medical procedures that turn "men" into "women", or is it due to the "poor cosmetic results" (Garber 1997:102) of phalloplasty during female-to-male procedures? In this regard Jason Cromwell questions the homocentrism of medical research and procedures that prefer to ignore problems of female sexuality and concentrate instead on transforming men into women (1998:133). If most sex reassignment surgeons were females or female-to-male transsexuals, would the surgical procedures for constructing penises have been more advanced? Is it once again a case of appropriating technologies for homocentric purposes and thereby perpetuating gendered biases? Paradoxically not, for research indicates that female-to-male transsexuals, although outnumbered by far, blend in far more inconspicuously than their transsexed sisters do. Claudine Griggs maintains:

> The bodies of female-to-male transsexuals are so effectively altered by hormone therapy that they are supremely confident in their attributions as men. This contrasts with many MTFs, who never escape the fear of being read. (1998:81)

If Griggs is correct in her analysis, female-to-male transsexuals are transformed more unambiguously into men than vice versa and yet they are the under-represented group not only in terms of numbers but also in terms of visibility. The reasons for their under-representation do not necessarily lie in deficient medical procedures: on the contrary, medical intervention in the form of hormonal therapy seems to be quite effective. In fact, it seems that female-to-male transsexuals form a group who seamlessly blend into broader society, while male-to-female transsexuals suffer from not being able to fit in unambiguously. Yet more men choose to become women than the other way around. Could it be because female-to-male transsexuals fit in easier on a social level, owing to the fact that becoming male is equivalent to adopting the "right" or dominant gender and is subsequently easier to accomplish? Or could it be that becoming a woman is a more difficult task due to women's alliance with acting and performing?
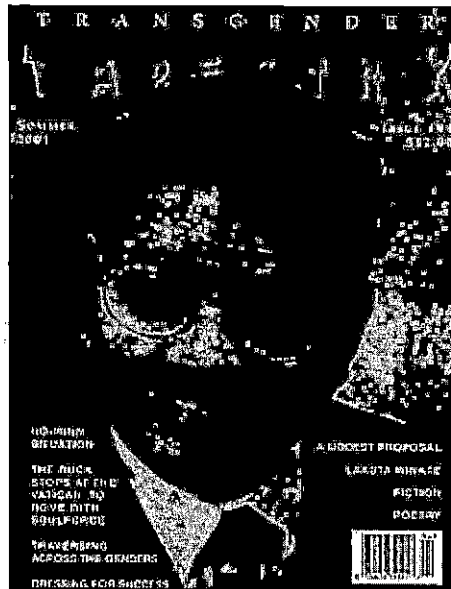
Fig. 5.11 *Transgender Tapestry*, Moonhawk River Stone, a female-to-male
transsexual on the cover, Spring 2001

How does Simone de Beauvoir's assertion that "one is not born a woman, but rather becomes one" fit into the equation? For indeed if the numbers signify the materiality of "becoming" a woman, then it seems easier to become a woman than a man. One could speculate that one does not become a man, but is rather born one or not (in a correspondence with Freud's problematic equation of women with lack). As Marjorie Garber explains: "In sex reassignment surgery there remains an implicit privileging of the phallus, a sense that a 'real one' can't be made, but only born" (1997:104). In other words, when applied to becoming women, medical science finds ways to remedy the predicament of not being born female, but changing a person the other way around meets with more resistance. It is conveniently assumed that being born male is an ontological given, while becoming female is a constant process of renewal aided by technological interventions. Maleness is, accordingly, constructed in most transsexual discourses as quintessential and irreproducible and femaleness as artificial and reproducible. The transcendence of sex only becomes operative in the case of male-to-female transsexuals, who supposedly surpass their sexed physicality, while in the case of female-to-male transsexuals the "phallus" is constructed as invincible and therefore as unsurpassable and irreproducible. The luxury of "transcendence" is reserved for certain bodies only.

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5.2.2   Rites of passage: *to pass or not to pass*

In order to pass successfully as the newly acquired sex, transsexuals have to put on convincing appearances, both in real and virtual environments. One of the main subjects for discussion on the online *Transgender Forum* for 17-23 July 2000, deals precisely with the theme of passing. In this issue an online participant enquires about successful voice transformation: "Voice is probably the toughest thing for a MTF to master. Got any advice?" The logo [Fig. 5.12] displayed at the top of the *Transgender Forum*, which deals exclusively with male-to-female transsexual problems and issues, in addition, reveals the type of femininity aspired to, which is extremely contrived and simulated – almost a re-embodiment of the screen goddesses of the 1940s and 1950s. The visual message is clear: in order to pass successfully as a woman, one needs to look like the hyper-feminine goddess sitting on the globe.

Fig. 5.12 Logo of the *Transgender Forum*, 2000

Not only male-to-female transsexuals need to pass: female-to-male transsexuals, although under-represented and even misrepresented must also pass. On the *FTM Passing Tips Homepage* one is confronted with a list of messages, ranging from advice on "abdominal binders" to "fake stubble" and "adding foreskin on the modified Softie" (*FTMPass* 2001). All these strategies aim at transforming female-to-male transsexuals into "men". The requests and advice deal with attempts to fit in and pass inconspicuously as the correct "other" sex. Most of these passing strategies are geared at not being uncovered while attempting to pass, in other words at avoiding being caught out while passing.
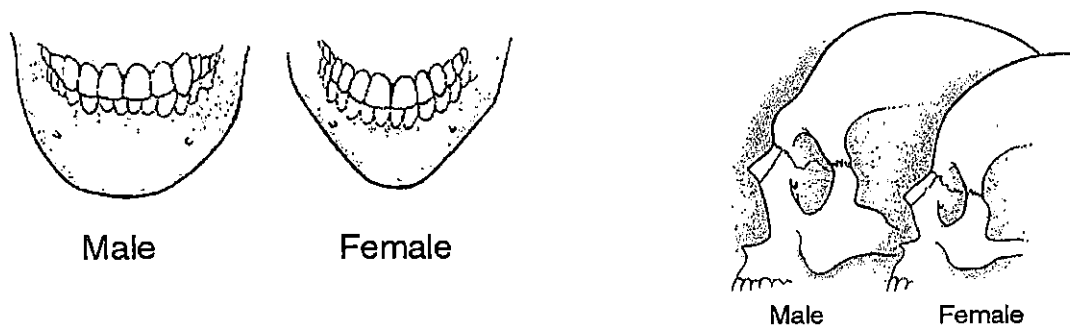
Fig. 5.13 Comparative chin and skull surgery, 1994
(Douglas K. Ousterhout, M.D., D.D.S. "Feminization of the transsexual")

The medical procedures that can assist in the transformation process are also not only intended to change the patient's genital sex, but in fact incorporate a complete physical body makeover – a remarking of the signifiers of the apparently erroneous body. If one browses through the online notes of plastic surgeon Dr Douglas Ousterhout, entitled "Feminization of the Transsexual" (1994), his intentions as an agent of the medical profession become very clear: "My main objective in this surgery is to make you as feminine as possible, in order for you to be as comfortable as possible in your new direction. When the surgery is completed, we want you to be seen as a female." Besides sex reassignment surgery, hormonal therapy and electrolysis, Ousterhout also offers transformational operations and surgery, including complete forehead reconstruction, for "females tend to have a completely convex skull in all planes" (Ousterhout 1994); chin and cheek bone reconstruction; scalp and brow re-positioning [Fig. 5.13]; thyroid cartilage reduction; breast augmentation; body contouring, such as abdominoplasty and trunk contouring. This set of surgical procedures is extremely expensive and moreover, constitutes drastic technological interventions into the patient's physical body. The body of the transsexual becomes a cyborgian dream of grafted constructedness, for little remains of the "original" body. Yet these techno-medical interventions do not guarantee a successful passing rite, for – ironically – it is the degree to which these changed attributes are effectively embodied that guarantees successful passing or not. The mere fact that the patient's physical attributes have been changed is not enough; without the "correct" gestures, tone of voice, facial expressions and body language, the "correct" sex on its own does not secure successful passing.

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Consequently, even though a transsexual may physically acquire the "correct tools", the success of transsexuality ironically lies in convincingly putting on appearances and, in fact, in how these newly acquired tools are re-embodied. Addressing this issue, Griggs explains that social pressures do not allow for intermediate sexes, indicating that a transsexual person has to transfigure unambiguously from one sex into the other. Society does make allowances for gender deviations, such as an "effeminate man" and a "mannish woman" – as long as the individual's sex is unambiguous. Being "read" in society as belonging to a doubled or cross-wired sex is highly risky for transsexuals. As Griggs elucidates:

> In the initial stages, 'passing' is of the utmost concern; **she is terrified of being read**. The resulting interpretation may be that she's a transsexual, a transvestite, or a drag queen, but that is not essentially important; the emotional consequence lies in the fact that she is not discerned as a woman. (1998:115, emphasis added)

In other words, it is of paramount importance for a transsexual (a male-to-female transsexual in this case) to be correctly "read" in public and therefore, emphasis is placed on appearing as the correct sex rather than necessarily being the correct sex. Undergoing reassignment surgery and altering the body's sex does not guarantee instant success: the new body's cues have to be convincingly embodied in order to be "read" correctly. On the other hand, "reading" a person as male or female is no guarantee that the person does indeed belong to that sex. Consequently, "reading" and passing are both highly superficial and contextual activities, even textualised ones and are not necessarily founded on material evidence.

In her text, *The transsexual empire: the making of the she-male* (1994) (which has been disputed by transgender theorists such as Sandy Stone), Janice Raymond reflects precisely on the superficial nature of transsexuality by emphasising that a transsexual transforms not from "male" to "female" but, according to Raymond, from "male-to-**constructed female**" and from "female-to-**constructed male**". By making this distinction, Raymond uncovers how much transsexuality relies on representations and appearances of sex and gender in order to pass. Moreover, Raymond also reveals the political agency on whose ideas of femininity and femaleness most male-to-female representations are based, as the logo for the *Transgender Forum* demonstrates. Raymond identifies the originators of transsexualism as "patriarchy and the legions of

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therapeutic fathers who create transsexuals according to their man-made designs and specifications" (1994:69). Although Raymond's text is contentious in places, for it assumes that "original" male and female identities do exist, she raises valid issues about the repercussions of transsexuality for feminism(s) in general.[30] Unlike Raymond, I do not find the constructed nature of transsexuality problematic, for in my view both sex and gender are constructions. The problematic question, for me, concerns whose constructions they are and how they are embodied.

**Fig. 5.14 Sandy Stone, 1998
(Transhistory.org website)**

In this regard I salute Sandy Stone's [Fig. 5.14] claims to her rightful position as a transsexual in society without attempting to "pass" as female to console the binary heterosexual sex-gender system. Stone refuses to be silent about her transsexuality; instead, she "reappropriat[es] difference and reclaim[s] the power of the refigured and reinscribed body" (1994:12). Although Stone's obvious transsexuality may be obnoxious to some, I find it commendable, for she sincerely challenges a system that has identified her as pathological by resisting to blend into "the binary phallocratic founding myth" (1994:11). By refusing to become amicably female Stone exposes the flaws of the heterosexual matrix and the passing parade upheld by transsexuals struggling to become "perfect" men or women, which is a decidedly contingent and contentious mould in any case. Stone phrases this dilemma as an enquiry whether male-to-female transsexuals go from "unambiguous men, albeit unhappy men, to unambiguous women" (1994:4), which is obviously not the case. The fact that societal gender roles do not permit any "territory between" (1994:4) places too much weight on the end destinations of "man" and "woman", which cannot be embodied to the full and nor

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does it fully signify the lived experiences of sex and gender. Does anyone fit the description of being completely and finally male or female? Are we not always, rather, on the way towards becoming male or female, without being completely either one or the other? Are we not always embodied somewhere in-between, while perhaps gravitating more to one sex/gender than to the other?

The tyranny of passing, although discredited by theorists such as Sandy Stone, does, nevertheless, remain a very important aspect of the whole medically-managed process of sex or gender reassignment. Bornstein admits as much: "[Transsexuality] is a matter of juggling cues. **Passing is the whole thing**" (interview with Bell 1995, emphasis added). The accomplishment of passing is literally put to the test when pre-operative transsexuals are required by medical institutions, such as the Gender Identity Clinic of the Clarke Institute of Psychiatry in Ontario, and the John Hopkins University Gender Identity Clinic, to live for certain periods (up to one year without hormonal aid and two years in full) as the opposite sex/gender in order to "prove" to the medical society that they are "truly" candidates for reassignment surgery and treatment. This trial period is known in transsexual circles as the "Real life Test (RLT)" (Holmes 1996). The "unreasonability" of the Real life Test can be debated for, as Holmes asserts, "no other medical procedure requires behaviour comparable to the real life test. Is transsexualism really so special as to deserve such a recipe for treatment?" (1996). Furthermore, each pre-operative transsexual also has to undergo several interviews during which his/her so-called authenticity is tested. The sexual preferences and choices of patients are particularly surveyed in order to assure that the so-called "correct" choices regarding sexual partners are made. In the context of heterosexual hegemony and its inherent homophobia, the sexual preferences of pre-operative transsexuals are made to fit into its heterosexual preferences. Ironically, the transsexual community, both pre- and post-operative, are well-informed as to the kinds of questions posed and also the medically "correct" answers to those questions. As Kate Bornstein confesses: "Transsexuality is the only condition for which the therapy is to lie" (1994:62). Not only are transsexuals required sometimes to "lie"[31] in order to be admitted to reassignment treatment programmes, but afterwards they also have to continue "lying" about their previous sexed and gendered history in order to pass as the other sex and gender. *The Renaissance Transgender Association* interprets this game of deception differently, though:

If there is any **fraud** involved in being a transsexual, it is the **fraud** perpetrated by the transsexual before treatment. The person who completes treatment is now the **genuine** article. He or she has left behind a life of deception and unhappiness. (*The Renaissance Transgender Association* 1990, emphasis added)

According to *The Renaissance Transgender Association*, the deception inheres in not undergoing the surgery, for that would require the transsexual to continue lying about who he or she "really" is. The "historical weight of the body" (Zita 1992:126) is seemingly surpassed when the transsexed person unproblematically emerges as "the genuine article". The fact that post-operative transsexuals may no longer allow their bodies' past experiences to surface, for example the body's memories of pain in the case of a male-to-female transsexual, accidents and physical experiences of being male, indicates a state of selective amnesia regarding their own lived bodies' histories and memories. In this endeavour of actively forgetting the previous histories of the "old" body the lived body shimmers unexpectedly through by resisting its newly inscribed state. One of the main forms of writing back or resistance evident in the historical weight of embodiment is the fact that transsexuals' chromosomal structure generally remains unchanged. In the case of male-to-female transsexuals, the body remains stubbornly XY chromosomed and does not transform into the longed-for magical XX chromosomes.[32] Subsequently, the newly-marked body obstinately refuses to be completely managed and does not faithfully signify what is expected of it. *Flesh* incorporates a degree of waywardness that medico-scientific institutions cannot manage and grasp fully. In contrast to the claims of *The Renaissance Transgender Association*, transsexed embodiment promises no authenticity, but rather encounters a sometimes painfully situated body and, at other times, perhaps, a lived *jouissance*.

5.2.3 *Putting on appearances again: comparative notes on hysteria and transsexuality*

In teasing out the embodied implications of constituting a transsexed body, I want to explore the relations between transsexuality and hysteria, in order to show the discrepancies between the two embodied conditions. The reality of putting on appearances during the transformational rites of transsexuality relates clearly to hysteria's theatrical impulses to mime dominant fears of femaleness by enacting those suspicions. Just as the hysterical patients mimed appearances under the watchful eyes

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of late nineteenth-century medical surveillance, similarly (although not precisely) transsexuals need to simulate femaleness and maleness in order to pass. It is not the medical intervention into bodies that turns men into women or vice versa, but, rather, how persuasively appearances are put on.

Hysterical women put on appearances to pass as perfect deviant females, while male-to-female transsexuals put on appearances to pass as perfect "normal" females. Male-to-female transsexuals, for this reason, aspire to become the perfect embodiment of (the artificiality of) femininity by simulating that femininity. Like the hysterical females who did not become madness to the full, but who mimed madness so convincingly that a (dis)ease was diagnosed, male-to-female transsexuals put on female appearances so convincingly that a pathology is identified, which requires medical and institutional assistance. Both hysteria and transsexuality are reciprocated by medical discourses and cannily mirror medical expectations without seamlessly succumbing to its management.

Discrepancies do transpire between the process of the lived body and the abstract and pathologised body created by medical discourses. The transsexual body, as identified by medical descriptions, cannot contain the located experiences of the transsexed body, for there always seems to be an excessive remainder that is not accounted for. Male-to-female transsexual Claudine Griggs acknowledges as much: "Self-endorsement of an altered body has been as difficult as changing it, and on certain days I am reluctant to 'act' feminine, because **I don't feel real**" (1998:6, emphasis added). Griggs also reveals: "I wanted genital reconstruction to make me 'not transsexual'. That did not happen" (1998:25). No medical intervention or surgical removal and dislocation can unequivocally warrant "feeling" female or "not transsexual", for the body is differently embodied after changing sex than predicted and anticipated by techno-medical intercession.

Another aspect that has to be teased out in this brief comparison of hysteria and transsexuality is how both states relate to womanliness as a masquerade. In her classic essay, "Womanliness as a masquerade" (1929), Joan Riviere traces the intertwined relation of womanliness and masquerading, which, according to her are the same thing:

> The reader may now ask how I define womanliness or where I draw the line between genuine womanliness and the 'masquerade'. My suggestion is not, however, that there is any such difference; whether

radical or superficial, **they are the same thing.** (ca 1929, 1986:38, emphasis added)

In my earlier explorations of hysteria and cyberfeminism's re-appropriation of new technologies, I indicated that femaleness and masquerading are closely interlinked. The same is true of femaleness and technology, where technology is understood as artifice and masquerade. Hysteria can, analogously, be described as a technology that mimes patriarchal medical expectations of deviant femaleness. Similarly – and this is an important distinction – transvestism also simulates femaleness without wanting or attempting to become completely female. As Marjorie Garber explains, drag queens identify the difference between themselves and transsexuals as the difference between masquerading as women and enjoying it, which contradicts the transsexual's claim to become an authentic woman (1997:355). Transvestism and dragging are activities that are conscious of their simulated state, not attempting to pass as "real" or authentic, while transsexuals endeavour to pass as real women.

Fig. 5.15 Agrado (Antonio San Juan), *All about my mother,* **1999**

The apparent authenticity sought by transsexuals is aptly embodied in the filmic monologue of the character Agrado (Antonio San Juan) [Fig. 5.15] in the film *All about my mother (Todo Sobre Mi Madre)* (1999, director Pedro Almodóvar). Agrado, as her name indicates, is a very agreeable transsexual person, who entertains her audience by disclosing the commitment and costs involved in transforming into an "authentic"

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woman. As she asserts, "Aside from being pleasant I am also very authentic". She then provides her audience with a full list of the surgical operations she has undergone in order to become "authentic", along with the corresponding price in pesetas. She informs the audience that her "almond shaped eyes, 80 thousand, silicone in lips, forehead, cheeks, hips and ass [...] the liter costs sixty thousand pesetas [...] you add it up, because I stopped counting [...] Tits? Two. **I'm no monster**. Seventy each, but these have been fully depreciated". Agrado's reference to her **two** breasts, which apparently wards off a pending monstrosity, lends itself to some speculation. Agrado claims to be "no monster", whereas women's bodies have explicitly been typified as monstrous due to their otherness and therefore, their implicit deviancy. As Marsha Meskimmon asserts: "The word 'monster', and the associated terms 'grotesque' and 'freak', have a special relationship to notions of representation, rational, scientific knowledge (upon which the structure of oppressive binarism is founded) and the body of woman" (1996:7).

In addition, if a monster is an imaginary creature comprising both human and animal parts, the link between woman and monster becomes even more obvious, for both fall outside the scope of male-centered humanness. Therefore, even though Agrado's embodiment corresponds with the category of the monstrous because of its femaleness, she stubbornly asserts her "normality" and thus her supposedly non-monstrous nature, which bizarrely, according to patriarchal metaphysics, could only connote a male body.[33] It is fruitful to compare Agrado's ironic and parodic non-monstrosity, for instance, with Susan Stryker's (1994) explicit admission of her own affinity as a transsexual with monstrosity, for they share the same foundations. Both comment on the constructedness of categories such as "authentic" and "natural". Stryker parodies the alleged monstrosity of her transsexuality by comparing it with the monster in Mary Shelley's *Frankenstein* and, in the process, deconstructs notions of normality and complacency. Stryker aligns herself as "monster" with the "Chaos and blackness from which Nature itself spills forth" (1994:254). As a transsexed "monster", her identity has been constructed over and against the so-called natural order and, as a result, she has not enjoyed any of the privileges awarded to heterosexual "naturalness".

Agrado also pays a high price for her not being "natural", not only economically, but also, if one takes into account the abuse and risk of being found out that she withstands as a prostitute ("working girl"). Nonetheless, Agrado is optimistic about her

prospect of becoming a woman, for, as she concludes: "It cost me a lot to be authentic. But we must not be cheap in regards to the way we look. Because a woman is more authentic the more she looks like what she has dreamed for herself". What interests me most in Agrado's narration is her description of what it means to become a woman and the emphasis placed on authenticity. If womanliness is a masquerade, as Joan Riviere argues, what constitutes an authentic female masquerade? Can one masquerade be more authentic than another? Is the transsexual masquerade of femaleness more authentic than historical or born females' masquerade of femaleness? I am inclined to disregard authenticity as not being a useful criterion for distinguishing between these different masquerades and would, rather, make reference to differently embodied positions for staging these masquerades.

Agrado's revelation makes it clear that the representation and reconstruction of womanliness are valued as more authentic than being born a woman, for, as Agrado informs her audience, the more a woman looks like her dream, the more authentic she becomes. In this view, the construction and representation of femaleness are more essential than the materiality of the female body. In other words, being adorned with female sexual organs does not constitute a woman, but putting on the right appearances does. If this is so, why do transsexuals insist on physically changing sex? According to Agrado, womanliness is an acquired facility, which can be reproduced and simulated with more success by means of appearances and looks than the "real" thing (constituting the so-called correct sexual organs, hormonal and chromosomal configurations for a female). Agrado may be correct in her assumption that a transsexual female can appear more "authentic" than a born female, but one must ask who defines "authentic"? Whose ideas about femaleness does Agrado embody?

As in the case of hysteria, femaleness in Agrado's case becomes a technology that can mime appearances so truthfully that attempting to differentiate it from "real" femaleness becomes absurd. But Agrado's femaleness, although extremely pleasant and agreeable, or precisely because of its agreeability, serves a different master or object from hysteria's mimicry. Agrado pleasantly passes as a female according to patriarchal and societal expectations of femaleness (including swaying hips and voluptuous breasts) if one takes Agrado's (shopping) list of necessary surgical interventions seriously. Hysteria, on the other hand, passes as defiantly female precisely

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because of its obstinacies and waywardness. It is exactly because the hysterical female **de**sexualised herself and does not **re**sexualise herself, as in the case of Agrado's transsexuality (traditional transsexuality), that she embodies another aspect of femaleness than the transsexual. Hysterical patients **de**sexualised themselves by upsetting (male) expectations of femaleness and transsexuals **re**sexualise themselves by entrenching (male) expectations of femaleness. The claim of authenticity also dissipates in the case of hysteria, for it is precisely an attempt to show that women have been awarded a non-place or an inauthentic place in patriarchal orders. Hysteria is a technology that "authentically" mimes women's inauthentic place/body as awarded under patriarchy, while transsexuality is a technology that simulates the inauthentic place/body as apparently "authentic". Accordingly, transsexuals attempt and succeed to an extent in passing as hyper-females, more real than "real" females, outdoing women at their own game of putting on appearances.

It seems that traditional transsexuality takes its simulated femaleness too seriously, but, given its relation to simulation (or the simulacrum) where bodily signifiers are substituted and reassigned, the relation is confirmed. Transsexuality's hyper-real imitation of femininity reveals the loss of an original femaleness or, rather, it stresses femininity's incapability (or unwillingness) to be "authentic". In transsexuality femininity is reduced to a set of signifiers endlessly being replaced and substituted by others. Baudrillard argues in a similar vein:

> [...] transsexuality is underpinned by artifice – be it the artifice of actually changing sex or the artifice of the transvestite who plays with the sartorial, morphological or gestural signs of sex. But whether the operation is surgical or semio-urgical, whether it involves organs or signs, we are in any case concerned with replacement parts, and since today the body is fated to become a prosthesis, it is logical enough that our model of sexuality should have become transsexuality [...]. A postmodern pornography, if you will, where sexuality is lost in the theatrical excess of its ambiguity. (1993:20-22)

What makes the transsexual's simulation of femaleness different from the hysteric's miming of deviant femaleness is that in the case of the hysteric there is always a difference, a "necessary remainder" (Irigaray 1985a:71), which cannot be appropriated into the rules of "the law of the self-same" (Irigaray 1985a:32). Mimesis only has meaning

in interaction with others; the self cannot induce it single-handedly. Mimetic interplay needs the mirror of "the other of the Other" (Irigaray 1985a:303) for its constitution, while simultaneously constituting the other in reciprocity. In the case of the transsexual's simulated femaleness, the self repeats or meets itself over and over again – as if being cloned obsessively. There is no "true" meeting with the other and the residue of male sameness is eradicated. The hysteric's mimicry of deviant femaleness contrasts sharply, then, with the transsexual simulation of hyper-femininity, for in the case of hysteria deviance is mimed without becoming it. Hysteria is always something different from what is expected, dancing simultaneously outside and inside the bounds of the symbolic order. The transsexual simulates hyper-femininity in an endless game of self-replication, without leaving a trace of the other(s). The hysteric has a residual shadow – an outside – whereas the transsexual is entirely comprised of transparent images.

5.3   Going beyond sex and gender

Fig. 5.16 Del LaGrace Volcano, *Dragking*, 1997   Fig. 5.17 Sadie Lee, *Raging bull*,[34] oil on canvas, 1994
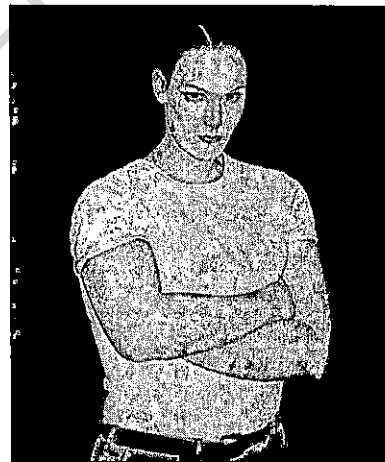
After sex has been changed and gender swapped, who is in the best position to open up the inhabitable and unnameable places for those who are differently sexed and gendered? Are sex-changers privileged because they have transformed sex, or are experimental virtual gender-swappers the most likely to revolutionise the binary sex and gender system? In my analysis of virtual gender-swapping, it became evident that most (although not all) men transform themselves fearlessly into hyper-gendered females such as "HotFabBabe" online, while in the discussion on transsexuality it emerged that

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most (although not all) male-to-female transsexuals transform into hyper-sexed women. In both cases women's sex and gender are simulated to embody male fantasies and desires concerning femaleness and femininity, instead of harbouring the seeds of insurrection for all the sexes and genders involved. In the case of women's gender-swapping, the drive is towards hiding gender rather than flaunting it and female sex-changers emerge as a category that is not only under-represented in terms of numbers, but also under-theorised.

Fig. 5.18 Annie Sprinkle, photo from her website   Fig. 5.19 Annie Sprinkle, *Susie Bright*, 2001

It is evident that the traditional transsexuals (male-to-female) and virtual gender-swappers do not pass beyond sex and gender, but instead only confirm their indebtedness to binary divisions. In Hausman's words: "one cannot 'escape' gender by switching roles or performances and thereby confuse the binary logic, because that logic defines the possibility of the switching in the first place" (1995:198). Gender is swapped and sex is changed against the backdrop of a binary sex/gender system and the possibilities are always already demarcated. Going **beyond** sex and gender does not seem to be workable as an embodied option, since every attempt to do so is a response to the sex/gender system. In my view the more truly transgressive figures are those who articulate their differences differently from what is expected in the heterosexual matrix and who do not work with expectations of transcendence. A few of

these differently sexed and gendered individuals may include: the drag kings [Fig. 5.16] who parade the supposed "unperformativity" of masculinity; transgenderist transsexuals who live as the other sex without undergoing complete reassignment surgery; female-born individuals who think of themselves as masculine but not necessarily as male or female [Figs. 5.20 & 21]; the witches of Mpumalanga;[35] cyber-sluts; porn stars who turn into performance artists [Fig. 5.18]; femmes; tomboys; masculine heterosexual women; stone butches and soft butches; working mothers; women with beards and bull dykes [Fig. 5.17]. I also include those who have inhabited unnameable sexed and gendered spaces and positions, whether real or/and virtual; those who have an entry into both worlds; those who "hav[e] it both ways" [Fig. 5.1], and those "borderlanders" who live through their own monstrosities.

Fig. 5.20 Del LaGrace Volcano, Judith "Jack" Halberstam, 1997
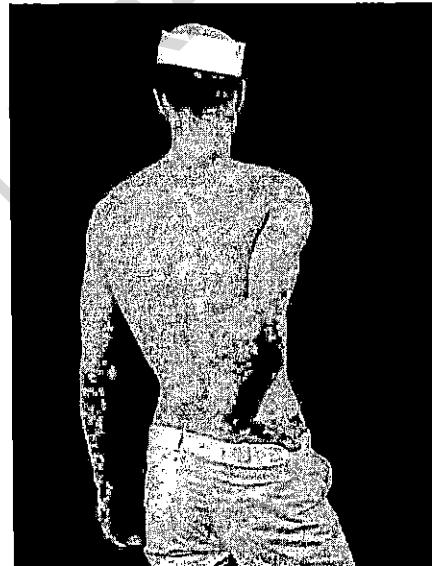
Fig. 5.21 Del LaGrace Volcano, "Jack's back", 1994

In conclusion, in keeping with my overall argument in this thesis, neither sex nor gender is constructed by means of willed acts or "do-it-yourself" enactments that can be forced onto bodies, whether real and/or virtual, by means of new technologies. Gender is not a piece of clothing to be worn whenever the opportunity arises; neither is sex an attentive plastic substance. As Theresa Senft wisely warns those who think of sex and gender in terms of willed agency: "if you do not believe in sex and gender, remember they believe in you" (1996). In other words, to the degree that one "makes" one's own sex and gender, one is in turn correspondingly being made by sex and gender.

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Endnotes:

[1] Queer theory presents itself not so much as a new construction of identity, which may be inclusive or exclusive or both, but rather posits itself as a critique of identity itself. In Judith Butler's terms, queer politics challenges the heterosexual matrix by engaging in "*disidentification*" (1993:4). The queer strategy of "*disidentification*" does not lie "outside the magnetic field of identity" (Jagose 1996), but instead remains within identity, albeit a *disidentity*. Identity politics (heterosexual identity politics) are reconceptualised by means of a queer non-identity or anti-identity, which is always tentative and preliminary.

[2] The term "no-place" actually makes reference to the Greek word *utopos*, (utopia) which is a combination of *u* (no) + *topos* (place), hence, no-place.

[3] In 1980 the category of "transsexualism" was included in the *Diagnostic and Statistical Manual of Mental Disorders*, the official publication of the American Psychiatric Association, as a disorder. In 1987 the definition of the condition was revised to focus more on the feelings of persistent discomfort and a sense of inappropriateness about one's assigned sex. From 1994 the term "transsexualism" has been omitted altogether and the term "gender-identity disorder" is now used to cover all conditions in which there is a strong and persistent cross-gender identification (Bullough & Bullough 1998:22).

[4] Amongst the main theorists publishing on the topic of gender-swapping online are Leslie R. Shade (1993), "Gender issues in computer networking"; and Amy S. Bruckman (1993), "Gender-swapping on the Internet"; Tomasz Mazur (1994), "Working out the cyberbody: Sex and gender constructions in text-based virtual space"; Elizabeth Reid (1994), "Identity and the cyborg body"; Shannon McRae (1995), "Coming apart at the seams: Sex, text and the virtual body"; Annalee Newitz (1995), "Surplus identity on-line"; Sherry Turkle (1996), *Life on the screen*; Elizabeth L. Lawley (1996), "Computers and the communication of gender", and Lynn Cherny & Elizabeth Reba Weise (1996), *Wired_women: Gender and new realities in cyberspace*.

[5] See Timothy Murphy's (1990) "Reproductive controls and sexual destiny" for an excellent reading of the premises on which the reproductive control that determines sexual identity is based.

[6] The word natural is placed in inverted commas because, as argued elsewhere, nature and sex are also texts. Perhaps nature is a text that falls outside and inside the scope and understanding of culture and cultural texts, but, nevertheless, nature is a text that is constantly being written and re-written in her interactions with culture, as the body of the hysteric shows.

[7] Robert Stoller (1975) describes **transvestism** as a heterosexual male who dresses as a woman and is erotically aroused by dressing in women's clothing. According to Stoller transvestism in women is so rare that it is almost nonexistent (1982:99). **Cross-dressing**, on the other hand, may be used as a substitute term for transvestism, although it means to dress in the clothes of the opposite sex, regardless of the motivation (*Sexual identity and gender identity glossary*).

[8] Dinitia Smith's novel *The illusionist* (1997) is loosely based on the murder case of Teena Brandon, which took place in Humboldt, Nebraska in 1993.

[9] See John Suler's list of ten questions, which are all based in the physicality of women. The questions range from the average sizes for women's panties, to the negative effect antibiotics may have on a woman. Suler's article is entitled "Do boys just wanna have fun? Male gender-switching in cyberspace (and how to detect it)", 1996. Available online at: http://www1.rider.edu/~suler/psycyber/psycyber.html

[10] Obviously the assumption is made that one can, in contrast to real life, know exactly where one supposedly "stands" with another person regarding sex and gender. As shown in *Boys don't cry*, real life can be as "deceptive" as virtual interactions and knowing where one "stands" is in fact a misguided notion.

[11] I am particularly referring to feasts held in honour of Dionysus, during which the sexes cross-dressed to celebrate Dionysus's hybridity and apparently his womanliness (Pollack 1995:10).

[12] See, in this regard, Audre Lorde's description of her attempt as a black lesbian to pass as both white and heterosexual in *Zami. A new spelling of my name* (1982). Lorde describes how she pretended "that difference did in fact not exist" (1982: 204). In certain places she tried to pass as white, whereas in others she tried to pass as heterosexual, being silenced in the first account on basis of her race and in the second case being marginalized due to her sexual preferences. As she states: "downtown in the gay bars I was a closet student and an invisible Black [...] uptown at Hunter I was a closet dyke and a general intruder" (1982:179).

[13] For an excellent sociological analysis of cybersex, see Robin B. Hamman's "Cyborgasms. Cybersex amongst multiple-selves and cyborgs in the narrow-bandwidth space of America Online chat rooms" (1996).

[14] I have not conducted formal research on this topic, but I am commenting on my own observations here.

[15] VanessaQ is a pseudonym for Sonja Katz.

[16] Ullman describes how the e-mail software that they used for their communication allowed for interpolation, which allows the recipient to copy the contents of the received message into the reply and then interject each statement with a direct answer. I supply the following example from Ullman's text to show how the interpolation works within the body of an e-mail message:

> **[Ullman wrote]** There's something in this team's working process that's really broken.
> **[Karl interpolates]** I couldn't agree more.

The significance of interpolation is that it constitutes a different and new communicative style that flourishes in e-mail interactions, but cannot work in real life due to the immediacy of conversation.

[17] The difference between the two phenomena amounts to "traditional transsexualism" adhering closely to medical practices and discourses, subscribing to descriptions and diagnoses of transsexuality, in other words allowing itself to be defined by medical practices, while "transgenderist transsexualism" defies the medical stronghold over transsexuality by living outside its technological interventions and diagnosis and, importantly, by refusing to undergo reassignment surgery.

[18] According to D.A. Reitz on her *Transsexuality* webpage, up to fifty percent of transsexuals never reach the age of thirty. Suicide is not uncommon in their ranks and they are also likely to fall victim to violent and untimely deaths when "found out" by society. The names of deceased transsexuals in the U.S.A., including Brandon Teena, Marcia Johnson and Chanelle Pickett, are circulated in the transsexual community (especially online) to commemorate their deaths at the hands of an intolerant society. See Riki Anne Wilchins's online poem "No more tears" (1994).

[19] The Danish painter Einar Wegener, who underwent part of the sex reassignment surgery, became Lile Elbe. Sadly Elbe died in 1930 after complications in her transformation process caused paralysis of the heart (Hausman 1995:18).

[20] Although Christine Jorgensen is not the first successful post-operative transsexual, she was the first to capture the attention and imagination of the media. On her return from Denmark to the United States, Jorgensen's transformation was published in the headlines. She remained a target of the press and reportedly even after her death her "story" was published and pursued (Denny 1998:40). In 1967 her autobiography was published, entitled *Christine Jorgensen: A personal autobiography*.
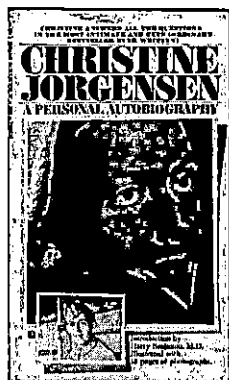

Fig. 5.22 Cover of *Christine Jorgensen: A personal autobiography*, 1967

[21] If one consults online resources advocating transsexualism and transgenderism, it becomes evident that historical examples attesting to "primitive" physical sex changes did occur, although rarely. The figure of the eunuch cannot be described as typical of transsexualism's need to change into the other sex, for eunuchs, although "castrated men", remained in many instances respected and politically powerful figures within their societies (Raymond 1994:105-6). By contrast, transsexuals struggle for acceptance in modern society.

[22] Anne Bolin (1998) explains in "Transcending and transgendering" that transvestites view the difference between themselves and transsexuals as a qualitative one, rather than one of degree. Apparently, transvestites view gender-variant identities as much more fluid and plural than most transsexuals do: therefore they do not see the two categories as distinct or static. On the other hand, for transsexuals, any reason not to pursue a complete biological alteration is just an excuse and in fact indicative of their transvestite status (Bolin 1998:72).

[23] Although transsexed women may perceive the difference between themselves and "born" or "full-term" women as not of real consequence, it is an opinion not shared by many born women. In this regard it is interesting to consider the example of Kaley Davis, a transsexed woman who applied for membership to WIT, the women-only online forum of ECHO and was denied access because of her transsexed state (Senft 1997). It is also worth considering the case of Kimberley Nixon that occurred recently. Kimberley, a transsexed woman and rape survivor, applied to become a rape counsellor at the Vancouver Rape Relief centre. Her application was denied on the grounds that she is a transsexual and thus not a "woman" (Holmes 1999).

[24] I use inverted commas when referring to "women" and "men" here to make a clear distinction between the re-assessed categories of "women" and "men" inferred here, as opposed to the standardised hegemonic heterosexual categorisation of women and men. In other words, the categories of "women" and "men" are open to re-negotiation and the meanings of what it means to be a 'woman" or a "man" are also open to re-evaluation.

[25] Vaginoplasty is the surgical procedure of constructing a vagina. The most common procedure utilises the skin of the penis for the lining of the new vagina and retains a portion of the erogenous tissue from the base of the penis for the clitoris (Hausman 1995:68).

[26] Phalloplasty involves the surgical construction of a penis by means of the tubed pedicle flap (Hausman 1995:67).

[27] Intersexuality refers to persons born with genitals that are neither clearly male nor clearly female and is the term that is now preferred to "hermaphrodite". "True" intersexed individuals, where both ovarian and testicular tissue are present in either the same gonad or in opposite gonads, accounts for less than 5 percent of all cases of ambiguous genitals (Kessler ca 1990, 1998:242). For the specific role played by the medical profession and the creation and maintenance of these categories, see Alice Domurat Dreger's *Hermaphrodites and the medical invention of sex* (1998) and Suzanne J. Kessler's "The medical construction of gender. Case management of intersexed infants" (1990).

[28] In this regard Bernice Hausman makes a convincing argument against Butler's use of gender as the creator of sex, by showing that gender is not a transhistorical concept, but, indeed, a term with a very specific history and context for its creation (1995:180-2).

[29] This is one of many contested issues for, depending on which source one consults, the ratio varies.

[30] This is especially true of the chapter entitled "Sappho by surgery: the transsexually constructed lesbian-feminist", in which Raymond challenges the invasion of women's place, physically and spiritually, by what she terms "transsexually constructed lesbian-feminists" (1994:99). Raymond's argument that transsexuality should be "morally mandated [...] out of existence" (1994:178) is valuable for feminist debates for it challenges patriarchal assumptions about femininity, as well as re-claiming a position for women.

[31] Bernice Hausman (1995:5-6) introduces the case of Agnes, a transsexed woman who deceived the medical institution by convincing them of her "genuine intersexual" state, while in fact she had started to take female hormones in her early adolescence, which gave her a convincing intersexual appearance. Agnes also had to lie about her preference for homosexual intercourse and portrayed an image of complete heterosexuality for her medical inquisitors.

[32] This may be read as an essentialist argument, for it seems to regress to the chromosomal level of the body as measure of identity, where genitals used to be the standard. I wish to stress though, that, neither genitals, gonads nor chromosomes are ever of complete male or female status. The hormonal and gonadal structure of an individual also fluctuates on a continuum of possibilities.

[33] See, in this regard, Lynda K. Bundtzen's "Monstrous mothers. Medusa, Grendel, and now Alien" (2000) and Barbara Creed's "*Alien* and the monstrous-feminine" (2000).

[34] Some masculine females (in slang referred to as "butch") are also sometimes identified as "bull dykes" (Denny 1998:401). The title of this painting is obviously a pun on the "bull dyke" label.

[35] The witches of the Mpumalanga province come from one of the largest rural areas in South Africa and can be described as fitting into the category of being otherly sexed and gendered. These women are still regularly ostracised and murdered (burnt) by their societies exactly on account of their sex and gender, which immediately make them suspect and labelled as wicked.

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Chapter Six
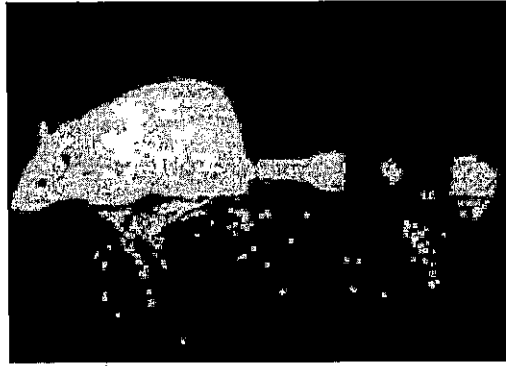# The cyborg body

<<<<< present .... pattern >>>>>

The body is returned to itself.
(VNS Matrix 1998:39)

The aim of this last chapter is to explore the final body in the field of body types, namely the cyborg body, which materialises as the melding (not necessarily harmoniously) of flesh and machine. I argue here that the cyborg body, as viewed from a cyberfeminist position, is the most potent and promising figuration for human/technology interaction. The cyborg body type, I will explain, promises the most favourable embodied stance of all the body types discussed so far. It meshes with new technologies without settling for a bodiless solution and hence, I place it on the semiotic square as the **present** and **pattern** configuration. The cyborg body, in its "enfleshed materialism" (Braidotti 2002:13), sets forward a responsible embodiment that counters the previously discussed techno-transcended, techno-enhanced and marked bodies' troublesome relations with embodiment.

In order to explore cyborg bodies, it is also necessary to enquire about the political agencies concealed behind the fragmented core of cyborg bodies. It can be ascertained that cyborg bodies are anything but neutral entities, for, although they are agencies in flux, cyborg bodies are inv(f)ested with political motifs, which determine their potential for becoming situated and embodied subjects or disembodied agencies.

The following course has been set to elucidate the cyborg body: first to interrogate critically the most prominent manifesto that has contributed to and shaped cyberfeminist postulations of cyborg bodies, namely Donna Haraway's "A manifesto for cyborgs" (1990). Then images of cyborg bodies, both fictional and factual, are interrogated, in order to establish the different representations of cyborgs that are perfused with patriarchal intentions in comparison with cyborgs as "situated knowledges" that may be termed cyberfeminist cyborgs.

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6.1   "A manifesto for cyborgs": are all cyberfeminists cyborgs?

Fig. 6.1 Photograph of laboratory rat that became first cyborg, 1960
(Clynes & Kline 1960:xv)

When charting a cyberfeminist position in the virtual age the cyborg becomes an important configuration of how new technologies are embodied. It is the cyborg (the embodied cyborg) that is at once the most controversial and yet also the most expedient representative of the obstinate union between bio-bodies and new technologies. Donna Haraway's "A manifesto for cyborgs: Science, technology, and socialist feminism in the 1980s" puts forward the ironic political myth of the post-gendered cyborg as "a cybernetic organism, a hybrid of machine and organism, a creature of social reality as well as a creature of fiction" (1990:191). The term itself is a shortened form of "cybernetic organism" and it emerged from the field of cybernetics.[1] The term was first applied in 1960 in a scientific article co-authored by two NASA scientists Manfred E. Clynes and Nathan S. Kline, entitled "Cyborgs and space". Clynes and Kline's research concerned itself with solving the problem of human survival in hostile environments such as outer space. The first bio-organism referred to as a cyborg was a laboratory rat [Fig. 6.1] with an osmotic pump attached under its skin, which formed part of Clynes and Kline's research. They reflect as follows on the rat's enhanced cyborgian state: "Like all cyborgs, this white rat has something extra, that sign of excess that marks the creature as somehow 'trans' to what once counted as normal and natural" (1960: xv).[2] The osmotic pump spurted chemicals into the animal's bloodstream at a slow controlled rate without its being aware of the intrusion, and without its consent, one may add. Therefore, the first cyborg referred to as such was an unreflecting and co-opted agent; it was apparently oblivious to its own cyborgian state, in contrast with Haraway's cyborg, which is a self-reflective and self-conscious agency, wary of any myth, tale or construction that attempts to restore an original whole or unity.

6.1.1 No origins, boundaries and politics

Accordingly, Haraway identifies the culprits in the construction of origination mythology as humanism, the Oedipal system in psychoanalysis, capitalism, Judeo-Christianity, Marxism, patriarchal thought systems in general and importantly, some strands of radical feminism. True to its scepticism towards the myths of origin, Haraway's cyborg does not long for the Garden of Eden. On the contrary, the cyborg would probably not even recognise Paradise, for it was not created from mud and neither will it return to dust. Refreshingly, this also indicates that Haraway's cyborg played no part in the dramatic fall of mankind into physicality and sin, because it has never been part of the Garden of Eden or the drama of sinful seduction. As a result, the cyborg remembers nothing about bodies being wicked and deceitful. One may wonder how effective such a strategy of collective amnesia may be for future cyborgs.

Fig. 6.2 Rick Berry, *Wind-up Man*, 1999[3]
(Braid Media Arts 2002)

In fact, Haraway's cyborg did not fall into a "natural" body, for it was not born from a "natural" body in the first instance. It has no mother: perhaps it may have an artificial one, but no natural one as defined under the laws of the decrepit nature/culture dispensation. Haraway explains: "The cyborg skips the step of original unity, of identification with nature in the Western sense" (1990:192); and apparently "cyborgs have more to do with regeneration and are suspicious of the reproductive matrix and of most birthing" (1990:223). Haraway's cyborg regenerates and replenishes, but is definitely not born. If there is no birth, but merely regeneration, what happens to death? Does Haraway imply that the cyborg is immortal and that, lizard-like, it

replaces failed organs and lost body parts without facing the final penalty for being embodied? If so, is she not perpetuating the techno-transcendent dream of immortality, which would make her cyborg unattractive from a cyberfeminist standpoint?

Additionally, in an attempt to escape from the "evil mother of masculinist fear" (1990:219), Haraway revives the myth of the **"originally** literate mother who teaches survival" (1990:219, emphasis added). Although her dismantling of the archetypal monstrous female as constructed in Oedipal systems is beneficial for a cyberfeminist project, I cannot but wonder why Haraway prefers to slip in this instance into an **"original"** literate mother. The concept of a "literate mother", combining two spheres (the maternal and the cultural) that have been unjustly disconnected, is indeed admirable. But by turning to an **"originally literate mother"**, does Haraway not compromise her dismissal of all origins? In this case Haraway unknowingly reveals how origin myths are retold and refigured by cyborgs and cannot entirely be forgotten in their construction. This slippage on Haraway's part could illustrate the impossibility of her project to do away entirely with all origin myths and constructions. The dismissal of all myths of origin is, thus, itself a myth. What seems to be required though, is not the mere denouncement of origins, but to move beyond the *impasse* of the concept by relativising it while yet acknowledging origins. Obviously, a cyborg cannot be reduced to its origins, but neither can it deny original traces in its socio-political construction.

In an attempt to relativise the origin myth and yet, to show how it may still operate as motivational construction, a comparison between Haraway's cyborg and the mythical goddess Athena may be useful. Such a comparison seems attainable for neither being is born of woman, but instead both "originate" from the heads of men. Athena sprouts forth from Zeus's head, while the cyborg is incubated in the heads of military men. Haraway insists that her cyborg has no father – at least not one that it is faithful to – but nevertheless, she does admit that cyborgs are the "illegitimate offspring" of militarism, patriarchal capitalism and state socialism. She is, nonetheless, quick to point out that illegitimate offspring are often exceedingly unfaithful to their origins and, besides, these "fathers" are, after all, inessential (1990:193). I am not convinced that these reluctant fathers are indeed as inessential as Haraway wants us to believe.

The mere fact that cyborgs dismiss their fathers does not necessarily mean the fathers will reciprocate by dismissing them in return. Then again, solely typifying cyborgs according to their origins simply perpetuates a destructive and hierarchical

myth of genesis. Consequently, if Haraway's cyborg is not born, but rather replicates like a virus, it could be a clever strategy to subvert all debilitating origins and to intercept military inceptions.

On the other hand, the fact that Haraway's cyborg has no mother (except for Haraway's unfortunate slip into the original literate mother), but an illegitimate father, whom it nevertheless denounces, casts some doubts over its coded existence. As already stated, although the cyborg may denounce its origins, this does not necessarily mean that the act of denouncement is reciprocated. This means that Haraway's cyborg, viewed from another angle, could be Athena reborn in a twentieth-first century technological guise, sprouting from militaristic and capitalistic fathers' heads. After all, the cyborg's illegitimate fathers can be traced back to technological developments for the military, carried out, for instance, by the National Aeronautics and Space Administration (NASA) and the U.S. Defense Advanced Research Projects Agency (DARPA).[4] For that reason, although unfaithful to its military fathers, the cyborg does not automatically remain outside the reach of either their corrupting influences or the seductions of their capitalist powers. In fact, it may be argued that, in some instances, the cyborg's denounced fathers are even cleverly continued in the cyborg, although disguised behind a smoke screen of waywardness, discord and disinheritance. My main argument here is that denunciation of origins is a fascinating political strategy, but the mere act of denunciation does not necessarily succeed in severing all familial and familiar ties.

In its defiance of an original creation myth, the cyborg is described by Haraway as a cybernetic organism that combines organism, animal and machine. Appropriating this unholy trinity into a harmonious unity is extremely difficult and almost impossible, especially within a culture where bestiality and machine control are extremes that are almost equally feared.[5] Combining organism, animal and machine indicates that the cyborg does not have clear boundaries, seeing that the "last beachheads of [human] uniqueness have been polluted" (1990:193). The humanistic divisions between "man" and "animal", and the dialectic construction between "man" and "machine" have all been transgressed in cyborg politics. No longer can man dream of the beast "out there" in the wild, nor can he conjure the machine as an autonomous and controllable being, for both are already "inside" and internalised. The skin of the cyborg does not end at the end of the body, but is instead endlessly permeable and leaky, like that of women, whose bodies are said to be prone to "leak" blood, tears and milk. As Haraway phrases the loss of boundaries, "Why should our bodies end at the skin or include at best other beings encapsulated

by skin?" (1990:220) In fact, cyborg bodies and discourses leak all over. For this reason Haraway does not differentiate between mind and body in her construction of the cyborg, for the cyborg is a creature that belongs both to social reality and the fictional sphere. In other words, it is both "real" and "unreal" in as far as those two categories still have meaning in a cyborgian world.

Fig. 6.3 Rick Berry, *Cybionette*, 2000
(Braid Media Arts 2002)

One would suspect, then, that a permeable and fused entity such as the cyborg, being constantly "disassembled and reassembled" (1990:205), would prove politically ineffective, for it has no agency or coherent centre from which to operate. Yet Haraway insists that cyborgs provide feminists, particularly, with a new socio-political myth, albeit an ironic one. She informs us that "the cyborg simulates politics" (1990:205), an activity that, she claims is more potent than Foucault's bio-politics, because "Discursive constructions are no joke" (1990:205). Haraway also develops a politics of "affinity" rather than automatically "belonging" to a specific identity. The discordant concept of "women" is replaced by the category of "women of colour", related not by blood but rather by choice:

> There is nothing about being "female" that naturally binds women. There is not even such a state as "being" female, itself a highly complex category constructed in contested sexual scientific discourses and other social practices. Gender, race, or class-consciousness is an achievement forced on us by patriarchy, colonialism, racism and capitalism. (1990:197)

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The new voice of "women of colour" is an "oppositional consciousness" that is "fully political", because it understands the "webs of power" (1990:197). Haraway understands "women of colour" to be "a **king** of postmodernist identity", for it is constructed out of otherness, difference and specificity. (It is to be hoped that Haraway's use of **king** is either an oversight on her side or subversively applied.) Initially the notion of "women of colour" was contested by precisely those "women" whom it would now represent, but it has since become a powerful tool for those women (black, chicana etc.) who could not previously speak either as "women" (being excluded on account of their race by white women) or as "blacks" (being discounted on account of their gender by black men and their race if they were non-black). In other words, "women of colour" is an inclusive term for all those who were previously doubly excluded, except that it now appears to sideline "women without colour" namely, white women.

Furthermore, on the political front, Haraway urges all cyborgs to "take responsibility for the social relations of science and technology" (1990:223). But how can a cyborg identity take responsibility if there is no transcendent agent of responsibility? As Jill Marsden enquires: "If we do not choose to be cyborgs, can we choose our responsibilities for machines? Are we still in control?" (1996:14, original emphasis). Throughout her manifesto Haraway makes reference to the "informatics of domination", but once again, does the concept of domination still hold any meaning in an age of reigning informatics, where it is not clear who is made and who is the maker in the relation between humans and machines? In other words, how are concepts such as "domination" and "responsibility" possible when there is no subject "at home", not even a transitory "as if" subject that can embody responsibility?
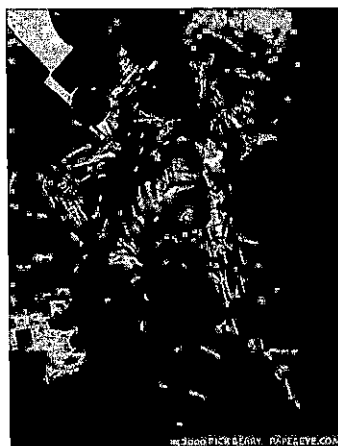

**Fig. 6.4 Rick Berry, *Iron Fawn*, 2000
(Braid Media Arts 2002)**

Ironically, Haraway also undermines her own revolutionary thinking by unequivocally stating that the world is translated "into a problem of coding, a search for a common language in which all resistance to instrumental control disappears" (1990:206). Apparently the biggest threat to this New World order of informatics is a breakdown in communication, for, as Haraway informs the reader, the cyborg is "wary of holism but needy for connection" (1990:193). Not once does Haraway suggest that a breakdown in the information mapping and coding of the material reality can and does occur. Haraway has no doubts, it seems, that the material realm is completely codifiable, quantifiable and transparent to the electronic eye. Everything from race to gender to daily existence has become information and has therefore been reduced to merely another interface or "window". Haraway explains:

> No objects, spaces, or bodies are sacred in themselves; any component can be interfaced with any other if the proper standard, the proper code, can be constructed for processing signals in a common language. (1990:205)

Resistance to this simulated political arena of codes seems futile, except perhaps by sabotaging the networks, thereby denying cyborgs their much-needed connection and communication. But even when the communication lines are broken and the cyborg becomes stressed, this merely interrupts the flow of codes and does not alter the inevitability of a coded world. Teresa Ebert in *Ludic feminism and after* (1996) criticises Haraway on more or less the same point, although from what she calls a "resistance postmodernistic" position. Ebert argues that the new informatics of domination, which Haraway preaches, is not really new, but a technological determinism substituting Marxist economic determinism. In other words, Haraway substitutes historical materialism for technological "matterism" (Ebert 1996:106), without blinking an eye. As Ebert explains: "Haraway erases the very real material conditions of science and technology: she obscures the fact that they are *capitalist* science and technology" (1996:107).

In other words, the informatics of domination – far from politically or economically neutral – creates and designs with capitalist values in mind, meaning that the inferior position of workers, especially women ["the feminization of poverty" (Haraway 1990:209)], is mercilessly perpetuated in this techno-process (*Gestell*). Furthermore, the world or materiality is increasingly being translated into a mere question of coding. Materiality is dematerialised into code and interfaced into discourse. As Ebert phrases her criticism: "Haraway thus has not moved beyond

determinism; she has simply reversed it: the economic is determined by technology as code; discourse determines the material nondiscursive" (1996:107). Political change will come about by means of semiotic recodings or the writing of different stories. Ebert criticises Haraway, not because she does not catalogue the problems in the material domain, for Haraway does indeed mention the homework economy and the international division of labour, but rather for the way Haraway explains these problems: "What kind of connections does she make [...] what kind of political interventions and social transformations does her explanation enable?" (Ebert 1996:108). According to Ebert, she displaces the production paradigm as part of an ongoing bourgeois "post-al Left" attempt to alienate immediate producers from their work.

Arguably Ebert runs the risk of absolutising labour and production, but she nevertheless makes some valid points in the cyborg debate. On the other hand, from a cyborg position Ebert obviously still places too much emphasis on the original myth of unalienated labour. Haraway extrapolates her simulated cyborgian political stance by explaining that old ideological questions addressed by decrepit feminists (and Marxists), such as the division between labour/production, mind/body, nature/culture, man/woman, animal/human and organism/machine have all been "techno-digested" (1990:205) by the new informatics of domination. All these debilitating categories have been cannibalised and are apparently no longer of any importance: the **actual situation** of women is their integration/ exploitation into a world system of production/reproduction and communication called the informatics of domination" (1990:205, emphasis added). Suddenly, Haraway changes the tables by protecting the "actual" position of women in this New World order of domination, while the older ideological struggle over concepts such as nature/culture has apparently become redundant. In other words, when it suits Haraway's argument, the discursive and coded struggles all fade in importance against the "real" situation of women. Arguably, Haraway's text switches from "fact" to "fiction" as needed, which makes it very difficult either to substantiate or criticise her political "position" or its lack.

I fail, though, to understand how categories such as nature/culture and women/men have become completely redundant and have ceased to inform the debate (whether discursively and/or materially) on the informatics of domination. Obviously, these categories have become exceedingly more complex and dynamic in the virtual age and have arguably been layered with nuances and multiplicities beyond previous comprehension, as I argued in the discussion of transsexuality and

transgenderism in the previous chapter. However, in my view, the informatics of domination perpetuates the premises that mind can transcend body, and culture can surpass nature. While these dichotomies are interspersed and complicated sometimes beyond recognition, this does not render them meaningless or, importantly, politically impotent. Although, I agree that these categories are fluid, fluctuating and constantly being renegotiated, politically they continue to hold significance.

The fact that more "women" (the category is expanded to include transsexuals, lesbians, homosexuals, gender outlaws and especially 'women of colour") are raped than "men", is an example of how the categories of "men" and "women", although constructed and highly disputed categories, cannot easily be discarded. Perhaps "men" rape differently and for different reasons under the dispensation of informatics; yet more "women" continue to be raped than "men". This indicates that the so-called redundant categories of "men" and "women" have somehow migrated into the age of informatics; they have replicated themselves into unrecognisable mutants, while dragging their power inequalities with them. The categories of "men" and "women" may, therefore, have to be expanded in a virtual age, while steering clear of a "feminist dream of a common language" (Haraway 1990:215).[6] Doing away with these embodied categories, altogether, however, seems ludicrous. In fact, I want to suggest, that Haraway, even though she professes otherwise, continues to operate within these parameters. For instance, she argues:

> **To be feminized means to be made extremely vulnerable**; able to be disassembled, reassembled, exploited as a reserve labor force; seen less as workers than as servers; subjected to time arrangements on and off the paid job that make a mockery of a limited work day; leading an existence that always borders on being obscene, out of place, and reducible to sex. (1990:208, emphasis added)

Is she not using traditional categories such as masculine/feminine, male/female and gender/sex to construct her analysis here? In other words, even in the cyborgian post-gendered world "to be feminised means to be made extremely vulnerable". Clearly new technologies challenge exhausted binaries, such as male and female, and make it very difficult to distinguish between "what is mind and what is body in machines that resolve into coding practices" (1990:219) and yet these binaries are constantly being refigured and re-embodied. When I, subsequently, refuse to discard categories such as male and female, it should not be misunderstood as an attempt to sustain rigid binary constructions of differences. Instead, as I have argued

throughout, I understand sex/gender differences to be constructed as embodied signifiers morphing in a matrix of possibilities, ranging for instance from extremely male to extremely female, and from extremely feminine to extremely masculine. In this matrix of possibilities "men" are on their way to becoming "men" and "women" are on their way to becoming "women" (or even vice versa). There are no natural or a priori "men" and "women", but there are pre-existing socio-political constructions and expectations of what a "woman" and "man" should be, just as there are bodies that materialise daily in different shapes and forms.

By way of concluding my reading of Haraway's cyborg, I have to add that, despite some of the concerns raised, Haraway's cyborg possesses many useful qualities for developing a cyberfeminist position on bodies and technologies, which have guided this study's analysis of techno-embodiment. As Haraway claims:

> Cyborg writing must not be about the Fall, the imagination of a once-upon-a-time wholeness before language, before writing, before Man. Cyborg writing is 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. (1990:217)

The fact that Haraway's cyborg does not claim "innocence" as a saving virtue holds fascinating prospects for women in particular who have to live the unbearable distinction of not only being marked as other, but also being forced into the "no-woman's land" between fallen whore and innocent virgin. Haraway's cyborg seems to be simultaneously whore and virgin, and yet neither. If "women" want to survive the informatics of domination they will have to do so not by claiming technological innocence and ineptitude, but also by infiltrating the "boys' toys" and domains. As the art ensemble VNS Matrix announces in their computer game *All New Gen*(der) (1997) (which will be discussed shortly) no moral codes abide in the digital matrix. Although myths of women's so-called original sin may have survived in cyberspace, they are thrown together with other life-affirming myths. Similarly, Haraway asserts that no bodies are sacred in themselves,[7] which means that no bodies are technologically innocent and pure, which places women specifically in an advantageous position regarding gender and technology. Any endeavour to return to a technologically innocent and naturally pure body is exposed as not only unfeasible, but also as a non-option. Accordingly, when Haraway boldly claims at the end of her manifesto that she would rather be a cyborg than a goddess, she strongly opposes the assumptions and constructions underlying the goddess myth, which hark back to a lost origination myth and a supposed naturally pure body.

6.1.2 No gender

This brings me to the issue of gender and the cyborg. Haraway makes it clear that her cyborg heralds a post-gendered world:

> The cyborg is a creature in a postgender world; it has no truck with bisexuality, pre-Oedipal symbiosis, unalienated labor, or other seductions to organic wholeness through a final appropriation of all the powers of the parts into a higher unity. (1990:192)

Ironically, even though Haraway attempts to depreciate all origin myths and utopias, her post-gendered cyborg is permeated with utopianisms. Haraway admits as much when she states that the cyborg is "oppositional, **utopian**, and completely without' innocence". She adds that she is "imagining a world without gender" within a utopian tradition (1990:192). Haraway's longing for a utopian post-gendered world conjures an original myth of completeness; in turn, this invokes utopia. The term is derived from the Greek *ou-topos*, meaning literally no-place. Therefore, despite her best attempts to create an ironic socio-political myth without gender, Haraway's cyborg does not realise this genderless state, except as a chimera shimmering on a coded horizon of a "no-place". As she herself states, this utopian post-gendered world may be a world without genesis, but it is also a world without definite outlines: "We require regeneration, not rebirth, and the possibilities for our reconstitution include the **utopian dream of the hope for a monstrous world without gender** (1990:223, emphasis added).

Fig. 6.5 Rick Berry, *Hedhunter*, 1999
(Braid Media Arts 2002)

The desire and dream to move towards a "monstrous world without gender" do, therefore, exist within everyday enfleshed situatedness where the relation between technologies and gender transpires as highly contested and not as a gender-neutral

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(or post-gender) utopia. The political "reality" of cyborgs can in no plausible way transcend the sexed and gendered embodiments of cultures and bodies in relation to technologies. When Alice Jardine argues that "technology has always been about the maternal body and therefore *the machine is a woman*" (1987:156, emphasis added), she grants a very specific gender and sex to the cyborg. Unlike Haraway, Jardine's gendered cyborg may prove more useful for a cyberfeminist enquiry into techno-embodiment. Jardine's specifically sexed and gendered cyborg directly opposes Haraway's vehement disassociation from origins and "natural" mothers by clearly acknowledging the "maternal body". Jardine's version also challenges Haraway's refusal of a gender-specific cyborg. Obviously, the specific sex/gender position of a cyborg is always already invested with and embedded within a socio-political matrix. Consequently, it is not possible to deal with the cyborg in a purely taxonomical manner, as the following analysis of cyborg imagery illustrates. Just as there are no natural bodies, there are no sex-gender-neutral cyborgs, or post-gendered cyborgs, for that matter. Cyberfeminists are therefore cyborgs – embodied cyborgs who live in and through their sexed and gendered differences and interactions with new technologies.

The remainder of this chapter investigates images of cyborg bodies and specifically the way they are sexed and gendered in popular visual culture. The analysis is introduced by a brief discussion of the quintessential patriarchal cyborg, the fembot Maria as depicted in Fritz Lang's *Metropolis* (1926), followed by the 1980s rendition of the hyper-masculine model of cyborgs in films such as *Terminator* and *RoboCop.* Thereafter a short comparison is made between the Queen Borg as portrayed in *Star Trek: First Contact* (1996) and the earlier fembot Maria, to indicate how the value systems for interactions between humans and technology have shifted in the late twentieth century. The analysis of patriarchal cyborgs will be concluded with a short discussion of three recent advertisements for the Acer Company advertising computer hardware. Thereafter, I proceed by elaborating on cyberfeminist cyborgs by discussing three contemporary visual examples: the virtual character *All New Gen(der)* created by the Australian art ensemble VNS Matrix (1995-7); Australian artist Linda Dement's interactive artwork entitled *CyberfleshGirl-Monster* (1995) and the comic character *Tank Girl* (1995) as portrayed in the film with the same title.

6.2   Patriarchal cyborgs: Daddy's girls and boys

The depiction of the cyborg in art, popular media and fiction has a diverse and complex history to which I can only allude here. One depiction of the cyborg in film that has credibly informed the sex/gender debate about women and technology is German director Fritz Lang's film *Metropolis* (1926).[8] In this cinematic rendition of the cyborg, patriarchy's ambivalent fascination with and fear of technology are embodied in the female robot[9] [Fig. 6.6]. The reasons for the ambiguity in the construction of the cyborg can be traced on different levels. Firstly, as Andreas Huyssen explains, the film is representative of both German Expressionism's view of technology as oppressive and destructive, and the upcoming *Neue Sachlichkeit*'s unbridled confidence in technology during the 1920s (1981-82:223). Lang's fembot is the ambiguous combination of two opposing viewpoints on progressive technologies. Secondly, Lang's feminisation of the machine is the coupling of two spheres – women and technology – that were not traditionally associated with one another, as I explained earlier in the chapter dealing with gender and technology. The two spheres only became interlinked during the late nineteenth century when machines started to threaten traditional roles of production and labour (Huyssen 1981-2:221). This was also discussed in relation to the weaving industry and the development of the Jacquard loom. The disruption of traditional roles of production occurred during the same epoch as women began to threaten traditional gender roles by lobbying for the vote (in the Suffragette movement), as well as campaigning for equity in education and work. The fact that the robot is sexed as female is clearly not coincidental, and does not only link with the contemporaneous women's movement, but also links with how male fears and anxieties at the time were projected onto their opposite, namely femaleness and femininity. Male anxieties appeared at the time in the guise of the threatening and seductive *femme fatale*.

The image of the *femme fatale* thematically dominated the oeuvre of many artists during the late nineteenth and early twentieth century to which Gustave Moreau's (1826-1898) repeated depiction of Salomé and Gustav Klimt's (1862-1918) preoccupation with Judith testify. The early twentieth-century techno-version of the *femme fatale* perpetuates the myth, not only in terms of iconology, but also its ideology. Fritz Lang's fembot is thus not a novel portrayal of woman; in fact she merely sustains and nurtures prejudices and fears about the feminine and female sexuality. As argued earlier, combining the threat of a rising female consciousness and the increasing industrialisation of reality into a dangerous union between

woman-machine makes sense within the given socio-political context. Fritz Lang's Maria can, accordingly, be described as an *angst*-filled patriarchal version of the ***machine-woman*** cluster.

Fig. 6.6 The fembot Maria in Fritz Lang's *Metropolis*, 1926

The cinematic construction of the fembot Maria also shows a definite correspondence with the Pygmalion myth, where a female entity is similarly created under male supervision. In Lang's cinematic version of the Pygmalion myth, the reclusive scientist Rotwang creates a robot in the image of his lost love, Hel. The fact that the robot resembles Rotwang's lost love inverts the Pygmalion myth in an interesting way. As Pygmalion transforms lifeless matter into living flesh in the person of Galatea (sponsored by the goddess Aphrodite) in the *Metropolis* version, the lost love becomes, not a living being, but an animated robot.

Joh Fredersen, the Master of Metropolis, instructs Rotwang to create the robot in the likeness of Maria [Fig. 6.7], the daughter of a worker and spiritual leader of the working masses. In other words, Maria the robot, or the false Maria [Fig. 6.8] as she is called, is both a tribute – a reminder of a lost love – and simultaneously a decoy for the masses. Being a devious creature by nature (as women are said to be devious), the robot wearing Maria's likeness foils her masters' control when she becomes more than they anticipated. Reminiscent again of hysteria, the false Maria at first obediently mimes her masters' voices and then becomes incontrollable. Like her other immoral *femme fatale* sisters, the Maria-robot also causes havoc by utilising her sexuality to enchant her male audiences and lead them to destruction. Her aberrance culminates in the scene where she dances like Salomé to ensnare her victims. She is punished for her evil deeds by being burned at the stake – the fate of many a witch. It can accordingly be argued that the female robot is punished not

only for her lecherousness, but also for daring to challenge the patriarchal capitalist powers and hence, for challenging the Law of the Father (Huyssen 1981-82:224). The message is conspicuous: give women power and they will surely misuse it and consequently, they have to be mastered and controlled.

Fig. 6.7 The "true" Maria, *Metropolis*, 1926

Fig. 6.8 The "false" Maria, *Metropolis*, 1926

In sharp contrast to the false Maria, the "true" and philanthropic Maria shows the children of the poor how the rich live above the ground. She also counsels the poor to have patience while awaiting the messiah. Although she preaches the coming of the Mediator, it is actually she who operates as mediator between the rich and the poor, the city above and the work pits below. In her "sermons" at the Catacomb meetings she proclaims: "Between the mind that plans and the hands that build there must be a Mediator, and this must be the heart." Inadvertently, Maria is the "heart" that links these opposing worlds, although the messiah is revealed as possessing the "correct" sex and gender, namely Freder Fredersen, the privileged son of Joh Fredersen. Tellingly, Maria is allowed to preach the coming of the saviour, but she cannot also be the saviour, for that would make her too powerful.
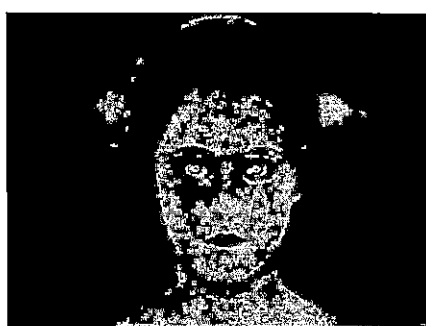

Fig. 6.9 "True" Maria transforms into "false" Maria, *Metropolis*, 1926

The double construction of femininity as both angelic and evil, virgin and vamp, false Maria and true Maria, is significant in this early visual twinning of women and

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technology.[10] It indicates the simultaneous attraction to and repulsion from technology and the female, for both are apparently in need of (male) control and supervision. In the end both are controlled, for the false Maria is burnt at the stake and the true Maria is married to the hero.

Lang's *Metropolis* offers a comment on the machinist-industrialised society of the early twentieth century, which has since developed into the post-industrial era emphasising information and digitisation. Subsequently, the image of the cyborg reflects these changes from steel machines to fluid information. With the development of electronic technologies, a coinciding discomfort grew with the "femininity" and "passivity" that is required when interacting with computers. Sandy Stone comments on the increasing feminisation required by new technologies when she states: "to put on the seductive and dangerous cybernetic space like a garment, is to put on the *female*" (1991:91). The impending discomfort with the implied femininity of microelectronics has consequently resulted in the resuscitation of a core masculine identity in films such as *The Terminator* (1984, director James Cameron); *Terminator 2: Judgment Day* (1991, director James Cameron); *RoboCop* (1987, director Paul Verhoeven) and *RoboCop 2* (1990, director Irvin Kershner).

According to Claudia Springer, commercial films such as these are "entrenched in a tradition that upholds conventional sex roles and maintains a stable masculine subject position by constructing a gaze assumed to be male" (1993:88). In other words, an attempt is made to construct the male body as fortified and indestructible in the same way that the German soldier corps known as the *Freikorps* tried to construct themselves as invincible and all-conquering during war.[11] Elements that represent the feminine and the female are banned from the fortified masculinised centre. Accordingly, the image of the cyborg is constructed as heavily armoured, muscular and almost invincible.

The Shwarzeneggerian model as embodied in the *T-100* [Fig. 6.10] in the *Terminator* series has become the most recognisable and popularised image of the hyper-masculine cyborg. Hyper-masculine cyborgs such as the *T-100* contrast precipitously with Lang's seductive fembot, who does not use brute power, but sexual persuasion, to capture her audience. The supposedly indestructible masculinity of the Shwarzeneggerian model is however, challenged by the amorphous and shape-shifting *T-1000* [Fig. 6.11][12], featured in *Terminator 2: Judgement Day*. Whereas the older *T-100* is composed of "living tissue over metal endoskeleton" (Pyle 1993:238), the newer *T-1000* is composed exclusively of liquid metal. And even though the *T-100* is able to repair itself, it cannot nearly compete

with the adaptability and agility of the so-called "feminised" *T-1000*. The liquid *T-1000* also has the ability to mime any human voice and to morph into any animate or inanimate object or creature. Given the emphasis placed on the process of mimesis earlier in this study, the *T-1000s* ability to mime and morph bears striking affinities with the feminised play between women and technologies. Accordingly, the *T-100* model with its hardcore masculine agency can be described as a modernist rendition of the cyborg, whereas the *T-1000* with its amorphous feminine identity can be likened to a postmodernist construction.

Fig. 6.10 T-100 model (Arnold Schwarzenegger), *Terminator*, 1984

Fig. 6.11 T-1000 model, *Terminator 2*, 1991

Neither of these two cyborgs fulfils Haraway's utopian dream of moving beyond genders into a post-gendered world. It is clear that cyborgs as portrayed in the popular media, frequently become not so "hopeful monsters". Contrary to Haraway's account of the post-gendered cyborg, popular depictions of cyborgs embody and portray very specific sexes and genders. Therefore, even though Haraway's cyborg bears instances of hope for new identity constructions in the age of informatics, the privileges and power relations that inform everyday realities are transposed onto the imaginary identities of cinematic cyborgs. It is not surprising then that the hyper-masculinised cyborg (*T-100* model) retains popularity over a feminised cyborg (*T-1000* model) due to prevailing sexed and gendered biases. The fact that the Shwarzeneggerian cyborg is redeemed in the end by becoming a hero who touchingly sacrifices himself to exterminate *T-1000* and save human lives, attests to obvious gender partialities.
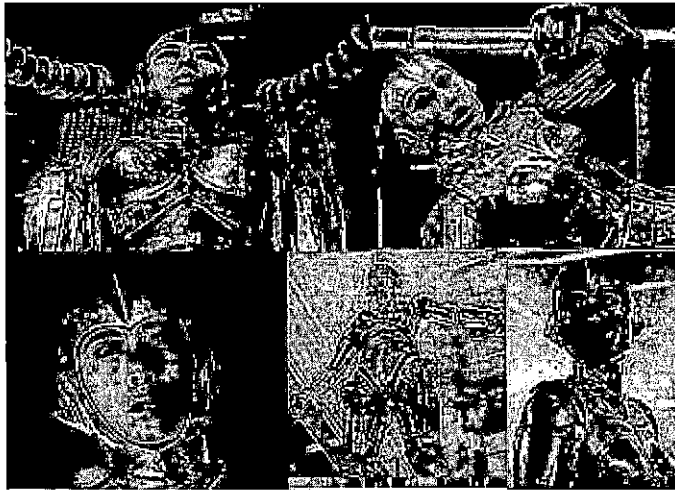
Fig. 6.12 Scenes from *I love Maria*,1988

While the hyper-masculinised cyborg may dominate popular renditions of cyborgs, the machine is still depicted as a woman on certain occasions. It may even be argued that in some cases the sexualised image of the ***woman-machine*** pairing, as portrayed in *Metropolis*, has morphed into the digital domain with the same intentions. A good example of how the visual trace of the ambiguous fembot has lingered is the film *I love Maria* (1988, director David Chung) [Fig. 6.12] starring an evil fembot that terrorises Hong Kong until she is re-programmed. In this instance the wayward fembot does not pay the penultimate penalty, but is re-programmed to behave in a more socially acceptable manner. In this case, women's misconduct is merely a question of faulty programming.

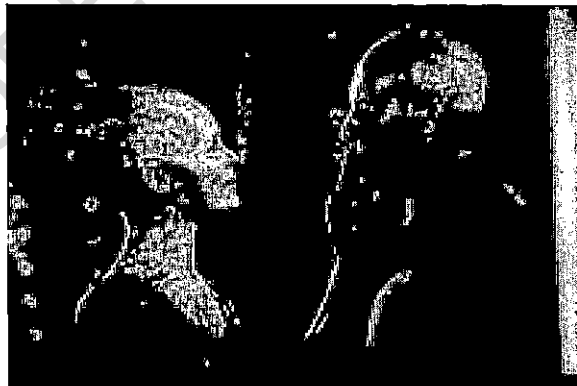**Fig. 6.13 The Borg Queen and Captain Picard, *Star Trek: First Contact*, 1996**

One of the most striking recent appearances of the ***machine-woman*** is portrayed in the figure of the Borg Queen in the film *Star Trek: First Contact* (1996, director Jonathan Frakes). The Borg Queen (Alice Krige) [Fig. 6.13] is depicted as a cruel, persuasive and dangerously seductive creature capable of assimilating all living

entities into "the Collective". Thus the Borg Queen embodies projected fears of returning to the undifferentiated *chora* or the maternal body. As Mary Anne Doane explains: "The threat of the maternal space is that of the collapse of any distinction whatsoever between subject and object" (2000:116). Once assimilated by the Borg, resistance proves futile, for the subject is dissolved into a nondifferentiated collective consciousness. Losing control over his subjectivity has been one of the greatest threats to the construction of the hu(man) subject. The distress that Captain Picard experiences upon meeting with the Borg again is a clear indication that the process of assimilation is not an enjoyable experience. The fact that the threat of assimilation is posed in the form of a woman is of definite significance. The threat of returning to the "nothingness" of the pre-symbolic womb can, apparently, only be convincingly posed by a devouring female.

When the Borg Queen first makes her appearance, she descends as a free-floating **head**, which is then attached to a body. As the Borg Queen descends connected to a halo of tubes, she oddly resembles an insect with the head in the middle, flanked by tubular legs. The correlating image of a female spider or mantis preying on unsuspecting mates also comes into play. The Borg Queen's tubular halos are likewise suggestive of Medusa's snakehead – the quintessential and archetypal embodiment of supposed female monstrosity. Attached to the cluster of female monstrosities is sexual adeptness: it is not surprising, then, that the Borg Queen is depicted as possessing sexual prowess. She tries her utmost to seduce both Captain Picard and the android Data into submitting to her onslaught of assimilation.[13] In this regard, teasing out some of the similarities between the Borg Queen and Maria – Fritz Lang's seductive fembot – may be useful [Figs. 6.14 & 6.15].

Like the Borg Queen, the false Maria also utilises her sexual attractiveness and skill to control and seduce men, which is an obvious comparison with the Borg Queen. Both constitute *femme fatale* figures. On a socio-cultural level, the false Maria embodies early twentieth-century fears about women and technology and the transformation to an industrial society. The Borg Queen, on the other hand, represents a postmodern mirage of fused female cyborg identity and a post-industrial society. In appearance they also correspond, for both are portrayed as hard-bodied cyborgs with little reference to the softness of female flesh. For instance, their breasts are constructed as cone-like weapons rather than nurturing symbols. Both figures' torsos are sculptured and outlined, without a hint of tenderness or vulnerability, which echoes some of the ideas sketched in the chapter dealing with

technology and womb-envy. These fembots are deadly and their problematic allegiance with technology makes them even more so.

Fig. 6.14 The Borg Queen, *Star Trek: First Contact*, 1996 (United Paramount Network)

Fig. 6.15 Maria, *Metropolis*, 1926

Concluding this analysis of how patriarchal cyborgs are sexed and gendered, I want to turn to three recent advertisements for the Acer Company, where the **machine-woman** cluster is revitalised in order to advertise a computer range. The following three advertisements are relevant for my discussion: the advert for the *Acer Veriton 7100 and 5100* [Fig. 6.16] with the leading copy: "The same, only different" (the rest of the copy reads: "The Acer Veriton will always perform for you"); the advert for the *Travelmate 350* [Fig. 6.17] with accompanying text: "Travelmate. Playmate" and "Meet your perfect match in the Acer TravelMate 350. Sexy, attractive and more than a little willing to perform [...] the Acer Travelmate 350 can sense your needs, even across a crowded room"; the advert for the *Travelmate 603* [Fig. 6.18], "Intelligently balanced" with accompanying copy: "A sensational memory in a healthy body [...] the Acer Travelmate 603 combines form and function in perfect proportion".

In all three advertisements the hardware's promised performance is symbolised by the image of a highly seductive female robot, visually indebted to the fembot Maria. The Acer female robot is, though, conveniently faceless and robotically anonymous, unlike the false Maria wearing the true Maria's resemblance. The Acer fembot represents the Acer hardware's convenience and endurance, and is appropriately described as sleek and eager to fulfil the user's needs. The

availability and convenience of these computers intersect with the traditional connection of women with other household appliances, which also supposedly operate on the same level.
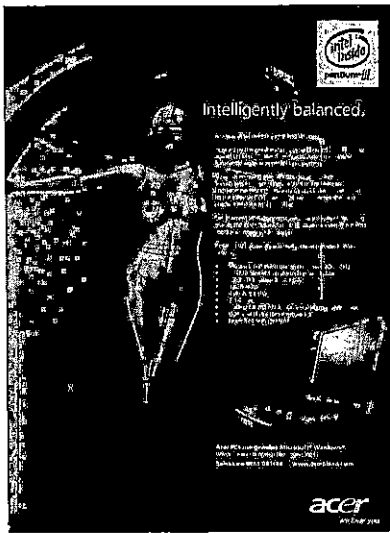

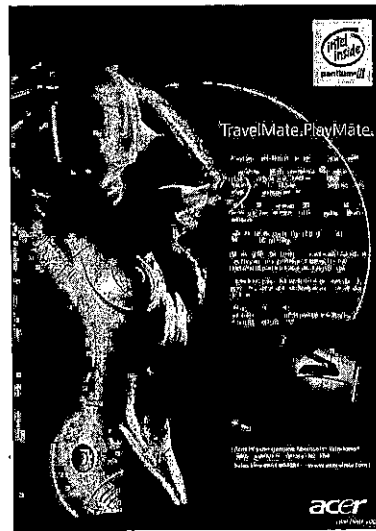**Fig. 6.16 Advert for the *Acer Veriton 7100 and 5100*, 2001**
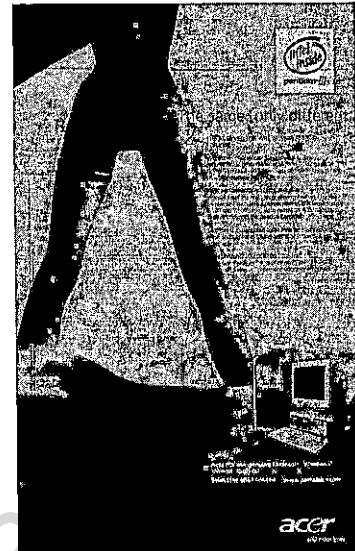
Fig. 6.17 Advert for the *Travelmate 350*, 2001

Fig. 6.18 Advert for the *Travelmate 603*, 2001

The reference to a "travel mate" could be a reference to Playboy's Playmate of the year competition. It also suggests that the *TravelMate* is the perfect travel companion away from "home" and all that may entail. The link between technology and sexuality are, nonetheless, not a new code transmitted by the Acer advertisements as became evident in the depiction of the Maria fembot. In a sense the Acer female robot digresses from this model though, for she embodies the "perfectly" proportioned female in her voluptuous form, while also being the ultimate servant in her readiness and availability to "perform" and to sense the user's needs "even across a crowded room".[14] The Acer fembot, in her willingness to perform, typifies the patriarchal ambition to control disobedient and unruly females such as out-of-control fembots, witches, hysterics and lesbian sexuality.

If women were to occupy the demeaning place appointed to them by the masters of technology and started to "perform", but not as prescribed and anticipated by their technological supervisors, what would the outcome be? Cyberfeminism entertains this possibility. As Sadie Plant muses, "there is more to cyberspace than meets the male gaze" (2000:265). In a similar vein the art-collective VNS Matrix and their virtual character named *All New Gen*(der) topple comfortable notions about the supposed incompatibility and controllability of women and technologies. In the computer game/art installation created by VNS Matrix the

following questions are asked: what type of relationship is established when women and networks silently start to correspond and to "hack into security's control" (Plant (2002:265). What would happen if "tools mutate into complex machines [and] begin to learn and act for themselves" (Plant 2000:267)? Who stands at risk when information becomes liquid and starts to spread languidly across the Internet? Who will be performing for whom then? How convenient will this be? My enquiry now shifts to cyberfeminist cyborgs.

6.3 Cyberfeminist cyborgs: "the promise of monsters"

Fig. 6.19 VNS Matrix, *All New Gen* from *Bad Code game*, 1995-7

In vivid contrast to both the hyper-masculinised and feminised cyborgs previously discussed, the cyborg created by VNS Matrix in their electronic art installation entitled *All New Gen*(der) (1995-7)[15] embodies an ambiguous cyborg both in terms of sex and gender differences. *All New Gen*(der) consists of a computer game, a video installation, an acoustic installation, a *Cyberfeminist manifesto for the twenty-first-century* (shown and discussed in chapter two) and a "shrine" to the Oracle Snatch. VNS Matrix's futuristic quest game revolves around *All New Gen*'s [Fig. 6.19] mission to sabotage the databanks of Big Daddy Mainframe: "Her aim: to corrupt Big Daddy's data/His mainframe/His Hard On" (VNS Matrix 1998:38). The main representative or "sidekick" of Big Daddy Mainframe in the game is the "dangerous technobimbo" (VNS Matrix 1998:37) Circuit Boy, who, owing to his direct mind link with Big Daddy Mainframe is almost invincible. *All New Gen* is assisted in her mission to infiltrate and re-map the "phallic patriarchal code" (VNS Matrix 1998:37) of Big Daddy Mainframe, by the DNA Sluts [Fig. 6.20]. They are Patina de Panties, Dentata and the Princess of

Slime – a band of sexy and subversive renegades that operate by disrupting and corrupting codes. As the name indicates, the DNA Sluts are extremely disrespectful towards their "origins" and not to be trusted at all, for they tend to affiliate with any creature, irrespective of creed, bio-construction or gene-material.

The trio act as the "mercenaries of slime", and, instead of drawing attention to the supposedly abject nature of the female body, they now re-map the female body and draw attention to the power of eroticised female embodiment. The DNA Sluts also have direct access to the Matrix, which is described as everything and everywhere; an omnipresent mist that threatens to infiltrate and corrupt Big Daddy Mainframe's highly structured databanks. As I explained earlier when the *Cyberfeminist manifesto* was discussed, the DNA Sluts also have direct access to the Matrix via their clitorises, which clearly subverts dominant ideologies concerning access to technologies.
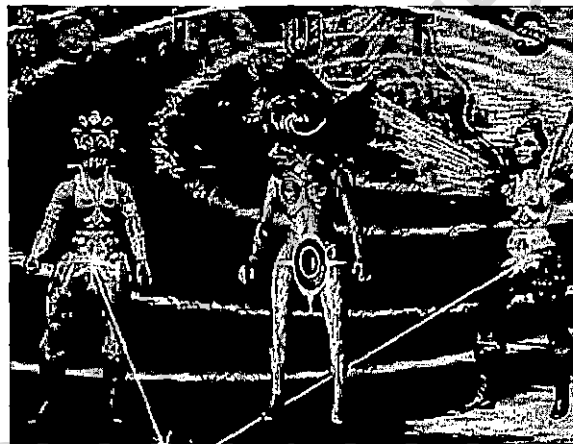
Fig. 6.20 VNS Matrix, DNA Sluts: Patina de Panties, Dentata and The Princess Of Slime from All New Gen (1995-7)

VNS Matrix plays indiscriminately with differences and oppositions between genders, sexual preferences and the sexes. The game is overtly proclaimed as an "interactive game for non-specific genders" (VNS Matrix 1993). Upon entering the game the first question the player has to respond to is: "What is your gender? Male, Female, Neither" (VNS Matrix 1993) to which the "correct" answer is "neither". If the player chooses one of the other options s/he is sent on a loop out of the game. Similarly, the "body" of the player/character VNS Matrix uses to manoeuvre their tactics cannot unequivocally be interpreted in terms of sex and gender. VNS Matrix cleverly weakens and confuses uncomplicated oppositions between male and female, heterosexual and homosexual bodies. The gender of the main character *All New*

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Gen is fluid and indecisive, for, as Steffensen suggests: "she could be a girl with a dildo, with a magic phallus, or a fantasmatic homosexual boy".

Fig. 6.21 VNS Matrix, *Circuit Boy is disarmed by a DNA Slut who removes his detachable penis and turns it into a cellular phone* from *All New Gen*. (1995-7)

All New Gen's opponent Circuit Boy [Fig. 6.21] (also playfully referred to as Dickboy), although directly linked to Big Daddy Mainframe, can also be interpreted in some ways as being of in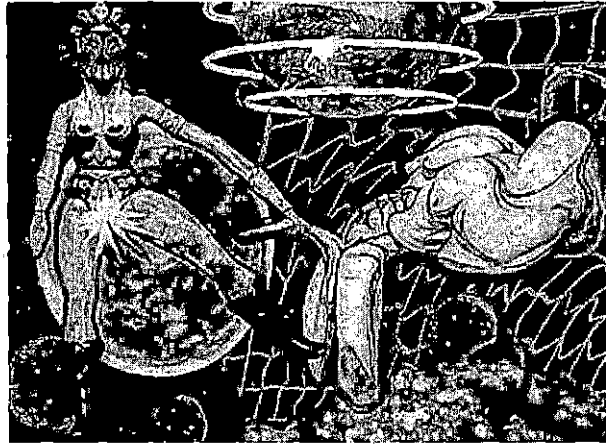determinate gender. The reference to "boy" indicates that he may be an androgynous coupling of girl and boy, and that he is not yet completely a "man". His androgynous nature surfaces playfully at the end of the game in the sequence described as "The triple temptation of Circuit Boy".[16] During the sequence, Circuit Boy is seduced and quickly adapts to "the rewards of willing submission" (VNS Matrix 1998:41). Subsequently, he discloses a more feminine side to his otherwise masculinised chrome demeanour. Also, Circuit Boy's androgynous nature is revealed by his detachable penis: in other words, his penis is a transferable prosthesis and not a fixed part of his "identity". The detachability of his penis opens an imaginary "post-phallic" (Schaffer 1996) space for differently gendered and re-combinable possibilities. Power and control are defused and shared during the triple seduction sequence, which provides a refreshing inversion of more conventional game structures, where the player is usually required to annihilate his/her opponent in order to survive another second of gaming.

What is more, *All New Gen*'s visual appearance or presence is not even a certainty in the game. As VNS Matrix informs the player: "You may not encounter All New Gen, as she has many guises. But do not fear; she is always in the matrix, an **omnipresent intelligence**, anarcho cyber terrorist acting as a virus of the new world disorder" (VNS Matrix 1998:37, emphasis added). *All New Gen* appears sporadically and in different forms and does not embody a hyper-sexualised female character created for pubescent male voyeuristic interests, as is usually the case in the gaming

industry. The epitome of such a sexualised virtual game character would obviously be the extremely popular Lara Croft of *Tomb raider* fame [Fig. 6.22].[17] Although Lara Croft can likewise not be interpreted as an unequivocal sex symbol of the late twentieth century, her virtual construction does undeniably perpetuate certain stereotypical aspects, such as her large breasts and narrow hips, which install female embodiment into sex objects.

Fig. 6.22 Lara Croft, 2002
(TM Core Design Limited)

The *All New Gen* game also digresses from mainstream games, for, instead of building up an arsenal of weapons to kill the opponent, the player is fuelled by G-slime [Fig. 6.23]. G-slime is an indiscriminate fluid that defies easy definitions and "metaphorically lubricates the binary logic system" (Schaffer 1996). The player is constantly reminded to monitor her/his levels of G-slime and to bond with the DNA Sluts in order to replenish supplies. Thus even the process of re-arming, so to speak, turns into a pleasurable and rejuvenating event. The motto of the game is: **"BE AWARE THAT THERE IS NO MORAL CODE IN THE ZONE"**, which is consistent with the game's liminal positioning between artwork and commercial prototype, aiming to inject alternative gendered narratives and characters into the adolescent "shoot 'em up'" games market.
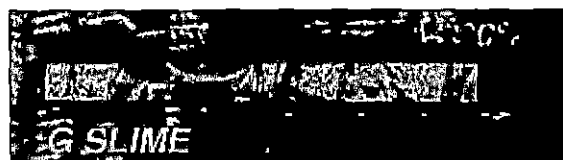

Fig. 6.23 VNS Matrix, G-Slime, *All New Gen*, 1995-7

Also, unlike most other games, the *All New Gen* game ends in the union of Circuit Boy and *All New Gen*, without announcing either of the entities as undeniable victor. By sharing victory, the initial animosity between the two virtual entities is cleverly perplexed and translated into positive sexual energy. The game ends as follows:

> Circuit Boy tended her biological components, practicing ethereal modes of convergence in his down time. He partitioned his RAM, slowing his response times to match her requirements. She was highly encrypted, he became expert at decoding. Their surveillance narratives grew so dense **it was impossible to know who was in control**. (VNS Matrix 1998:42, emphasis added)

Although their shared victory results in Circuit Boy's corruption, it does not leave him defeated and baffled, but rather satisfied. The cyborgs created by VNS Matrix can, thus, not be interpreted as one-dimensional and essentially over-embodied. Neither can they be interpreted as completely dispersed and disembodied, but instead, they mime a speaking position temporarily from different inter-sexual and trans-gendered positions "as if" (female) agency is possible.

In very much the same vein, Australian artist, Linda Dement's interactive multi-media CD-ROM artwork entitled *CyberfleshGirlMonster* (1995) [Figs. 6.24 & 6.25] configures a cyberfeminist cyborg. In her computer-based interactive artwork Dement makes use of donated body parts, which she collected during an art festival held in Adelaide, Australia in 1994. About thirty women participated in this event by scanning chosen body parts and digitally recording a sentence or sound related to that body part. From this source material Dement constructed conglomerate bodies, which are digitally animated and interactive. In opposition to dominant notions of the computer as devoid of visceral traces, Dement insists on inserting the female body – blood, guts, slime and all – into cyberspace. She wants to infect men's clean and slick silicon machines with visceral counterparts, in a similar way to VNS Matrix. The result is no shining metallic robot comparable to Fritz Lang's Maria, but rather a fleshy and messy amalgamation – for the female body is said to be leaky[18] and difficult to contain because she seems to seep and trickle from fissures and cracks. Likewise Dement counters highly structured and hierarchically organised computer interfaces by not making use of an obviously structured menu system or clearly controllable interfaces. Instead, she goes about the process of structuring by creating a *bricolage* of possibilities. Each interface is remarkably interactive and personalised and reveals intimate stories about the donated parts. Arms and hands, lips and virtual *wombs*, have all morphed into "witty little monsters" (Dement 1995:9)

enticing the viewer to interact with them by making use of commands such as "*press here*" and "*touch me*". The apparent hideousness of these donated body parts engages with dominant evaluations of the female body as monstrous on the one hand and, on the other hand, it demonstrates that the unfixed liminal, even ambiguous, nature of the monster can possibly produce alternative figurations of female bodies. In similar vein, Rosi Braidotti specifically develops the possibilities of the monstrous as an empowering position for female embodiment that is "both horrible and wonderful, object of aberration and adoration" (1994:77-8) at the same time.

Upon activating one of these "monsters", the words recorded for that body part can be heard or seen, or another monster may appear, or a digital video may start to play, or a medical history of the body part will be displayed. Here technology, traditionally perceived as cold and distant, invites viewers to interact and to touch. Dement reveals that she wants her pictures to appeal to viewers' smell, taste and touch and to make contact with "senses still to come" (Dement 1995:10). She is appealing to future senses, which have not yet been developed in the body's interaction with technologies. *CyberfleshGirlMonster* consequently engages with embodied sensory beings, rather than with free-floating disembodied spectres as portrayed in the techno-transcendent model.

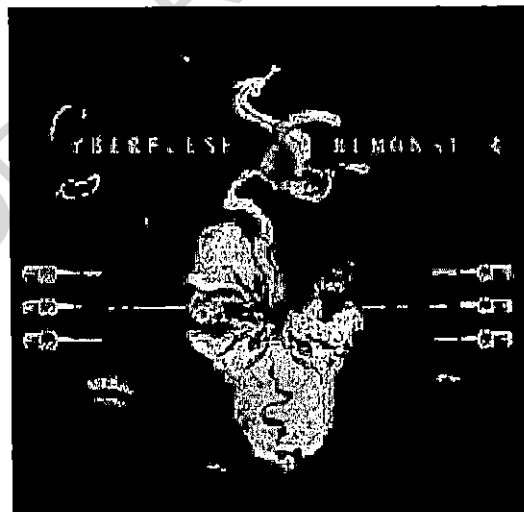Fig. 6.24 Linda Dement, *CyberfleshGirlMonster*, Interactive CD-Rom, 1995

The fact that Dement chooses to use the term "cyberflesh" and not "cybermeat", for instance, indicates that Merleau-Ponty's concept of *flesh* may be intertextually present. As established previously, Merleau-Ponty's *flesh* is an inclusive concept that supersedes the mind/body split. Dement is likewise careful not to fix her

CyberfleshGirlMonster into unyielding dichotomies. Reminiscent of her hysterical sisters, who could apparently not speak a coherent language according to patriarchal discourses, Dement similarly muses: "The computer-generated image in the virtual world provides **a space where the unspeakable can be spoken**" (Dement 1995:9, emphasis added). She also explicitly states that she wants to "**Make the unbearable visible**" (quoted in Delacour 1999, emphasis added). In the same way as the hysterical inmates of Salpêtrière wanted to make the unbearable position of being female visible through the signs that they co-authored onto their skins, so Dement wants to make the unbearable and non-representable in a digital age, such as wombs, breasts, vaginas and mouths, highly visible and interactive. This drive towards making the unbearable visible invokes the themes addressed by women science fiction writers, who also, according to De Lauretis, create new stories, events and characters "that were previously invisible, untold, unspoken (and so unthinkable, unimaginable, 'impossible'" (1986:11). The cyborg body that Dement puts forward in her *CyberfleshGirlMonster* is thus not technologically innocent or naturally pure, but resiliently embodied in and through technologies.
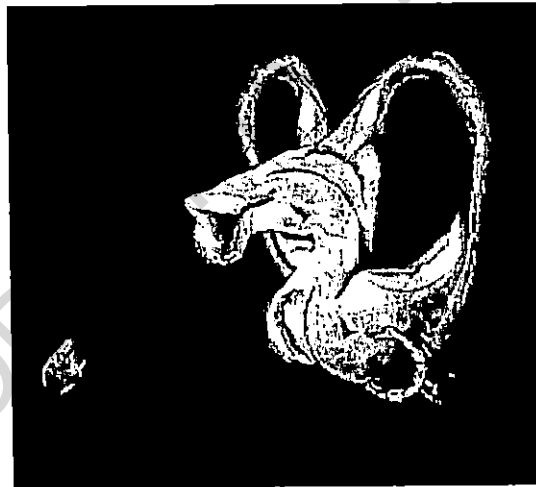
Fig. 6.25 Linda Dement, *CyberfleshGirlMonster,* **Interactive CD-Rom, 1995**

Similarly the comic-strip character *Tank Girl* [Fig. 6.26], featured in the British comic magazine *Deadline*, created by Jamie Hewlett and Alan Martin and later reworked into a film with the same title in 1995 (director Rachel Talalay) [Fig. 6.27], presents herself as yet another alternative formation of a cyberfeminist cyborg. *Tank Girl*, the film, is set in the year 2033 in the aftermath of a cosmic cataclysm that has robbed the earth of its life-giving water. In this wasteland water becomes the currency and predictably, whoever controls the water controls the world. The ruthless Kesslee, head of Water and Power Company, becomes the most powerful human on earth

and Rebecca Buck (Lori Petty), also known as Tank Girl, is the (s)hero who counters his oppressive rule.
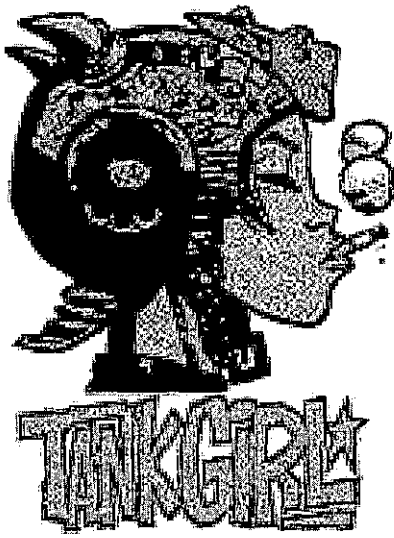
Fig. 6.26 Jamie Hewlett and Alan Martin's comic-strip character, *Tank Girl*

Fig. 6.27 *Tank Girl*, directed by Rachel Talalay, 1995

Tank Girl, together with her female cohorts, namely Jet Girl[19] [Fig. 6.28] and Sub Girl, are represented as technologically skilled and innovative. They show no signs of the technological ineptitude that is traditionally attributed to women. Upon meeting the "tank", a highly sophisticated computer-controlled model, Tank Girl confidently jumps behind the control panel and greets the computer with these words: "My mother and your mother were hanging close". In this short remark Tank Girl discloses a great amount about her own "origin" or, rather, her apparent lack of origin in terms of humanist expectations. In fact, her words echo Haraway's denial of so-called "natural" mothers and origins. Instead, Tank Girl acknowledges the seamless relation that has always existed between women and machines, and, conclusively, between women as cyborgs. For if Tank Girl's mother knew the tank's computer-mother, the chances are they were both cyborgs. Therefore, Tank Girl affirms and appeals to an effortless bond between woman and machine that subverts any notion that the two have been wedged into separate spheres.

Tank Girl appropriates the tank – an extremely phallic and militaristic emblem – stolen from the Water and Power Company and redesigns it into a playful and colourful feminised object [Fig. 6.29]. She redecorates the tank from an unforgiving steel structure into a mobile that mocks (male) aggression. When she needs the tank, she whistles to it and it obeys like a faithful dog. The tank becomes an extension of her provocative and subversive character and together they merge into an

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inseparable cybernetic organism. The image of Tank Girl sitting with her legs spread across the tank's canon, while admiring "the sheer size of it", obstructs notions of the tank as solely a masculinised icon of phallic invincibility. "Armed" with the canon between her legs she strikes the pose of a "phallic woman" with the interesting visual twist added that her image does not provide any fetishistic comfort or compensation to a male audience. Tank Girl does not affirm the so-called castrated state of women and neither can her image be unproblematically aligned with an aspiration to become male by filling her supposed lack. On the contrary, her visual merger with the tank not only challenges constructions of technology as inherently masculine, but also contests the male gaze. Furthermore, her seamless union with the tank inverts the formation of the heroic knight on his noble steed saving a damsel in distress. Tank Girl is clearly not in need of a saviour, for she saves herself and the clan of Rippers on the back of her tank. Tank Girl's abilities are enhanced and augmented by her tank and together they combat the ultimate powerful cyborg, Kesslee, who is part human and part hologram.[20]

Fig. 6.28 *Tank Girl*, Tank Girl and Jet Girl in the interior of the tank, 1995

Similar to the aberrant associations made by Tank Girl between gender and technologies, the clan of Rippers also share bonds with the unconventional. They have interesting affinities with the mythical figure of the golem, for instance. The golem has its origins in Jewish mysticism, and is described in the Talmud as a "shapeless mass", "imperfect", and an "unformed body without soul" (Oreck 2002). It is only once the shapeless lump of matter is touched by a magical formula, such as a chant or magic words, that it comes to life. Accordingly, it is said that when the word "truth" is written onto the creature's forehead, it becomes animated. The golem was frequently created as a guardian to protect the Jewish community from physical danger and onslaughts.[21] The Rippers were similarly created as soldiers to protect

their military fathers' interests, before they were abandoned by their creators. In addition, the altered DNA-structure of the Rippers can be compared to a "shapeless mass" magically inscribed by the coding of biogenetic engineering to create a species of super-soldiers.
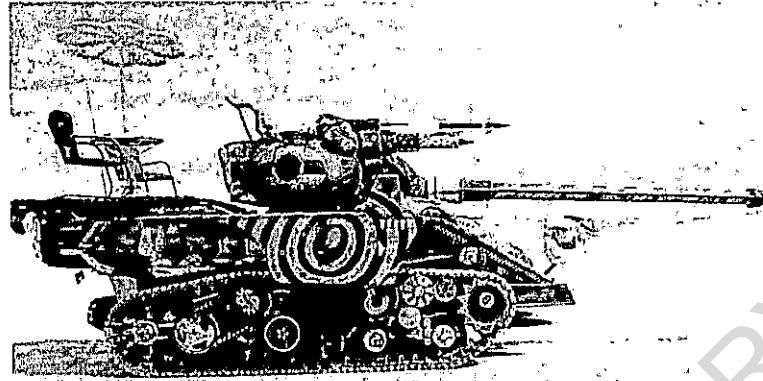
Fig. 6.29 The tank after its appropriation, *Tank Girl*, 1995

The Rippers are excellent examples of Haraway's cyborgian transgression of human/animal boundaries using technology's aid. Designed to be the ultimate soldiers, they have, instead, become outlaws after their creators, or "military fathers" to be more precise, abandoned them when government funding stopped. Whereas Haraway's cyborg identity actively denies its origins, the Rippers, are ironically, actively deserted by their "origins". The desertion of the Rippers by their military fathers turned them into an underground force, and it is exactly from the underground that they plan and execute their subversive and deadly offences.

The assortment of cyborgs depicted in *Tank Girl*, namely Kesslee as hologram, the Rippers as genetically altered cyborgs and Tank Girl as a cyberfeminist cyborg, testifies to different political agencies and cyborg embodiments. Hence, the form and appearance of a cyborg are not neutral, but greatly dependent on **who** (what political agency) occupies its fragmented core. Obviously Kesslee's power-lusting core differs greatly from Tank Girl's more democratic and subversive identity construction. In addition, not all cyborgs are constructed from the "woman of colour" category, as Haraway suggests. If "there is no one kind of cyborg" (Hables Gray 1995:2), it can be deduced that cyborgs are not only utopian post-gendered figures, but are specifically gendered and embodied agents that can also embody techno-patriarchal ambitions, as in the case of the hyper-masculinised *Terminator*-type.

Jill Marsden explains that the cyborg cannot be protected from illicit, anarchic and random liaisons, for no absolute control over the cyborg is possible.

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Instead, only "degrees of control, resistance, rates of stability and changes of flow" (Marsden 1996:14) are feasible. Depending on whether the cyborg becomes an agent of distributed late capitalism or a cyberfeminist fleshy machine, this may make the difference between a disembodied or embodied, immortal or mortal, hyper-violent or life-affirming cyborg. In the end, the who question remains pertinent. In other words, the political agency matters (quite literally) even in a virtual age of postmodern, fragmented and interspersed identities. These are relevant questions for cyberfeminism, namely to whom does the technology belong? Who makes it? Who uses it? And how is it used? A cyborg always represents embodiment in a specific, situated socio-political context, positioned very pertinently in terms of sex and gender.

Endnotes:

[1] Norbert Wiener first defined the field of cybernetics in *Cybernetics: or control and communication in the animal and the machine* (1948). Basically cybernetics entails the study of the control and regulatory properties of complex systems as it pertains to both machines and living systems or organisms. According to Katherine Hayles, cybernetics was born from the joining of nineteenth-century control theory and the nascent theory of information in the 1930s and 1940s (1999:8). The following three fields form the main focus of cybernetics: information, control and communication.

[2] The cyborg-rat also became an example of the processes of autopoiesis and homeostasis. Both are concepts developed within cybernetics and on a crude level can be understood to refer to the ability of an living organism to sustain itself under difficult circumstances. Obviously, both terms are far more complex than can be explained or elaborated within this space. Therefore I refer the reader to Humberto Maturana and Francisco Varela's *Autopoiesis and cognition: the realization of the living* (1980), and to Walter Cannon's "Organizations for physiological homeostasis" (1929).

[3] I have selected artist Rick Berry's work for this section dealing with the cyborg, not only because the content of the work deals precisely with cyborgs, but also because Berry collaborated on the images for the climax scenes in *Johnny Mnemonic*, discussed in chapter four.

[4] See "A Brief History of the Internet and Related Networks " by Vint Cerf (2001) for more detail on the history and government involvement in the early developmental years of the Internet. Available at: http://www.isoc.org/internet/history/cerf.shtml

[5] Jill Marsden speculates that Haraway's readers may perceive the cyborg fusion between humans and animals as less culturally threatening due to a species prejudice or a belief in the uncontested superiority of the rational animal (1996:9). The fusion with the machine is, on the other hand, still positioned as qualitatively distinct from carbon-based life forms and in the end the cyborg is "[...] badly misconceived as the triumph of instrumental technology over the natural realm" (1996:9).

[6] Haraway is citing Adrienne Rich here. In Rich's poem "Culture and Anarchy", she makes reference to the existence of a "common language" existing among women. I quote from the poem: "How you have given back to me/ my dream of a common language/ my solitude of self" (Gilbert & Gubar 1996: 2039).

[7] Jeffrey Fisher reiterates this point when he compares Haraway's cyborg body with those constructed by Anne Balsamo and Sandy Stone. According to Fisher, neither Balsamo nor Stone provides us with cyborg bodies in the "truest" sense of the term, because they persist in reinforcing the opposition between natural and cultural (technological) bodies. For them, cyborg bodies are experienced in a liminal state known as cyberspace, after which one returns again to an unchanged and technologically innocent natural body. Haraway on the other hand "[...] gives us cyborgs, bastard humans or bastard posthumans for whom the body itself is altered. For cyborgs, the body itself is no longer sacred, but it is not rejected either. The body is not transcended or left, out of hand" (Fisher 1997).

[8] One of the literary sources that is, according to Mary Anne Doane (2000:111) most frequently cited as the exemplary forerunner of Fritz Lang's female robot, is Villiers de l'Isle-Adam's novel L'Eve future (1886), wherein a mechanical woman, named Hadaly, is created by Thomas Edison. Lang's film is, however, directly based on the novel by his wife, Thea von Harbou, also entitled Metropolis (1926).

[9] It is important to note that Fritz Lang's Maria is a robot and therefore, not technically speaking a cyborg. Claudia Springer distinguishes as follows between cyborgs and robots, and between cyborgs and androids: "Robots are completely mechanical figures of any shape or size. Androids are human-shaped robots or genetically engineered synthetic humanoid organisms, but they do not combine organic with technological parts. Androids look like, and sometimes are indistinguishable from humans" (1993:87). However, it is only the cyborg that represents the fusion of particular human beings with technologies (1993:20). In my analysis I am, therefore, stretching the strict meaning of the cyborg to include Maria in that category.

[10] See Peter Ruppert's (2000) "Technology and the construction of gender in Fritz Lang's Metropolis" for a thorough analysis of the causality created between gender and technology in the film.

[11] See Klaus Theweleit's (1987) Male fantasies where he analyses the soldiers of the Freikorps between the two world wars and specifically their animosity towards the female and feminine.

[12] The T-1000 cyborg-model is described as a feminised version of the cyborg, according to Bukatman, owing to its "liquid metal" configuration, which stresses its deceptive liquefying and shape-shifting ability that is mostly associated with the feminine (1993:304).

[13] The Borg Queen's seductive strategies differ in interaction with Captain Pickard and Data. To Captain Pickard she promises power and control, and in Data's case she promises full body skin-implants so that he can experience the exhilaration of bodily senses. In other words, she finds the vulnerability in each character and focuses her seduction on their weaknesses.

[14] This is rather ironic for a machine, given the debate and developments in Artificial Intelligence and the precise problems experienced in the field with computers' lack of "sensing".

[15] All New Gen is set in "A TRANSPLANETARY MILITARY INDUSTRIAL DATA ENVIRONMENT. The game consists of the following characters:

1. **BIG DADDY MAINFRAME** – the enemy who must be infiltrated through **DATA LIBERATION**,

2. **RENEGADE DNA SLUTS** – who are watched over by **ORACLE SNATCH**,

3. They call themselves **PATINA DE PANTIES, DENTATA AND THE PRINCESS OF SLIME**. They must battle Big Daddy Mainframe and his agents through the contested zone in order to release the: **VIRUS OF THE NEW WORLD DISORDER**,

4. **CIRCUIT BOY** – the dangerous technobimbo (and one of Big Daddy Mainframe's agents). The DNA Sluts must disarm him by removing his three-dimensional detachable penis, and by doing so, turn it into a cellular phone and

5. **A BONDING BOOTH** – where **G-SLIME** (fuel required by the player) is replenished if stocks run low. The motto of the game is **"BE AWARE THAT THERE IS NO MORAL CODE IN THE ZONE"** (VNS Matrix 1998).

[16] Circuit Boy is seduced by Cunt, the Mistress of detestable Pleasure and by Abject. I interpret all of them as incantations or different guises of *All New Gen*, and therefore it is fair to surmise that Circuit Boy is seduced in the end by *All New Gen*.

[17] In "Virtual babes: gender, archetypes and computer games" (2000) I discuss Lara Croft and the archetypes at work in her construction.

[18] See Margrit Shildrick's *Leaky bodies and boundaries. Feminism, postmodernism and (bio)ethics* (1997) for an excellent discussion on how the female body has been "fabricated" as leaky, specifically within medical discourses.

[19] Jet Girl is a very capable technician who services Water and Power's aircrafts. She also develops a lie detector in her spare time, which comes in handy when she and Tank Girl meet up with Sub Girl. She does, however, initially lack Tank Girl's confidence and it is only in her relation with Tank Girl that she blossoms into a hardened soldier.

[20] Kesslee meets with a terrible fate after the Rippers, a bandit of mutant soldiers, rip him apart. But Kesslee does have the power and resources available to contract the services of a medical-technician, Che'tsai, who reinvents Kesslee. Che'tsai proudly states: "All the king's horses and all the king's men wish they had the technology I have". By means of cybernetic surgery the shredded Kesslee is reconstructed as a hologram with a prosthetic arm that can shred human flesh to pieces. Ironically Kesslee's only true weakness is water, precisely that on which his power is based. It is, therefore, very fitting that it is a mere bucket of water that causes his final shutdown by short-circuiting his bioelectronics.

[21] One of the most well-known and compelling stories of the golem is attributed to Rabbi Judah Loew ben Bezalel (1513-1609), the Maharal of Prague. Apparently he created a golem from clay to protect the Jewish community from physical onslaughts and the golem did also assist in doing physical labour due to its immense strength (Oreck 2002). In popular media such as film and television, the golem has made its appearance in various forms, particularly in Mary Shelley's *Frankenstein*. It may even be argued that Fritz Lang's fembot Maria is a golem, for in the film lifeless matter is reanimated and comes alive in the form of the false Maria robot.

Conclusion: Virtually yours

This study has positioned embodiment as a crucial and nonnegotiable facet of being human amidst a flood of body-antagonistic theories and practices. All of these, in one way or another, want to transgress and renegotiate the categories of embodiment and "being a body" into a future that is oblivious to the body. Also, mostly underpinning these theories and practices is the impulse to dilute embodiment to information or to a code to be cracked, mastered and engineered.

Embodiment has, however, proven itself to be a more complex and diverse concept that cannot so easily be engineered into abstraction. Embodiment has a remainder, an aspect that is in excess of technological interference. It has also been shown to be the resilient or non-negotiable "thing" that is the prerequisite for any meaningful form of existence. Quite literally without a body no-one is identifiable, no agency and no place exist – a reality that is cleverly elapsed by cyber-theorists' vision of complete disembodiment.

In order to establish embodiment as the invariable prerequisite for human existence, this study has explored four body types as they interact with new technologies. The four body types have been explored from a cyberfeminist framework that takes a responsible and challenging stand towards new technologies. By utilising four body types a richer and varied interpretation of the meeting between bodies and new technologies is made possible. It also allowed for a more complex reading of new technologies by showing how different types of new technologies create alternating expectations concerning embodiment. The impact on embodiment resulting from virtual reality is thus quite different from cosmetic surgery, just as physically changing sex is dissimilar in its embodied effects to online gender-swapping. Various technologies impact differently on embodiment and therefore, they need to be treated differently, as far as possible, in order to avoid a hegemonic argument.

Thus, the four body types selected have provided a varied and enriched reading of embodiment and new technologies. The first type is the techno-transcended body type. Associated on the semiotic square with the concepts of **absence** and **randomness** this body type has a great deal in common with older Enlightenment projects, which similarly distrusted the corporeal sphere. The techno-transcended body is perhaps best illustrated in the film *The Matrix* (1999), which

reveals the sensory world, to which the body belongs, as codes that can be manipulated and controlled by the power of the mind. Embodiment as constructed in the techno-transcendent version is a technicality that can be overcome once enough information becomes available that will ultimately make it possible to transgress the material realm.

Obviously, this body-technology configuration does not lend itself to a constructive cyberfeminist engagement with new technologies, since it wants to rid itself of the bodily sphere and all its implications. Read in strong feminist terms the techno-transcended body type wants to rid itself of the female and the feminine in its disembodied endeavours that relies solely on the masculinised mind's abilities. It is not surprising, then, that the techno-transcended body type's impact on the constructions of embodiment is critically viewed and treated with intellectual suspicion from a cyberfeminist position.

In the second identified body type, referred to as the techno-enhanced body type, materiality still plays a role, although this time the corporeal is under continual construction. This body type is associated with the concepts **absence** and **pattern** on the semiotic square. This indicates that the techno-enhanced body type also attempts to transgress the physical during its interactions with new technologies, but this time through a constant process of augmentation and enhancement. In other words, a body has remained, which forms the **pattern**, although that body needs to be improved. It is for this reason that the techno-enhanced body is best described by means of prosthetics, which enhances humanities' potential by seemingly overcoming the frailty of the human body.

In the case of the techno-enhanced body type, a cyberfeminist reading would implore that enhancing and improving the body are not problematic in itself. Since the cyberfeminist position does not favour a technologically innocent body, but accepts that bodies and technologies meet constantly with impetuous results. It is only, however, when these technological augmentations tend to supplement embodiment beyond existence, or beyond repair, that they become contentious. There are definite limits to how far the body can be enhanced and the body cannot be enhanced beyond itself. Once again, technological intervention collides with the embodied possibilities of the organism. Accordingly, it has been shown that the physical remainder cannot simply be negotiated to disappear or not to matter any longer. Therefore, embodiment remains the precondition for technological intervention. If there were no bodies what would technologies enhance?

In the penultimate body type, the so-called marked body, technology's intervention is focussed on the physical changing of sex (transsexuality) and the virtual swapping of gender online (transgenderism). These two seemingly opposing categories are closely interlinked in the manner in which they privilege technological transcendence of either sex (in the case of transsexuality) or gender (in the case of transgenderism). Especially relevant to my analysis is how new technologies mark bodies as being sexed and gendered or belonging to a specific sex and/or gender. It is argued that although the body is **present**, it is a marked body that may seemingly take on different (or any?) sexes and genders at **random** that is present. Both sex and gender are treated as malleable constructions – as is the body. I do not wish to argue that neither sex nor gender is a construction, or that they are pre-ontological given entities that cannot change or be permuted, but rather to emphasise that, in order to become relevant, each changed sex and swapped gender need to be embodied from somewhere to be meaningful.

The position that cyberfeminism takes in relation to the marked body is, therefore, a cautious one, for how does one responsibly change sex or swap gender without considering the body and all that it implies as immaterial? Changing one's sex is not problematic in itself, as long as the change does not imply that the material body with its "erroneous" sex is mere clay in the hands of the "correctly" gendered and disembodied subject. The same applies to virtual gender swapping, which may provide wonderful opportunities for people to experiment with cross-gender roles. As long as the gender swapping does not suggest that we can escape our sexed/gendered embodiments completely, it may be a fruitful experiment. The gender that we portray online is, nevertheless, always in some way, positively or negatively, informed by the body which launches it.

Finally, in the search for a responsible and creative merger between bodies and technologies, the cyborg body has been explored. The cyborg body is described as the body that is **present** and follows a **pattern** in its being present. The cyborg body does not necessarily indicate that the meeting between bodies and technologies is a joyous and harmonious affair. In fact, the meeting can be painful and even detrimental to the bio-organism. What the cyborg body does, however, suggest is that no bodies are pure and untouched by technologies. Our bodies are permeated by new technologies, but this does not result in the annihilation of bio-bodies. This means that bodies need to be negotiated in the correspondence between materiality and information, organism and machine.

Cyborgs are embodied creatures and how they are embodied plays a distinct part in their political intentions and interventions. This indicates that cyborgs are not neutral technological machines, but the way they are positioned *vis-à-vis* the discourse of embodiment also immediately situate them in a specific gendered relation towards embodiment. There are no gender-neutral cyborgs, just as there are no completely disembodied cyborgs.

Naturally, the cyborg body is the embodied position most preferred from a cyberfeminist position, since it allows for a responsible and creative embodied position. The cyborg is not fearful of new technologies, but neither does it fatally merge with new technologies. It is a new creature negotiated between that which cannot ultimately be altered, namely the body and that which is extremely changeable, namely information technologies. Between these oppositions of fact and fiction the cyborg is being embodied.

I want to conclude this study by directing the discussion to the factual and the local, and specifically to the continent from which I am "speaking" and where I am concretely embodied. I want, therefore, to tie up my arguments about gendered bodies and new technologies by returning to the locality and specificity from which I am writing, namely the continent of Africa and, to be more specific, sub-Saharan Africa.

Sub-Saharan Africa is a region that is rich in tradition and, importantly in embodied traditions. It is likewise a place where embodiment is respected and treated with dignity, as is borne out by rites and rituals of the region. Even so, it is also a place torn apart by famine, disease, poverty, war, and racial, class, gender and sexual conflicts. It is thus a locus or topos where embodiment cannot easily be disregarded or transgressed. It is very difficult to ignore the plights of embodiment, such as pain and hunger, especially when human existence has been reduced to these basic issues of endurance. Sub-Saharan Africa is thus a region where privileged dreams of techno-transcendence, with their quick and clean disembodied "fixes", do not play a significant role. In fact, as ethnic lines are drawn and the class divides are becoming canyons, it is also sadly a place that has the potential to become a mere reservoir of body parts (recalling Heidegger's *Bestand*/standing reserve) as the trade in body ware increases.

While techno-enlightened crusaders of the North build laboratories for immortality, where genetic manipulation, cloning and increasingly body-invasive technologies are developed and perfected, in vivid contrast millions of Africans are estimated to die before 2005 from AIDS alone. In these parts, embodiment cannot

be reduced to a designer item awaiting the latest techno-enhancement or prosthetic fitting. Embodiment remains a site that is to be borne and lived through, as well as being the emblem of human mortality. And even though mortality is treated by cyber-theorists such as Hans Moravec and Timothy Leary as an abstract riddle (due to a lack of information) in need of a clever solution, it remains the non-negotiable premise on which human existence is based.

Sub-Saharan bodies are the most likely embodiments to be disregarded and disposed of by old and new Enlightenment dreams of techno-transcendence as figured in mind uploading, head transplants and other complete technological substitutions for the body. They are also the bodies most unlikely to receive techno-enhancement or to be treated as designer items on the consumer horizon. Neither are these embodiments anticipating sexual and gender realignment, for the lived and situated bodies in these parts cannot be reduced to mere wearable gendered items. These are examples of lived bodies that, in their frail situatedness, undeniable locality, specificity and materiality, need to be negotiated and taken account of in both the theory and practice of new technologies. Cyberfeminism faces the political challenge of not only dismantling the debilitating myths that align men/masculinity and technology, but also of opening access to women and other gender outlaws.

It is my contention that a meaningful posthuman existence, as it merges and morphs with new technologies, depends mainly on how embodiment is organised in that collision. And although embodiment is virtual, for embodiment is a mediated activity that mediates the clusters of "mind" and "body", inside and outside, the discursive and the material, it is a necessary virtuality. Our bodies are virtually ours, they are *flesh*, the *sensible transcendent* that cannot be owned (as one might "have" a body), but are rather lived (because we are bodies) through mediated body images and other "languages". This does not mean that the "realness" and materiality of the body are denied. Mortality testifies to that insurmountable fact: nevertheless, we do not have direct access to our bodies, except by means of mediating languages.

This study has shown the misguided premises on which instrumentalist theories and practices of embodiment such as techno-transcendence, techno-enhancement and marking the body differently are based. It is due to the luxury of being a body (embodied) that these theories and practices can imagine themselves as disembodied or construct embodiment as a malleable tool. And, even though embodiment is not predetermined, but pliable and adaptable, there are limits to embodiment's plasticity. Embodiment – that there is a body – forms the necessary

and non-negotiable supplement of disembodied flights of fancy. Without embodiment there can be no cyberspace or virtual spectres flying on the screen.

Women – understood in the broadest sense – were traditionally "burdened" with the temporality and changeability of bodies, and this now suits them well in the virtual age where technologies and bodies are merging into cyborgs. As subterfuge posthuman agencies, who have never been fully hu(man), but who have mimed their humanity, women's bodies are well positioned to become "hopeful monsters". And it is from this monstrous site that embodiment can responsibly and playfully be negotiated, morphing new facts and fantasies for gendered bodies' encounters with new technologies.

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