Biotech industries currently expanding globally, but especially in the US, have opened new frontiers for colonising bodies – and commodifying and patenting life – at the molecular and genetic level. Gamete harvesting and freezing, In Vitro Fertilisation (IVF), Intra Cytoplasmic Sperm Injection (ICSI), pre-implantation embryo screening and genetic manipulation of embryos are just some of the new techniques transcending previous limits of reproductive intervention that have profound repercussions for the human genetic heritage. Under the guise of optimising reproduction – and ‘improving’ human beings – ART (Assisted Reproductive Technologies) are rapidly being naturalised in everyday life. As feminist theorists have pointed out, the new biotech reproductive order has territorialised the female body as a pre-eminent laboratory and tissue mine for a lucrative medical/pharmaceutical industry.\(^1\)

The women’s liberation movement of the early 70s formulated a politics of women’s autonomy and control over their sexuality and reproduction that included the right to safe contraception and abortion. By the late 80s, after almost two decades of abortion wars, the politics of autonomy and liberation had been transformed into a rhetoric of ‘choice’ typified by the slogan “A woman’s right to choose”, which became identified with the pro-choice movement. Since then, the rhetoric of ‘choice’ has become firmly associated with reproductive liberalism.

Using strategic marketing, a seductive consumer industry intent on normalising ART in everyday life has appropriated the rhetoric of ‘choice’ in order to appeal to a broad constituency of progressive consumers ready to produce “children of choice”. Marketers of new reprogenetic technologies (ReproTech) were quick to capture this rhetorical territory, cashing in on the expectation that it would appeal to liberal, educated, middle-class consumers schooled by feminist activism to be proactive in personal health care. ART industries, principally driven by profit making motives and embodying eugenic ideologies, have recuperated the politicised rhetoric of ‘choice’ by concealing a deeply embedded conflict between the macro-politics of rationalised reproduction in late capital and a micro-politics that capitalises on individual desires.

Despite the highly invasive and risky body processes of ART, many feminists have explicitly welcomed the development of ReproTech for its promises of an expanded range of reproductive choices for women. Others have recognised that ReproTech represents not only an ultimate form of body colonisation, but that its practices and ideologies reinforce patriarchal systems of scientific and medical authority, control and rationalisation of reproduction – contradicting radical feminist philosophies of women’s autonomy.

“A woman’s right to choose”
Appropriation of radical feminist rhetoric and practices by liberals and conservatives alike became rampant in the abortion movement. In the 70s, the nationally mobilised Feminist Women’s Health Movement (FWHM) developed clinics that offered a wide array of feminist health care services to women. Most controversial were their abortion services, especially the technique of menstrual extraction pioneered by the Los Angeles Feminist Women’s Health Centre. This vacuum suction procedure could be done by lay practitioners and was often used as a form of early abortion. Abortion services made feminist health clinics the target of vicious attacks from anti-abortion and right-to-life fundamentalist groups like Operation Rescue. These groups appropriated many of their confrontational direct action occupation and blockage practices, as well as their spectacular visual tactics – such as their use of the foetus – from leftist activist movements including feminism. ‘Pro-choice’, ‘anti-choice’ and ‘pro-life’ are rhetorics that now signify a divisive, often anti-feminist partisanship. Diverse and bitterly contradictory feminist positions on abortion have been subsumed under the liberal rhetoric of ‘choice’. Abortion became such a loaded political and cultural issue that the medical profession tried very hard to wash its hands of it as much as possible. Clearly, abortion could not be made to suit capitalist ends. No sexy consumer market of clinics and products could be developed around the ‘choice’ of abortion, but the rhetoric was perfect for the purposes of the new infertility industry that promises to be a lucrative new flesh frontier – some have estimated the potential IVF market alone at 40-50 million dollars a year. It is time to question the capitalist marketing strategies of ReproTech and the imbalance of macro and micro-politics masked by the stolen rhetoric of ‘choice’.

Models of Choice
Many feminists and bio-ethicists have argued that despite their risks the new reproductive technologies represent greater reproductive choices for women (and men) – most notorious among the latter is John A. Robertson whose passionate advocacy of “procreative liberty” concludes: “There is no stopping the desire for greater control of the reproductive process. There is no better alternative than leaving procreative decisions to the individuals whose procreative desires are most directly involved”.2 Such arguments appeal to the deepest democratic beliefs of Americans, but they overlook the way entrepreneurial marketers and fertility services providers are exploiting the rhetoric of choice to naturalise ART. Their clinic brochures, fertility advertisements and web pages pitch the many reproductive choices and techniques available to satisfy the desires of different sectors of the population – including people who are not biologically infertile. Rather than selling ART principally as a set of biomedical procedures designed to cure or circumvent severe cases of infertility, ReproTech marketers highlight its many benefits for those who want the control made possible by scientifically managed reproduction. ART is represented as a means to realise lifestyle choices and support career goals – key factors in reifying its use in everyday life.

For example, an advertisement from the Genetics and IVF Institute offers a “large choice of fully evaluated and screened donors who are immediately accessible”, and a “revolutionary technique enabling men with long-term vasectomies to father children”.3 Though never mentioning any of the risks involved, such ads imply that almost anyone (who can afford it) can ‘make’ a baby with purchased donor eggs and/or sperm, and the use of

‘Pro-choice’, ‘anti-choice’, ‘pro-life’
a hired gestational womb. ART would therefore seem to be the ideal choice for people living in ‘non-traditional family’ configurations, which group includes single women or men, older couples, affinity groups, lesbians and gays. Thanks to entrepreneurship – although most fertility books are aimed squarely at married couples – there is a thriving niche market of reproductive choices. There seems to be a specialised clinic for almost every group; for example, there are feminist and gay sperm banks and insemination clinics, as well as those that specialise in male infertility problems, or treating older women. ART is also sold as the reproductive solution for couples or singles who have pursued career goals and postponed childbearing. Healthy people considered at risk for certain diseases, or exposed to environmental hazards at work, can choose to use ART procedures such as gamete banking before they are ready to reproduce as insurance against future infertility.

ART procedures promote new eugenic consciousness. Marketers sell IVF as a family building technology; infertile couples are encouraged to bypass adoption and instead ‘make’ a child of their ‘own’. IVF is a eugenic procedure because it involves screening and selection for ‘fit’ gametes and embryos. Currently between 60-70% of US pregnancies are already being screened using methods such as amniocentesis and ultrasound. The discovery of individual gene functions through the sequencing of the human Genome will facilitate the routine use of embryonic genetic screening and manipulation. Parental ‘choice’ now encompasses so much more than whether to have children, or not. Consumers can purchase a wide selection of pre-screened and tested human gametes that come with detailed profiles of donor characteristics promising improved success and health for offspring. IVF produces excess embryos, and multiple embryos are usually inserted to ensure implantation of at least one. By using the technologies of pre-implantation embryo screening and selective reduction, parents can select precisely which embryo is to be gestated. Selective reduction – a euphemism for abortion – is justified by the (eugenic) argument that it is the necessary means by which only ‘fit’ embryos are selected to be carried to full term. Here the rhetoric of choice is firmly bound to an individualistic micro-politics of manipulating consumer desire. (Note: we are not making an argument for or against abortion here, but wish to note how the rhetoric of choice is used to make controversial issues acceptable.)

The liberal rhetoric of ‘choice’ has long been used in the mass media to imply that women can ‘have it all’ no matter what the personal or social costs. Infertility discourse similarly promotes as a given the idea that everyone has a right to choose to have a child using whatever methods s/he can afford (procreative liberty). ART can be used to tame recalcitrant bodies. The titles of infertility books clearly tell the story of the enterprise of conquering (in)fertility, for example: Overcoming Infertility; How to Get Pregnant with the New Technology; RESOLVE Infertility; Taking Charge of Infertility. The imperatives to “take charge” and “overcome” urge the individual woman to take control of her body – with the help of her doctors and technology, of course. What she learns by reading further is that ART requires her to surrender her body to disciplinary medical manipulation, surveillance and invasion. While clients are urged to shop around for clinics with the best specialists and success rates for particular procedures, they are given virtually no tools to assess the risks associated with ART. Instead, ART brochures and books highlight the hundreds of healthy babies that have been born using IVF. The models of ‘choice’ offered by ART promote nei-
ther anti-authoritarian social and political values, nor do they liberate women from their biology. Rather, they reify cultural values of compulsory motherhood and represent an intensified control of women's bodies. In this context, the notion of choice is appropriated to promote corporate economic interests rather than personal autonomy.

**Reproduction and Feminist Utopian Thought**

Understandably, feminist analyses or critiques of ReproTech are rarely mentioned in mainstream ART literature. Feminist responses to assisted reproduction are too complex to be summarised here. However, contradictory strands of utopian feminist thinking regarding reproduction and maternity are well illustrated by two very different texts; the first, the extraordinary feminist utopian novel *Herland* (1915) written by the prominent socialist feminist Charlotte Perkins Gilman during the height of the first wave of feminist suffrage struggle; the second, *The Dialectic of Sex* (1969) by Shulamith Firestone, a fiery socialist feminist tract that inspired women during second-wave feminism.

Gilman's *Herland* presents a country populated solely by women. Over the course of several thousand years they have created a rational, stable, peaceful, prosperous economy and social order - including voluntary eugenic reproductive practices - based on exalting the social principle of Motherhood. The grand task of Herlanders is "Making People" in every sense of the word. There is no individual ownership of children. All the women act as nurturing and social mothers to all the children, who are all girls. There is no sexual intercourse and no "sex feeling". To solve problems of population control each adult woman is allowed to bear only one child. When born, this child – who is engendered by the intense inner desire and preparation of the mother-to-be, becomes part of the community, not part of a nuclear family. In Herland women can only get pregnant because of their great desire for a child. For the good of the community, some women voluntarily defer or forgo motherhood, satisfying their desire for it by tending the communities' babies. In Herland hundreds of years of rational, diligent attention to the problems of weeding out undesirable characteristics and choosing good characteristics by voluntary eugenics have paid off in a population that is strong, healthy, beautiful and multi-talented.

Gilman was simultaneously a radical socialist feminist and a believer in “positive eugenics”. Her writings call for women to be liberated from the biological burdens of compulsory reproduction, motherhood and domestic work. Gilman believed in ‘female values’ of cooperation rather than competition, sharing skills and property and the labour of raising children. Though she welcomes technology to liberate women from backbreaking labour, in *Herland* Gilman solves the problems of fertility and reproduction with social engineering and the development of a strangely mythic reproductive biology - a kind of parthenogenesis, like that practiced by creation Goddesses. In her utopia, reproductive self-repression for the good of the community takes the place of autonomy, as the solution to overcoming the constraints of biology and sexual reproduction.

In *The Dialectic of Sex*, on the other hand, Shulamith Firestone is adamant that technology - and technology alone - will provide human mastery of matter and free women from the tyranny of biology: “The biological family unit has always oppressed women and children, but now, for the first time in history, technology has created real preconditions for
overthrowing these oppressive ‘natural’ conditions, along with their cultural reinforce-
ments. Only women’s technological control of their biology will change the patriarchal bal-
ance of power. Firestone was writing in the late 60s, a time when research on reproductive
technologies was developing rapidly. Astoundingly, by the mid-80s many of the reproduc-
tive techniques she anticipated were already in place. Firestone speculates that the inven-
tion of an artificial womb will solve the vexing problem that women are still the sole bearers
of children; pending this, she suggests that women pay other women as surrogate
mothers. Concluding her feminist socialist analysis of the biological and material causes of
women’s oppression, Firestone calls for a feminist revolution based on the creation of a
humanly controlled ecological balance using cybernetic feedback systems and artificial
reproductive technologies. Today, though the technologically based systems she advocated
are highly developed, the feminist ‘revolution’ is bogged down in conflicted debates about
the impact and consequences (for women) of the purportedly liberating new technologies.
In different ways, both Gilman and Firestone pin their utopian dreams on women freeing
themselves from traditional (heterosexual) and ‘natural’ biological reproductive processes.
However, neither Gilman’s eugenicism nor Firestone’s techno-utopianism (which is also
racist) is defensible, since both depend on repressive or rationalised bodily and social
processes, anathema to the goals of feminist autonomy.

Individual Desire and Reproduction in Late Capital
From the mid-60s onwards, women’s liberation, widening use of the birth control pill and the
availability of abortion began to give large numbers of women the experience of separating
sex from reproduction. Feminist health and abortion services supported a politics of female
autonomy and helped change women’s attitudes toward childbearing and motherhood.
Books like Adrienne Rich’s Of Woman Born, and Nancy Chodorow’s The Reproduction of
Mothering, provided generative theoretical studies of female ambivalence toward societies’
constructions of reproductive functions and the institution of compulsory maternity. Cru-
ically, they questioned and challenged the assumption that the desire to bear children is a
‘natural’ and innate one common to all women.

The following three decades saw significant changes in women’s reproductive patterns
and choices. Many women began to defer childbearing to pursue higher education and
careers. Many opted for single lifestyles, childfree marriages, lesbian relationships (with or
without children), or experimented with collective household and child sharing arrange-
ments. The entrepreneurs of new ReproTech took advantage of these new cultural and
social patterns. Deferring childbearing lowered women’s fertility rates, and ART was ready
to step into the breach with techniques of ovarian hormone stimulation, IVF procedures and
egg donation. During this time new definitions of infertility were established by medical
authorities, and ‘infertiles’ – supporting a growing culture of infertility – demanded that it be
recognised as a disease or disability whose treatment should be covered by insurance. (At
present infertility treatments and ART are financed almost entirely by the private monies of
mostly middle-class and affluent users, who often mortgage houses, sell stocks or raise
bank loans to pay for treatments.) Fertility doctors have supported this move; for example,
the American Society of Reproductive Medicine (ASRM) and RESOLVE (an infertility support
group) have joined in endorsing the FAITH (Fair Access to Infertility Treatment and Hope) Senate Act that calls for insurance to pay for up to four IVF treatment cycles and promises “minimal impact on the cost of health insurance”.

While such legislation may seem like a progressive move to make ART widely accessible to all economic classes, it does not acknowledge that it still won’t benefit the majority of Americans who have no health insurance at all.

American commodity desire is immediate, and is fed by the belief that science can provide technological solutions for every biological problem. The still highly experimental technologies of assisted ReproTech have a low success rate and their long-term safety and biological and genetic risks have not begun to be adequately assessed or studied. But ART is being driven by the twin engines of (manufactured) consumer desire for new technologies and the enormous profits to be made off the infertility business. At the macro level of politics the function of reproduction in late capital is to produce compliant workers and successful consumers to serve and feed a global commodity economy. Corporate biotech entrepreneurs must find ways to divert reproductive desire and autonomy to serve market imperatives to colonise and patent genes, germ lines and life processes. Rationalised and optimised methods of new eugenic reproduction are represented as far more efficient than the random chance method of sexual intercourse, because they can be technologically controlled and promise improved human characteristics and successful offspring. Even though the success rate of ART (between 15-22.5% of IVF cycles result in take-home babies) is still very low, its spectacle is one of scientific authority and control. The ideology and practice of new eugenic principles that is part of the macro discourse of ART has been masked by the (micro) discourse of individual choice. Many sperm banks, for example, accept only certain categories of donors – Nobel Prize winners, successful professionals, heterosexuals, non-artists, athletes – and all require extensive genetic, medical and racial background profiling. Preferred and highly-paid egg donors must generally be young, intelligent, college educated, from selected ethnic and racial backgrounds, healthy, good-looking and able to pass a battery of psychological tests.

**Radical Ideas and Normalised/Naturalised Process**

In order to be territorialised by capital, radical ideas and processes must be normalised/naturalised in everyday life, and their dangers rewritten as benefits. This is done through literature, art and mass media representations. Religious indoctrination works this way, as does political propaganda. Science too relies on these instruments to make it appear rational, humanistic and necessary, rather than outlandish and threatening. In the consumer culture of late capital, public acceptance of formerly frightening or taboo scientific ideas is managed through carefully orchestrated propaganda campaigns that domesticate the previously unthinkable with promissory rhetorics of ‘improvement’ and ‘choice’, and with seductively aestheticised images of scientific processes, products and services.

The often extreme biotechnological procedures of ART have been naturalised in this way within a few short years. Starting with the birth of Louise Brown, the first IVF baby, in 1978 in Britain, the new reproductive technologies were at first both sensationalised and glorified in the media, often by the use of apocalyptic language, or dire warnings about the
monstrous experiments scientists were conducting in their labs. These media reports played to the fears and fantasies of people worried about becoming guinea pigs in an authoritarian scheme to remake humankind. The media revisited all the classic archetypes and eugenic myths from *Frankenstein* to *Brave New World*. The icon of the baby in the bottle – literally *in vitro*, in the glass – was updated with pictures of doctors mixing gametes in petri dishes, and hundreds of frozen embryos crammed into cryotanks.7

To counter much negative publicity and push their business, ART doctors and entrepreneurs entered the battle of representation, writing their own books and launching web sites that present reassuring images, human interest stories, and descriptions of ART in matter-of-fact and easily assimilated ways. For example, detailed diagrammes of the interior of the female pelvis and reproductive organs are often shown with a vision machine or surgical instrument in place. These cyborgian images help to normalise the idea of technological intervention into the reproductive body. The literature is usually directed at the (white) educated, middle-class, professional couple, or career single; it is reassuringly scientific (i.e. it gives assurances that ART is cutting edge medicine, not stitching together corpses), affirmative and upbeat. It represents ART as an exciting creative venture any couple could undertake with their doctor.

ART literature also paints a picture of how clients can integrate these processes into their everyday lives (i.e. “our clinics open early and close late so you can come in for your tests every day”), and helps them work out payment plans. Crucially, this literature pitches its utopian and promissory rhetoric in the non-sensationalised, calmly authoritative voice of the expert: “I helped to create the United States’ first pregnancy produced from a frozen embryo”.8 Disguised as consumer advice, this approach benefits capital and reinforces scientific authority.

Consumer persuasion also works by aestheticising scientific processes. An iconic representation of ART that has recently been circulated widely is a colourised microphotograph of ICSI (Intra Cytoplasmic Sperm Injection), a delicately precise micro manipulation process in which a single carefully screened, washed and capacitated sperm is inserted through the zona pellucida of a selected egg by means of a hollow glass needle. This is an image of wilful creation every bit as compelling as Michelangelo’s iconic Sistine Chapel image of God creating Adam. It is simultaneously the ultimate image of scientific control and triumph, and a secular visualisation of miraculous creation. Most viewers have no scientific understanding of the precise biotechnological process this image demonstrates, but the ideological reading is clear: technological control over life processes. Further, it is an image of (eugenic) ‘choice’ that brings one superior egg and one fit sperm together in a technologically mediated act of fertilisation. Without needing to spell it out directly, the ICSI picture has become an unparalleled poster child for the new eugenic processes of genetic screening and manipulation. Such consumer friendly representations have been effective in helping to naturalise the often frightening and extreme processes of ART in everyday life.

The abstract beauty of the aestheticised scientific ICSI image is made possible by sophisticated new visualisation instruments including sonography, hysteroscopy, laparoscopy, microphotography, tunnelling microscopy, PET and MRI. After all, the breakthrough step of being able to ‘see’ the foetus in the womb opened the way for it to become a trag-
ic icon in the abortion battles. Both ART and abortion foreground the foetus or take-home baby, not the mother or the woman. Since the foetus icon was contested territory already claimed by anti-abortion crusaders, ART adopted the image of the radiant biotech baby – the child of choice. After all, what ART was promising was a live baby, not just an unformed foetus. (Hard statistics of ART success are measured in ‘take-home-babies’ not pregnancies). These iconic baby pictures have helped to domesticate strange and threatening technologies that were previously unthinkable.

Conclusion: New Practices, New Rhetorics
The micro and macro-politics of the public discourses of ART are unbalanced; currently the forces of market capitalism have won the field with the consumer friendly appropriated rhetoric of ‘choice’. Research in assisted ReproTech is still advancing rapidly, and increasingly there are contestatory interests at stake. Meanwhile, growing bodies of feminist cultural theory and literature, as well as new media practices and art works, play with concepts of the post-human cyborg body and recombinations of women and machines. The 80s saw strong feminist activism, both in the US and internationally by groups such as FINRRAGE (Feminist International Network of Resistance to Reproductive and Genetic Engineering, founded in 1984), that critiqued and opposed new ReproTech using many classic feminist arguments and tactics. But currently there is a wide gap between liberal and radical feminist theory, activism and practice in the domains of biotech and ART. An important goal for new (cyber)feminist artists working with these issues must be to expose the ways in which the marketing of biomedical technologies promotes the colonising interests of late capital, rather than the critical goal of women’s autonomy. The rhetoric of ‘choice’ is too compromised to be useful for feminism any more. Instead, a new critical rhetoric must be introduced to describe changed conditions and new practices.

The challenge for feminist activists/artists now is to create strategies that counter corporate biotech’s increasing pressure to control the female body and reproductive processes. Recent techniques such as harvesting live foetal stem cells for medical research, suggest the urgent need for new ways to assess the threats to women’s health and autonomy posed by the rapid naturalisation and deployment of such technologies. Since most women do not understand many of the complex implications and consequences of new ReproTech, it is necessary that feminists begin to generate autonomous (free from state, corporate or entrepreneurial control) cross-cultural, decentralised, biomedical sex and reproduction education projects transnationally. In Women as Wombs, radical feminist Janice Raymond suggests that science has become overly dependent on developing new technologies; she calls for a new feminist reproductive science that doesn’t hinge on often risky, high-tech approaches that are financially unavailable to most women anyway.9 (Feminists should not be afraid of critiquing the ways in which intensified biotechnological intervention is increasingly offered as the solution to every problem from infertility to world hunger). Such a science could recombine diverse sources of knowledge to create new sexual and reproductive options that take into account women’s differing economic, social and political conditions and desires. New feminist reproductive science would have to devise flexible information and distribution mechanisms, perhaps based on a combination of electronic networking and
performative practices. As the autonomous method of menstrual extraction practiced by lay people (bypassing the medical authority system) proved, new approaches to reproductive science can enlist feminist activists from diverse backgrounds to act as trained, non-specialist practitioners teaching methods that foster principles of autonomy and physical and social well-being.

subRosa has begun to activate a resistant cultural practice based on the goals discussed above. Initially, we have focussed on aspects of ART that have largely been silenced in public discourse. We hope to disrupt the current ‘choice’ discourse of ART; to initiate an interventionist debate and practice among diverse non-specialist audiences; and to further probe and expose biotechnology’s far-reaching repercussions for women’s health and bodily autonomy worldwide. subRosa projects to date are: 1. Does She or Doesn’t She, SmartMom and Vulva De/Reconstructa which expose gender differences in ART practices, and highlight the effects of high-tech body invasion on women’s health and bodily autonomy; 2. Expo EmmaGenics and The Economies of ART which question and challenge the ways in which market forces drive the research, development and deployment of ReproTech’s products and ‘services’ through an analysis of the economies of ART; and 3. Sex and Gender Education in the Biotech Century which interrogates the intersecting ideologies and practices that serve to normalise and naturalise ART, exposing their historical connections to eugenics and colonial ideologies.

This essay has been previously published in: Richard, Birgit and Sven Thuen (eds) Kunstforum “Klonen und Mutante” (2001) and subRosa Domain Errors. Cyberfeminist Practices (2002).

NOTES
1. For a bibliography on women and biotech see www.cyberfeminism.net
6. See http://www.resolve.org/RELEASE_FaithBill.htm