

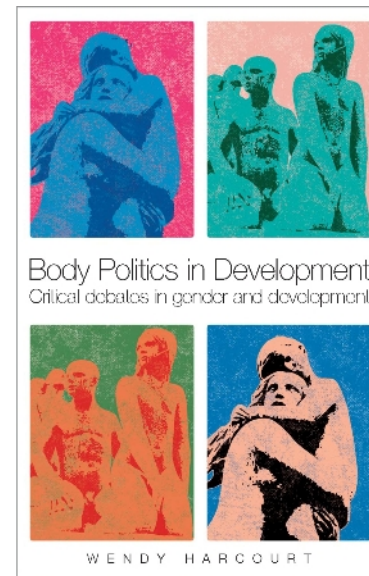
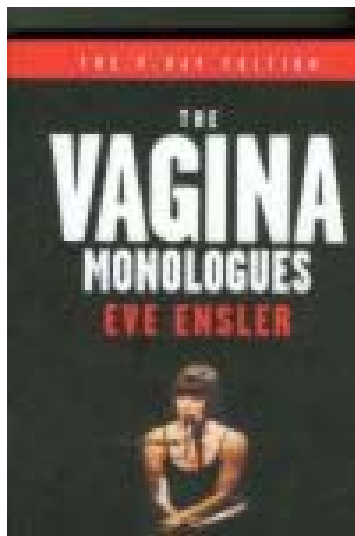
# Body politics: technoscience, gender and development

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# Body Politics in Development, Zed Books, London, 2009

Working on embodiment inside and outside of  
mainstream gender and development



# Technobodies

Critical importance of understanding technology, science and biotechnology for gender and development.

# Beginning with concerns

Technologies around the body all seem very new, very specialized and moving very fast it seems important to find the right questions to make sense of all the information that pours out on human biotechnologies, on nanotechnologies genomes and artificial reproductive technologies.

# And fears around technoscience

Fears around high tech, high investment and high costs to peoples' lives

Are the fears around the food we eat, the medicine we buy, the ethical uses of stem cells, foetal research and the invasion of our bodies valid?

# Donna Haraway

Haraway is a professor at the University of California, Santa Cruz, is a creative and brilliant writer who inspires many feminists across the fields of biology, life science, human biotechnologies, social justice and feminist activism

In modern western technoscience biology and genetics construct the modern concept of nature through an instrumentalisation of life via different cultural practices.

Haraway deconstructs our common (western) understanding of science and technologies so that we do not see them as 'above' politics, economics and gender relations but rather part of them.

# The seed and the gene as constructions of meaning

The integration of informatics and biology are connecting bodies (ours and other bodies) which leads to reworkings of nature, race, species, family, nation, gender, individual corporealization as well as genetics, biotechnology and biodiversity.

# Technoscience

A system to be managed, a field of operations constituted by scientist, artists, cartoonists, community activists, mothers, anthropologists, fathers, publishers, engineers, legislators, ethicists, industrialists, bankers, doctors, genetic counselors, judges, insurers, priests and all their relatives.

# Corporealization

Corporealization is about the interactions of humans and nonhumans in the work processes of technoscience which involve not only laboratories and computers but also scientific and government institutions, types of technical practices, legal structures, different forms of labour, economic and political narratives.

Cells, organisms and genes are not ‘discovered’ but are integrated into technoscience in the process of corporealization. The gene signifies an important node of action where many actors meet.

# The floating foetus and the blue Earth

- The Human Genome Project biology's equivalent to 'putting a man on the moon'.
- Commercializing future life forms and ways of life for humans and nonhumans.
- The foetus with the planet Earth represent the two 'seed worlds in technoscience'
- They signify the natural and embodied over and against the constructed and the disembodied, we feel we can touch the wet blue earth, the soft fleshy child.

Some of the questions that I ask as a feminist of technoscience is what is meant by choice, agency, life and creativity? What is at stake here, and for whom? Who and what are human and nonhuman centers of action? Whose story is this? Who cares? What are the conditions of effective reproductive freedom?

# **What kinds of reproductive freedoms does technoscience offer?**

There are huge inequalities built into technoscience, whereas millions are spent in the Global North on artificial reproduction technologies, literally hundreds of millions of children experience serious deprivation including millions of poor children in the US.

How to find knowledge, freedom and justice in a world of consequential facts drawn up by technoscience requires that we understand in what ways science overlaps with the technical and the political.

We need to ‘interrogate critical silences’ and try to understand the reasons why questions seem ridiculous in the face of what seems neutral and rational.

The modern day images of the rising temperatures of a denuded ravaged Earth, the computerized image of the human genome, the building of life itself from cloned cells of the embryo are becoming part of our changing vision of nature, the environment and the knowledge of our own bodies.

# What to ask of technoscience

- How much money is poured into the research?
- How are decisions made?
- How does the use of resulting technologies determine many areas of our lives determine the ‘facts of life’?
- How do we see our bodies, the food we eat, the medicine we take, our reproductive lives, our overall health and our biosecurity?

- Technoscience is not happening in some objective, politically free vacuum.
- Powerful part of modernity and of what ‘economic progress’ venture capital has bankrolled the commercial biotech boom in the US and large pharmaceutical companies have developed a range of relationships with biotech firms.
- Interconnections between national government interests in the US, Europe, Canada, India, Korea, Singapore, South Africa, Brazil, Australia and the global scientific and business community make it a truly transnational endeavour.

# For example Synthetic Biology

Synthetic biology scientists and the companies they start or which fund their research (backed by government and venture capital) aim to commercialize new biological parts, devices and systems that do not exist in the natural world.

J. Craig Venter's company Synthetic Genomics Inc. visible and well funded project to build an artificial chromosome (receiving half its funding from the agribusiness giant Savia)

The field of synthetic biology raises considerable concern about biosecurity. For example if synthesized microbes can exchange genetic material with soil and gut bacteria they could at some time in the future cause genetic pollution and alter the functioning and behaviour of natural microbial ecosystems in unforeseen and unpredictable ways.

# **Bio medical reproductive technologies**

While new areas such as synthetic biology open up whole new unforeseen landscapes of concern, a number of existing technologies, women's bodies are deeply implicated in molecular biology and genetic technologies with Assisted Reproductive Technologies (ART) raising new legal, ethical and policy issues around reproduction

# Some questions

Do ART increase or decrease reproductive choices and control of individuals? Who do they benefit?

Do they devalue people with disabilities?

Do they exploit young women and economically vulnerable women?

Do they increase the commodification of women's reproductive capacity and reproductive tissues?

Is it possible to draw the line between medical rather than economic purposes of reproductive technologies?

Is it possible to ensure industrial accountability?

# Social justice implications

Growing reproductive tourism.

US citizens go to India, Thailand and China to find surrogate mothers. British citizens go to Crete, Bulgaria, Romania and Spain to buy eggs where economically poor women are paid almost twice their average monthly salary. Such women are typically paid between 200 to 300 US dollars per cycle, whereas clients are charged around 15,000 US dollars. South Africa is another IVF tourist destinations as well as an organ trade hub.

# New biotechnologies

Now being turned into private property owned by companies in a new property regime. With the ‘enclosure of the body’ human tissue and human genetic material containing elements of both person and ‘things’ our concept of humanity and the relationship between the body and person are changing.

Biotechnology has made the entire notion of the body much more fluid. On the one hand bodily functions can be replicated or enhanced by objects originally extraneous to the subject ... on the other hand human biomaterials extracted from the body enter into research and commerce as objects.

# Closure of the body commons

The enclosure of genetic commons and forms of human tissue makes a distinction between natural and artificial body harder to pin down.

women's bodies continue to be most objectified in this process.

More 'normal' for female bodies to be objectified, harvested and commodified in new and disturbing ways unsurprisingly so as in this new type of ART regime the female body proves more valuable.

# Women's bodies more able to be manipulated

IVF and stem cell technologies have brought the most intimate biological functions of women to the market place. Women's position and contributions as the embodied subject of these technologies has been displaced as the focus goes onto what is taken from their bodies and commodified – rather than on the question if women are being exploited.

Public discussions focus on the embryo rather than the women from whom the ova are removed.

# Stem cell research

These debates are integrally linked to issues of power, commercialization and business.

The burgeoning trade in ova for stem cell research has risks as with IVF. But these risks increase as often more eggs are 'harvested' as the amount of eggs needed means the temptation is to over stimulate the ovaries which can be dangerous for the women selling or donating their eggs.

# Umbilical cord blood banking

- feeding into the myth of the infinitely regenerative body
- medical reviews are concerned that taking the blood during the third stage of labour (before the placenta is delivered) unduly puts the woman and baby at risk.
- the mother and child should be resting waiting for the placenta to be delivered.
- little or no evidence that cord blood cells are actually useful in several conditions, as claimed by the companies.
- most cures are from other not self cord blood donations against the interests of the mother.

# Ethical issues

How can the public interest be ensured, given the commercial context that determines the research agenda? The direction of research in molecular biology genetics, reproduction and embryo research is determined by funds from wealthy individuals, universities, corporate foundations, governments, large corporations and venture capitalists.

Ova harvesting represent a radical change in the political economy of human tissue. What has not radically changed is the unbalanced power relationship between donors and institutions which take/buy/use the eggs. Government money boosts industry, commerce and to create wealth (not health).

# New techno-eugenics

- redesigning and ‘improving’ humans as such. Terms like transhumanism and designer babies seem to take us into a realm of futuristic science fiction
- science-fiction like imaginaries of markets for genetically modified children, ‘designer babies’ and ‘enhanced’ and perfected humans. As Richard Hayes Executive Director of the Center for Genetics and Society argues the era of genetically modified humans is not as far away as we might want to believe.

# Designer babies

Contemporary biomedicine holds the potential to both screen out ‘imperfect’ bodies and to enable people with significant disabilities to survive and flourish. The ‘genome revolution’ holds out promises of designer babies and personalized genetic medicine and other life-extending biotechnologies. This is what colours the feature articles such as those found in *The Economist*, *The Times* and *Newsweek* and the hype about genetic futures in the *Financial Times* and *Wall Street Journal*

# Global body polices

The underlying often unchallenged assumption is that if the money and skills are available high tech solutions are the best option. Even if low tech or no tech solutions are available they are rarely seen as being as effective or worth the investment. In the technoscience development scenario biotech and nanotech industry are set to feed the world and eradicate poverty, despite the fact that many nano products have not even been tested neither in relation to health nor the environment.

## **Need to open up knowledge around technoscience**

Too little knowledge or time for discussion among the public, even those with the time and education to follow what all these high technical discussions are about.

The issue is not whether technologies are good or bad, but about how to ensure participation, engagement and political action that will shape technoscience in ways that promote methodologies and applications that do not misuse or negatively impact on women, men or nature.