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WOMEN'S BODIES: THE SITE FOR THE ONGOING CONQUEST BY REPRODUCTIVE TECHNOLOGIES

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Synopsis –This paper attempts to throw light on the aspect of struggles around women's bodies in relation to the development and use of new reproductive technologies, particularly with reference to India and the Netherlands. Often these technologies are used within population policies in which women are seen as mere instruments. It is absolutely crucial to draw attention to and support women's struggles to resist control by others and to achieve and maintain their integrity and autonomy over their own bodies.

Assault and rape, incest, sexual harassment at work, pornography, and prostitution are the more well-known aspects of violence against women and girls. What is much less known is the violation and struggle for the control over women's bodies by means of the new reproductive technologies.

While the term *old reproductive technologies* refers to technologies such as contraceptive pills, various intrauterine devices, sterilization, and abortion, the term *new reproductive technologies* (NRTs) is used to refer to the new technologies used both for preventing conception and birth and the technologies used for stimulating or aiding birth. Large-scale sterilization abuse of women and forced abortion in several parts of the so-called developing world have been exposed by now, but the more subtle ways in which women's bodies are violated with the use of drugs –either to suppress fertility (mostly in developing countries) or to stimulate it (generally in developed countries)–is not yet common knowledge.

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With the worsening of the debt crisis and increasing poverty in the so-called Third World, population control policies take on a more aggressive tone. There is abuse of women in clinical trials of hormonal contraceptives such as long-acting hormonal injectables and subdermal implants. Women, particularly poor, uninformed women in regions with inadequate health care services, are offered incentives to use these inadequately researched and unsafe contraceptives.

Reports from several countries such as Bangladesh, Brazil, India, Peru, and Thailand all show that the women involved in these trials "are rarely told that the hormonal contraceptives being given to them are in the trial phase, or, that they cause serious short-and long-term adverse effects on health" (Nair, 1989, p. 19).

On the other hand, women, mostly in the developed countries, are offered sophisticated, lengthy, often painful fertility treatments during which high doses of estrogen and progesterone drugs are administered in the hope of giving them or their partners their own biological children. Very often these technologies are offered to women couched in terms of *reproductive choice* and *reproductive freedom,* whereas in actual practice they are often misused and abused to violate women's bodies and to exercise control by outsiders rather than by women themselves.

Women's biology and especially their reproductive capacity has long been a coveted area for scientists, an unchartered territory which they would see mapped and explored to the last detail in order for it to be scientifically managed and controlled by them. To the scientific community, following in the footsteps of Francis Bacon, the father of modern science, women are synonymous with nature. The origins of modern science are based upon the Baconian principle of control of nature, whose secrets have to be tortured out of her; she is the bride who needs to be tamed.

Science and technology have played an important role in the development of modern society. In the 20th century, developments in the field of human reproductive technology have been significant and have potentially far-reaching effects, especially when used within national and international family planning and population control policies. The role of national governments, population control organisations, the multinational drug industry, and privately funded international bodies in promoting the population control policies and the impact of these on the health and lives of women needs to be thoroughly examined.

At the same time the existence of national and international networks of women to resist such forms of violence, and women's struggles to achieve and maintain their integrity and autonomy over their own bodies, are crucial and need to be supported.

Sterilization abuse of women in certain population groups (and the mentally handicapped) is occurring in different parts of the world. The forced sterilization of secondary school girls in Dili, East Timor, under the pretense that they were being given anti-tetanus injections, although the injections were given only to girls is a more recent example (TAPOL Bulletin, April 1989).

The most common method of family planning used in India is sterilization. While middle-class women usually resort to it as a terminal method once they or their families decide they have acquired the desired number of children, working-class rural women are pressured or coerced into undergoing the operation and often offered monetary or other incentives. How many of these are voluntary and how many are done under coercion, by offering women incentives and disincentives, is difficult to ascertain. However, it has been reported that family planning programmes increase in intensity during the lean agricultural season, when women are most vulnerable.

Coercion is not restricted to those who must practise family planning methods. Pressure to achieve prescribed family planning targets by recruiting family planning *acceptors* and to fulfill pre-established quotas is also put on the *motivators.* The case of Manda Padwal, one such female health functionary, attached to a Primary Health Centre (PHC), who committed suicide because she feared losing her job as she had not been able to fulfill the required quota is only one such example (Gupte & Duggal, 1986).

The earlier promotion of vasectomy in India's family planning programme (during the 1960s) has almost totally been replaced with tubectomy, by *laparoscopy,* mainly carried out in sterilization camps. Sterilizations by means of a laparoscope are done in camps where a single surgeon performs 300 to 500 laparoscopies in 10 hours per day, which works out to one operation every 2 minutes. With the minimal care that is necessary for such an operation, only a maximum of 50 a day would be possible. There was a report from Kumbakonam that 1,225 women were operated in one day. The District Magistrate of the area proudly boasted that this was the world record for a single day (Balasubrah-manyan, 1986).

Padma Prakash reports a death rate of 10 to 12 per 100,000 laparoscopic sterilizations, compared to an acceptable figure of 0.25 to 0.5 (Prakash, 1984). Malini Karkal mentions "a study of 9,066 laparoscopies conducted in camps over 10 years reported surgical difficulties for 7.9% of the clients, complications for 5.3%, and failure rates of 0.6 per 100 women years. The Indian Association of Gynecological Endoscopists has registered its concern for the use of this method" (Karkal, 1985, p. 39).

This clear shift of emphasis to sterilize women rather than men is likely to have serious long-term consequences for the health of women, and it is felt that urgent action by the women's movement is needed to demand a major change in sterilization policy (Balasubrahmanyan, 1986).

THE NEW CONTRACEPTIVE TECHNOLOGIES

Hormonal contraceptives

Hormonal contraceptives consist of synthetically produced hormones which, when in the body, act in several ways to prevent conception. The majority of the contraceptives made for women today contain hormones, whose long-term effects are little known or inadequately studied. The most commonly used hormones in contraceptives for women are estrogen and progesterone. These hormones can be administered in various forms: orally, in the form of a low-dose contraceptive pill; in the form of injectables, such as Depo Provera or Net-OEN; or in the form of implants, such as Norplant.

While the oral pill, which is taken once a day, contains the drug that is effective for just that day, injectables and implants are long-acting methods, implying that the contraceptive effect lasts for a long period of time (from 1-3 months with injectables, up to 5 years with the six-capsule implant, Norplant). While the pill is self-administered and women can stop taking it whenever they like, (especially if they have problems with it), the long-acting injectables and implants are provider-dependent methods, which means that they need to be delivered by medical personnel and once put inside the body women do not have control over the drug and cannot take them out. Although, theoretically, it is possible to have implants removed, in practice it is very complicated and requires great surgical skills, especially because fibrous tissue tends to grow around each capsule and this must be cut away first. Also the capsules may break during removal and may require several surgical attempts.

Injectables. In India, long-acting provider-dependent hormonal contraceptives are being adopted within the family planning programmes. One of these is Net-OEN. Net-OEN is administered as an oily preparation by intramuscular injection. It is most effective in preventing pregnancy when administered every 60 days. Uncontrollable bleeding is a very common side-effect among women who are undernourished and already anaemic. The Indian Council for Medical Research (ICMR), India, conceded that there had been significant dropouts due to menstrual disturbance among women undergoing Net-OEN trials, but felt that the benefits far outweighed the risks. They claimed that "the method has no life-threatening side-effects" and with "proper counselling" more women can be made to accept the drug (Balasubrahmanyan, 1986, p. 49).

Doubts have been expressed regarding the safety of an injectable hormonal contraceptive for widespread use. The concerns are related to possible carcinogenicity, impairment of future reproductive functions, adverse metabolic effects, potential teratogenicity (abnormalities or malformations of the foetus), and other possible adverse effects on the progeny as a result of exposure either *in utero* or through breast milk (Balasubrahmanyan, 1986, p. 49).

The other well-known hormonal injectable is Depo Provera (depot medroxyprogesterone acetate), also known as DMPA. Sumati Nair quotes a recent study done in Thailand supported by the World Health Organization (WHO) and the Family Health International (FHI) in the United States which shows that "children born to mothers who have used Depo Provera are twice as likely to have limb defects and five times more likely to have chromosomal abnormalities than children of women who used no contraception" (Nair, 1989, p. 26).

Public hearings in the United Kingdom and the United States into the effects of Depo Provera have documented loss of sex drive as an adverse effect (largely due to heavy bleeding and subsequent debility). The male-dominated research establishment has dismissed these effects as subjective. There are a number of contraindications for the use of this drug, but Primary Health Centres in India have hardly any facilities for such large scale investigation and maintenance of records. Moreover, the staff is often poorly trained, callous or careless, and under compulsion to meet impossible targets. There is an absence of hygienic conditions, a lack of follow-up facilities, and a great potential for misuse.

Except for Norplant, which is registered for use in Finland, Sweden, and only since December 1990 in the United States, almost none of these methods have been registered for contraceptive use in the so-called developed countries. In the Netherlands, France, Germany, and the United

Kingdom, Depo Provera and Net-OEN can be used only as a last resort contraceptive, when all other contraceptives have failed (Nair, 1989). Injectables are reportedly used in developed countries on certain groups of women such as ethnic minorities, working-class women, and women with psychiatric problems. In such cases doctors often provide injectables without official sanction or obtaining prior informed consent from the women concerned (Hartmann, 1987).

The Dutch Medical Bulletin, writing about Depo Provera says: "like all other progestagens, DMPA has a slight immunosuppressive effect" (lowering the body's resistance to infection) (Nair, 1989, p. 27). Although not enough is known about the major health risks with Depo-Provera and even less is known about the risks of Net-OEN, adverse cardiovascular effects, cancer risks, temporary or permanent sterility, and adverse effects on the body's immune system are some of the health hazards to be taken into account (Nair, 1989).

Implants. The best known and most frequently used contraceptive in the form of an implant is Norplant. It is a long-acting hormonal contraceptive that is planted under the skin of the woman's upperarm. It consists of six capsules, each containing 36 mg of the hormone levonorgestral. The drug is released slowly over a period of five years, after which the capsules have to be removed. Norplant was developed by the U.S. Population Council and is manufactured in Finland. It is distributed through the Population Council and purchased (with loans from the World Bank and USAID) directly from the manufacturer at commercial rates for use within family planning programmes.

According to figures provided by the Population Council, by March 1988, the number of users had reached 200,000 in 30 countries, three-quarters of them in Indonesia alone. Clinical trials are still going on in approximately 20 countries. About 60% of the users of Norplant suffer disruptions of their menstrual cycles. Prolonged bleeding and spotting are very common. Other so-called minor side-effects include severe headaches, nausea, weight gain or loss, and depression. Ovarian cysts have been found in as many as 10% users. There is an increased risk of ectopic pregnancy if pregnancy does occur, and a risk of heart and other birth defects in the unborn child. Studies have yet to be done on the risks to children who are exposed to the drug through breast milk (Nair, 1989, pp. 29-30).

Vaginal rings. The vaginal ring, developed by the World Health Organization's Human Reproduction Programme (WHO-HRP) consists of a ring that releases hormones for a period of three months. It can be placed by the woman herself and removed in case she has problems with it. This method is still under trial and is found to be less effective than the implants or injectables and can cause vaginal irritation, infection, or discharge. There is also a chance of expulsion of the ring when women squat to defecate.

Contraceptive vaccine. Another technology that is being tested is the contraceptive vaccine developed by the WHO. The vaccine is supposed to immunize women against their own hCG-hormone secreted by the early blastocyst, which plays a role in the fertilization of the egg. Anti-hCG antibodies released by the vaccine prevent implantation of the blastocyst in the uterine wall. The idea is to actively immunize rather than sterilize. As Mies says, the embryo is seen as a pest which has to be fought and fertility is viewed as a disease or even an epidemic in the so-called Third World (Mies, 1987).

The abortion pill. Mifepristone, commonly known as the French abortion pill, consists of the chemical compound RU 486. It is "administered as a tablet in conjunction with a small dose of a prostaglandin, which increases the frequency and strength of the uterine contractions needed to expel an embryo" (Ulmann et al., 1990, p. 42). This drug combination is used in France to terminate pregnancies up to seven weeks.

The manufacturers of mifepristone, Roussel Uclaf, say, "RU 486 was not invented with the goal of pregnancy interruption in mind. Nevertheless, by the time it was synthesized, social concerns and scientific events had already helped set the stage for that use. International agencies were calling for the introduction of a variety of new birth control technologies" (Ulmann et al., 1990, p. 42).

In countries where abortion is legal and medically safe, medical abortifacients such as RU

486 delivered as a tablet or by injection have been tried as a medical alternative to the existing practice of terminating a pregnancy by means of vacuum aspiration, which requires surgery. This has been the case in France, where in the last two years about 30,000 women have been administered the drug. Research indicates that abortion performed with the use of RU 486 + prostaglandin is *harder* on the women than *good, compassionately* conducted abortion under local anaesthesia, which is not even really surgery but more like a curettage. Even among European women the blood loss has been found to be substantial, for example, five transfusions needed in 580 women in a U.K. study and many emergency curettages (Raymond, Klein, & Dumble, 1991).

In a newspaper interview, the inventor of the abortion pill, Dr. Etienne Beaulieu, underlined the possibility of its distribution in the developing countries, where generally safe abortion services are nonexistent. He calls the abortion pill "a blessing for women in the Third World." Furthermore, he states that this "soft" and noninvasive method is preferable for women to a mechanical, and what he calls, invasive, and aggressive method like the suction curettage (Rademakers, 1990, p. 14).

It is precisely for the same reasons that one would be reluctant to introduce this method in developing countries. As Paul van Look says:

> Obviously, as with pregnancy termination by vacuum aspiration, treatment with mifepristone and prostaglandin is something that can only be undertaken in appropriately equipped clinics and under medical supervision. It is certainly not a "do-it-yourself" method as sometimes mistakenly thought. . . . pilot studies carried out among Chinese women in Hong Kong and Singapore suggest that the blood loss associated with the abortion may be greater than observed in European women, (van Look, 1990, p. 3)

The administration of RU 486 and prostaglandins does not require anaesthesia or surgery. However, its use may cause acute pain for several consecutive days. The users have to be checked three times, first to establish pregnancy and its duration, after which they are given the mifepristone tablets. On the third day they are given an injection of prostaglandin. The women are observed for three hours to assess the expulsion and the beginning of the bleeding. (In many cases the bleeding starts only later at home, and many women find that psychologically stressful.) Ten days later they must undergo a gynaecological examination, and possibly an ultrasound to ensure that the abortion has been complete. This intensive procedure and follow-up is absolutely essential, something which may be possible in the developed countries, but is almost impossible in the developing countries with their poor infrastructure of medical facilities.

Ulmann and his co-authors themselves admit that in countries where legally operated facilities for the medical termination of pregnancy are not readily accessible, "many women die from having unsafe abortions, typically because of uncontrolled bleeding and infection" (Ulmann et al., 1990, p. 42).

Even the efficacy of the abortion pill depends on its *correct usage,* that is, the right dosage, the administration of prostaglandins at the appropriate time, and the right indication (only in pregnancies of less than seven weeks), says Amanda le Grand. She also mentions some important complications which may occur in treatment with RU 486 + prostaglandins such as incomplete abortion, severe bleeding, or ongoing pregnancy. Taking India as an example, Amanda le Grand points out that wrong use of RU 486 is very likely even though abortion is legal. In other words, the abortion pill can be expected to be sold over the counter without prescription or supervision, due to lack of strict controls on drug provision (le Grand, 1990).

Consequently, the two drugs might be used in pregnancies of more than seven weeks, with a higher failure rate as a result. A study reported that, at present in India, a high percentage of women have abortions at a later stage because the services are limited. According to the same study, the better educated/informed women find their way to legal abortion clinics, while women who are either less educated and/or economically weak fall back on illegal abortion services. These women are less likely to have access to the necessary information for the proper application of RU 486. When complications occur, medical help will often be inaccessible to them (le Grand, 1990, pp. 20-21).

Recently, the inventor of RU 486 accused the WHO and the manufacturers of the drug, Roussel Uclaf, for holding back the drug for fear of an economic boycott by the American pro-life activists. He states "it is in developing countries that mifepristone could be most useful, although there is the possibility that it could be used under less stringent conditions than in the West" *(New York Times,* Scrip no. 1542, 22/9/90, p. 19).

Le Grand points out that "efficacy might also be affected by the poor *health and nutritional status* of women, which is generally the case in Third World countries. A study in Bangladesh found that from the 1,000 women, 64% had anaemia, of which 25% cases were severe. In India the situation is reported to be even worse (le Grand, 1990, p. 21).

The most significant side-effects are the long duration of the bleeding and abdominal pain and contractions. The average bleeding period after treatment with RU 486 is 8 to 12 days, but in some extreme cases it has continued for more than a month. In women who are anaemic, a long bleeding period may be a serious problem. Also pain relievers (analgesics) are not always available to women in developing countries.

Other possible uses of RU 486 as suggested by Ulmann et al. are its use for later abortions (up to third trimester) where the foetus is seriously malformed or where the health of the mother is endangered. It may also help in inducing labour at term. In monkeys the drug has been shown to increase uterine contractions, thus it may help to avoid some caesarean deliveries. Also in monkeys it triggers lactation and increases the volume of milk that is produced in the breasts (Ulmann et al., 1990, p. 48).

A lot more research needs to be done to find out the long- and short-term effects of RU 486 on the woman's *whole* body and on that of the embryo. Knowing what the effects have been of the use of drugs such as DES on pregnant women, we cannot but be cautious with possible uses of the drug for these purposes. Jany Rademakers (1990) states that her organization, Stimezo, the association of Dutch abortion clinics, welcomes every good supplement to the package of methods for pregnancy termination and finds the abortion pill a promising effort. However, she emphasizes the fact that:

> The (abortion) pill is not perfect at the moment, that the possibility of medical consultation should be available and especially the option of a regular curettage in the cases where the abortion pill failed because of the possible damage that is done to the foetus. Since these possibilities are not available in most Third World countries distribution in the Third World seems not a very good idea at all. (Rademakers, 1990, p. 16)

As for its use in the Netherlands, Rademakers is of the opinion that the abortion pill does not compare favourably with the current practise of abortion by suction-curettage in the Netherlands. Therefore, she recommends that more research be done before it is marketed in the country (Rademakers, 1990, p. 17).

EP Forte drugs. Estrogen and progesterone are two naturally occurring female hormones principally responsible for regulation of the menstrual cycle in women. While synthetic combinations of these two drugs are used in low-dose oral contraceptive pills, EP Forte drugs make use of these combinations in much higher doses. EP Forte drugs were extensively used in the 1950s and 1960s for determining pregnancy – the method was known as Hormonal Pregnancy Test (HPT).

Throughout the 1960s, manufacturers recommended these products as a safe and reliable method of pregnancy diagnosis and gave assurances that they do not interfere with pregnancy. However, in the late 1960s, there was enough medical evidence to show that abortions, still births, malformed live births, and possible long-term effects (e.g., cancerous developments in children) are among the dangers of giving high doses of sex hormones at an early stage of fetal development (Chetley & Gilbert, 1986).

These findings led some governments, mainly in Europe and the United States, as well as in a few developing countries, including India (1976), to ban the use of HPT drugs during the 1970s. As a result, realizing that it would be increasingly difficult to market EP drugs for HPT, drug companies started shifting the emphasis of their marketing propaganda. These drugs began to be marketed for indications of secondary and primary amenorrhoea, recurrent abortions, etc. (*NCCDP Newsletter,* Nov. 1988).

In India, a study done at the Kilpauk Medical College by Dr. Palaniappan showed that of 52 women who gave birth to deformed babies, 31% had taken hormonal preparations in early pregnancy. The study made another startling revelation – many of the women had taken EP Forte drugs in order to terminate pregnancy. Dr. Palaniappan brought into sharp focus the tremendous potential for misuse of EP drugs. The mistaken belief that EP drugs can be used as an abortifacient is widespread among many doctors and an even larger number of unqualified practitioners. In fact, induction of abortions was the single largest indication for which EP drugs were being used. Thus, every year thousands of pregnant women are exposed to this potentially hazardous drug in India alone (*NCCDP Newsletter,* Nov. 1988).

As M. D. Rawlins, professor of clinical pharmacology at Newcastle University in the United Kingdom states: "There is no place for high dose EP drugs in gynaecological practice either as therapeutic agents or as diagnostic tests" (Chetley & Gilbert, 1986). The dangers of high-dose EP drugs have been known for about 20 years. During this time, some pharmaceutical companies such as Schering and Organon changed their promotion policy or indications for use in some countries, but this has not altered their use for pregnancy testing. In many developing countries, including India, Pakistan, and the Philippines, these drugs are still prescribed by ignorant doctors. Moreover, the drugs can be easily obtained over the counter in pharmacies.

Medical drugs to the value of approximately half a billion guilders (approximately 295 million dollars) were exported from the Netherlands alone to the developing countries in 1989 *(NEFARMA Annual Report,* 1989). The Netherlands occupies a rather modest position within the EC which exports medical drugs worth approximately 8 billion guilders (approximately 4,720 million dollars) every year according to Bas van der Heide (1990, p. 12). She further reports that the International Organisation of Consumers Unions (IOCU) is certain that drugs manufactured by Dutch companies but not registered for use in the Netherlands are on the market in India, Thailand, the Philippines, Peru, Bolivia, and some West- and East-African countries (van der Heide, 1990).

The Dutch government is also aware of the fact that products manufactured in other countries can be exported via the Netherlands even though the product is not registered in the Netherlands itself. It is often difficult to ascertain if the products are being manufactured in the country itself or in a subsidiary of a Dutch company elsewhere. In the so-called Good Manufacturing Practices the only guarantee sought is the genuineness of the product. Safety and efficacy are criteria that do not figure at all (van der Heide, 1990).

Nel van Dijk, Euro-parliamentarian for the Green Left party of the Netherlands, and rapporteur of the EC Commission (which has prepared a report on Women and Health Care for the European Parliament) has recommended to the European Parliament to ban export of all medicines which are banned in the country of manufacture. The Commission reports that harmful hormonal pills and contraceptives are being sold to women in Third World countries which cause infertility and cancer. They have also asked for extensions to time periods within which pharmaceutical companies can be liable for the harmful effects of medicines, because sometimes the damage done becomes known only in the children of the users.

In the context of increasing European economic unity it is even more essential that a uniform code for export of pharmaceutical products is enforced to avoid further malpractices affecting the lives of millions of women and children in the developing countries.

Contraception by electric current

Researchers from a women's clinic in New York are actively developing a totally new kind of contraceptive, according to the *New Scientist* (12.5.90). They are working on a thread-like battery which is placed in the cervix where it releases a current of 50 milliam-peres. The lithium-iodine battery is fixed in the cervix by means of two barbed hooks. The cervical mucus and the semen act as electrical conductors. Experiments have shown that within 3 to 4 minutes of passing this current, the sperm are totally incapacitated, according to Steven Kaali, medical director of the Women's Pavilion in Dobbs Ferry, New York. One wonders why such a battery cannot be placed in males in the first place and the sperm be immobilized before it enters the woman's cervix. This begs the question: What about contraceptives for males?

Male responsibility in contraception

Why is there this fervid emphasis on yet newer contraceptives for females? The role of men and their responsibility for contraception needs to be reviewed. Vasectomy is quicker, simpler, less expensive than tubectomy and 95% reversible. Yet tubectomy is the most common terminal method of contraception used all over the world.

In 1986, the Hyderabad branch of the Indian Women Scientists Association passed a resolution strongly condemning the use of Net-OEN and pointing out that "there should be a shift in emphasis (both in research and use) of noninvasive, nonhormonal barrier methods. Men should be encouraged to share responsibility for birth control. The present neglect of research and promotion of male contraceptive methods should be corrected" (Balasubrahmanyan, 1986). They pointed out that the lack of volunteers for testing various valves and other devices to be used by males was hampered by real and imaginary effects on the male libido.

It appears that informed consent, apparently so easily obtained from women for trials and use of various reproductive technologies, cannot be obtained so easily from men. The only period during which men were forcibly sterilized in certain parts of India was during the state of political emergency which gave the government special powers. This was a major cause of the defeat at the following national elections of the then Prime Minister, Indira Gandhi, and of the Congress Party which had ruled India uninterruptedly since its independence in 1947.

According to W. Bezemer, sexologist at the Rutgers Foundation in Eindhoven, when she asked the men who came for consultation to her what kind of contraception they used, the most common reply she got was the pill(!) Since the use of the contraceptive pill is so high among *women* in the Netherlands, Dutch men do not need to feel coresponsible for contraception. However, as a permanent method, vasectomy is outstripping tubectomy in the Netherlands lately. Nevertheless, only after the woman has been taking the pill for 20-odd years and the desired family size has been achieved are Dutch men willing to get themselves sterilized (Evenblij, 1990).

Mention must be made here also of the very recent development and clinical trials of an injectable contraceptive for men. This injectable consists of the male hormone testosterone, is administered weekly, and blocks the production of sperm. Once the injections are stopped, sperm production resumes within one to four weeks.

Whether a pill or injectable contraceptive for men will come on the market remains an open question. The pharmaceutical industry has very little incentive to market contraceptives for men. More pills for men will mean a reduction in the sales of pills for women which form the major source of profits for them. The high costs of development of a new contraceptive for men is an important decisive factor, especially when it is predominantly men who determine research priorities and allocate finances for the development of pharmaceutical products.

According to H. Nieuweboer, director of Schering-Netherlands, the most important reason is that the woman's reproductive cycle is more easy to influence than the production of sperm, which is seen as a more complicated process (Evenblij, 1990). Although this may be true, this is not the most important reason why development of a male contraceptive has not received enough attention so far. There is still a lot of money going into the research, development, and marketing of newer contraceptives for women. The real reasons are to be sought more in the area of the fear of men losing their libido and potency if their hormones are interfered with, while the harmful effects of IUDs and hormonal contraceptives for women have been highly underrated, and dismissed by doctors and even by women themselves.

SEX-DETERMINATION AND SEX-PRESELECTION TECHNIQUES

In this section, I will attempt to show how certain new reproductive technologies, such as sex-determination and sex-preselection techniques, can be misused to intensify the oppression of women, particularly within cultural settings where women already have a low status in society (such as in India and China). The misuse of these techniques to determine the sex of the child, and when found to be female, usually followed by an abortion, or to pre-select the sex of the child in favour of males, violates the dignity of women as human beings at an ideological level. Also, we can use the term *pre-victimization* (Raymond, 1990) to mean that the female foetuses are liable to victimization on the

basis of their sex alone even before they are born. The sexist bias is what distinguishes female foeticide from abortion in general, in addition to the fact that women themselves come forward to undergo these tests due to the pressures of patriarchal family structures and values.

In India, inhuman practices such as female infanticide, wife-beating, and wife burning *(sati)* are centuries' old traditions, as well as the recent phenomenon of dowry deaths, in which female children and women are seen as inferior beings. Their birth is mourned and their death is sought by various means. In such a context the (mis)use of technologies such as amniocentesis is hardly surprising. The practice of this has added yet another dimension to the violence against women both within and outside the home.

Sex-determination techniques

Amniocentesis, first introduced in India in 1975, has grown into a multimillion dollar business of sex-determination for selective abortion of female foetuses in a society where there is a marked preference for male children. The technique of chromosomal analysis of the amniotic fluid to detect genetic abnormalities has become a *household word* and clinics providing prenatal diagnosis and screening have mushroomed even in the remote corners of India. Amniocentesis is only one among other techniques for sex-determination, such as chorionic villi biopsy, ultrasound, and the more recently emerging sex preselection techniques to eliminate women, even before they are born. Between 1978 and 1982, about 78,000 female foetuses were aborted after sex-determination tests, a number of them even in the second trimester (18-19 weeks of pregnancy) (Patel, 1984).

What is particularly disturbing is the scale on which this sort of selective abortion is practised, as compared to the number of female children dying due to neglect or even by active killing. Also government and private practitioners have hailed amniocentesis as an important tool in the promotion of birth and population control programmes in India. Dr. D. N. Pai, an influential figure in the Indian family planning establishment, strongly advocated the use of sex-determination tests within India's family planning programme. In 1974, at a conference in Stockholm, Dr. Pai described amniocentesis followed by abortion of the female foetus as a possible "solution" to India's population growth problem (Balasubrahmanyan, 1986, p. 69).

It has been argued that particularly in cases where women have one or more daughters, they should opt for amniocentesis followed by abortion if the foetus happens to be female so that they can plan a "balanced family" by having sons. This concept of having a so-called balanced family has a sexist bias. Hardly any couple with one or more sons could be expected to get rid of a male foetus and have a daughter to balance the family, not to mention the number of abortions a woman might have to undergo just to achieve this so-called "balanced family". The new slogan of the Indian family planning programme, NRR 1 (Net Reproductive Rate of 1), boils down exactly to this–not more than one daughter per couple.

A study by Dr. S. Kulkarni (1986) of the Foundation for Research in Community Health (FRCH) in Bombay, conducted at the initiative of the state government of Maharashtra, revealed that 84% of 42 gynaecologists interviewed were performing amniocentesis for sex-determination purposes. These 42 doctors performed on an average 270 sex-determination tests per month. In the 10 years since it was introduced, commercially available sex-determination tests spread to many small towns in many states of India. As a result of protests by women's groups, and a campaign initiated by the Forum Against Sex-determination and Sex-Preselection Techniques in Bombay, amniocentesis was banned in the state of Maharashtra in May 1988.

However, the Forum observes to its dismay that this ban has not stopped the lucrative business of sex-determination tests. Due to a lack of enforcement machinery such as vigilance committees, the practice has either been driven underground or to the neighbouring states which provide the services quite openly, since they have not been banned there (Forum, 1989). In addition alternative methods of determining the sex of the foetus are being developed and used. Chorionic villi biopsy (CVB) enables sex-determination in the third month of pregnancy. Sonography or ultrasound is also being routinely used for monitoring pregnancies and for sex-determination. There are enough doctors trying to sell this technique as a simple, accurate, and safe method for finding out the sex of the foetus in the first trimester. Although spontaneous miscarriages and scars on the bodies of children born

after amniocentesis have been reported, there are enough people around who are willing to believe these doctors and spend thousands to get rid of unwanted daughters. Scientific journals report newer methods such as analysis of maternal blood and chromosomal analysis of IVF embryos (Patel, 1984).

Sex-preselection techniques

For some years a company based in the state of Gujarat in India has been marketing a product for sex-preselection. Select-1 and Select-2 capsules are meant for consumption by a pregnant woman from the 45th day since her last menstruation, for a period of 2 weeks. The manufacturers claim that it can *change* the sex of the foetus from female to male after conception. It is recommended by several renowned doctors, especially in Gujarat, although modern medicine warns against the use of any medication or drugs in the first trimester, as it can lead to deformities in the foetus (Ravindra, 1990).

A more scientific technique for sex-preselection is the Ericsson technique, named after its discoverer, Dr. Ronald Ericsson, a reproductive physiologist from the United States. This technique makes use of a process to spin sperm, so that the X-bearing sperm, which are heavier, sink to the bottom and the Y-bearing sperm float on top. By inseminating women with the primarily Y-bearing sperm, the conception of a male foetus is assured. India is one of the countries where a Bombay-based doctor, Dr. Mehta, has obtained the sole franchise to use this technique.

Once the sperm has been separated by using the Ericsson method, the woman has to undergo ultrasound to pinpoint her ovulation timing. After that she has to be artificially inseminated with her husband's or donor sperm. This entire procedure may have to be repeated 3 or 4 times to ensure pregnancy. Once the woman has conceived there is still a 25% chance that she may have conceived a child of the wrong (in most cases female) sex. Therefore, she would still have to undergo amniocentesis or chorionic villi biopsy, and in the event of a mistake, an abortion or repeated abortions, at the cost of her health. Thus, the argument often advanced that sex-preselection is entirely noninvasive and nonviolent does not hold (Gupte & Duggal, 1986).

The consequences for the male-female sex ratio in India upon widespread use of sex-determination followed by abortion of the female foetus, or sex-preselection techniques are apparent. India already has a low and almost steadily decreasing female-male sex ratio in contrast to most developed countries, 972:1000 in 1901, 933 : 1000 in 1981 (Government of India, 1988). The social consequences for women of this unfavourable sex ratio are bound to be disastrous. Research studies on societies with adverse female sex ratios have indicated the presence of customs like polyandry, abduction, and purchase of women. Also, adverse sex ratios are bound to increase the incidence of rape, prostitution, and violence against women (Lingam, 1989).

Women's groups, such as the Forum Against Sex-Determination and Sex-Preselection Techniques in Bombay have drawn attention to the discriminatory attitudes of high-placed family planning officials and bureaucrats towards women. They have also exposed the violation of medical ethics by medical personnel in using technologies, which were principally meant for detecting genetic abnormalities, for detecting the sex of the foetus, and further for misusing the liberal abortion laws of the country by performing sex-selective abortions. Where were these medical personnel with their sophisticated prenatal diagnosis technologies, such as amniocentesis and ultrasound, when pregnant women who were exposed to the gas leaks during the Bhopal Gas Leak Tragedy needed their help? This is a question that has been rightly asked by women and women's groups concerned with the reproductive health of women in India.

THE NEW CONCEPTIVE TECHNOLOGIES

While the former technologies were anti-natalist, the conceptive technologies function in a pro-natalist context and are misleadingly offered as cures for infertility. Originally developed as a solution for women with blocked fallopian tubes or idiopathic (unexplained) infertility, in vitro fertilisation (IVF) is now offered to infertile couples to have a chance of having children through husband's/donor semen or donor egg, and the embryo grown in a petri dish can be implanted in a woman's uterus.

In vitro fertilisation (IVF)

Popularly known as the test-tube baby method, IVF has reached many countries of the developing world, too, although generally speaking women in these countries are expected to produce less children. IVF may have given hope to some infertile couples, by portraying a positive beautiful bouncing baby image. In actual fact the success rate measured even in terms of the take home baby rate is under 10% after on an average of 3 to 4 cycles of treatment. IVF doctors themselves concede that it is a stressful treatment, both in physical and emotional terms (Klein, 1989; Gupta, 1989, 1990), not to speak of the financial costs to individuals and to the public exchequer. These astronomical costs have led to questions regarding the cost/benefits of IVF and the definition of IVF children as luxury items available only to the wealthy. The WHO Report, for example, estimated that the cost of one IVF birth could prevent 100 women becoming infertile through Sexually Transmitted Disease Prevention Programmes (Meek, 1990).

It is also acknowledged that the procedures required for IVF may actually cause genetic damage. Data collected over seven years (1979-1986) by the National Perinatal Statistics Unit of Australia revealed five to seven times the normal rate of congenital abnormalities in 1700 live births in Australia and New Zealand (Meek, 1990).

In addition, the administration of hormones to stimulate ovulation, which is necessary when there are infertility problems, is not without risks. There is a chance that the ovaries are stimulated so strongly that ovarian cysts are formed and an accumulation of moisture in the chest cavity or the stomach result. Doctors of the IVF team in a hospital in Tilburg, the Netherlands, warn of these dangers in the Dutch Journal of Medicine *(Nederlands Tijdschrift voor Geneeskunde,* 12/5/90; see also Klein Rowland 1988).

The *ovarian hyperstimulation syndrome* is an example of an illness caused by the drugs and hormones given to stimulate ovulation. The Tilburg doctors team says that it is little known and therefore detected too late. This can have serious, even fatal consequences. There is no real treatment for it and doctors can only fight the symptoms. There is insufficient information on how often the syndrome appears. A guess is that between 0.4 to 4% of the women undergoing IVF treatment suffer from this problem. The Tilburg IVF team has been confronted with it 12 times in 950 treatments (1.3%).

The origin of the illness has primarily to do with the hormones that are administered to stimulate the ovaries. The combination with the hormone LH-RH or the use of hCG increases the chance of the occurrence of the syndrome, according to the IVF team. Every time the woman is made to superovulate to capture the eggs the ovaries are damaged, whether ultimately IVF is successful or not *(Volkskrant,* 19/5/90). If the levels of hormones in the woman's bloodstream are not monitored during the administration of hormonal drugs, the consequences of hyperstimulation can indeed be severe. Monitoring is less likely to occur *outside* of IVF clinics.

The Tilburg doctors observe that the sale of hormones that stimulate fertility is growing steadily. In 1984, 16,000 ampules were sold, and in 1988 it was 210,000, of which only 40,000 were for a typical IVF treatment. The remaining 170,000 were used in other forms of aided conception within which there is no question of disturbed ovulation. If this trend continues, the chance of the existence of this syndrome is likely to increase, fears the Tilburg team *(Volkskrant,* 19/5/90).

There are other health hazards associated with IVF, such as the hepatitis infection that occurred at the Dijkzigt Hospital in Rotterdam in the Netherlands. American biologist Helen B. Holmes (1990) in her study on Dutch women in IVF programmes reports:

> In early 1988, 172 women undergoing IVF at Dijkzigt Hospital were exposed to hepatitis B virus when the culture fluid used for embryo development contained virus-contaminated human blood serum. Of these 172, some 25 contracted hepatitis and an additional 30 tested positive for the virus, (pp. 3-4)

Holmes adds that three women have developed chronic hepatitis, which means that eventually (perhaps after many years) they will die from liver failure or cancer. Most of the other women have recovered, although some still have arthritic pains. Fortunately, no babies contracted the disease (Holmes, 1990, p. 4).

Microscopic tuboplasty

Recently there has been a boom in India of the use of microscopic tuboplasty, an operation to surgically reverse tubectomy, as well as for treatment within IVF programmes. The success rate of this surgical operation is claimed to be 60 to 70%, higher than that achieved by surgery without use of the special microscope. This operation can be useful in infertility treatment, or a first trial treatment before starting with IVF, but most doctors carry out this procedure only on women who have undergone tubectomy. The emphasis is on the reversibility of tubectomy, as doctors feel that more women will be encouraged to be sterilized by tubectomy if they are assured about its reversibility. Therefore, at policy level preference is given to women who have undergone tubectomy and then desire to have more children either because they unfortunately lose a child, or because they remarry and want to give their new husbands their biologically own children. Women who are infertile because they have some problems with their tubes, either due to some infection or adhesions, are directed straight to IVF programmes, while the trained doctors wait with their specially imported idle microscopes for women who were earlier tubectomised to come for this reversal surgery (Deval, personal communication, May 1990).

We see here, on one hand, the control by medical personnel of technologies by having the power to decide when and to whom access to technology is to be granted by determining their own criteria rather than women's reproductive health needs. On the other hand, it is also an example of women's bodies being invaded to perform one kind of operation, and then again to reverse the damage done. Another example is that certain harmful contraceptives cause reproductive damage and infertility, and then painful procedures such as IVF are offered to women, supposedly to overcome infertility.

CONTROLLING WOMEN'S BODIES, CONTROLLING WOMEN

"Women's bodies are a site of contested meanings," writes Carol Smart. She gives credit to feminist research for having "documented the extent to which women's bodies have been a focus of power struggles" (Smart, 1990, p. 105).

As a result of political, cultural, social, and economic differences there is a great variety in the degree of autonomy or control women have over their own lives. However, it is an almost universal truth that women have little autonomy over their bodies and reproductive powers. Almost universally increasing intervention of the state along with, or in place of, organised religion or the Church regarding women's sexuality and fertility is visible. There is (inter)national pressure on women for birth and population control and new reproductive technologies are advocated to achieve the goals of population control policies.

Technologies that give some women certain rights are at the same time bound to give those in positions of power the right to use those technologies to exercise their power, by allowing or denying access to them on a selective basis. Nothing illustrates this better than the politics around the question of women's access to safe abortion in different parts of the world.

In both legal and medical discourse women's bodies have become increasingly defined as problematic, although what Smart calls "misogynistic views of women's bodies" (Smart, 1990, p. 105) predate the march of law and medicine in the 19th century. Smart goes on to say that "legal and medical discourse have tended to make women little more than their bodily functions and processes, or bits of bodies" (Smart, 1990, p. 109).

See adds that "women quite literally became their bodies, they were reduced to their reproductive functions. . . . They became their sexual organs" (Smart, 1990, p. 105). Both law and medical science increasingly tolerate biological reproduction only if it occurs under the gaze and supervision of their authority, as women are considered to be irrational and incapable of control over their nature.

Modern medical technologies have increased the potential scope of religion and law to penetrate women's bodies. Rosi Braidotti in her formulation "organs without bodies" refers to the discourse of the bio-sciences, which, "in taking the organism as its object, also takes the body as a mosaic of detachable pieces" (Braidotti, 1989, p. 152). Braidotti refers to several feminist philosophers such as Evelyn Fox-Keller and Luce Irigaray, who have pointed out how scientific discourse since Plato has "privileged the image of 'the eye' as

metaphor for 'the mind', i.e. 'I see' as a synonym of 'I know'" (Braidotti, 1989, p. 154).

Under the biotechnological gaze which penetrates at three levels–x-rays and ultrasound, steel (instruments), and chemistry (biochemicals) – the living organisms are reduced to an infinitesimal scale and lose all reference to the human being as a whole. This reduces the bodies of people to individual parts in which a holistic concept of the human being is missing and the symbiosis of the body is destroyed (Braidotti, 1989).

The basic methodological principles of reproductive and genetic engineering are the same as in other hard sciences. The dissection of organic or inorganic wholes into ever smaller particles and their recombination to new machines (Merchant, 1983) is based on the eugenic principle of selection and elimination. Desired particles are selected and undesired ones are eliminated. In the sphere of reproduction, this dissection splits up the pregnant woman into the mother and the embryo and increasingly, as in IVF and IVF-ET (embryo transfer), the embryo is also *de facto* separated from the female body. Women as living relation or the symbiosis between embryo and woman is technically taken apart to the extent where these parts enter into an antagonistic relation. . . . Women as whole beings cease to exist (Mies, 1988, p. 233).

Through DNA research and genetic engineering scientists are busy tinkering with the physical and chemical composition of life itself (human, animal, or plant), trying to define it in scientific terms and divesting it of its unique character. This can only lead to a fundamental devaluation of the worth that is attributed to human life and to being human. There is a tendency to see people as only objects, as instruments and as tools where their worth is seen only in terms of quality and economic usefulness. A world in which the competition between scientific institutions and individuals to be the pioneers takes priority and the interests and needs of human beings take a back seat is likely to have serious consequences for society.

The so-called right to have one's own biological children and the right of each child that is born to be perfect has been reinforced by the representations of the new reproductive technologies in the media. There is a recent trend to expropriate even the terminology used by feminists and reproductive rights activists regarding women's control over their own reproduction by such varied groups with totally opposed interests as pro-life campaigners and pharmaceutical companies.

As Maria Mies says (1988):

> The technological feasibility to dissect reproductive and genetic processes and the human body, particularly the female body, which constitutes the holistic base of these processes, into "reproductive factors," "reproductive components," "reproductive and genetic material," and the possibility to recombine these "components" etc. to new "reproductive alternatives" is welcomed by some as an opportunity to enhance individual "choice" and "autonomy." This increase of individual choice, however, will automatically lead to more state and legal control in the sphere of reproduction, (p. 233)

We will then have moved towards further legalising and institutionalizing the control of women's bodies and the violence against women.

In such a scenario it is of the utmost importance that feminists and all others who are concerned with women's health issues, and women's bodily autonomy and their autonomy over their lives, make their voices heard and join hands both at a national and international level. This struggle of women for the integrity of their bodies has also to be carried on in the field of epistemology. Feminist researchers and women's studies cannot afford to ignore this challenge.

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