

NEW REPRODUCTIVE TECHNOLOGIES: THE OLD QUEST FOR FATHERHOOD

VERENA STOLCKE

Department of Social Anthropology, Universitat Autònoma de Barcelona, Barcelona, Spain

Synopsis – Science and technology are not value free. For effective political action we need to know, however, whose interests and which values have informed the development of the new reproductive technologies. In this article I argue at two related levels. I analyze the development of the notions of personhood, parenthood, and reproduction in Western class society. I show that a concept of social status, as in the last instance, determined by one's genes, underlies an individualized biological understanding of parenthood that accounts, in turn, for the obsession with having a "child of one's own" if necessary through in vitro fertilization (IVF). Because of this naturalization of parenthood in an unequal society, women are subject to men's control over their procreative capacity. A modern variant is technological motherhood at the service of men's quest for biological fatherhood. The same ideology of genetic fitness informs aggressive population control practiced in the Third World that equally maintains the dominance of white Western men.

Synopsis – Wissenschaft und Technik sind nicht wertfrei. Eine erfolgreiche politische Aktion erfordert jedoch die Kenntnis jener Interessen und Wertvorstellungen, die zu der Entwicklung der neuen Fortpflanzungstechniken geführt haben. In diesem Aufsatz behandle ich zwei zusammenhängende Themen. Ich untersuche die Entwicklung des Begriffs der Person, der Elternschaft und der Fortpflanzung in der westlichen Klassengesellschaft und weise nach, dass der individualisierte, biologische Begriff der Elternschaft, der dem Wunsche nach einem "eigenen" Kind, wenn erforderlich durch IVF, zugrunde liegt, auf einen ebenfalls biologischen Begriff der Klassenstellung zurückzuführen ist. Diese Naturalisierung der Elternschaft in einer ungleichen Gesellschaft hat die Kontrolle der Gebärfähigkeit der Frauen von seiten der Männer zur Folge gehabt. Eine moderne Variante hiervon ist die technologische Mutterschaft im Dienste des männlichen Wunsches nach biologischen Nachkommen. Dieselbe biologistische Ideologie liegt auch der aggressiven Bevölkerungskontrolle in der Dritten Welt zugrunde, die letzten Endes ebenfalls der Vorherrschaft der weissen Männer dient.

Hier sitz ich, forme Menschen
Nach meinem Bilde,
Ein Geschlecht, das mir gleich sei,
Zu leiden, zu weinen,
Zu geniessen und zu freuen sich,
Und dein nicht zu achten,
Wie ich!

Goethe, *Prometheus*, 1773

A scientific worker is necessarily the child of his time and the inheritor of the thought of many generations. But the study of his environment and its conditioning power may be carried on from more than one point of view.

J. Needham, *Time: The Refreshing River*, Essays and Addresses, 1932–1942, London, 1943

UTOPIA BECOME REALITY

Man's dream to create life is an old one. Until recently, it was no more than a figment of the imagination which, while being exemplary of modern

man's thirst for knowledge and control of nature also served to emphasize human limitations. Yet this dream is now fast becoming reality.

In 1818, Mary Shelley, daughter of the feminist Mary Wollstonecraft and the anarchist political philosopher William Godwin, and wife of the poet Shelley, published her – initially anonymous – *Frankenstein, or the Modern Prometheus*. This is the fable of a scientist who ends up creating a man-monster. In his failure, Frankenstein exemplifies man's obsessive desire to discover the secrets of life in order to generate life itself but also the limitations of a scientific enterprise devoid of moral responsibility (Shelley, 1818; Winter, 1982).

In 1926, Charlotte Haldane, the wife of the distinguished English biologist J. B. S. Haldane, and a feminist, wrote *Man's World*, a pseudo-scientific Utopia describing the effects on society if man could determine in advance the quality and sex of its children. The outcome is a shallow, functional society of whites governed by a scientific elite in which women are classed according to their aptitude to breed and individual freedom and diversity are sacrificed to communal ends. Charlotte had been inspired by Haldane's

own dreams of eugenic breeding of children by ectogenesis, which he had described in *Daedalus* in 1923 (Haldane, C, 1926, 1949; Haldane, J. B. S., 1925; Clark, 1968).

Almost simultaneously, the famous biologist H. J. Muller wrote *Out of the Night, a Biologist's View of the Future*, a eugenic utopia foreseeing a "brave new world" peopled by a race supremely intelligent and cooperative. Artificial insemination (AI), the culture and storage of sperm from great men (his heroes were Lenin, Newton, da Vinci, Pasteur, Beethoven, Omar Khayyam, Pushkin, Sun Yat Sen, and Marx), the recovery of eggs for extrauterine fertilization, embryo transfer, and sex selection to eliminate genetic defects and determine the sex ratio at the service of a new science of eugenics would transform competitive social relations abolishing classes by improving human's intellectual and moral qualities:¹

Now all this is no idle dream. It not only certainly can be done – I believe it certainly will be done. Exactly how these applications of genetics will come to man may at present be in some dispute; but come they undoubtedly will. It is unthinkable that man will ever voluntarily relinquish his potential dominion, now that he has gone thus far. Nor will an enlightened world for ever reject any effective means for its own advancement. Not only is our genetic improvement patently possible, but it is far surer and more feasible than any ultimate conquest of the atom, of interplanetary space, or of external nature in general... And even if our conquest of external nature fails, still we shall have conquered ourselves, and we may be content enough with the probable prospect of some hundreds of millions of years of happy endeavour in store for us on this planet. (Muller, 1936: 145–155)

Muller shared his enthusiasm for eugenics with most of his contemporaries but he was no laissez-faire social darwinist. On the contrary, he proposed eugenic breeding as a path to social betterment. He also defended the liberation of women from the "martyrdom" of involuntary motherhood. Only birth control would ensure eugenic breeding by artificially inseminating women with infertile husbands with the sperm of exceptional men.

According to Muller's eugenic program, the

qualities of voluntary selection that were to be selected for were intelligence and creativity, cooperation, and physical and mental health. Although Muller condemned the fascist use of genetics, he never questioned the elitist premises of his own theory, however.² It is noteworthy that the two Haldanes as well as Muller actively participated as volunteers in the Spanish Civil war on the Republican side.³

This is an arbitrary selection of writings. I obviously need not mention Huxley's *Brave New World*; it is known well enough. But in different ways all of them are pertinent for my theme – the motives, meaning, and consequences entailed in the new reproductive technologies. There is the quest for knowledge and control of the principles of life, there is the eugenic dream of a perfect race, and there is women's instrumentalization at the service of these dreams.

THE DEVELOPMENT OF PROCREATIVE CONTROL

Muller's eugenic program was new at the time in its technical detail. All societies have exercised some sort of reproductive control. With the rise of the medical profession, procreation became progressively medicalized in the eighteenth century. Thereafter, contraception and artificial insemination developed hand in hand.

In the late eighteenth century, with the consolidation of the bourgeoisie, a new concept of childhood emerged. The family became child centered, and the bearing of children appeared to be increasingly a matter of choice (Lepénies, 1976: 199; Gordon, 1977; Trallori, 1983). Spallanzani, a preformationist – but of the ovist persuasion – had shown in the 1770s that contact between seminal fluid and the egg was essential for fertilization to take place. In the late 1770s, he successfully inseminated a bitch, although the penetration of the egg by the spermatozoa was not discovered until 1879 (Coleman, 1977). This was the second artificial insemination in mammals on record, the first one of a mare apparently dating back to the fourteenth century.⁴ Given the simplicity of artificial insemination consisting simply in depositing the semen of a man in the vagina of a woman, it comes as no surprise that the first successful attempt in humans dates back almost 200 years. In 1799, Hunter in England achieved the

first pregnancy with semen of the husband. In 1804, Thouret repeated the feat in France. But the technique does not seem to have caught on until the 1870s.

The first official condemnation of this practice came from a Bourdeaux tribunal in 1880, and in 1897 the Holy Office followed suit on the grounds that procreation without sex and entailing masturbation violated natural law. Church opposition apparently curbed artificial insemination in France while the practice spread in the United States where Pancoast carried out the first insemination with donor semen in 1884 in the case of the husband's azoospermia (David, 1985). The technique was generally used in cases of *impotentia coeundi, generandi* or genetic disease. With the official medical discovery by Ogino and Kraus in 1932 of the fertile period in the female cycle artificial insemination became more efficient, but the use of donor semen continued to be regarded as a violation of human dignity. In 1953, Bunge and Sherman achieved the first human pregnancy with frozen sperm and with this came sperm banks, especially in the United States. Thereafter, AI with donor sperm increased. In the late 1960s, it was estimated that between 5000 and 7000 children were born by AI in the United States and about 1000 in the Federal Republic of Germany (1 and 1.5 per thousand respectively) (Herzog, 1971: 5–6).

The decline in the birth rate in the industrialized countries throughout the past century indicates that, on the other hand, birth control mainly through abortion and other popular means developed simultaneously with artificial insemination. As Gordon has shown for the United States, conservatives initially opposed feminist demands for reproductive freedom and voluntary motherhood out of fear that the alleged differential decline in birth rates of the upper classes might threaten their "racial" supremacy and class privileges and of the freedom that contraception offered women. In the 1930s, however, they came round to birth control, without abandoning their elitist class aims. If the upper class was having fewer children, the fertility of the growing mass of poor people needed to be controlled as well (Gordon, 1977). Also early in the century, as abortion was criminalized, the first laws on compulsory sterilization of the retarded and mentally ill and the physically handicapped were

enacted in the United States.⁵ The United States was not exceptional in this. The best known case is, of course, Germany. Extensive compulsory sterilization in this country was one outgrowth of the doctrine of race hygiene although eugenic sterilizations were carried out already toward the end of the century well before the enactment in 1933 of the first law of compulsory sterilization, which was thereafter applied above all to women with alleged psychic disorders in relation to sexuality and procreation (Bock, 1986).

Reproductive policy and practice in the postwar period increasingly reflects inequality on a world scale. A rise in the birth rate in the industrialized countries after the war was followed by a marked decline accompanied by the spread of mainly female contraceptives. No progress was made, however, in the development of an efficient male contraceptive. By the late 1970s, population growth in some of the European countries such as Germany and France had slowed to zero, a decline achieved in Spain by the early 1980s. But while pronatalist anxiety was growing in Europe, the United States government, in particular, adopted aggressive population control for Third World countries to reduce the number of the poor instead of sharing with them the wealth of the rich.

Population control for the Third World and a domestic pronatalist policy in the 1970s coincided with the formulation of a new sociobiological paradigm. According to this view, all social behavior has a genetic base and social institutions have a sole function – genetic maximization. As far as women were concerned, they are genetically programmed for monogamous heterosexual mating and motherhood, whereas the most effective male strategy of genetic maximization is to fertilize as many women as possible.⁶ Sociobiology thus came to reinforce an ideology of motherhood in the industrial countries at a time when the traditional family composed of a male breadwinner with a wife devoted to domestic work and child care seemed to be disintegrating as a growing number of women joined the labor market, fertility declined and the feminist movement challenged male supremacy. Indeed, as the French politician Michel Debré pointed out in 1979, the problem of fertility is above all a political one. If French women did not assume their patriotic duty to produce more children, this would lead to a situation of "producers without a market, pensions

which the State will no longer be able to pay, social legislation put totally at risk, the dangerous isolation of an ageing Europe in an overpopulated world in which the Third World is playing the fertility game" (Debré, 1979). Therefore, as a recent advertisement proclaimed "France needs children! ... there's more to life than sex" (Il n'y a pas que le sexe dans la vie").

In vitro fertilization began to be developed in the 1930s although at first research using human eggs advanced only slowly.⁷ In the 1960s, however, experimentation with IVF of women's eggs received a new impulse, and in 1978 the British scientists Steptoe and Edwards fathered the first baby conceived by IVF and embryo transfer. By mid 1985, over 1000 test-tube babies had been born in the world.

By now Spain and India had also joined the test-tube baby club. The most recent feat is the successful fertilization of frozen ova (Bopp, 1987).

At first sight, it may seem that in vitro fertilization is no more than one further step in the sex-neutral scientific endeavor to conquer the principles of life. However, the new reproductive technologies (NRTs) entail not only a qualitative jump in the medicotechnical control exercised over procreation, but also women are the objects of this new form of procreative technology more than ever. Artificial insemination was designed to treat cases of male infertility and responded to the husband's or the couple's wish to have a child, of the former's own "blood." The NRTs are equally informed by the wish for a child of "their own." By contrast, however, they are claimed to have as their primary aim the "cure" of female infertility although they are also used in cases of male infertility. They offer technological "solutions" for problems whose causes, such as female infertility itself, or the desire for motherhood, are left unexamined. And they always involve extensive biomedicotechnical intervention for the woman such as hospital confinement, heavy hormonal

treatment, and general anesthesia for egg recovery and embryo transfer (Duelli-Klein, 1985: 65).

REPRODUCTION OF THE FIT, ELIMINATION OF THE UNFIT

So far I have told a fairly straightforward story of the way in which the medicalization of human procreation progressed in the past two centuries. However, modern biology and medicine are inevitably bound up with social values and politics (Webster, 1981). Science and technology are influenced by the sociopolitical environment in which they develop, and in their turn reinforce the values and sociopolitical relationships that engender them. Biologists, geneticists, and doctors argue that they are only responding to peoples' needs and demands, that they only seek to help infertile couples to have a child of "their own." But they never stop to think about the reasons for this obsession to have a child "of one's own blood" in a world in which, it is also said, too many children are already being born many of whom die of malnutrition or starvation. What desires, then, do the new reproductive technologies satisfy, and whom do they really serve?

I am *not* suggesting that the NRTs are a technocratic solution conceived to arrest the decline of fertility and its alleged economic consequences in First World countries – this would be highly simplistic.⁸ Artificial fertilization was first developed for cattle and plant breeding to improve the quality and productivity of existing varieties. Why have these techniques now also been applied to humans? Or, more specifically, why this obsession with having a child of one's own "blood"? Without this desire for biological paternity, artificial fertilization would make no sense. The roots of this individualized biological notion of paternity and maternity must be sought in the nineteenth century.

Table 1. Number of test-tube babies, of IVF centres and date of first birth, by countries —mid 1985

Country	Test-tube babies	IVF centres	Year of first birth
UK	over 200	8	1978
France	100–200	over 60	1978
Australia	over 200	10	1978
USA	approx. 180	approx. 108	1980
West Germany	130	19	1982
Brazil	2–3	6	1982
Japan	20–30	over 10	1982
Denmark	1	2–3	1982
Switzerland	2	7	1982/83
Sweden	8	4	1982/83
Netherlands	20	8	1983
Israel	6–8	4–6	1983

Source: Seager, J and A. Olson. 1986. *Atlas—Women in the World*, New York, p. 6.

The study of kinship systems has been a favorite pastime of anthropologists. One important contribution we have made is to demonstrate that kinship systems and theories of conception are cultural constructs rather than natural facts. Thus, according to the theory of conception of the Trobrianders, a matrilineal society of Oceania, it is the mother who plays the essential role in the formation of the fetus, whereas it is thought that the genitor takes no part, the role of social father being assumed by the brother of the mother-genetrix. Symptomatic of European naturalistic prejudices, this conceptualization led to a forty-year controversy among anthropologists over the alleged *ignorantia paternitatis*, that is, the stupidity of primitives about the facts of life (Malinowski, 1927; Leach, 1969; Delaney, 1986). Conversely, the theory of conception reflected in Greek mythology (for example, in the Oresteia) conceives of the genetrix as merely a vehicle for the “essence” that the fetus derives from the genitor-father alone. Pallas Athene even was believed to have been born from the head of Zeus (Vickers, 1973; Lloyd, 1983). In Western culture today, by contrast, the fetus is conceived of as the combined product of the genetic ingredients of both genitors. This cultural conception is also reflected in our laws of filiation which are cognatic or bilateral.⁹

Two anthropologists, Rivi re in England and H ritier in France, have recently tried to minimize the conceptual and legal difficulties posed by the NRTs, which in the case of donation of sperm or eggs seem to subvert established biological notions of parenthood (H ritier-Aug , 1985; Rivi re, 1985). In effect, from an anthropological point of view, the problems raised by the NRTs are not as striking as they may seem. A range of cultures provide examples of a variety of alternative notions of parenthood. However, such a relativist position does not provide any explanation for these

cultural differences. And, in the Western case, by not accounting for our highly naturalistic notions of kinship it cannot explain either the reasons why artificial fertilization was developed in the first place nor can it tell us anything about the reactions these techniques provoked from different social sectors. For this we need to inquire into the sociostructural context in which the technologies evolved.

The emergence in the West, in the nineteenth century, of scientific naturalism, that is, of biological theories that then tried to legitimate social inequalities, is a crucial fact in understanding the individualized biological notions of parenthood that prevailed and that were further reinforced at the time. The most striking aspect of the nineteenth-century debate over the place of humans in nature is the deep and persistent tension between man’s quest to conquer and control nature on one hand and the simultaneous tendency to naturalize social beings on the other. Developing class society was generating growing social inequality – a process, nonetheless, accompanied by an ethos of equal opportunities for all humans seen as born equal and free. This illusion could obscure social inequalities to a degree but, by implication, it also reinforced the tendency to naturalize social relationships in the following way. If the self-determining individual, through persistent social inferiority, seemed to be unable to make the most of the opportunities society appeared to offer, this must then be due to some essential, inherent defect. That is, the person, or even better, his or her genetic endowment, rather than society was to be blamed for this.

But note, I am neither arguing that, at the time, this naturalization was a novel invention nor, conversely, that it was some sort of cultural residue of times past. What happened between the eighteenth and nineteenth centuries was a shift in

the paradigm conceived to order nature and society. Up to the eighteenth century, the notion of a God-given, static, vertical, and hierarchical great chain of being dominated scientific endeavors to conceptualize variety in nature including humankind in an ordered way. By the nineteenth century, scientific naturalism generated a historically conceived, horizontal, but nonetheless hierarchically ordered model in its place (Lovejoy, 1936; Hodgson, 1964).

The crucial question is this: Why, in a society of self-determining individuals, did naturalization of social facts as propagated by social darwinism, social spencerism, and social lamarckianism continue to play such a central ideological role (Young, 1973; Leeds, 1972; Hofstadter, 1944)? In the nineteenth century, the bourgeoisie could no longer justify social inequalities purely in terms of an ethic of abstinence and effort, that is, personal achievement, not least because these attributes no longer seemed to account for the success of the bourgeoisie itself. The result was a kind of sociopolitical elitism grounded in theories of class superiority (Hobsbawm, 1975). Moreover, on account of their biological base, these doctrines reinforced the notion of individualized biological parenthood and with it an image of women destined by their biology for motherhood. If social conditions expressed no more than genetic endowment, then for those possessing social preeminence, it became crucial, through class endogamy, to control reproduction in order to protect this preeminence. One consequence of this naturalization of social reproduction was the obsession with biological paternity, which meant the control by men of women's reproductive capacity and sexuality since, from such a biologicistic perspective, only women could bring social cum biological "bastards" to the family (Stolcke, 1981). As Laqueur has recently argued, "the old model, in which men and women were arrayed according to their degree of metaphysical perfection, (in the great chain of being), their vital heat, along an axis whose telos was male, gave way by the late eighteenth century to a new model of difference, of biological divergence ... at one time male and female bodies were regarded as hierarchically, that is vertically, ordered and ... at another time they came to be regarded as horizontally ordered, as opposites, as incommensurable..." (Laqueur, 1986: 2-3). Men,

nonetheless, remained the measure of all things. The universalistic notion of the self-determining individual thus, in practice, turned out to exclude women (as well as other social categories such as blacks at certain historical moments) who on account of their nature are, in reality, no part of it.

Note, for example, the ambiguous meaning of the term "to inherit" still prevalent today, meaning not only "to receive property, rank, title by legal descent or succession" but also "to derive (quality, character) from one's progenitor."¹⁰ Since the rules of heredity, "the tendency of like to beget like," are natural and unchangeable, they furnish the most persuasive justification for social inequalities. This same ambivalence is also reflected in the widespread unease about adoption, which, in fact, would be a possible solution to infertility.

Let me now return to the politics of population control for the Third World, pronatalist campaigns in the First, and the NRTs. What all three share is a similar naturalist and genetic ideology of procreation with connotations that are eugenic-racist and sexist. Common to them all is a view of humanity divided into us and them, into the fit and the unfit.

The Warnock Report prepared by the British Government Commission for the study of the legal and ethical implications of the NRTs is explicit about the social values that underlie the "desire" for biological fatherhood by means of technological motherhood:

Childlessness can be a source of stress even to those who have deliberately chosen it. Family and friends often expect a couple to start a family, and express their expectations, either openly or by implication. The family is a valued institution within our present society: within it the human infant receives nurture and protection during a prolonged period of dependence. It is also the place where social behavior is learnt and where the child develops its own identity and feeling of self-value. Parents likewise feel their identity in society enhanced and confirmed by their role in the family unit ... *In addition to social pressure to have children there is, for many, a powerful urge to perpetuate their genes through a new generation.* This desire cannot be assuaged by adoption.¹¹ (Warnock, 1984: 8-9)

The true pain that infertility can cause women as well as men in a society in which feminine identity rests so heavily on biological motherhood and male infertility tends to be confused with lack of virility must be taken seriously. Nonetheless, one must distinguish between freely expressed desires and socially induced needs. Little is known about the motives of women who go through IVF. But Cristine Crowe has shown, in a study of a group of such women at the Royal Shore Hospital in Sydney, Australia, that whereas they themselves desired above all to live the social experience of motherhood, it was their husbands who tended to conceive of paternity in purely biological terms. Those women who had never consulted an adoption agency had failed to do so because their husbands preferred to not have a child to adopting one of another man (Crowe, 1985). Thus, while it is women who feel the greatest social pressure to bear a child and who have historically been blamed for infertility, it is they who must now undergo the physically and psychologically painful procedures of IVF to give their husband a child of his own "blood." And they undertake this even though there is a high risk of failure. Doctors have claimed a success rate of 20 to 30 percent that they argue is similar to that of the natural process of conception in humans. According to one expert, *Homo sapiens* "is the species within the animal kingdom with the highest reproductive failure rate."¹² This is a singular piece of androcentric, instrumentalist logic which, moreover, entirely disregards the pleasure involved in the "natural process," which by no means always aims at conception but may be an end in itself. In addition, these success rates have been challenged not only by critics of the new reproductive technologies but more recently also by sectors of the medical profession itself. If the total number of women who have ever started an IVF program is compared with the number of actual live births, then the success rate lies around 7 percent.¹³ For the large majority of women who fail often after having gone through several attempts, therefore, IVF only serves to exacerbate the pain of infertility.

Even as renowned a scientific journal as *Nature* in a recent editorial justified surrogate motherhood (at present prohibited by commercial agencies in England) on the following biological grounds:

Procreative instincts have an adaptive

significance for all species and, while they may become a nuisance in long-lived human societies, they cannot be repressed by legislation. *It is natural that couples should prefer genetically related to unrelated children:* Dawkin's concept of the selfish gene, not to mention a great deal of sociobiology, refers to this. (*Nature*, 1986)

THE QUEST FOR FATHERHOOD

Nevertheless, the latest achievements of the NRTs, – fertilization with donated semen, ova, or embryos – would appear to challenge conventional biological concepts of parenthood. With the possibility of contraception, sex ceased to have procreation as its sole and necessary end. Artificial fertilization, moreover, now allows the separation of biological from social parenthood. For this reason, fertilization by donors has raised alarm in certain quarters. A vast juridical literature already exists on AID focusing mainly on the legitimacy of the child, the legal status of the donor and the doctor's responsibilities (Herzog, 1971; Starck and Coester-Waltjen, 1986). Opponents of fertilization by donors are, however, generally oblivious of women's concerns focusing mostly on the rights of the father or the child.¹⁴ Women's interests that are even more directly affected by the NRTs are rarely taken into account. For example, at a meeting of Spanish lawyers to assess the legal problems of artificial fertilization the opinion was expressed that:¹⁵

... from the point of view of first principles, heterologous insemination within marriage has worrying aspects ... this operation will seriously disturb married life, with consequent repercussions on the child itself. *The deficiency in the husband's virility with regard to fertility, is made good by a stranger.* It is the sexual cells of this other male which will provoke the metamorphosis which pregnancy produces in the woman. The vital cycle, the biological and emotional life of the woman will suffer profound change, not brought about by the sexual power of her husband, but that of a stranger. In gestation, in birth, in lactation, in the new born child and in its genetic capacity, the other will always be present. Living through these procedures cannot but constitute a serious

disturbance in the intimate life of the couple, with the resulting repercussion on the child since what it needs for the normal development of its personality, is a home with a minimum of emotional unity deep down between the two parents. (Ministry of Justice, 1986)

The Catholic Church, on its part, rejects fertilization by donor because this constitutes adultery! although Catholic researchers and doctors do not seem to be necessarily following the doctrine of the Church.¹⁶ But neither is Spain so different nor is the Catholic Church so exceptional in its defense of “true” paternity. As Balz, a German legal expert, recently argued:

The decision to have offspring of their own arises from a natural and original desire of most people . . . Although . . . heterologous insemination as distinct from adultery does not usually imply a break up of the conjugal union . . . it does dissolve the link which according to the *Grundgesetz* (constitution) exists between the sexual union, biological descent and social adscription. It is debatable whether a . . . constitutional protection of the desire to have a child exists if this is not fulfilled within marriage and the family. (Balz, 1980: 21–22)

Moreover, he argued, “it may not be advisable to further a technology in the form of heterologous insemination which endows women with a socially adequate instrument to dislodge the husband.”

Note that in biology “heterologous” fertilization means that different species are involved in an act of fertilization!

Certainly, not all lawyers endorse this combination of sexual prohibitions and prescriptive genetic fatherhood. Nonetheless, European parliamentary commissions studying the legal regulation of the NRTs have generally proposed procedures for the selection of sperm or eggs with a view not only to prevent the transmission of genetic diseases but also to assure “phenotypical similarity” of donors with the couple.

The Warnock Report proposed that the couple receive sufficient relevant information about the donor “for their own peace of mind”: “This should include certain basic facts about the donor, such as his *ethnic group* and his genetic health.” It is not

made clear what is meant by “ethnic group,” whether the criterion should be religious, cultural, or racial.¹⁷

The German Benda Report is more cautious in this respect. Although “heterologous insemination was preferable to adoption when the couple had an appropriate attitude, since the child conceived by the wife would inherit half of her characteristics and the husband could recognize a part of his spouse in the child,” the Report rejected it in the interest of the child’s psychic well-being. Moreover, “selection of the donor by the doctor entailed the risk that eugenic criteria might come into play.” Nonetheless, almost as an afterthought the Report added, “The physical and psychic health of the donor should determine the selection” (Benda Kommission, 1985: 21–23). It is at least arguable whether psychic health necessarily has a genetic base.

And in the case of Spain, one biologist advising the Parliamentary Commission on artificial fertilization¹⁸ suggested the following “norms of quality control” for donor selection:

We would want to give as a guarantee the fact that, as in the case of the majority of banks of reproductive material, we can ensure that a couple who have, for example, a particular type of straight fair hair and blue eyes are not going to have a child with curly black hair and dark skin, when phenotypically that would seem impossible.

A rather startling suggestion if one considers that fair hair and blue eyes don’t exactly predominate in the Iberian phenotype. The Report itself revealed a racial concern when it argued that “the female recipients of gametes or embryos and their male companion . . . have the right to know the characteristics of the donor or donors, such as the phenotype, ethnic group, blood group, genetic health, etc. but not their identity.”¹⁹

With fertilization by donor, fatherhood, motherhood, or both are not based on a genetic link. Nonetheless, through donor selection by phenotypical criteria the eugenic ideal may be assured, namely to obtain a child “alike” to them. Doctors and technicians may not necessarily share these eugenic ideals, but they respond to the racial desires of their clients who are motivated by latent racial prejudices coupled with the sexual values that prevail. A phenotypically different child might

also give away the husband's infertility, a fear that itself stems from the biological notion of procreation coupled with the norm of conjugal fidelity.²⁰

Representatives of the scientific community involved in the development of the NRTs themselves have acknowledged the eugenic potentialities of these techniques. Peter Singer, Professor at the Bioethics Centre of Monash University in Victoria, Australia, for example, last year argued that:

If we were able to alter intelligence, would our function be solely that of eliminating cases of mental deficiency, or of trying to raise the average level of intelligence? If we were able to eliminate particularly depressive personalities would it then be wrong to attempt to bring into the world people a little happier than most of us usually are? If we were able to eliminate criminal violence, would it not be possible to develop some loveable qualities in the human spirit? We can certainly say that though the risks of such an enterprise are great, so are the potential benefits. (Singer, 1986:14–15)

But precisely because of this very real eugenic potential some, although isolated, opposition has now been voiced within the scientific community in France (the country with the relatively largest number of IVF clinics) against embryo manipulation and research. Jacques Testart, the father of the first French test-tube baby, has recently called for a halt to research on the egg with a view to develop procedures for sex determination. As he argued, at present 40 percent of the couples seeking in vitro fertilization at his center turn out to be fertile (i.e., seek IVF for reasons other than infertility). And the French national ethics committee in December of last year called for a three-year moratorium on embryo research because, "(it) raises the risk of the development of eugenic practices, which, if they become commonplace, may engender the desire to banalize human reproduction. The temptation to choose the child to be born in accordance with its qualities may be contrary to human dignity, because it calls in question the respect for the difference, the singularity and the freedom of the child."²¹ In vitro fertilization at its present technological level, duly regulated by the state,

may, however, proceed while women's specific experiences are overlooked.

The erosion of conventional biological notions of parenthood by the NRTs not only affects those directly involved. Precisely because, despite their initial purpose of endowing infertile couples with a child of their own, the NRTs also challenge the conventional juridical base of marriage, the family, and filiation and hence the social order itself, their consequences are deemed to require regulation by the state.

The case that has drawn most public attention in recent times is surrogate motherhood. There are three technobiological possibilities here. Either a hired woman matures the embryo generated with the eggs and sperm of a couple that is implanted through embryo transfer in her womb on the understanding that the child will be theirs, or she is artificially inseminated with the husband's sperm, or the wife's eggs are fertilized in vitro with the sperm of another man and the embryo is implanted in a hired womb. In all three cases there is a potential conflict between contractual rights and the biological criteria of parenthood. This conflict becomes overt when, as has indeed happened recently, the surrogate mother refuses to hand over the child, when, as a male writer recently put it to me, the two women involved quarrel over the child. This is obviously a matter of perspective. One could equally well interpret such cases as an instance of a man successively using two women to bear *his* child. The tendency in cases of litigation in the United States seems to be that the right of contract prevails over the surrogate mother's claim. But this is so because the contract, apparently entered into between free, consenting individuals hides a power relationship that it serves to reinforce. The contract, in fact, endorses the father's right while surrogate motherhood becomes an instrument in the quest for fatherhood.²²

Nonetheless one might presume that the NRTs may gradually erode and transform traditional concepts of marriage, family, filiation, and inheritance. But this does not seem to be the case. On the contrary, the tendency is to regulate the effects of the NRTs in terms of established father-centered institutions and norms. One obvious reason why no dramatic changes in values can be expected from the NRTs is that though spectacular, the actual cases of artificial fertilization are relatively few. Most of the conservative reactions

they have provoked reveal concern over the effect the NRTs may have for conventional biological concepts of parenthood even though these technologies do not really challenge dominant values. Nonetheless, political and social pressure for regulation is intense. The legal innovations recommended are generally designed to preserve, under the new technological conditions, prevailing norms, and social relationships, at the same time making apparent which interests are at stake.

AID through the use of sperm banks could offer women the opportunity to bear a child without a husband. But the tendency is to demand control by medical experts of this simple technique and to restrict its use to stable, ideally married, heterosexual couples. Even the Spanish Parliamentary Commission, which purports to be more liberal in this respect than most, on the one hand permits AI of single women and on the other assesses the NRTs essentially in terms of family interests. In an attempt to reconcile the right of the single woman to have a child and the constitutional protection of the family, the Commission argued that the "necessary environment" for artificial insemination should be "the stable heterosexual couple" or alternatively that "reasonable guarantees be given that the mother be capable of bringing up the child, of maintaining it and of ensuring its family and social integration."²³ One wonders by whom and in which terms a woman's maternal "qualifications" will be assessed.

The crucial question is fatherhood! As the old saying has it, *mater semper certa est* (the mother is always certain). With IVF the fertilized egg can be transferred for gestation to another woman's womb, and this can be a source of conflict. But both women still bear evidence of their participation. In the case of men, their role becomes potentially very elusive instead. The recommendations made, for example, by the Spanish Parliamentary Report with regard to paternity constitute, in effect, a reconsecration, in the new circumstances of the NRTs, of an old reality, namely fatherhood. On the one hand, "the rule must be that the married or stable consensual couple on whose female partner an artificial insemination or in vitro fertilization with donor semen, ova or embryo is practiced ... consented to by both partners, will be the legal parents of whatever child or children may be born." But on the other, the stable male partner of a couple in

which the woman has undergone fertilization by donor without consent should be able to refuse to acknowledge the child, who should be registered as fatherless (Spain, 1986: 164). A similar recommendation was made in the German Federal Republic. What is being proposed here is a kind of "technological" adultery. In other words, while it is the woman who is subjected to artificial fertilization, the man has the last word on paternity. Even in the relatively simple case of artificial insemination little room is left for a woman to choose.

On the whole, then, the NRTs are a new instrument of ideological, psychological, and physical control of women, developed and used according to interests that are not theirs. Politicians are alarmed by the decline in fertility; scientists and technicians strive to conquer the ultimate secrets of life; the men want to have children "of their own," and the state sets about safeguarding the new old fatherhood. Women in contrast, control nothing, but are the objects – the indispensable objects – of all these technologies.

As Haldane wrote prophetically in 1923:

We must regard science, then, from three points of view. First, it is the free activity of man's divine faculties of reason and imagination. Secondly, it is the answer of the few to the demands of the many for wealth, comfort and victory, for "healthy and eternal life," gifts which it will grant only in exchange for peace, security, and stagnation. Finally it is man's gradual conquest, first of space and time, then of matter as such, then of his own body and those of other living beings, and finally the subjugation of the dark and evil elements in his own soul" (Haldane, J. B. S., 1923: 81–82).

I would qualify this definition of science only in one important sense. Using the same martial language that is so popular among scientists, I would stress that the battle ground on which this conquest of the ultimate secrets of life takes place are mainly women's bodies as the objects and instruments of all these technologies. This is so because science is itself a social activity mediated by the structures and values which prevail in society. For this reason, as Virginia Woolf declared in 1938, "Science, it would seem, is not sexless; she is a man, a father and infected too."

(Woolf, 1938).

ENDNOTES

1. Muller, Hermann J. 1936. *Out of the Night: A Biologist's View of the Future*, London. Muller was a pioneer of modern genetics; inspired by the Mendelian theory of heredity, he discovered the mutagenic effects of X-rays and investigated the chromosomal location of genetic information, convinced that the "hereditary units" were chemical substances. Having become sceptical about the possibilities of putting his eugenic doctrine into practice in the United States, he went to the Soviet Union in 1933 at the invitation of the Moscow Genetic Institute. But the political dogmatism of T. D. Lysenko and Stalin's opposition to his eugenic program and the persecution of scientific dissenters soon drove Muller to seek a way to leave the country. Enlistment as a doctor in the International Brigades provided a politically legitimate reason to depart and also responded to his feeling of solidarity with the Republican side in the Spanish Civil War. In 1947 Muller received the Nobel Prize for Medicine. In the postwar years he denounced the deleterious effects of radiation on human genetic endowment calling for control and regulation of nuclear energy. Until his death in 1967 he worked on popularizing his "humanist" eugenic doctrine. Allen, Garland E. 1970. Science and society in the eugenic thought of H. J. Muller. *BioScience*, 20(6); Roth, Karl-Heinz. Sozialer Fortschritt durch Menschenzüchtung? Der Genetiker und Eugeniker H. J. Muller (1890-1967). Hansen, Friedrich and Regine Kollek. 1985. *Gen-Technologie Die Neue Soziale Waffe*, Hamburg; Carlson, Eloy Axel. 1981. *Genes, Radiation and Society: The Life and Work of H. J. Muller*, Cornell University Press.

2. J. B. S. Haldane collaborated in 1932 with mathematician Lancelot Hogben, with Julian Huxley and the Edinburgh geneticist F. A. E. Crew in the establishment of a Society for Experimental Biology. Symptomatic of the predominance of eugenic ideas in the community of British biologists is the fact that Hogben was the only one of the SFB's four "founding fathers" who did not advocate some form of birth control for a sector of the working class. As Hogben argued in 1938: "Because differences in the intelligence quotient are not much affected by school environment, many writers have given, and still give, support to the view that differences of this kind are a reliable index of inborn endowment. Such assertions are not supported by the results of inquiries into twin resemblance. They overlook the significance of the uterine environment and the period of social training before intelligence tests can be applied. Between birth and the age at which formal education begins there is a protracted and, it may be, highly significant period during which differences of social behaviour may affect the behavior of an individual. ..." Hogben, Lancelot, 1938, *Political Arithmetic. A Symposium of Population Studies*, London, p. 333. See also Hogben, Lancelot, 1933, *Nature and Nurture*, London. Sir Cyril Bun, whose findings were later shown to be a fraud, was to provide the apparently clearest evidence of the genetic determination of intelligence in his studies of separated identical twins in the Galtonian eugenic tradition. Burt died in 1971, knighted by the Queen and honored by the scientific community. By the mid-1970s it had been established beyond any doubt, however, that Burt

had perpetrated a major scientific fraud by faking his data. As significant as the fraud itself is the time it took the scientific community to uncover it. Burt started publishing his findings on the heritability of intelligence in 1909! Rose, Steven, R. C. Lewontin and Leon J. Kamin, 1984, *Not in Our Genes: Biology, Ideology and Human Nature*, Penguin Books, esp. chapter 5.

3. For a description of the Haldanes' involvement in the Spanish Civil War, their membership in the English communist party as well as their later disillusionment see Haldane, Charlotte, 1949. See also Graham, Loren R., 1977, Science and values: The eugenics movement in Germany and Russia in the 1920s, *The American Historical Review*, 82(5) for an excellent discussion of eugenics in Soviet Russia.

4. Rohleder, Hermann. 1981. *Normale, pathologische und künstliche Zeugung beim Menschen*, Leipzig, vol. I; it is worth recording this story. It exemplifies well the aim of AI, namely breeding. Rohleder found the report in a book by a Dr. LeBon who in turn had discovered it in an Arab text dating from 1322. The story is as follows: "An inhabitant of Darfur (Arabia) who had a mare which was on heat, took a handful of previously cleaned and prepared cotton and fastened it carefully to the genitals of the animal leaving it there for a day. After removing the cotton, totally wet with the secretion of the vulva, he wrapped it up well in additional cotton and placed it into his tightly closed saddle bag. Upon this he entered in disguise into the territory of an enemy tribe where he knew there to be a renowned stud, from which he desired offspring. After succeeding in approaching the horse held by an iron chain, he took out the cotton, put it to the horse's nostrils, upon which the horse got excited by the smell, got aroused and ejaculated. The Arab approached with the cotton and, God willed that it was wetted. Upon his return home he placed the impregnated cotton to the genitals of his mare leaving it there for a while. The semen spread and was absorbed by the local heat. God willed it that the mare became pregnant. The fertilization proved true. The mare gave birth. A foal was born à l'image de son père" (p. 238).

5. In 1907 the State of Indiana adopted the first sterilization law for mentally handicapped and allegedly inveterate criminals; by 1915 twelve other states had followed Indiana's example (Allen, 1970: 347). During the 1950s and 1960s, a new wave of involuntary sterilizations took place in the United States, where many black girls and women were sterilized without their knowledge; other victims of such abuses were women of Indian and Mexican origin (Clarke, 1984: 188-203). That women, for example in Latin America, subject themselves voluntarily to sterilization does not mean, however, that this is necessarily a free choice given the absence of adequate family planning services and the economic hardship that prevails.

6. It would be mistaken to regard sociobiology as no more than an unsequential academic fad. By now, a vast and still growing literature has been generated by this "new synthesis," which, because of the apparent simplicity of the model it proposes, and the widespread biologism to which it appeals has, moreover, found considerable popular resonance. The Harvard biologist Edward O. Wilson, the founder of sociobiology, formulated the general framework of a new unified Darwinian theory of behavior in 1975 in *Sociobiology: The New Synthesis*, Harvard University Press, which was followed in 1978 by *On Human Nature*, the first explicit book

on human sociobiology. Thereafter followed, with Charles J. Lumsden, *Genes, Mind and Culture* in 1981 and *Promethean Fire* in 1983.

7. Pincus and Enzman published a paper in 1935 on attempts at IVF of women's eggs and Menkin and Rock wrote about similar experiments in 1948. I am grateful to Pat Spallone for these early references to IVF research.

8. Although if one takes some of the literature on the decline in birth rates at face value, one gains the impression that some politicians do set such hopes in the NRT. The Spanish Undersecretary of the Ministry of Health and Consumption, for example, announced recently in this respect: "They (the centers for family planning) are not centers of family planning, but of family guidance, which will assist people who desire children of their own free will to have them, with the spacing they wish, and which will, moreover, fight against the infertility which 300,000 Spanish couples suffer. I am sure that in this field and with the help of all the means at our disposal, we can achieve many new children for those who want them and have not up to now been able to have them" (J. Catalán Deus, 1986: 40).

9. One could argue that at least in those countries where family law has its roots in the Napoleonic Code, such as France and Spain, according to which the father is the husband of the mother, paternity is conceived as a social rather than a biological bond. However, the same law conceded to the husband exclusive access to his wife's sexuality expressed in such legal instruments as the penalization of adultery. Furthermore, also in these countries, paternity has been popularly understood as a "blood" tie.

10. *Concise Oxford Dictionary*; in *La Grande Encyclopédie* edited in Paris around 1900, for instance, one can read the following under the heading *fécondation*: "Il nous reste à noter un fait bien singulier à l'égard de la fécondation: c'est l'influence qu'exerce souvent la première fécondation sur les suivantes, et la sorte d'imprégnation de l'organisme femelle qui en résulte. C'est ainsi qu'une jument ayant été fécondée une fois par un couagga, ses produits ultérieurs, après fécondation par un pur sang, rappelleront avec une netteté frappante la coloration caractéristique du premier fécondateur ... Les exemples de ce genre abondent, et on en trouve même dans l'espèce humaine. A quoi tient cette influence du premier fécondateur sur les fécondations où il n'a point part? On n'en sait rien. Comment une femme blanche, mariée d'abord à un nègre, engendre-t-elle plus tard, après un mariage avec un blanc qui la féconde, des enfants portant des traces évidentes de sang nègre? Cela est: on en peut citer des cas, mais on ne les explique point" (p. 110). This notion of hereditary racial "imprégnation" is surely quite remarkable.

11. Warnock, Mary, 1984. *Question of Life: Warnock Report on Human Fertilization and Embryology*, London, pp. 8-9 (my italics). It should be noted, however, that voluntary vasectomy seems to be on the increase in the industrial countries. In the Federal Republic of Germany, an estimated 30,000 to 50,000 men are sterilized upon request annually. Seventy percent of these, however, already have a child and 5 percent attempt a "refertilization." Wenn der Stammbaum gefällt wird, *Der Tagesspiegel*, August 16, 1987.

12. This seems to be a comparison very commonly used by the medical profession. I have heard Dr. Edwards draw this parallel in a colloquium on in vitro fertilization in Barcelona in 1985.

13. During his recent visit to Barcelona, Edwards declared that he had achieved a success rate of 30 percent (defined as "embryo transformed into child born") in the implantation of three embryos in mothers under 40 years of age. *El País*, October 26, 1985. Dr. Barri of Barcelona informed the Spanish Special Study Commission on Artificial Insemination of an overall success rate of 20 percent *pregnancies* in transfers of one to three embryos per cycle at the Dexeus Clinic. But pregnancies are not births. As Corea and Ince have shown in a study of "success" rates obtained by IVF clinics in the United States, the figures are commonly inflated by counting transfers of embryos or pregnancies instead of live births. Corea, Gena, and S. Ince. 1985. Survey of IVF Clinics in the US. Report presented at the *Women's Emergency Conference on the New Reproductive Technologies*, Vällinge, Sweden and published in *Made to Order*. Françoise Labourie, who gave evidence at the first public hearing of the Commission on Justice and Human Rights of the European Parliament on "Juridical and Ethical Aspects of Genetic Engineering" in Brussels, also questioned the "success" rates claimed by the medical establishment. In the case of France, where at the end of 1984 there existed around 60 IVF centers, the success rate per cycle did not exceed 7 percent in the best clinics if one takes into account failures at different points in the fertilization process. Labourie, Françoise, Report presented at the *Women's Hearing on Genetic Engineering and Reproductive Technologies*, held at the European Parliament on 6-7 March 1986. See also Athea, Nicole, 1985. *La Fécondation In Vitro: De l'Anarchie à une Réglementation?* Mémoire de Santé Publique, ESNP, Rennes, p. 48, who concluded that the rate of actual viable pregnancies achieved – the only ones that could lead to a birth – was about 10 to 15 percent at the most experienced centers. Similarly *The Second Report of the Voluntary Licensing Authority for Human In Vitro Fertilization and Embryology*—1987 published by the British Voluntary Licensing Authority cites an 8 percent success rate for 1985. Another recent publication of statistics on IVF is by the National Perinatal Statistics Unit, Fertility Society of Australia. 1987. *In Vitro Fertilization Pregnancies—Australia and New Zealand, 1979–1985*. I want to stress, however, that low success rates of IVF which can, moreover, be improved by further technological refinements, are by no means the primary source of feminist opposition to the NRT.

14. The British Warnock Committee was composed of fourteen members and two observers, among them only four women: the chairman (sic), Dame Mary Warnock, a philosopher, two social workers, and the chairman (sic) of the Gwynedd Health Authority. A wide range of organizations submitted evidence to the Committee, among them a few women's groups such as Women for Life on Earth, but none of these were selected to give oral evidence as were, for instance, Drs. Edwards and Steptoe. The Report of the Committee was debated in the two Houses of Parliament late in 1984. The dominant concern of both chambers was with the experimentation on and the status of embryos, the notion of the beginning of life, the rights and protection of the unborn child, the status of the child born by AID, and the protection of the family. Women's interests and needs were reduced to the desire for a child. Only very few voices in the House of Commons denounced the fact that women's groups were neither represented nor heard by the Committee; and only one member, Ann Winterton (for Congleton) challenged the technocratic approach to infertility adopted in the Report that

lacked any recommendations regarding the root causes of infertility and that she attributed above all to sexually transmitted diseases resulting from poor sex education and promiscuous sexual intercourse. *House of Lords Weekly Hansard*, 456 (1265) and *House of Commons Weekly Hansard*, 68 (1326).

15 Spain. 1986. Ministry of Justice. Problemas Civiles que plantea la Inseminación Artificial y la Fecundación In Vitro. Supplement No. 3 to the *Boletín de Información del Ministerio de Justicia*, January 15, 1986, p. 11. The lawyer Carmen Frias Garcia, however, was in total disagreement with this interpretation. In some Spanish IVF centers couples seem to be advised to intensify sexual intercourse after an artificial fertilization by donor in order to help the husband to overcome his sense of exclusion.

16. For example, Balcells Gorina, professor of law, and member of the Catholic lay organization Opus Dei, argued already in 1980 that "Sperm banks mean a real dehumanization of paternity." From this perspective human is what is "natural," the natural is of divine origin and it is not for man to interfere with God's design (Balcells Gorina, 1986). *Le Monde*, December 16, 1986 informs of two "Catholic" test-tube babies having been born in France. The official prohibition by the Vatican of in vitro fertilization has been made public recently, although a year ago it seemed that the procedure of extracting the embryo conceived by the "natural" process from a woman's womb by means of "washing" and its subsequent transfer to another woman for gestation might be exempted from the prohibition. In the English case the Lord Bishop of Norwich declared during the debate on the Warnock Report in the House of Lords: "... in 1948 the Archbishop was so highly critical of artificial insemination by donor that he recommended it should be made a criminal offense ... I believe myself that this (AID) raises major moral problems ... because here a third party enters that nuclear relationship of husband and wife. Here problems arise whether (one might say) morally, of adultery, or legally of inheritance of the person concerned, or socially (because we know so much more about family relationships today) the problem of that mother knowing that she has received the life of another man who is anonymous, thus making it possible for her to bear a child, and her relationship with her husband, who knows he has not been able to help his wife in that common activity of parenthood, and the child growing up in the years to come not fully having the assurance that *he is owned, loved, and supported by two natural parents* (my italics). It is an entirely different situation from the fostering situation." *House of Lords Weekly Hansard* 456 (1265), cols. 552–3. Note that a child born through AID was considered illegitimate in England, a situation still prevailing in Spain. The members of the Warnock Committee unanimously agreed, however, to recommend that an AID child should in law be treated as the legitimate child of its mother and her husband provided both had consented to the treatment (Warnock, 1984: 23–4).

17. Warnock, 1984: 24; Robert MacLennan, member of the House of Commons for Caithness and Sutherland, made a similar recommendation for donor selection: "The first principle that I advance is that both partners in the marriage should be in as equal a genetic relationship to the offspring of that marriage as is possible. If there is a genetic imbalance in the relationship to the offspring, there is a potential danger not only to the relationship of the husband and wife to each other, but also the

offspring to the two partners of the marriage." *House of Commons Weekly Hansard* 68 (1326) col. 564.

18. Spain. Congress of Deputies. 1985. *Diario de Sesiones*, p. 10217; or, as the geneticist Lacadena suggested concerning the appropriateness of keeping secret the origin of the semen or the eggs and donor selection: "One cannot use the semen of a person of negro race when it is a question of a couple of white race, because there would then be a genetic incongruity between the biological product, the new being, and origin from his parents." Ibid. *Diario de Sesiones*, pp. 10645–46. One might ask why there is such insistence in this case on keeping the origin secret. If the issue is one of preventing the child born through donor fertilization from making legal claims on the donor, this eventuality could be ruled out legally. In the Federal Republic of Germany the position is the reverse, namely anonymity of the donor is rejected because of a child's right to know his/her origin. It would be interesting to know the roots of this right.

19. Spain. Congress of Deputies. 1986. *Informe de la Comisión Especial de Estudio de la Fecundación "in Vitro" y la Inseminación Artificial Humana*, p. 164. In the attached glossary, "phenotype" is defined as "The external or morphological characteristics displayed by an individual, for example, blue eyes, cranial form." What is meant by "ethnic group" is, however, not said. Ibid., p. 181.

20. Thus the newspaper *Ya* of November 22, 1985 reported of an infertile husband of a couple seeking artificial fertilization by donor having asked the physician "Doctor, please, find me a donor who is white because if I appear in Guadalajara with a mulatto child the laughter will be heard right up to Zaragoza."

21. Ein Biologe sagt: Halt! *Tageszeitung*, January 27, 1987; L'avis du Comité d'éthique sur les manipulations de l'embryon humain. *Le Monde*, December 16, 1986, p. 12.

22. One such controversial case is that of Baby M in the United States in which the court recently decided against the biological mother's right to keep the child and in favor of the father which also means that the contract was upheld. *Tageszeitung*, April 2, 1987. Significantly, in a dramatized court case presented on Catalan television in 1986 in which a jury composed of members of the public was asked to judge such a case, the surrogate mother's desire to keep the child was overruled in similar terms. In the German Federal Republic, however, legal opinion seems to be opposed to surrogate motherhood contracts applying adoption law to such arrangements instead which leaves time after the birth for the so-called surrogate mother to reconsider her decision. See also Mies, Maria. Im Supermarkt der käuflichen Körperteile. *Tageszeitung*, August 1, 1987 who denounces the commercialization of reproduction under surrogate motherhood contracts that belies the alleged freedom of the contract.

23. Spain, 1986: 129; the recommendation to permit artificial fertilization by single women rests on the constitution, which outlaws discrimination of unwed mothers and permits adoption by single women. The Warnock Committee, however, opposed this possibility on the grounds that "As a rule it is better for children to be born into a two-parent family, with both father and mother, although we recognize that it is impossible to predict with any certainty how lasting such a relationship will be" (Warnock, 1984: 11–12).

REFERENCES

- Allen, Garland E. 1970. Science and society in the eugenic thought of H. J. Muller. *BioScience* 20(6).
- Arditti, Rita, Duelli Klein, Renate, and Shelley Minden (eds). 1984. *Test-Tube Women*. Pandora Press, London.
- Athea, Nicole. 1985. *La Fécondation in Vitro: De l'Anarchie à une Réglementation?* ESNP, Rennes.
- Balcells Gorina, A. 1980. La inseminación artificial, zootecnia en el hombre. *La Vanguardia*. May 3.
- Balz, Manfred. 1980. *Heterologe künstliche Samenübertragung beim Menschen*. Tübingen.
- Benda-Kommission des Bundestages. 1985. Bunderrepublik Deutschland. *Bericht der Arbeitsgruppe In-Vitro Fertilization, Genomanalyse und Gentherapie*. Bonn.
- Bock, Gisela. 1986. *Zwangssterilisation im Nationalsozialismus, Studien zur Rassenpolitik und Frauenpolitik*. Westdeutscher Verlag, Opladen.
- Bopp, A. 1987. Mit Frostschutz und Hormonen ins Leben. *Die Zeit*. February 27.
- Carlson, Elof Axel. 1981. *Gene, Radiation and Society – The Life and Work of H. J. Muller*. Cornell University Press, Ithaca, NY.
- Catalán Deus, José. 1986. Tener hijos? No, gracias. *El País*. March 23, Sunday Supplement.
- Clark, Ronald. 1968. *The Life and Work of J. B. S. Haldane*. London.
- Clarke, Adele. 1984. Subtle forms of sterilisation abuse: A reproductive rights analysis. Arditti, Rita, Duelli Klein, Renate, and Minden, Shelley (eds). *Test-Tube Women*. Pandora Press, London.
- Coleman, William. 1977. *Biology in the Nineteenth Century, Problems of Form, Function and Transformation*. Cambridge University Press, New York.
- Corea, Gena. 1985. *The Mother Machine: Reproductive Technologies from Artificial Insemination to Artificial Wombs*. Harper & Row, New York.
- Corea, Gena and Ince, S. 1985. Survey of IVF Clinics in the US. *Women's Emergency Conference on the New Reproductive Technologies*. Vällinge, Sweden. Published in Patricia Spallone and Deborah Lynn Steinberg (eds.). 1987. *Made to Order: The Myth of Reproductive and Genetic Progress*. Pergamon, Oxford.
- Crowe, Christine. 1985. Women want it: In vitro fertilization and women's motivation for participation. *Women's Studies International Forum* 8(6): 47–52.
- David, G. 1985. Don et utilisation du sperme. *Génétique, Procréation et Droit*. Actes Sud, Paris.
- Debré, Michel. 1979. *Nouvel Observateur*. April 30.
- Delaney, Carol. 1986. The meaning of paternity and the virgin birth debate. *Man*. 21(3). September.
- Duelli Klein, Renate. 1985. What's "new" about the "new" reproductive technologies? Corea, Gena, Duelli Klein, Renate, Hanmer, Jalna, Holmes, Helen B., Hoskins, Betty, Kishwar, Madhu, Raymond, Janice, Rowland, Robyn, and Steinbacher, Roberta, *Man-Made Woman*. Pandora Press, London.
- Gordon, Linda. 1977. *Woman's Body, Woman's Right*. Penguin Books, New York.
- Graham, Loren R. 1977. Science and values: The eugenics movement in Germany and Russia in the 1920s. *The American Historical Review* 82(5).
- Haldane, Charlotte. 1926. *Man's World*. London.
- Haldane, Charlotte. 1949. *Truth Will Out*. London.
- Haldane, J. B. S. 1925. *Daedalus or Science and the Future*. London.
- Haldane, J. B. S. 1927. *Possible Worlds*. London.
- Hansen, Friedrich and Kollek, Regine. 1985. *Gen-Technologie—Die Neue Soziale Waffe*. Hamburg.
- Hogben, Lancelot. 1933. *Nature and Nurture*. London.
- Hogben, Lancelot. 1938. *Political Arithmetic. A Symposium of Population Studies*. London.
- Héritier-Augé, Françoise. 1985. La cuisse de Jupiter; Reflexions sur les nouveaux modes de procréation. *L'Homme* (94). April–June.
- Héritier-Augé Françoise. 1985. L'individu, le biologic et le social. *Le Debat* (36). September.
- Herzog, Jürgen. 1971. *Die Heterologe Insemination in verfassungsrechtlicher Sicht*. Würzburg.
- Hobsbawm, Eric. 1975. *The Age of Capital*. Scribner, London.
- Hodgen, Margareth. 1964. *Early Anthropology in the Sixteenth and Seventeenth Centuries*. University of Pennsylvania Press, Philadelphia.
- Hofstadter, Richard. 1955. *Social Darwinism in American Thought*. Beacon Press, Boston.
- Labourie, Françoise. 1986. Juridical and Ethical Aspects of Genetic Engineering. *Women's Hearing on Genetic Engineering and Reproductive Technologies*. Brussels (mimeo).
- Laqueur, Thomas. 1986. Orgasm, generation, and the politics of reproductive biology. *Representations* 14. Special Issue: Sexuality and the Social Body in the Nineteenth Century.
- Leach, Edmund. 1969. *Genesis as Myth and Other Essays*. London.
- Leeds, Anthony. 1972. Darwinian and "Darwinian" evolutionism in the study of society and culture. In Glick, Thomas F. (ed.), *The Comparative Reception of Darwinism*. University of Texas Press, Austin, TX.
- Le Monde*. 1986. L'avis du Comité national d'éthique sur les manipulations de l'embryon humain. December 16, p. 12.
- Lepenies, Wolf. 1976. *Das Ende der Naturgeschichte*. München.

- Lloyd, Geoffrey E. R. 1983. *Science, Folklore and Ideology: Studies in the Life Sciences in Ancient Greece*. Cambridge University Press, New York.
- Lovejoy, Arthur O. 1936 *The Great Chain of Being, A Study of the History of an Idea*. New York.
- Lumsden, Charles I. and Wilson, Edward O. 1981. *Genes, Mind and Culture: The Coevolutionary Process*. Harvard University Press, Cambridge, MA.
- Lumsden, Charles I. and Edward Wilson, O. 1983.
- Rivière, Peter, 1985. Unscrambling parenthood – The Warnock Report. *Anthropology Today* 1(4). August.
- Rohleder, Hermann. 1981. *Normale, pathologische und künstliche Zeugung beim Menschen*. Leipzig.
- Rose, Steven, Lewontin, R. C, and Kamin, Leon J. 1984. *Not in Our Genes: Biology, Ideology and Human Nature*. Penguin Books, Harmondsworth, Middlesex.
- Roth, Karl-Heinz. 1985. Sozialer Fortschritt durch Menschenzüchtung? Der Genetiker und Eugeniker H. J. Muller–(1890-1967). In Hansen, Friedrich and Kollek, Regine, *Gen-Technologie – Die neue soziale Waffe*. Hamburg.
- Shelley, Mary W. 1818. *Frankenstein or, The Modern Prometheus*. London.
- Singer, Peter. 1986. La revolución reproductiva. *El País*. June 14.
- Spain, Congress of Deputies. 1986. *Informe de la Comisión Especial de Estudio de la Fecundación "In- Vitro" y la Inseminación Artificial Humanas*.
- Spain, Ministry of Justice. 1986. Problemas civiles que plantea la inseminación artificial y la fecundación in Vitro. *Boletín de Información del Ministerio de Justicia* 3.
- Starck, Christian and Dagmar, Coester-Waltjen. 1986. *Die künstliche Befruchtung beim Menschen – Zulässigkeit und zivilrechtliche Folgen*. München.
- Stolcke, Verena. 1981. Women's Labours: The Naturalisation of social inequality and women's *Promethean Fire: Reflections on the Origins of Mind*. Harvard University Press, Cambridge, MA.
- Malinowski, Bronislaw. 1966. *The Father in Primitive Psychology*. Norton, New York.
- Muller, Hermann J. 1936. *Out of the Night: a Biologist's View of the Future*. London.
- Mies, Maria. 1987. Im Supermarkt der käuflichen Körperteile. *Tageszeitung*, August 1st.
- Nature. 1986. Tough talk on surrogate birth. March 13. subordination. In Young, Kate, Wolkowitz, Carol, and McCullagh, Roslyn (eds.). *Of Marriage and the Market: Women's Subordination Internationally and its Lessons*. London.
- Tageszeitung. 1987. Ein Biologe sagt: Halt! January 27.
- Trallori, Lisbeth N. 1983. *Vom Lieben und vom Töten. Zur Geschichte patriarchaler Fortpflanzungskontrolle*. Wien.
- Vickers, Brian. 1973. *Towards Greek Tragedy: Drama, Myth, Society*. London.
- Warnock, Mary (ed.). 1985. *A Question of Life: Warnock Report on Human Fertilization and Embryology*. Basil Blackwell, London.
- Webster, Charles, (ed.). 1981. *Biology, Medicine and Society 1840-1940*. Cambridge University Press, New York.
- Wilson, Edward O. 1975. *Sociobiology, the New Synthesis*. Harvard University Press, Cambridge, MA.
- Winter, Michael. 1982. Don Quijote und Frankenstein. In Vosskamp, Wilhelm (ed.), *Utopienforschung*, vol. 3. Stuttgart.
- Woolf, Virginia. 1938. *Three Guineas*. Harcourt, Brace & World, London.
- Young, Robert. 1973. The historiographic and ideological contexts of the nineteenth century debate on man's place in nature. In Teich M. and Young, Robert (eds.). *Changing Perspectives in the History of Science*. Kluwer, Boston.