D7 | NEW REPRODUCTIVE TECHNOLOGIES

Introduction

While all societies in the past developed techniques to both avert and assist conception, and created and invested cultural meaning in and through processes of gestation, labour, birth, and breastfeeding, the rapid proliferation of reproductive technologies in the latter half of the twentieth century has redefined reproduction in unprecedented ways. The era that began with the birth of the world's first test-tube baby in 1978 and reached its zenith with the cloning of a higher vertebrate from an adult cell in 1997 continues apace today, marking a dynamic phase in the development of reproductive and genetic technologies.

New reproductive technologies (NRTs) are a broad constellation of technologies aimed at facilitating, preventing, or otherwise intervening in the process of reproduction. This includes, for example, contraception, abortion, antenatal testing, birth technologies, and conceptive technologies. The constant advancement and development in the world of NRTs is not without challenges and dilemmas.

NRTs as a range of technologies have come a long way, from ultrasound to assisted conception. Technological progression is both horizontal and linear. Thus, while new and different technologies emerge, there is a simultaneous endeavour to advance the already existing technologies, thereby resulting in different variations of a particular technology. This constantly evolving nature of scientific innovation has become the hallmark of contemporary biomedicine. The expansion of the realm of biotechnology in general, and of NRTs in particular, has also brought in new actors. Indeed, there is an entire industry based on and around these technologies, especially assisted reproductive technologies (ARTs) today. It is in this context that this chapter explores the implications of NRTs in a globalised world.

Contraception and women's health

The contemporary version of reproductive technologies is not without a past. Hence, it is important not to see these technologies as isolated scientific breakthroughs, but rather to historicise their modern avatar. With the unprecedented expansion of these technologies, accelerated also by developments in the field of biotechnology, an interrogation of issues that lie at the interface of technology, health, and society – and their implications for women – has become all the more urgent.

International agencies, family planning organisations, and governments have justified the use of invasive medical interventions in developing countries – hormonal contraceptives, anti-fertility vaccines, chemical sterilisation, and tubectomies performed in unsafe conditions – with arguments about 'out of control' fertility rates and the imminent 'population explosion'. Scientists have collaborated in this enterprise, testing contraceptives on poor women without their consent, despite evidence of the serious health consequences of this practice. When research towards the approval of these contraceptives has been opposed, regulatory authorities have permitted their introduction through the back door.[1] There has been a long and dubious historical association of 'family planning' with 'population control'. Feminists and health activists in different parts of the world have raised their voices against the harmful effects of contraceptive technologies in the form of implants, vaccines, and injectables. They have questioned the safety of hormonal contraceptive technologies, the ways in which clinical trials are conducted, the ways in which informed consent is collected, and the inadequate efforts of family planning programmes in securing women's health in general. Furthermore, health activists have protested the inclusion of women in the health care system as essentialised reproductive beings, to the exclusion of their other health needs.[2]

'Desired sex' to 'desired traits': technologies for 'selection'

What started with technologies like ultrasound, amniocentesis, and sperm sorting has acquired a new meaning with advanced technologies like pre-implantation genetic diagnosis (PGD). This technology, which was first developed to detect genetic abnormalities in the embryo prior to implantation, is now in rampant use to pre-select the sex of the embryo during the IVF procedure. Therefore, positing these technologies as the 'right to family balancing' has given rise to more questions than answers; patriarchy, son preference, and social prejudice have framed serious ethical concerns around their use. In India, for example, despite the legal prohibition on sex selection, the practice is widely prevalent, resulting in highly skewed sex ratios in most parts of the country. It is also not surprising to find couples going abroad to countries like Thailand in pursuit of PGD for sex selection.[3]

Similarly, reports in countries like the USA have highlighted the use of these technologies (mainly) by couples of Asian origin. For instance, up to 30 per cent of the patients at Dr Jeffrey Steinberg's Fertility Institute, a Los Angeles-based clinic known to provide PGD, are women of Indian and Chinese descent. It is not difficult to see why. In countries where the sociocultural construction of motherhood (and related issues of access and validation) are inextricably linked to the birth of a son, couples may want not just a biological child, but also a child of a particular sex.[4]

Further, the eugenic concerns posed by these technologies have compounded the accompanying ethical challenges. In addition to the selection of the sex of

the child, other traits like eye colour, skin colour, and hair colour can be, and are being, chosen. Thus, the re/production of 'designer babies' or 'tailor-made babies' has become a distinct possibility.

Notions about the kind of embryo considered 'desirable' and 'worthy of implantation' have also been contested from the perspective of disability rights. Given that societal and structural frameworks determine the norm for what can be an 'able/d' life, the decision to eliminate a disabled fetus is not an innocent technological fix, but one with political causes and consequences. Thus, it becomes important to question both the nature and the deployment of technologies that promote one 'standard of life' over another.

While arguments have been made on either side, the discussion vis-à-vis 'selection' or 'non-selection' points to the significant role played by society in both designing and shaping the idea of the 'desirable'. What is preferred and valued by society is what becomes internalised as the 'ideal', with the technology on offer becoming a means for its achievement. Therefore, what is ultimately selected is what reinforces and re/produces societal prejudices, structural biases, and power imbalances, thus propelling a market-driven and state-mandated eugenic discourse.

Biological to contractual motherhood: surrogacy

ARTs are perhaps the most visible and recognised of medical technologies. The ART industry has exploited the social pressures on women to have children. It claims to offer women new choices when in fact it increases the pressure on women to use these technologies, despite the high costs, poor success rates and risks to their health.[5]

With the advent of ARTs, notions of parenthood, family, and kinship have undergone significant change, with new ties – material, psychosocial, and otherwise – being formed. Commercial surrogacy has become a highly visible and contentious issue in the globalised ART industry. Although surrogacy is not a technology in itself (it is an arrangement, involving the use of ARTs), and has been practised historically in India in other forms, what has undergone significant change is the character of surrogacy arrangements, with cross-border surrogacy becoming popular in this age of rapid globalisation, including of medical services.

In particular, recourse to ARTs with third-party reproduction (including gamete donation) has been seen as opening a Pandora's box of ethical dilemmas. While most of the discussion on the issue has seen divided views 'for' and 'against' surrogacy, the increasing commercialisation of this arrangement has also led to the suggestion that commercial surrogacy should be banned and only altruistic surrogacy allowed. However, altruistic surrogacy cannot be said to be without coercion and risk, material, physical, social, and emotional. The very notion of altruism is a construct, deployed in and through discourse, with particular interests, including commercial, at stake.

The larger questions remain: Can surrogacy be considered an acceptable form of livelihood? Or is it simply a temporary survival strategy for some economically vulnerable women in countries like India?

In looking at commercial surrogacy as a new form of reproductive labour, Amrita Pande argues that one needs to understand (commercial) surrogacy as 'sexualised care work'.[6] Surrogates recognise that their bodies are the receptacles without which the birth of the child would not be possible, thus connecting them in a critical, if limited, manner with the child; some even consider the womb (or 'blood') as more important than the genetic material (oocyte). In redefining everyday forms of kinship ties, the body is used as a metaphor for establishing a separate identity, often challenging the societal perceptions around surrogacy.

The separation of reproductive body parts – wombs and oocytes (that is, different women acting as genetic and gestational mothers) – also has implications for the global economic market. Through the commodification of women's bodies, it is now possible for a California-based couple of Japanese origin to hire a surrogate in India to have a 'biological child', possibly through the use of donor sperm or oocyte. A mapping of this reproductive market reveals long international chains of varied actors and agencies, often employing aggressive promotional strategies.

The exchange of money for services (in this case, gestation) and goods (the child, possibly?) across international boundaries raises other questions. How do international trade laws function between two countries like the USA and India in the absence of any related national legislation in either? And what implications does this have? As Christina Stephenson points out about the United States with respect to trans-border surrogacy:

> The ethical questions provoked by surrogacy are the same that are involved in the sale of organs, tissues and other elements of human life for pecuniary gain. Since there is no indication that these markets will disappear, the US must face the question of how to balance these questions against the ever expanding mandate of free trade.[7]

The market for ARTs and surrogacy has blurred geographical boundaries and has created global 'consumers' of modern reproductive technologies. While at one level these are held up as signifiers of scientific progress, at another level commercial forces exploit the desire for a biological child, despite the low success rate, health risks, and high costs of ARTs. Through the language of choice, innovation, and right to parenthood, ARTs portray infertility as a disease and infertile people as patients requiring technological intervention. Questions of equity and access further complicate this already complex situation, with the 'reproductive rights', including to ARTs, of people from HIV+, LGBTQ (Lesbian, Gay, Bisexual, Transgender, and Questioning), and poorer communities being strongly debated.

What make these technologies controversial, apart from their inherent nature, are their social, ethical, and legal implications. Not only do they 'crystallize issues at the heart of contemporary social and political struggles over sexuality, reproduction, gender relations and the family' (Stanworth 1987 in Shore et al 1992: 295), but they also 'challenge our most established ideas about motherhood, paternity, biological inheritance, the integrity of the family, and the "naturalness" of birth itself'.[8]

Beyond ARTs: the other facet of this bio-economy

ARTs are just one facet of a growing bio-economy that also has large pharmaceutical companies, equipment suppliers, and research organisations as stakeholders in emerging bio/genetic technologies.

There exists a nexus between the medical profession and the drug industry, driven primarily by profiteering, with little or no commitment to social responsibilities. In India, such companies sponsor the annual conferences of professional bodies like the Mumbai Obstetrics and Gynaecological Society and the Federation of Obstetric and Gynaecological Societies of India. They determine conference programmes and offer free trips abroad for advanced training in ARTs, thus securing a market for the supply of medicine and equipment.[9] The following market research report also confirms India's potential for the ART market, liable to grow in the future:

> With infertility treatment stabilizing in the major markets, pharmaceutical companies are exploring other markets where assisted reproduction technologies are in growing clinical supply and demand … India is an attractive market because of its highly pronatalist culture, ART-seeking South Asians living abroad and preference for branded products.[10]

Additionally, India is also emerging as a crucial market for oocytes for research. Women's ova are at the centre of the industry's planned development of an embryo-based genomics industry that promises to provide products that will engineer genetically inheritable characteristics. This is made clear in a report in the Bulletin of the Indian Council of Medical Research:

> IVF … has not only opened up novel ways of treating infertility involving [a] third and sometimes fourth party parenting a child in a tandem manner, but also advanced our understanding of the basic biology and pathology of human reproduction. With new developments occurring in the potential use of embryonic stem cells in the development of bio-therapeutics, IVF is the only way to obtain pluripotential embryonic stem cells.[11]

To foster the growth of a viable biotechnology and stem cell research industry, a successful collaboration between public support and private profiteering is being advanced. The high demand for oocytes both for ARTs and biotechnology, within the framework of an unregulated market, poses a seri-

42 Patient undergoing egg retrieval procedure (© Monkey Business Images | Dreamstime.com)

ous threat of exploitation for women. Countries like India and China, which have large populations of the economically vulnerable, have become the sole source of biotechnology research capacity, with extensive networks of fertility clinics, a burgeoning stem cell industry, and a lack of effective oversight or regulation. Ethicist John Harris opines that anyone living in a society that has benefited – or expects to benefit – from medical research has a 'positive moral obligation' to participate in it. But women end up burdened with a double duty, to sacrifice themselves for the greater good of both family and society.[12]

Somatic cell nuclear transfer research or therapeutic cloning research is hampered by the lack of good-quality oocytes and reliance on those oocytes that have been rejected as non-viable for IVF. Ian Wilmut, the creator of Dolly the sheep, has urged young British women to donate oocytes to assist in stem cell research into motor neuron disease. Wilmut has appealed to the altruistic ethos whereby the donor 'acts not out of self-interest but out of a collective sense of belonging'. On the other hand, the Human Fertilisation and Embryology Authority (HFEA) in Britain has increased the level of reimbursement for reproductive donation and has also made research donors eligible for discounted IVF services. Perhaps the concept of 'altruistic donation' does not provide an adequate framework for meeting the ever-expanding worldwide demand for oocytes. Women may be unwilling to donate oocytes unless they are undergoing procedures for infertility (through IVF) as the process of oocyte retrieval is difficult, painful, time consuming, and risky.

Thus, increasingly, concepts of 'duty' and 'citizenship' are being invoked in relation to genetics, reproduction, and fertility.[13]

In this quest for research material, the medical risk borne by women is sidelined, as is the question: How and under what conditions are eggs being sourced for research? Emily Galpern of Generations Ahead (a US-based organisation that works on social justice issues in human genetic technologies) points out, 'One of the primary issues in the debate is whether women should be paid for their eggs. Paying women will likely be a financial inducement for economically vulnerable women to undergo a process in which the long term effects are not clearly understood.'[14] These, amongst others, are concerns that lie at the intersection of regenerative and reproductive genetic technologies, thus constituting a grey area for women's rights and health.

Conclusion

Reproductive technologies are of particular significance to women, as not only do their bodies provide the raw material for the unregulated development of these ARTs, but also because women are sought as consumers of these and other emerging biotechnologies.[15] Particularly in the sphere of human reproduction, women may find themselves at the crossroads of science, society, industry, and policy, with their bodies being claimed by several sectors, and their voices being heard by none. Life-saving health care technologies are still not available to most women in the world. *Our bodies, ourselves* (1994) emphasises: 'We must judge the value of the reproductive technologies in the context of the social, political and economic setting …'[16] Thus, it is of critical importance that mandated protocols of informed consent and counselling, and the provision of adequate health infrastructure and care, should not be overridden or ignored. Women's health and rights, including their reproductive health and rights, must be located and addressed within the larger context of determinants that affect their lives, such as poverty, curtailment of capabilities, lack of livelihood rights, lack of health rights, illiteracy, and multiple forms of discrimination based on caste, class, gender, religion, ethnicity, sexual orientation, and on many other power structures. These are matters not just of ethics, but also of human rights and social justice.

Notes

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