

Implications of Scientific Innovation in the New Reproductive Technologies

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Innovation in medical science has legal implications. In particular, in the area of "new reproductive technologies" (NRT), science is developing very rapidly, providing us with many new choices. Technology affecting the reproductive process in humans is being developed in a range of disciplines, making new reproductive technologies a large and complex field. Over the past year, as Chairperson of the Royal Commission on New Reproductive Technologies, I have had the opportunity to consider a number of these issues in depth. In this paper, I have selected three examples of scientific innovation in new reproductive technologies. I will explain the scientific aspects of these innovations, then look at the complex cascade of issues raised as a consequence of their use or non-use.

In considering these innovations, you will see that, increasingly, members of the legal profession will require background knowledge in this area, because they will have to address the range of legal issues that will arise in the interpretation of existing laws and in the advocacy of new statutes and regulations to deal with the new choices we face.

These three technologies, out of the multitude that fit under the rubric "new reproductive technology", are: pre-implantation diagnosis, total surrogacy and embryo freezing. I have chosen these three particular topics because science has developed the capability of offering them to people in very recent years. I will use these three as models to show that the consequences of the use of a scientific innovation are not easy to evaluate. Harms and benefits must always be traded off, and economic and social justice issues must be raised.

I will discuss each of these three technologies, using the following outline: First, I will describe *how the new technology fits into the biology of the reproductive process*. Second, I will talk about *how the new technology is currently used*, and how widely it is used, as far as we know. Third, I will talk about the *possible harms and possible benefits* to the individuals concerned. Finally, I will touch on some of the *wider social implications*, including ethical and economic considerations. In doing so, I hope the issues I cover will raise legal questions and ring bells in your minds as to what precedents and what laws may be relevant.

I. PRE-IMPLANTATION DIAGNOSIS

A. The Technology

Pre-implantation diagnosis is one of the most recent developments in the area of new reproductive technologies. For quite a number of years scientists have been able to diagnose a range of disorders in the developing fetus by various techniques, for example, by the use of amniocentesis and ultrasound. But pre-implantation diagnosis occurs at a very early stage of human development, even before the fertilized egg implants into the uterus.

There are two classes of pre-implantation genetic diagnosis. The first occurs even *before* fertilization and can only be used when it is known that a woman has a particular abnormal gene. When the egg is released from the ovary and is picked up by the fringed end

of the fallopian tube, it starts to pass down the tube towards the uterus. It can only live for less than a day if it is not fertilized.

As the egg progresses down the fallopian tube, it divides into two cells, one of them very small and called the polar body. Each of these two cells receives half of the 46 chromosomes that humans have. These 46 chromosomes are actually 23 pairs, and one member of each pair goes into each of the two cells.

Because genes are carried on the chromosomes, they come in pairs too, which means the gene pairs separate into the two cells. Testing the gene that has gone into the polar body tells you — by inference — which gene must be left in the egg. For example, if one of the pair of genes the mother has is abnormal, and the polar body has a normal gene, then you know that the egg has the abnormal gene and should not be fertilized. This diagnostic test in humans was used for the first time earlier in 1990.

How can you test such an infinitesimally small amount of matter — a single cell — for a genetic defect? The development of the *polymerase chain reaction* (PCR) allows us to do this. PCR is a new technique that allows a particular gene to be copied, or "amplified", many, many times, providing enough matter so that specific probes can be made to detect whether the abnormal gene is present.

The development of this diagnostic technique means that theoretically any single gene-caused defect in human beings could be detected prior to implantation.

In the second method, fertilization occurs in the first third of the fallopian tube, so that the sperm have had quite a long journey prior to the union occurring. The fertilized egg then starts a series of cell divisions and as the original mass cleaves, the cells become smaller. This second type of pre-implantation diagnosis is carried out at this stage, when the conceptus is approximately three days old, and a number of days before it would have implanted into the uterus. Of course the fertilized egg is not usually recovered from the tube. Instead, fertilization has taken place in the laboratory where an egg and a sperm have been brought together in a dish, and cell division has taken place.

At this stage of several cells, one cell may be mechanically removed. The developing conceptus does not appear to be harmed, which allows the one removed cell to be examined in detail as representative of the whole. To determine the presence of an abnormal gene, the cell is tested by the PCR method I described earlier.

While the test is being done, it may be necessary to freeze the rest of the embryo so that it does not continue to develop and reach a stage which makes it impossible to implant by the time the diagnostic testing is finished. This new diagnostic test means those fertilized eggs with normal results can be the ones transferred for implantation into the womb.

Pre-implantation diagnosis is made possible in part by our ability to create embryos outside the human body through *in vitro* fertilization, but the discovery that makes it all truly possible — the gene or DNA testing — is dependent on the PCR which amplifies the gene and that technique is only a couple of years old.

B. The Implications

Pre-implantation diagnosis means a great deal for couples identified as being at risk of having a child with a single gene-caused disease such as sickle cell disease, Duchenne muscular dystrophy, cystic fibrosis, or many other serious genetic defects. Instead of waiting until a baby is conceived and developing and then facing the difficult choice of whether to terminate or not, pre-implantation diagnosis could guarantee that all conceptuses which are implanted would not in fact have the particular disorder for which they are at risk. Without doubt, it seems to bring benefit to potential parents who may now avoid choosing between a termination or bearing an affected child.

What are the drawbacks? As I mentioned, the use of this technology is predicated on our ability to create the embryos upon which to perform the tests outside the body, through *in vitro* fertilization (IVF). Physicians are already concerned about IVF because of its relatively low success rate (i.e., low chance of going home with a child), and its high cost. Some women have grave concern about the procedure, because it involves hormone treatment, surgery, hospital stays and considerable disruption of a woman's daily life.

This ability to screen out genetically abnormal embryos through genetic diagnoses before implantation raises the question of whether IVF will become increasingly used to produce embryos. The most extreme scenario suggests that in the future, becoming pregnant through IVF will become the norm, precisely because of our ability to do this pre-implantation diagnosis. In my view, this is unlikely for several reasons. First, most of us are not at high risk of particular known genetic defects. Second, the high cost, invasive nature and relatively low success rate of IVF will prove prohibitive, and finally, the old way of making babies is a lot more fun! Nonetheless, it is wise to think about the concerns that arise out of the use of IVF and pre-implantation diagnosis.

Questions of an ethical nature also arise. Is there a difference between deciding to terminate a pregnancy if the fetus is found to have a severe defect, and deciding not to implant an embryo because it is shown to have a genetic disease? Should an *in vitro* conceptus be treated differently in law than an *in utero* conceptus?

Conflicts between individual rights and the good of society as a whole must also be considered. Pre-implantation diagnosis offers tremendous potential for couples who are at high risk of transmitting a genetic disorder, but who are ethically or for religious reasons opposed to abortion. Yet, it has been estimated that an IVF child costs more than \$35,000, to which would be added the costs of the actual genetic diagnosis. Who should pay these costs? How are these decisions to be made in terms of the total allocation of our public health-care resources?

The technology also raises fears in groups representing disabled people and women in Canada. Disabled people fear that such diagnostic technologies may be used to decrease the number of disabled people in society, and that this will lead to discrimination against them, or against parents who do not wish to use such prenatal diagnostic technologies. They are concerned that gaining the choice to control the quality of our children may in fact result

in losing the choice of simply accepting children as they are. Many women fear that as a result of these technologies, women will lose control of their own reproduction.

What will be the implications for society as a whole? Are these techniques benign — simply assisting parents to have healthy children, children who will not burden the health care system, for example? Or will they fundamentally alter the character of our society? How do we guard against the misuse of this technology, in law or otherwise, while at the same time allowing individuals its beneficial results?

Pre-implantation diagnosis raises the question of how much we, as a society, want individuals to be able to control the genetic qualities of their children. It raises the spectre in some people's minds of the misuse of genetics for social aims, as happened in Nazi Germany for example. We must remain constantly vigilant so that the freedom of choice of individuals does not become compromised in the name of "social policies for the good of the State".

II. TOTAL SURROGACY

A. The Technology

"Surrogate motherhood" is the term often used for a contract arrangement in which a woman agrees to bear a child for a couple. In the most frequent circumstance she becomes pregnant by artificial insemination with the contracting father's sperm, and agrees to give up the child when born to the contracting couple.

Although I will be talking a bit about general surrogate motherhood, I want to focus on total surrogacy, which involves the gestating woman being implanted with an embryo produced from the ovum and sperm of the commissioning couple. In this situation, the embryo and its genetic constitution are that of the commissioning couple, and the gestational mother simply provides the nurturing in her womb for the nine-month period. The gestating mother is not being asked to give up her natural child. Rather, she is relinquishing a child that she has gestated for its genetic mother and father.

What are the circumstances in which this procedure could be utilized? In a number of medical circumstances, the commissioning mother may be able to produce eggs, but has an abnormality of her uterus, making it impossible for her to actually carry a pregnancy. Or, the commissioning mother may have a medical condition herself, and the added stress of pregnancy may seriously prejudice her own health — for example, if she has severe diabetes. Finally, some couples may wish to pursue total surrogacy even though the commissioning mother could in fact gestate her own pregnancy. Thus, it could be used for strictly "social" reasons.

Total surrogacy has become possible because of the development of the science that allows embryo transfer. The fertilized egg is usually obtained by *in vitro* fertilization from the couple, and implanted into the gestational mother.

Before I continue, I should mention the difficulty with terminology and the common use of the term "surrogate motherhood". A recent report prepared for the Law Reform Commission of Canada refers to "preconception contracts for the production of children". The researchers felt that this term describes the phenomenon more precisely: namely, an agreement entered into prior to conception, by which a child would be produced in order to be handed over to someone other than the woman who gave birth to the child.

How common are preconception contracts in Canada? In a study conducted during the summer of 1988, The Law Reform Commission of Canada reportedly found more than 100 cases of preconception contracts involving Canadians.¹ The report points out that this figure probably greatly underestimates the true extent of the activity because of the very stringent criteria used for case identification. There is very likely a substantial amount of unreported activity, for example arrangements involving friends or relatives.

Total surrogacy, however, of necessity involves sophisticated medical procedures, so cannot be simply a "social arrangement". It involves attendant costs — both financial, emotional, and some risk to health for both "mothers". The incidence of these arrangements is increasing, and internationally, lawyers, brokers, and surrogacy companies are known to receive high fees for making them.

B. The Implications

Although a relatively new option, an estimated 80 births worldwide have occurred through total surrogacy. What are the implications of total surrogacy? For the first time in human history, a woman can give birth to a child who is not genetically her own child. As a result, we must evaluate what aspects of parenthood are most important in determining "motherhood".

The stable definitions of "mother" or "child of mother" in the family context have been a fundamental aspect of social identity throughout human history. Total surrogacy destabilizes such identity; we can now separate the genetic and gestational roles.

It raises some fundamental social issues. How do the children of total surrogacy view their genetic mothers and their gestational mothers? Who do they feel is their mother? Does this pose problems in self identity?

A number of basic legal questions also arise from the further fragmentation of "mother". How should society and the law view cases where a child is not genetically related to its gestating mother? This kind of technologically facilitated complexity is more than capable of re-defining family structure and our conceptions about the family, and of generating issues that will have to be settled in family law courts.

1. *The [Toronto] Globe and Mail* (10 February 1989).

Courts have already begun to deal with some of the issues arising from pre-conception contracts, the most familiar being the Baby M saga in the United States.² Mary Beth Whitehead signed a surrogate motherhood contract with William Stern, in which she agreed to be inseminated with his sperm, to carry her child to term, and then to surrender the child to Mr. Stern and his wife for a fee of \$10,000. However, when the child was born, she refused to give her up.

After lengthy litigation, the trial court held that it was in the child's best interests that the contract be enforced and turned the child over to Mr. Stern. The court also terminated Ms. Whitehead's parental rights and consented to the child's adoption by Mr. Stern's wife.

On appeal, however, the New Jersey Supreme Court reversed that decision. Chief Justice Robert Wilentz ruled that the contract was in violation of state law because it required the sale of a child for money. He also ruled the contract was against public policy among other things because it required permanent separation of the baby from one of her "natural parents", namely Mary Beth Whitehead.

Total surrogacy raises new questions for the courts. In total surrogacy both "natural" parents are the commissioning couple and so there would be no separation from the natural parents. How would this lack of a genetic link between the child and the gestating mother affect decisions? What rights will gestation confer on a woman, compared to the rights conferred upon genetic parents?

Other legal issues may arise if the contracted-for child is born with a defect, issues which become more complicated when total surrogacy is involved. If the defect is genetically determined, then the gestating woman could not be held responsible; whereas if some action of hers had harmed development of the baby, the situation may be viewed differently.

Ethicists are concerned in partial surrogacy with the clear separation of the decision by the surrogate mother to create a child from her willingness and decision to parent it. It is considered ethically inappropriate for the surrogate mother to create a human life with the clear understanding that she is to avoid responsibility for that life. What would be the corresponding ethical position in regard to total surrogacy? Would the couple who produced the egg and sperm take total responsibility for the new human life, or would the gestational mother also have a responsibility?

Most countries and jurisdictions leave surrogacy contracts unenforceable. In Canada, as far as I am aware, there is no legislation prohibiting or condoning surrogacy. If such contracts are undertaken at present, they probably must rely totally on the mutual good faith of the parties. If challenged, it is generally believed they would be unenforceable in the courts.

To my knowledge, the only report that has recommended that surrogacy be legalized is the *Report on Human Artificial Reproduction and Related Matters* from the Ontario Law

2. *In re Baby M*, (1988) 109 N.J. 396, 537 A.2d 1227.

Reform Commission in 1985.³ The report also spelled out an elaborate legal scheme designed to regulate surrogate mother arrangements.

C. Opposing Views

Because surrogacy, in the partial form, has been around for many years (since Biblical times, some people would say), arguments for or against its use are more widely developed than in the case of the other technologies I have discussed in this paper.

Proponents of surrogacy assert that it provides a woman with the chance to engage in a highly valued service for which couples otherwise not able to have a child are willing to pay large sums of money. As well, the "surrogate mother" may be acting altruistically by gifting a child to an infertile couple.

Others view surrogacy as "procreative liberty", defending it as a woman's right to choose what to do with her body, and as an economic option for women. They argue that any ban on surrogacy would amount to an unjustifiable intrusion on the rights of women to determine what they will and will not do with their own bodies and what risks they may or may not undertake. They claim it is simply a business agreement entered into by two parties acting freely, and as long as both parties understand their rights and obligations and no coercion is involved, there is no reason to object. They believe adequate screening and counselling will eliminate the psychological and other problems raised by these arrangements.

Some have said that surrogacy can benefit women, since it offers them a chance to make money from bearing children — a socially valuable function which, up until now, women have always done for free. They argue the fee paid to the woman is for services only and is not to "buy a baby". This argument may be more relevant in total surrogacy, where there is no genetic link, than in partial surrogacy, where the surrogate has provided an egg — half the genetic constitution of the new individual.

Opponents of surrogacy argue that the practice in its commercial form is dangerous, because it can lead to the economic exploitation of women. The payment of fees will attract women of lower economic status who will be driven by their poverty into surrogacy contracts. Empirically, poor women comprise the great majority of women who enter into paid surrogacy agreements. Reports indicate that the opportunity for financial gain is a vital motivational factor for women entering into such contracts. In such cases voluntary and fully informed consent will have little meaning.

Some people even fear the development of a "breeder class" of women drawn from economically disadvantaged or minority groups, or even Third World women. This is especially relevant to total surrogacy because of the lack of a genetic link to the gestational mother.

3. (Toronto: The Commission, 1985).

From the feminist point of view the greatest threats posed by commercial preconception contracts are the effects on social attitudes towards women, and their role in reproduction. Women perceive that the emphasis on production and commercialism in surrogacy agreements reduces a woman to her function as a manufacturing unit, and reduces her value as a person to her reproductive capacities. A woman becomes a "foetal container" or "an incubator".

Feminists are also concerned that surrogacy entails the risk of coercion and infringement of women's autonomy. Through the surrogacy contract, various proscriptions may be placed upon the surrogate mother's behaviour to ensure that the pregnancy results in the delivery of a healthy child. The mother may agree not to engage in behaviour that could be injurious to the health of the child, such as drinking or smoking, for example, or may agree to submit to a range of medical tests or procedures.

One of the strong messages that women's groups are giving to the Commission is that they fear having their conduct legislated when they are pregnant. Our legal and medical traditions have enshrined the notion of the patient's right to decide for herself what treatment she wishes to undergo or reject. Legally enforceable surrogacy contracts throw this principle into doubt, and this issue is likely to end up in the justice system.

Lastly, opposition to surrogate arrangements also centres around the effects of the commercial aspects on the children. Critics insist that the practice, as generally used, constitutes nothing less than the selling of babies as commodities.

As you can see, total and partial surrogacy should be separated in our thinking and analysis if the full complexity of the use of this technology is to be addressed.

III. EMBRYO FREEZING

A. The Technology

When a woman undergoes *in vitro* fertilization, her ovaries are stimulated by hormones to produce eggs so that several eggs can be reliably recovered at a given time. Often, all of the eggs obtained are fertilized *in vitro* because it is not known how many will "take" and start developing normally.

However, not all of them may be implanted in the woman, which can result in "extra" embryos. If the woman does not become pregnant, and if these could be kept and used in a later cycle, it would mean she would not have to undergo further hormone treatment and egg retrieval (which is usually a surgical procedure).

This has led to research in freezing of embryos and their later thawing so they could continue their development. Embryos can now be frozen or "cryopreserved", and used later if a first implantation does not work or, indeed, if it does — for example, for a second birth. However, it also means they are potentially available for research purposes.

B. The Implications

The implications of freezing embryos and the issues that arise are numerous, and will inevitably involve the law in many ways. This technology is still not fully developed, and there are wide variances in opinion and recommendations on the use of embryo freezing from country to country.

For example, what is the status of the embryos? Who, if anyone, "owns" frozen embryos? What happens to the frozen embryos of a couple in the event of their deaths? Who controls what happens to them? Can an embryo inherit? What if the marriage dissolves?

How frozen embryos should be used is another concern. Should freezing embryos be permitted only for future implantation into the woman who originally contributed her egg to the embryo? Should freezing embryos for a second birth be permitted yet? What would happen if there were enough "extra" frozen embryos to constitute an embryo bank? What if embryos were kept long enough and then implanted in a subsequent generation? For example, a person could potentially have been his own grandfather's brother! Or her own aunt!

This scientific innovation has the theoretical capacity to make us rethink our normal framework of human family relationships and identity. It could disrupt the concept of generations. What are the implications of this type of disruption for family law? For instance, what will constitute an incestuous marriage?

There are also questions of safety. What are the risks associated with using embryos that have been frozen and then thawed? How long can embryos be safely frozen? So far,

almost all limits that have been proposed by various bodies have ranged from one to five years, but as one such group has said, these are arbitrary. What are the ethics of offering such an experimental service to women? What are the effects on the children who result from this?

Other issues relate to the use of frozen embryos for scientific research. How would such use relate to the concept of human life and human dignity? What safeguards need to be considered? What respect and obligation do we have to ourselves and to the embryo because it is human? Is it ethical to treat the embryo as material for research as opposed to a human life?

These are not theoretical issues. Cases relating to the status of the embryos have already come before courts. In a recent divorce case in Tennessee,⁴ custody of the couple's frozen embryos became an issue. The wife wanted to use the embryos to try to get pregnant; the ex-husband said he did not want to become a father. The trial judge's finding that a human being begins at conception, and that the wife should be awarded custody of what he called the "preborn children" was reversed on appeal. Before the appeal, the woman, now remarried, decided not to bear her ex-husband's child, but to donate the embryos to a fertility clinic to assist other childless couples. The Appeal Court rejected the applicability of custody law, and placed the embryos under the joint control of the ex-spouses.

With regard to inheritance, in an Australian clinic, two frozen embryos were "orphaned" when their "parents", a wealthy Los Angeles couple, were killed in a plane crash.⁵ Who now owns the embryos? Can they be left as property in a will? Can they be left to the care of guardians, as living children are? Can they inherit the parents' estate? If so, and if they are implanted in a third party and carried to term, do their new "parents" have a right to the estate in the interest of their children?

IV. INNOVATION AND SOCIETY

The decade of the eighties saw enormous change in the field of reproductive technologies, and it is anticipated that the next five years will see as much change in this field and associated medical and social practices as was seen in the last twenty years. A rich cascade of consequences flows from the use of this new scientific knowledge. Interventions during the process of human reproduction have profound implications for us all. To deal with these new choices in a wise manner, an active social dialogue is essential. The new choices potentially could alter the control of fertility, pregnancy, and childbirth, and could challenge our perception of the process of reproduction and parenthood. The choices raise profound social, legal and ethical issues, particularly with regard to the rights and responsibilities of individuals and of society as a whole.

4. *Davis c. Davis* (Cir. Ct., County of Blount) Tenn., n° E-14496 (21 sept. 1989) Young J., rev'd 59 U.S.L.W. 2205 (Tenn.App. 1990).

5. The "Rios" case.

There is a very wide spectrum of views with regard to these new technologies, and no social consensus on some of them. The view at one end of the spectrum is that these developments are uniformly positive and offer choice and benefit to people who have been unable to have a child of their own. The view at the other end of the spectrum is that new reproductive technologies extend scientific and medical involvement into procreation in a way that overreaches the human capacity to understand and the public ability to control — and that these developments should be completely banned.

Given the potential power of reproductive technologies and their ability to have impacts on future generations, we must ensure that we understand both how they are shaping society, and how society can in turn shape *their* future development. Our Canadian society needs to deal with these issues if we are not to be driven by technological development to become a society we do not wish to be. Increasingly we are coming to understand that all innovation should not necessarily be accepted with equal equanimity. Just because something can be done does not necessarily mean it should be done. Our growing understanding of the environment, and of the complicated inter-connectedness of human actions and natural processes, is heightening our appreciation of the unintended consequences of scientific innovation. And where scientific advances and technological developments relate to human life itself, there is special cause for concern. Indeed, if developments in scientific knowledge and their practical applications have "progressed" to the extent that the foundations of life itself are affected, as I believe they are, then it is essential that we consider the consequences.

There is already a clear impression that current use of the existing reproductive technologies and the research being conducted has moved well ahead of what may be desirable from the standpoint of health policy and the law. The gap between behaviour (what is actually happening in fertility clinics and hospital caserooms) and the broader public interest is significant. This gap is widening as individual cases are dealt with on a piecemeal basis, in the absence of an informed social consensus about the future development of such powerful technologies.

It is worth putting this into a larger context — the situation we face because of the new reproductive technologies available to us is not really unique. The introduction of new technologies intended to improve the human condition has been a regular feature of our history. Through the ages, intelligent individuals have understood the delicate balance that exists between benefit and harm, and between the necessity of risk and the uncertainty of outcome. We are, understandably, both fascinated by and afraid of the reproductive innovations that are being presented to us.

One feature of our modern society is that developments in medical science are seen for the most part to be socially indispensable activities. Once new, safe and reasonably effective medical procedures are available, public support for putting these procedures to general use as soon as feasible is usually considerable. Often, the recognition and acceptance of the potential for harmful outcome lags far behind the appreciation of a technology's benefits. Even if potential harms are not yet fully known, our idea of ourselves as "socially progressive" demands that as long as procedures *appear* reasonably safe and useful, we will use them rather than wait until safety and effectiveness are proven "beyond the shadow of a doubt".

But recent developments in the reproductive technologies, such as infertility diagnosis and treatment, surrogacy, maternal and fetal testing, genetic engineering and fetal research and treatment may challenge this willing acceptance of new procedures and treatments. Some people describe the use of these new reproductive technologies as nothing less than a revolution in reproduction. We must ask, as a society, whether we want this revolution to continue without limits.

Ultimately, we must ask ourselves whether we, as a society, are going to be driven by the pace of technological change, and have our values, our approaches to procreation and parenting shaped by these technological developments; or whether we are going to ensure that the further development of these technologies is shaped by our own carefully considered priorities and values.

V. NEW REPRODUCTIVE TECHNOLOGIES AND THE JUSTICE SYSTEM

New reproductive technologies present the justice system with obligations and responsibilities both to ourselves and others. Many of the issues surrounding these technologies will have repercussions on, and will be dealt with by, the legal profession and the courts.

The legal profession and the judiciary need to start thinking about whether the law and the legal system should get involved at all in some of these issues. If so, how will the law respond to the rapidly changing and growing complexity of issues? At what point in the seamless path from "bench to bedside" should gatekeeping be introduced? Are the existing biomedical, ethical and legal approaches equal to the task at hand?

One of the moral underpinnings of our society, and a fundamental basis of our legal system, is our belief in the natural duty all persons owe to others to do no harm. This is the basis for a conscientious analysis of the use of any new technology. In the world of new reproductive technologies, the principle "to do no harm" involves not only individuals and their well-being in relationship to that of the society which supports them, but also the relationship between the desires and aspirations of this generation and our commitment to future generations. We have to consider justice across time, or intergenerational justice. Short-range planning and decisions on human reproduction and technology must take into account the "full time-frame of the impact".

We have to consider how best to balance the interests of all parties in the reproductive process. We need to listen to the concerns about confidentiality of donors and the legal implications of their act of donating sperm with regard to the children that are produced. Similarly, we need some way of listening to children's experiences and taking their interests into consideration. Finally, it is vital not to lose sight of the fact that women are at the centre of the use of these new reproductive technologies.

One of the most poignant and difficult examples of the need to balance interests is judicial interventions during pregnancy and birth. This is not a purely theoretical concern. To

date, in at least five reported cases in Canada, a judge was asked to balance maternal versus fetal rights.

Court orders have been issued allowing the apprehension of fetuses and requiring at least one pregnant woman to submit to an unwanted caesarian section. Existing child welfare legislation and criminal sentences are being used to protect fetuses. Based on the belief that a fetus is being abused, child welfare authorities can try to apprehend the fetus and place it under "Crown Wardship".

Once the fetus is deemed to be a "child in need of protection", a pregnant woman may be forced to submit to medical procedures against her will for the sake of the fetus. The pregnant women in the cases in question were found to be abusing their fetuses either through the use of addictive substances, through harmful behaviour (i.e. prostitution), or by refusing to provide medical care for the sake of their fetuses.

These cases to date indicate a willingness on the part of the court to distinguish between the rights of the fetus and those of the woman, and thus support judicial interventions during gestation. Taken together, these cases prompt the following questions:

- a) Do these cases indicate a growing trend in judicial intervention during gestation and birth?
- b) What are the legal implications of treating the fetus as an entity separate from its mother?
- c) When a woman is forced to submit to a procedure, be it a caesarian section or ultrasound, for the sake of her fetus, what sorts of questions are raised about free, informed consent, bodily integrity and the status of all women in our society?
- d) Will developments in the area of prenatal diagnosis and therapeutic interventions to correct genetic anomalies, including prenatal surgery, generate more occasions in which the courts may be invited to balance interests in this fashion and authorize judicial interventions during gestation?

To date, questions such as these have been dealt with on a case-by-case basis. The time has come to examine some of the larger issues involved.

VI. QUESTIONS OF EQUALITY

In many ways, the impact of these technologies on women's reproductive health and well-being, must be the prism through which we examine the issues. As I travel across Canada, one message I continue to receive from women is that our institutions, medical, legal or political, have not been sufficiently sensitive to the biological and sociological realities that impact on women.

Women perceive that the legal profession and the justice system have not understood nor represented their interests; that judges as a group are white, middle class, able-bodied men; and that women's life experience has not been recognized, understood or reflected in judgments and legal concepts.

The law is seen as having not listened to women. For instance, issues such as prevention of sexual assault, wife battering, sexual harassment, and pregnancy discrimination as sex discrimination were not recognized by the law as part of women's rights to sex equality until recently. At the same time, I do not want to diminish the progress that has been made. The law certainly is becoming more sensitive to women and their concerns. I am very encouraged, for instance, by the fact that judges are now being censured for sexist remarks they make in their court rooms, a situation that certainly did not exist 20 years ago.

What does this mean for the response to new reproductive technologies by the legal community? I would emphasize the necessity for the legal profession to listen and respond to women's concerns, because women will be central figures in many of the legal questions that arise from new reproductive technologies.

For example, women who live in poverty have expressed concerns about accessibility and the availability of NRT's to women with fewer resources and lower socioeconomic standing. Women from all regions of Canada, and from different ethnic backgrounds, stress that the issue of equal access is vital.

Women who are doubly disadvantaged in our society — for example disabled women and women of colour — are particularly concerned about accessibility to information and technologies. Disabled women are fighting the view that in general disabled individuals should not be allowed to reproduce. They also fear that the elimination of some disabilities through various new reproductive technologies may mean that disabled people will become yet more marginalized in our society.

The justice system cannot afford to ignore the reality that one third of women in Canada are from a minority racial or ethnic background. These women have raised concerns about the potential for racism and sexism in this area. They fear that certain disadvantaged groups, for example Southeast Asian women, could be pressured into becoming surrogate mothers.

These concerns raise issues of equality that highlight the applicability and importance of the *Charter*⁶ to the area of new reproductive technologies. The *Charter* has given the courts new powers to rule on whether federal and provincial legislation conforms to the protection offered by the Constitution.

This has opened a new chapter in judicial activism in Canada. Equally, the *Charter* has provided a new yardstick for governments involved in public policy-making because they now know their legislation may be subject to a constitutional challenge under the *Charter* if it leads to further disadvantage to already disadvantaged groups.

The Supreme Court of Canada appears to recognize that law is not made in a social or political vacuum, and is beginning to reflect an understanding that the context of women's lives, including their subordination, is important when judging cases. This will be of vital importance as cases concerning new reproductive technologies begin to appear more frequently before the courts.

Other questions relate to access to funding. Will only stable, married couples have access to funding for IVF, or will single women be included? If single women are excluded, is that a violation of equality guarantees under the *Charter*? If a lesbian woman is denied access to IVF, or access to a sperm bank, is that discrimination on the basis of sexual orientation?

Women's rights under Section 7 of the *Charter*, to do with life, liberty and security of the person, have to be respected as well. For example, techniques such as prenatal diagnosis raise issues for women's bodily integrity and autonomy.

Social awareness and attitudes are the bulwark between us and the misuse of these powerful new technologies, but the *Charter* will help ensure that we do not lose sight of concerns about equality. All of us must be conscious of the fact that, whatever their differences, women agree upon the necessity for their active involvement in decisions about their fertility. They agree on the need to be able to experience and live within the context of informed choice and to have adequate information about the nature of the risks and opportunities presented by any particular NRT.

Women have had direct personal experience with the reproductive technologies in a way that we as professionals cannot and do not have. It is extremely important for the legal profession to listen to what they are saying about their experiences in this area.

6. *Canadian Charter of Rights and Freedoms*, Part I of the *Constitution Act, 1982*, being Schedule B to the *Canada Act 1982* (U.K.), 1982, c. 11 [hereinafter the *Charter*].

CONCLUSION

New reproductive technologies are not a marginal issue, affecting a narrow range of Canadians, but rather an issue whose implications we all must grapple with. The justice system is unavoidably implicated in the future of new reproductive technologies. Members of institutions such as our justice system have special insights that can be brought to bear on issues related to new reproductive technologies that confront our society today. That is the challenge facing you as individuals who together make up that institution.

Taken together, new reproductive technologies present a complex mosaic of choices. We simplify at our peril in this area. The law in particular must be respectful of the diversity and gender-specific realities of the reproductive process. By being respected, Canada's system of justice will be better equipped to understand the interaction between these technologies, the individuals who use them, and the nature of the outcomes of uses or non-uses of technology. There are implications for how all of us choose to live together as a society guided and enriched by the rule of law.

Canadians need assurances with respect to the collective commitment and capacities of our institutions, be they the government, the medical profession, or the legal system, to address these complex and emotionally charged issues.

That is why it is vital that the justice system be perceived as responsive to the complexities and diversities I spoke of earlier, and respectful of the life differences that led some Canadians to turn to one or more NRT as solutions to their particular problems and led other Canadians to conclude the converse.