

LEGAL ASPECTS OF HUMAN AND GENETIC ENGINEERING

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INTRODUCTION

Taken in its broadest sense genetics pertains to the origin or development of something.¹ Genetic engineering is the practical application of scientific knowledge pertaining to the reproduction and generation of species, and for the purposes of this paper the human species. If one describes law as the study of the relationships among people in society, and between people and society, one usually is restricted to those relationships derived from the reproduction and continuation of the species in the traditional manner.

Traditionally law reflected the relationship between people as the law found them. It usually did not attempt to anticipate the nature of individual persons and alter that nature in advance or prevent such individuals from becoming. Similarly it usually, with certain notable exceptions, did not attempt to interfere with anyone who wanted to take positive action as a result of their anticipations of the nature of another human being.

A new world is dawning in which man will be capable of determining the nature of his fellows and of whether his fellows will be or not. Quite apart from the morality of such a development and the social desirability, lawyers must begin examining the new problems which will be raised. The question much asked: will traditional legal approaches be applicable to the new interpersonal relations which will be engineered?

THE NEW LIFE

From out of science fiction into the new reality comes the matter of cloning. Described in Aldous Huxley's "Brave New World" as one of the major instruments of social stability, it involves asexual reproduction by introduction of a genetic cell into an unfertilized egg. The egg ultimately develops into a duplicate of the adult from which the genetic cell was taken. No sperm and therefore no sexual intercourse nor even artificial insemination is required. To date cloning has been achieved with frogs, though researchers have not yet been able to clone mammals.² It has been estimated that there will be a human being born of clonal reproduction on earth within the next twenty to fifty years.³ In theory it is possible to clone people on an assembly-line basis, all carbon copies of one another.

A second method of producing human beings is via embryo transfer in which an unfertilized embryo is removed from the mother, fertilized with the husband's sperm, grown in vitro and then surgically implanted in the uterus. Both cloning and embryo transfer break the biological connection between the unborn and the mother. The possibilities for this connection not being reunited can result in a myriad of potential legal problems unknown in the history of the Common Law.

A third method is merely an extension of the traditional means of reproduction, that of artificial insemination. Of the two types of artificial insemination, A.I.D. (by a donor) and A.I.H. (by a husband) only A.I.D. causes potential legal difficulties. This method differs from cloning and embryo transfer in that the biological connection between the mother and the child

1 Webster's Third New Int'l Dictionary (Springfield, Mass.: G & C, 1968).

2 F. Anselmi et al. *The Politics of Genetic Engineering: Who Decides Who's Defective?* Psychology Today, June, 1974 vol 8 no 1 p. 30.

3 J. D. Watson "Moving Toward the Clonal Man" Atlantic, vol 227 no 5 pp. 50-53 May 1971.

is not broken but the natural course of events which lead to fathering a child is broken.

ARTIFICIAL INSEMINATION

Let us examine artificial insemination first, since it has been with us since it was first reported in England in 1790. The British Committee on Human Artificial Insemination recommended that while A.I.D. should be strongly discouraged it should not be outlawed nor be regulated by law.⁴ In 1897 the Roman Catholic Church condemned the use of A.I.D., a stand which was later reaffirmed by Pope Pius XII in 1949 and in 1956. Regardless of whether A.I.D. is ethical, medically justified or socially desirable, this method of procreation is widespread.

The courts to a large extent have not been faced with the problems arising from A.I.D. and few legislatures have addressed themselves to the issue. One exception is the widely criticized Ontario Supreme Court decision of *Orford v. Orford*⁵ in which it was decided that artificial insemination of a wife by a donor without the husband's consent constituted adultery and was therefore ground for divorce. Apart from the merits of the decision itself it leads to the logical conclusion that a married donor of the semen is also guilty of adultery.⁶ Following this logic even further, one must also consider the possibility of, in the absence of the husband's consent, a possible suit against the physician or employing hospital on the basis of seduction or alienation of affections. Kenneth Hennessy analyzing the *Orford* case in the Canadian Bar Journal dismissed it as having little or no value.⁷ Be that as it may, the case has never been overruled and looks in the face of a vastly expanded use of A.I.D. From a practical point of view the cautious and conservative solicitor might be forced to advise his physician-client to obtain consent not only from the donor of semen but also his spouse.

The legal turmoil arises from the view that it is not just intercourse that is an integral part of marriage as a legal institution but also procreation. This activity has not usually been separated from that of intercourse and therefore is viewed legally in the same way when it takes place outside the bonds of marriage. Were one to treat procreation separately since by artificial insemination it can be separated from intercourse, one must revise one's entire view of marriage as an exclusive arrangement. If procreation can take place outside of marriage without destroying the institution, is it likewise with intercourse? Dealing with the recipient and donor of semen individually and apart from their marital state the physician or health institution must consider the threat of a suit based on assault and battery, that is trespass to the person, as well as a breach of contract.

Both the trespass and the breach of contract involve the much discussed consent to treatment issue.⁸ One of the necessary criteria in order to obtain a valid consent from a patient is that he give what the American courts have called "informed consent". Canadian courts have never attempted to develop the strict objective or subjective rules as to what consent means as have U.S. courts. It has always been stated that the criterion is whether the nature of the treatment is fully understood.⁹ The

4 Report of the Departmental (Feversham) Committee on Human Artificial Insemination (London: H M S O., 1960) 1105.

5 (1921), 49 D.L.R. 15, 58 D.L.R. 251.

6 See Dean Tallon in 34 Cdn B.R. 1

7 K. R. M. Hennessy, "Artificial Insemination", (1967), 10 Cdn. B. Jo. 514 at 520

8 See L. E. Rozovsky, Consent to Treatment, (1973), 11 Osgoode Hall L. J. 103

9 E.g. *Johnston v Wellesley Hospital*, [1971] 2 O.R. 103 (Ont S.C.)

limitations which sometimes apply in cases in which knowledge of the full nature of the treatment would either not be understood or even harm the patient would not be applicable in artificial insemination.¹⁰ Thus, it is essential that the physician obtain a full and informed consent from both the recipient and the donor. Both should be aware in my opinion not only of the nature and risks of their respective operations but the use to which the sperm is put on the part of the donor and the possibilities of problems on the part of the recipient. The recipient must be made aware of the possibilities of failure to impregnate and of deformation of the child.

As in any medical treatment, no guarantee of success is implied. Because of the emotional issues and expectations involved in A.I.D. the recipient must recognize that there is no guarantee of success. While the genetic history of the donor must be carefully examined, it must also be clearly understood that if impregnation occurs, no particular type of baby can be assured. This is especially important since both parents employing A.I.D. appear to society to be the natural parents.

The problem of informed consent is especially important if it is viewed as one of breach of contract rather than of trespass to the person. It has also been dealt with in a minority of cases as negligence in obtaining consent¹¹. Though this method of handling the problem would seem to be less appropriate in the A.I.D. situation, physicians must be extremely careful in avoiding any implication which would imply a particular result, or that the sperm is in any particular condition. Similarly, the donor must not be induced into donating his sperm, or selling it, for any purpose other than its actual purpose. The donor should also be asked to agree to the unrestricted use of the sperm and agree that he has no right to, nor will he seek out, the identity of the recipient.

A further problem facing physicians and institutions involved in A.I.D. is the possibility of a negligence suit whereby the recipient of the embryo is injured. It is now settled law that a child can bring action by next of friend for injuries caused by negligence before it was born.¹² The possibility of negligence arising is particularly apparent in the operation of sperm banks in which sperm is collected, stored and even mixed. The more complicated the system becomes, the further away the donor is from the recipient, the more likely the built-in precautions can break down.

The primary area of concern arising from A.I.D. is the legitimacy of the offspring. Ordinarily the child from the union of a woman and a man other than the woman's husband is considered to be illegitimate unless the biological parents subsequently marry. The principle is observed despite the fact that where the mother is married the child will be considered *prima facie* the legitimate offspring of the mother and her husband.

This paper is not intended to explore the problem of the legitimacy of artificially inseminated children other than to bring to light this problem as an issue of human engineering. However, it is sufficient to say that some courts, legislatures and other official bodies have faced the problem and have arrived at differing conclusions. The Feversham report in the United Kingdom¹³ concluded that A.I.D. children are illegitimate. The basis of this conclusion was that the child is not the blood relative of the father, unlike

10. See *Male v. Hopmans* (1967), 64 D.L.R. (2d) 105, [1967] 2 O.R. 457. (Ont. C.A.)

11. *Kenny v. Lockwood*, [1932] 1 D.L.R. 507 (Ont. C.A.).

12. *Duval v. Seguin* [1972] 26 D.L.R. (3d) 418.

13. See *supra*, note 4.

the situation in which the offspring of unmarried parents is legitimated when the parents marry. A move towards legitimation, the Committee said, would require the abolition of marriage as a condition of legitimation. Commentators and those few courts which have considered the matter are generally divided on the subject. It would appear that the uncertainty of the outcome on questions particularly of inheritance must be removed. This can be done by legislation. While a suit exposing the origin of a child might be unlikely and prove difficult, the fear of suit must be removed.

EMBRYO TRANSFER

Turning to the method of human engineering, which is one step further from the natural process, we must examine embryo transfer. Ordinary embryo transfer involving husband and wife and reimplantation into the mother's uterus causes no particular legal difficulties apart from negligence suits which might arise in any medical procedure. The legal problems begin to rise when the transplantation takes place into the uterus of another woman. It is at this point that the traditional legal problems are the same for both embryo transfer and cloning. In both cases the natural biological chain leading to motherhood is interrupted and two "mothers" are involved in the birth.

By letting one's imagination run rampant, one can raise such a myriad of legal questions without answers so as to illustrate how totally unsuited the traditional legal solutions are for the future era of human engineering.

Consider the problems that could arise between the conceiving mother and the host mother or what Louisiana law professor, Leila Schroeder, referred to as "the hatchery".¹⁴ Who has the right to the child and the responsibility for it? Is the conceiving mother merely providing the embryo as a service to the first mother? If the latter be the case, based on a contractual obligation, one must consider whether a therapeutic abortion would be considered breach of contract, or whether failure to take standard precautions during pregnancy could be negligence. Considering the emotional factors involved in pregnancy and delivery there are bound to be disputes over the child.

Professor Schroeder points out that this raises the problems of treating the foetus as property in a bailment situation. Would the courts consider the analogy as being against public policy? This issue falls in line with that raised in the abortion debate - is the foetus a person? When this question is raised in Canadian courts or legislatures, it would be well to consider the logic of extending the answer, whatever it may be, into the domain of human and genetic engineering.

The problem would not be overwhelming if it involved only the two "mothers". However, the further involvement of the two "fathers", that is the husbands, must be considered. Their rights and responsibilities over the child come into question. How different would the answer be depending on which is biologically the father? How does this affect the matrimonial relations? We must consider whether we wish to apply the *Orford* case and declare the host mother guilty of adultery. Are the provincial adoption laws really suited to this type of problem? As a matter of statutory interpretation, can one adopt an embryo?

To further complicate the situation, A.I.D. could be combined with embryo transfer thus affecting the legal relationship between the two mothers, one conceiving, and one bearing, plus the donor of the semen, the

14. L.O. Schroeder, "New Life: Person or Property?" (1974), 131 Am. J. Psychiatry 541.

husband of the conceiving-recipient, the husband of the host-bearer and the wife of the donor. Each may have a claim to the child. Each may have responsibilities to the child. The child may have a claim against the estate of each. The marital status of each may be affected. Using our current jurisprudence, definite guidelines are not possible. Our legal experience to date is inadequate in solving these futuristic but inevitable problems.

In our ever increasing commercial world, one must also consider the effect of commercial enterprise on human engineering and the legal implications which flow from it. There are in the world commercial sperm banks. There is no reason to believe that some women will not have a "rent-a-womb" programme available for those women who can conceive but not bear children.

Artificial insemination and varieties of embryo transfer cause legal difficulties in the private law sector owing to the fact that they are based on traditional human relationships with which the law is already familiar. It is therefore natural to attempt to view any variation of the reproductive process along traditional jurisprudential lines in the belief that the ever-changing Common Law will adapt to the situation. Undoubtedly it will, but is it fair to those affected to leave them in this uncertain state pending litigation which may never arise? This is based on the assumption that litigation will result in an answer to the particular unanswered problems.

CLONING

A further step away from the traditional reproductive process is cloning, that mythical but possible asexual reproduction without the introduction of sperm. From a particular point of view it would seem to create fewer problems, since fewer people are involved. The contractual obligations between those providing the cloning service and those employing such services would be as at present. The marital relations of the mother could be plagued by the *Orford* case. Is the mother giving up her reproductive facilities even where no male is involved? The legitimacy issue could also be raised. However, these problems could be avoided by the husband's consent and by adoption. This creates no difficulty since the entire matter is kept within the family. Artificial insemination and embryo transfer cause problems largely due to the family wall being breached and the subsequent desire for confidentiality. Similar problems would arise if cloning and embryo transfer were to be combined.

The real problem is not in the private law sector. It rests squarely on what the courts were so fond of calling "public policy". Is cloning, embryo transfer, artificial insemination or any other method of human or genetic engineering so against public policy that Parliament should speak out against it? Is artificial tampering with reproduction immoral or is it socially undesirable? The real fear was expressed by American biologists Ausubel, Beckwith and Janssen¹⁵. They said that because of its potential for misapplication in a totalitarian society, cloning represents the most frightening prospect of genetic engineering. It theoretically could be used to turn out on an assembly-line basis the finest genotypes - or the worst. Does our society rest on the plurality of genotypes or does it exist despite it? Is the answer to ban clonal development because of the fear of misapplication? Or to move away from the type of society that would misapply it?

15 F. Ausubel, J. Beckwith, K. Janssen, "The Politics of Genetic Engineering: Who Decides Who's Defective?" 8(1) Psychology Today 30, June 1974

POPULATION CONTROL

From a legal point of view, these various methods of human and genetic engineering affect not only individuals in society but the entire relationship of society to the individuals in it. Not only can these methods be employed to either increase or decrease the size of the population they can also be used to determine the type of population which will make up society.

In order to achieve this result the positive methods to create life and select the type of lives to be created must be regarded along with the methods to prevent life, such as the modern birth control devices and therapeutic abortion. These negative methods are gaining greater social acceptance and the legal restraints on them are lessening. Since the law has not restrained the positive creative methods, both the positive and negative methods will be available to create or prevent life. Coupled with these methods is the advancing knowledge of genetic screening.

Genetic studies of populations are currently being undertaken or are proposed, such as that set out in 1966 by Dr. Howard B. Newcombe of Atomic Energy of Canada in order to study disease conditions, the occurrence and consequences of mutations, the prevalence of different patterns of mating, the effects of various deviations from random mating, the extent of migration, the process of assimilation of migrant groups, and so on.¹⁶

To carry out such a study and to advance the understanding of human genetics and thus human and genetic engineering it is necessary to have access to extremely personal data. This is presently being collected under the various provincial medicare and hospital insurance plans and under the authority of provincial vital statistics legislation. Dr. Newcombe suggests the complete integration of this information on a person basis.¹⁷ Through computerization this task is less onerous than it once was.

Thus, society is faced with the means of creating life, avoiding the creation of life, predicting the genotype of lives and having access to information upon which to base decisions as to when to employ these means. The dilemma is posed by Vancouver geneticist, David Suzuki: Will we survive the next decade and if we do, will it be worth it?

THE STATE OF THE LAW

The law in its failure to grasp the significance of these developments has no doubt accurately reflected the similar failure by society. There has been a failure to take an overall view of the implications of the various factors which will scientifically enable man to engineer his species. Laws are passed, decisions reached to meet particular problems without examining the wider effects.

In terms of data banks which will provide the basis for human engineering, we establish social service programmes which, in order to efficiently carry out their tasks, require an increasingly larger amount of personal information. On the other hand, perhaps out of distrust of the government officials to whom we give this information, we press for and obtain legislation protecting privacy affecting relatively few.¹⁹ A right to

16 H B Newcombe, "Present State and Long-Term Objectives of the British Columbia Population Study". Proceedings of the 3rd International Congress of Human Genetics (Baltimore: John Hopkins Press, 1967) 291

17 *Ibid.* at p. 309.

18 D T Suzuki "Genetics and the Future of Man" (Fredericton: University of New Brunswick, 1972) 16.

19 The Protection of Privacy Act, Bill c-176 (Can)

privacy *per se* has never been accepted by the Common Law and so certain provinces have established such a right by statute.²⁰

Canadian society has been inconsistent in its legal approaches to the various methods of human and genetic engineering. The first method to be examined is the prevention of birth by therapeutic abortion. Legislation has been passed which has permitted at least some localities to allow therapeutic abortions on extremely liberal grounds, while others may continue to prohibit or restrict it.²¹ Through Canada's hospital insurance programme, it is possible for provincial governments to affect the trend in either direction because of the hospitals' almost complete dependence on government for financial support. In addition to this generally permissive attitude towards therapeutic abortion, it is also to a certain extent encouraged in that it is an insured hospital and medical service.

The second concerns sterilization and from a legal point of view the attitude has been passive. Neither the Common Law nor the Criminal Law prohibit it and thus, while not actively encouraging it, allow it to grow in popularity. In some provinces it is permissively encouraged in that it is an insured hospital or medical service. In others it is not and, therefore, is discouraged.

The third method is at present only in British Columbia where legislation permits the compulsory sterilization of certain defective persons.²² Alberta abolished such legislation.²³ Numerous American states continue to have such provisions. These statutes, taken generally, rest on the principle that certain mental defectives should not be able to bear children because they have not the capability of rearing them, or because of the danger, which is not always proven, of further defectives being born. Such laws have been widely opposed owing to the threat of abuse.²⁴

This threat is even greater when one combines a social decision to engineer society genetically with the growing ability to diagnose individuals genetically and to predict the offspring of sexual unions. It is especially threatening in cases in which one is able to procreate the type of children by choice. The question is whether the state through its legislative power should either prevent some people from procreating completely, prevent certain people from procreating with certain other people, or force procreation of certain types. The third is inconceivable except in a very tightly controlled state. The first is, as mentioned, not widespread in Canada. The second is present throughout the country and may increase.

It is present in marital legislation whereby incest is prohibited. States often have certain health requirements before obtaining a marriage licence. Such requirements could be expanded. In the present liberal society this would probably not be successful owing to the large percentage of the population which does not regard marriage as a prerequisite to sexual relations, let alone procreation.

These problems raise serious social and political questions. What is the role of the state in developing a stronger genetic pool? If the state is asked to bear the cost of genetically weak or defective offspring, should it have the corresponding right to prevent such cost?

20. E.g. The Privacy Act, S.B.C. 1968, c. 39; The Privacy Act, S.M. 1970, c. P 125; Privacy Act, S.S. 1974, Bill No. 1.

21. Criminal Code, R.S.C. 1970, c. C-34, s. 251.

22. Sexual Sterilization Act, R.S.B.C. 1960, c. 353.

23. Alberta Sexual Sterilization Act, R.S.A. 1970, c. 341.

24. J. G. Castel "Legal Implications of Biomedical Science and Technology in the Twenty-First Century". (1973) 51 Cdn. Bar Rev. 119 at 124

On an individual level, is it a right to bear children either artificially or naturally and with whom one pleases? Are there rights belonging to that which has been created and what are the responsibilities of those who have taken part in the creation?

These are not legal questions, but the legal student can use his knowledge in two ways. The first is to glean from current law the often conflicting social attitudes and determine whether the law and those attitudes will allow or prevent developments from taking place in genetic and human engineering. The second is to guide the development of law which will enable this engineering to take place in the context desired by society.

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