

August 1993

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Recommended Citation

Roessler, Mark A. (1993) "Fetal Tissue Transplantation: An Ethical Analysis," *The Linacre Quarterly*: Vol. 60: No. 3, Article 8.
Available at: <http://epublications.marquette.edu/lnq/vol60/iss3/8>

Fetal Tissue Transplantation: An Ethical Analysis

by

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Fetal tissue research has been going on for decades in the United States. In the early years of research, tissue was used in developing particular cell lines and for safety testing of vaccines. In the last fifteen years, after numerous animal studies, medical technology has made it possible to use fetal tissue for transplantation in humans.¹ Such transplantation research is now being done in three areas. Human fetal liver tissue and thymus tissue are being transplanted into patients in the attempt to treat inherited and acquired diseases of the blood and of the immune system, as well as inherited diseases of metabolism. For example, transplants have been performed on patients with DiGeorge's syndrome, severe combined immune deficiency (SCID), leukemia, aplastic anemia, inherited metabolic disorders, as well as persons injured by radiation. Transplantation for DiGeorge's syndrome is now the treatment of choice for that particular disease. Transplantation, however, for the other diseases is still on the experimental level.² Fetal pancreatic tissue is now being used for the treatment of type I diabetes. Early results of such experimental transplantations indicate no adverse reactions and good cell-survival rates, with insulin requirements reduced in some cases.³ Animal studies have indicated that transplanting fetal neural tissue from the brain, spinal cord and peripheral nervous system may offer significant therapeutic benefit for a variety of neurologic disorders and trauma. For example, there has been success in treating patients with Parkinson's disease, a common degenerative neurologic illness.⁴ There is debate within the scientific and medical communities over the therapeutic benefit of fetal tissue transplantation into humans. The experiments carried out so far look promising but they are still at a very early stage.

The common source of fetal tissue for research and therapy purposes is from induced or spontaneous abortions. Fetal tissue is preferred to adult tissue because it is believed to:⁵

- be less likely to trigger an immunological response
- be easier to culture, proliferate, and transplant

- grow more rapidly and to be more adaptable
- possess greater potential for restoring damaged tissue and biochemical function
- be more resistant to lack of oxygen
- be exceptionally adaptable to a new environment
- be able to stimulate the growth of new blood vessels

By far the greatest percentage of fetal tissue comes from induced abortions because they provide the fresh and healthy tissue required by transplantation research. Tissue from spontaneous abortions is less preferred because spontaneous abortions cannot be planned like induced abortions and so cannot be depended upon to yield the tissue when it is needed. Also, spontaneous abortions are often due to some type of fetal abnormality, an abnormality that must not be passed on to a patient receiving the transplanted tissue.

The use of tissue from induced aborted fetuses has brought a ban on the use of federal funds to support research. Research using private funds, however, is continuing. This ban came about as a result of a proposal by a National Institute of Health (NIH) researcher in 1988 to transplant tissue from electively aborted fetuses into patients with Parkinson's disease. The research proposal was approved by an institutional review board at NIH, but approval was withheld by Dr. James Wyngaarden, the Director of the NIH, until he received the opinion of the Department of Health and Human Services (HHS) as to the propriety of funding research in this area. In March, 1988, the Assistant Secretary for HHS, Dr. Robert Windom, in a letter to the Director of NIH, placed a moratorium on the funding of fetal tissue transplantation research until an NIH appointed advisory committee could answer ten questions posed by him. The committee answered the questions and in December, 1988 a majority of its members approved the use of fetal tissue from induced aborted fetuses for human transplantation purposes.⁶ Dr. Louis Sullivan, the Secretary of HHS responded to the committee's report in a letter written on November 2, 1989 to Dr. William Raub, Acting Director of NIH. In this letter the Secretary indicated his desire to continue the moratorium on federal funding of research in which human fetal tissue from induced abortions is transplanted into human recipients. One of the reasons Sullivan gave for his decision was his belief that permitting human fetal research will increase the incidence of abortion across the country.⁷

This paper will not seek to resolve the debate in the scientific/medical community over the therapeutic benefit of fetal tissue transplantation in humans. Nor will this paper seek to address the public policy issue surrounding this issue. Rather this paper is concerned with several ethical issues raised by the use of fetal tissue from induced abortions. The paper will first analyze the three competing ethical models for the use of human fetal tissue. The paper will then analyze the issues of complicity, inducement, and consent as they relate to this issue. The paper will conclude with an evaluation of the ethical issues from the perspective of the Vatican document *Instruction on Respect for Human Life in Its Origin and the Dignity of Procreation: Replies to Certain Questions of the Day*.

The Ethical Models

Three distinct models are employed to determine the ethics of the transplantation

of fetal tissue obtained from induced abortions. Each assign the fetus a different moral and legal status: the fetus as a body part of the mother, the fetus as a cadaver and the fetus as a human research subject.⁸ The first model views the fetus as a body part of the mother and treats it like any other body part removed at surgery. Such body parts are routinely employed in medical diagnostic and research activities. The necessity of informed consent from the mother for the use of the fetal tissue is the only ethical concern raised by this model.⁹ This model permits consent to be given prior to the abortion and seeks only the woman's consent to use the tissue. The father would have no right to veto the use of the tissue since it is seen as part of the mother's body.¹⁰ This first model differs from the other two which acknowledge that the fetus is a unique individual whose genetic constitution is unequivocally different from the mother. This model, in other words, does not acknowledge that there are two organisms involved.¹¹

The second model treats the dead fetus as a cadaver. It recognizes the humanity and individuality of the fetus and so considers the aborted fetus to be analogous to any other dead person who has not expressed an opinion regarding donation of his or her body.¹² The Uniform Anatomical Gift Act (UAGA), which gives legal guidelines for organ donation in the United States, allows another party to give consent for the donation. It even allows the donation of fetal tissue and organs by the parents based on their own needs, concerns, and interests since the wishes of the deceased fetus are unknown. The UAGA permits either parent to have veto power over the use of the tissue.¹³

The analogy used by the second model (i.e., the dead fetus is like an adult cadaver) may be weak for several reasons.¹⁴ First, in adult cases the best interests and wishes of the potential donor are being considered. It is difficult to believe that a mother or others who had the fetus aborted are concerned about the fetus' best interests. Second, organ donation in the case of unavoidable death may be a means of obtaining some good from a tragic situation. It is entirely different if the death of the donor is arranged ahead of time as occurs frequently in fetal tissue procurement. Third, in the case of induced abortion, consent for fetal tissue research is often obtained while the fetus is alive to insure fresh, healthy tissue. Since the fetus at this point is definitely not a cadaver, it is difficult to see how the cadaver donor analogy applies.

The third model treats the fetus as a human research subject. It recognizes the humanity and individuality of the fetus as well as the ethical constraints imposed by them.¹⁵ However, is it appropriate to treat a dead fetus as if it were alive?

The first ethical model is generally not concerned about the ethical issues discussed below. The only ethical issue that may concern it is consent, that is, the need to obtain the woman's consent for the use of "her" tissue. These issues however, are a concern for the other two models because they recognize the fetus as a unique individual possessing dignity and certain rights.

Complicity

The use of tissue from induced aborted fetuses has raised the question of complicity, that is, does the researcher who uses such tissue or who permits such use,

become party, after the fact, to the destruction of the unborn?¹⁶ Both sides of the issue will be given below.

Complicity

One can discern four types of moral complicity in evil: active collaboration in the deed; indirect association that implies approval; failure to prevent the evil when possible; shielding the perpetrator from penalty.¹⁷ The second type best describes the type of involvement the researcher has with the abortionist. The researcher involved in this type of complicity is not actually joining in the work itself but somehow enters into a supportive alliance. The researcher becomes an associate by resorting to the abortionist as a ready supplier of tissue from unborn humans who have been intentionally destroyed. By benefiting in the abortionist's injurious behavior, the researcher places him or herself in silent but unmistakable alliance with what the abortionist is doing.¹⁸

This second type of complicity is analogous to that condemned by the Nuremberg Code of 1946. The German physicians found guilty at the Nuremberg trials argued that they were only using the brains obtained from executed Jews for the good of all humankind. They contended the guilt lay with the SS who did the executions and not with them. These physicians stated they had an "ethical imperative" to make use of what was provided them from the concentration camps. The Nuremberg judges rejected these arguments.¹⁹ The physicians also argued that the imprisonment, torment, and killing of the Jews would have happened with or without their participation. The physicians here failed to understand that their professional presence and the use of the corpses of executed Jews in their research offered endorsement and legitimacy to the exterminators and established them as accomplices in the exterminations. The Nuremberg trials make the point that one need not cause a wrongful act to be party to it; it is enough to have abetted it.²⁰ Nuremberg teaches that when the bodies of people are forcibly delivered up to be used as some want, then no antecedent good and no subsequent good will absolve those who have been confederates in their oppression.²¹ The complicity between Nazi exterminators and physicians was recognized in 1988 when the chief of the Environmental Protection Agency (EPA) barred the use of data from Nazi experiments on concentration camp prisoners in an EPA report on the human effects of a toxic gas. The chief was influenced by a letter from twenty-two EPA employees who questioned the use of unethically obtained data and expressed doubt about the scientific value of such information.²²

Governments and not just researchers or physicians can be guilty of complicity. Consider, for example, the following analogy of a banker who judges narcotics to be a tragedy, but agrees to launder the proceeds from the local drug network to make more capital available to his clientele. Who should believe his readiness to accept those funds is not an act of association — indeed, of partnership, in the human tragedies that such moneys have already purchased? The banker has become a party to destruction even though it was complete before his involvement. The point of this analogy is that it is indeed possible to become a complicit party to abuse, after the fact, by enacting an agreement with those who exploit, to take further advantage

of their victims. The systematic use of electively aborted human remains in federally funded research would make the U.S. government a complicit party, after the fact, to those abortions just as surely as the German research made the researchers accomplices, after the fact, of the military personnel who had executed the research subjects.²³ Since the implication of endorsement is a necessary concomitant of funding, funding must be eschewed in order to avoid the complicity inherent in the funding relationship.²⁴ It is difficult to see how the use of fetal tissue from induced abortions can be institutionalized without threatening a morally unacceptable collaboration with the abortion industry.²⁵ Even if a person could insure that there was no one-to-one correspondence between an individual case of abortion and the subsequent use of the fetal tissue, our society bears the ultimate responsibility for both by condoning such activity.²⁶

No Complicity

A number of arguments is given to refute the charge of complicity. First, the researcher does not seem to be cooperating either formally nor materially.²⁷ If the will or intent is absent, researchers are not necessarily implicated in a system about which they may feel moral opprobrium if the medical benefits promised are proportionate to the use of fetuses from elective abortion.²⁸ Even though the researchers involved in transplantation may feel remorse or regret, they are not objectively guilty of cooperation in a system about which they may have moral questions, since they are not assisting in abortions themselves. Those who argue for complicity fail to recognize the important distinction between the foreseen and the intended aspects of a human act.²⁹ If direct benefit from a wrong grounds complicity, then the fire fighter (an all his/her dependents, heirs, creditors, etc.) is complicit with the arsonist; and the transplant surgeon and recipient are complicit with unsafe driving that provide brain dead bodies for organ transplants.³⁰ The researchers are able to disassociate themselves from induced abortions as long as conception and abortion are not premeditated means of procuring fetal tissue.³¹

Second, the analogy to Nazi experimentations is weak. These experimentations are reprehensible not first and foremost because they represent acts of cooperation, but because they lacked authority insofar as they lacked informed consent.³² Also, one could use the results of such experiments without approving the horrendous acts of Nazi doctors that made such knowledge possible. People may reasonably view such use as retrospectively honoring the victims rather than approving their victimization.³³

There are as well major differences between the Nazi experimentations and fetal tissue transplantation research. The former were not medical research projects intended to help the victims of Parkinson's and other diseases. Nor were they scrutinized by peer reviews, examined by NIH panels, publicized by the media, open to public questioning, debated in Congress, and challenged by the administration.³⁴

Also, unlike the Nazi experimentations, the fetal tissue transplantation research does not harm fetuses. They are not aborted to advance research and are dead when the research occurs.³⁵

Third, it is unclear how complicity can be involved since the researcher and

patient will ordinarily be removed from the abortion process; they will not have requested it; and will have no knowledge of who performed it or where it occurred. The abortion will have occurred for reasons unrelated to tissue procurement, and the tissue will be procured by a third party.³⁶ Real or apparent conflicts of interest can be avoided if the distinction found in the analogous situation of organ retrieval from living or cadaver donors is maintained between the physician who performs an abortion for a pregnant woman and the physician who transplants fetal tissue into the body of another patient.³⁷ Once dead the fetus clearly lacks interests and can no more be exploited or harmed than can any cadaver.³⁸

Fourth, if infant or adult murder victims may be used for research, therapy, or education, there is no apparent reason why fetal victims should not be used as well since the patient and physician benefiting from the murder do not applaud it or enter into a supportive alliance with the murderer. In other words, physicians may benefit from or make use of induced abortions without also approving of the abortionist's causative act. Even later approval or applause of the abortions would not make the physician an accomplice in an abortion that has already occurred. Physicians or patients are not accomplices in the prior evil merely by seeking to achieve some good from a contingent event over which they had no control.³⁹ (Those who argue for complicity make the point here that if the physician contracts with the murderer to provide him organs for transplantation, told him when and where the organs would be made available, arranged for the physician or his agents to be present to harvest the organs and reimbursed the murderer for any expenses incurred in making the organs available — these physicians would be guilty of complicity. These types of arrangements are routinely made to obtain fetal tissue.⁴⁰)

Fifth, induced abortions will occur regardless of the needs of researchers. This indicates that the abortion and subsequent use are clearly independent from each other.⁴¹

Sixth, while there is no intrinsic connection between research on fetal tissue and induced abortions, those involved in this form of research have an ethical responsibility to make sure that the distance between the two realities is kept clear. Several steps should be taken to ensure that researchers are not promoting induced abortions: a) No monies should be paid for fetal tissue. If money can be made by becoming pregnant, then some type of commerce will probably be developed. (No fees should be paid to the woman to abort or to donate tissue. And no fees beyond actual expenses should be paid to abortion clinics to provide the tissue.) There are federal laws against the sale of organs for transplantation. It seems there should be federal laws prohibiting the sale of fetal tissue for research as well. b) The possibility of deriving fetal tissue from fetal tissue culture processes whose source is fetal tissue from spontaneous abortions should continue to be researched. The ethical issue concerning the source of supply of fetal tissue might be solved in this way. c) Fetuses should not be kept alive to obtain tissue. d) Induced abortions should not be performed solely or primarily to get tissue for transplantation. e) Consent for the use of the fetal tissue should be obtained from the woman only after she has decided to have an abortion. There should be no discussion in abortion counseling about using tissue from the aborted fetus for possible therapeutic purposes.⁴² These five steps are seen by many as sufficient to separate the researcher from induced abortions as such.

Inducement for Abortion

As we saw above, Secretary of Health and Human Services, Louis Sullivan, continued the moratorium on federal funding of research in which human fetal tissue from induced abortions is transplanted into human recipients because he believed, among other reasons, that permitting human fetal tissue research will increase the incidence of abortion across the country.⁴³

Inducement

The argument for inducement is made in several ways. First, the routine beneficial use of human fetal tissue will legitimate abortions previously considered immoral such that moral immoral abortions may be expected to occur.⁴⁴ Such beneficial use could be a powerful inducement for women to have an abortion, that is, they could more easily justify their action by having something "good" come from it. Abortion decisions are often very difficult for women, so the appeal to beneficence might be highly manipulative of women. The prospect of fetal tissue transplantation offers a powerful argument in the hands of abortion clinic counselors who could counsel that having an abortion can be good for humanity. Such an argument may be a powerful additional reason to go through with the abortion.⁴⁵ Even in the absence of direct interpersonal pressure, the beneficence of giving up a fetus for the sake of a disease victim will be widely discussed in society and hence likewise influence the woman.⁴⁶

Second, fetal tissue transplantation can also be reasonably expected to increase abortions due to financial incentives motivating abortion clinics. If fetal tissue transplants are successful the supply would not begin to meet the demand.⁴⁷

Third, if the medical research establishment becomes dependent on elective aborted fetuses, an irreversible institutional and economic bond between abortion centers and biomedical science will have been established. Medical science could have a great deal at stake in the continual flow of elective aborted fetuses. With the advent of widespread fetal tissue transplantation, induced abortions would no longer be a political issue that biomedical researchers could ignore. Rather, livelihoods and institutional grants would demand that induced abortions be continued. If this happens there might be no turning back because of the symbiotic relationship which would arise between medical and scientific progress.⁴⁸

No Inducement

The inducement arguments are countered in various ways. It is argued that the ultimate impact of fetal tissue transplantation on the incidence of induced abortions is simply unknown, and so research should be allowed to continue for a while to determine if abortions do increase. The risk of some increase, however, should not justify a total ban.⁴⁹ Also, there is a sufficient amount of fetal tissue available today from induced abortions for transplantation so no increase in abortions is likely to result.⁵⁰

Various safeguards can be implemented to prevent or minimize inducement. First, to avoid any conflict of interest that might affect their advice to patients about abortion, medical personnel who perform induced abortions should not be allowed

any direct benefit from the subsequent use of the fetal tissue. Second, women who undergo induced abortions should not be allowed to benefit directly from the subsequent medical use of the fetal tissue, through payment for it, through the reimbursement of expenses connected with the abortion, by designating who will receive the tissue, or in any other manner. Third, the National Organ Transplantation Act should be amended to cover human fetal tissue, whether used for transplantation or any other medical purpose; and to exclude abortion-related expenses from its definition of permissible reimbursements.⁵¹ Fourth, permission to use tissue from the aborted fetus should be obtained only after the woman has made the decision to have the abortion. Fifth, the physicians performing the abortion and those performing the transplant should be distinct.

Consent

The necessity of obtaining consent to donate fetal tissue is closely related to the three ethical models discussed above. If the fetus is viewed as just a part of the mother, then no more consent is needed for such a donation than for the donation of any tissue specimen of the woman. However, this practice is inconsistent with the Uniform Anatomical Gift Act (UAGA) which treats the dead fetus as a cadaver donor of tissue (the second ethical model). The third model, which treats the fetus as a human research subject maintains that the federal regulations for the protection of human subjects should apply to this type of research.⁵²

If the first ethical model is accepted then there is little controversy surrounding consent. The consent of the woman having the abortion is sufficient. If the second ethical model is accepted then the differences from normal organ donations from cadavers need to be noted. For example, when a family surrenders through proxy consent organs from a cadaver for transplant they have not been involved in causing the death of the person in question.⁵³ Also, the criteria currently in use for defining death for the purpose of cadaveric organ donation from postnatal organ donors are not sufficient when applied to the fetus. This insufficiency is apparent in the unique physiological status of the fetus as compared with postnatal organ donors, as well as the fact that the medical personnel who would normally be called upon to make the diagnosis of death are either the agents of death (the abortion practitioners) or have a vested interest in the subsequent use of the tissue (the transplant personnel). New criteria need to be established for defining fetal death which would be compatible with obtaining tissue suitable for transplantation. However, such criteria are suspect when the necessity for developing them is driven by the desire to obtain viable fetal tissue.⁵⁴

The third ethical model, which treats the fetus as a human research subject, maintains that informed consent cannot be obtained for an experimental procedure that calls for the willful killing of the research subject.⁵⁵ It is a canon of ethical science since Nuremberg that no human being may be used for research without his or her voluntary consent. If a subject is unable to consent to research that might serve his or her own welfare, another person can give proxy consent: a parent for a minor child, a guardian for a mentally handicapped person, etc. In the case of the use of fetal tissue, a mother's power to act on her child's behalf is

grounded entirely upon her protective office and duty to provide for the child's benefit.⁵⁶ But the mother's decision to abort her child is an act of such violent abandonment of her protection and duty that no further exercise of such responsibility is admissible.⁵⁷

Since this third model treats the fetus as a human research subject it is also concerned that the remains of an aborted fetus be treated with the dignity given a human body and not be treated as an impersonal object to be owned and used at will.⁵⁸ Human remains demand dignity because of the dignity owed to the persons when he or she was alive. To disregard that dignity after death discredits the dignity to be accorded the person while living and orients persons to treat others with contempt.⁵⁹

Against this understanding of dignity it is argued that the key question about the dignified treatment of human remains is what is done with them. If what is done is dignified then the remains are treated with dignity.⁶⁰ In fact, greater dignity seems to be afforded fetal remains if they are used as a source of transplanted material rather than treated as organic trash. Also, the disposers of cadaveric remains are not the guardians or proxies of the deceased, who no longer has interests to be guarded. Rather their role is to guard their own feelings and interests in assuring that the remains of kin are treated respectfully.⁶¹ The absence of a positive warrant (i.e., proper consent from the mother or father or State, etc.) should be no bar to use of the tissue.⁶²

On the other hand, the UAGA teaches that human cadavers, organs and tissues must be treated as human subjects — not objects — of research, protected from arbitrary intrusion or seizure by the essential requirement of voluntary consent by the person (or that person's protector). It has been a longstanding moral conviction that a human body cannot be owned — it can only be held in trust. Therefore, fetal remains no more belong to the next-of-kin than an estate belongs to an executor. And when the only reason there is a fetal cadaver to be disposed of is that it was violently destroyed at the choice of his or her next-of-kin, that survivor surely forfeits his or her right after death, just as he or she violated his or her duty before death, to provide the services of posthumous kinship. The unborn is not there to serve the interests of those who have him or her in their power.⁶³

In summary, it can be argued that no one is capable of giving authentic consent in the case of tissue donation from an induced abortion since there is no honest attempt to serve the best interest of the unborn.⁶⁴ The mother is unable to give consent because when she resolves to destroy her unborn fetus she has abdicated her office and duty as the guardian of her offspring.⁶⁵ There is no ground for claiming that the medical professionals who performed the abortion have rights over remains of aborted fetuses. This is especially true since death has resulted from nontherapeutic intervention with no consent by the victim.⁶⁶ The prerogative of the father to release the remains of his aborted fetus for medical research is rarely considered, yet in comparable instances of significant parental guardianship neither parent is considered to act rightfully when he or she avoids consultation or consensus with the other parent. The absence of their consent, unless the right to give it could credibly be assumed to have been waived, would

further encumber any others' claim to dispose of the remains.⁶⁷ When the natural protectors of the weak have either deserted or abused or absented themselves from their wards, guardianship usually devolves upon the State as *parens patriae*. But if the State agrees to consign to research the remains of those fetuses killed by induced abortions, that inevitably places the State in a position of patronage toward their destruction. The State would, like the aborting mother, also be implicitly derelict in its protective powers.⁶⁸

Conclusion

This paper will conclude with an evaluation of the moral issues presented above from the perspective the Vatican document, *Instruction on Respect for Human Life in Its Origin and the Dignity of Procreation: Replies to Certain Questions of the Day* (Instruction).⁶⁹ The *Instruction* asserts that a human being must be respected and treated as a person from the very first instant of his or her existence.⁷⁰ Therefore from the same instant his or her rights as a person must be recognized, among which in the first place is the inviolable right of every innocent human being to life.⁷¹ This understanding of the human personhood from the moment of conception is obviously incompatible with the understanding of the first ethical model which defines the fetus as no more than a body part of the mother. The *Instruction* rejects any research based upon such an understanding of the fetus.

The *Instruction* permits medical research on live embryos as long as it does not involve risk to the embryo's physical integrity or life by reason of the methods used or the effects induced.⁷² Fetal tissue research which uses tissue from live fetuses is ruled out by the *Instruction* because of the risk it imposes on the fetus.⁷³ Also, the *Instruction* does not allow parental consent for tissue transplantation to be given *pre mortem* since such consent is given for research which has no benefit for the fetus.⁷⁴

The *Instruction* does allow for experimental research or medical use of human embryo and fetal remains.⁷⁵ They are to be treated with the same respect as other human remains, and so, can be used only under certain conditions. These conditions are: death must be verified; parental consent must be obtained; there must be no complicity in deliberate abortion, the risk of scandal must be avoided; and there must be no commercial trafficking in dead fetuses.⁷⁶

These conditions can be fulfilled if the fetal tissue used in transplantation comes from spontaneous abortions or ectopic pregnancies. But they seem impossible to fulfill if the tissue comes from induced abortions. The arguments given above demonstrate the problems of parental consent — how can parents presume to act in the best interest of their baby if they have chosen to abort him or her? The arguments above also demonstrate that complicity in abortion and scandal are impossible to avoid if the use of tissue from induced aborted fetuses is anything more than an isolated event. And if the medical use of fetal tissue becomes standard practice with most of it coming from induced abortions, a business-as-usual relationship will be established between researchers and the abortion industry.⁷⁷ It is difficult to imagine that some type of commercial

transaction in fetal tissue will not result from such a relationship.

In summary, the *Instruction* permits fetal tissue transplantation if the tissue is acquired from the remains of spontaneous abortions and ectopic pregnancies under the conditions mentioned above. The quantity and quality of tissue obtained in this way, however, limits the availability of such tissue for research and therapy. However, this limit may be overcome in the future through fetal cell cultures derived from such tissue. The possibility of growing fetal cells in culture is still in its early stages of research. If such culturing becomes possible it would remove the demand of acquiring fetal tissue from induced abortions and hence remove a major objection to fetal tissue transplantation research and therapy.

In conclusion, fetal tissue transplantation is ethical if the source of the tissue is from a spontaneous abortion, an ectopic pregnancy, or fetal cell culture; and the conditions found in the *Instruction* for the use of the remains of human embryos and fetuses are fulfilled.

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32. *Ibid.*, p. 631.
33. J. A. Robertson, "Fetal Tissue Transplant Research is Ethical," *IRB: A Review of Human Subjects Research*, 10 (6), November/December, 1988, p. 7.
34. Report of the Research Panel, Vol. I, statement by Aron A. Moscona, pp. 27-28.
35. Report of Research Panel, Vol. I, statement by John A. Robertson, pp. 32-33.
36. Robertson, pp. 6-7.
37. Mary B. Mahowald, Jerry Silver and Robert Ratcheson, "The Ethical Options In Transplanting Fetal Tissue," *Hastings Center Report*, 17 (1), February, 1987, p. 14.
38. Report of Research Panel, Vol. I, statement by Robertson, p. 31.
39. Robertson, pp. 6-7. Robertson uses the following analogy to make his point. "Suppose X murdered Y, a woman who was three months pregnant at the time. Surely if her husband, Z, could consent to donation of Y's organs for transplant, he should be free to consent to donation of the dead fetus's organs as well."
40. Bopp and Burtchaell, p. 68.
41. Report of Research Panel, Vol. I, statement by Moscona, p. 30.
42. Kevin O'Rourke, "Research with Fetal Tissue," *Parameters*, (special double issue) 12 (4) & 13 (1), 1987-1988, p. 18.; and Report of Research Panel, Vol. I, statement by Robertson, p. 29.
43. Statement by Sullivan, November 2, 1989.
44. Center for Biomedical Ethics, p. 259. Bopp and Burtchaell, p. 53. Bopp and Burtchaell argue that the respectability given to abortion by the use of fetal tissue by medical researchers will motivate pregnant women who are ambivalent about abortion to have an abortion. Hence, respectability will lead to an increase in the number of abortions.

45. Bopp and Burtchaell, p. 58.

46. Stephen G. Post, "Fetal Tissue Transplant: The Right to Question Progress," *America*. 164 (1), January 5-12, 1991, p. 14-15. Bopp and Burtchaell, p. 55. Bopp and Burtchaell believe that fetal tissue transplantation from induced abortions possesses strong potential to increase abortions by providing both selfish (payment for the tissue) and selfless (help those who need the transplant) reasons for abortion.

47. Bopp and Burtchaell, p. 59. Bopp and Burtchaell state that for the treatment of Parkinson's disease only 10,280 fetal transplants could be expected from aborted fetal tissue compared with 300,000 to 500,000 patients who could potentially demand the benefits of such transplants. This overwhelming demand for tissue will lead to demand for more legal abortions.

U.S. House Subcommittee, p. 2. In his testimony, Burtchaell argues that even if abortion clinics only charge a fee to cover the costs of retrieval and transplant, such a possibility of almost doubling the cash flow per abortion would inevitably stimulate the imagination of the abortion providers and perhaps also supply an indirect subsidy to make abortions more economical.

Harris, p. 2. Harris concurs with Burtchaell's argument. Weiss, p. 297. Weiss states that tissue procurement agencies currently (1988) pay abortion clinics \$25.00 - \$50.00 per fetal-tissue sample. He too believes that these transactions could create some incentive for physicians to urge more women to abort.

48. *Ibid.*, p. 52-53. Bopp and Burtchaell also believe that a symbiotic relationship will exist between the abortion industry and the researcher because research people will need to be present at the abortion clinic to insure that tissues are fresh and that sufficient tissue will be available.

49. Post, p. 15.

50. Alan Fine, "The Ethics of Fetal Tissue Transplants," *Hastings Center Report*, 18 (3), June/July, 1988, p. 6. Fine states that on the basis of animal experiments, dopaminergic neurons from a single fetal midbrain seem sufficient for effective transplantation. Based on this and on the current rate of legal abortions in the U.S.A., the tissue from 90,000 appropriately aged fetuses are available to meet the need of 60,000 new cases of Parkinson's disease which arise each year. The total cases of Parkinson's disease would be less than this since not all of the persons with the disease would be satisfactory candidates.

51. The Stanford University Medical Center Committee on Ethics, "The Ethical Use of Human Fetal Tissue in Medicine," *The New England Journal of Medicine*. 320 (16), April 20, 1989, p. 1096.

52. Center for Biomedical Ethics, pp. 8-9.

53. O'Rourke, p. 19.

54. U.S. House Subcommittee, Crutcher, pp. 12-13. Fine, p. 6. Fine reports that of the 1.3 million abortions performed in 1981 78% were performed between 6 and 11 weeks. 94% of these abortions were done by suction and curettage. Since fetuses aborted in this manner are definitely dead, the concern about defining death is not entirely relevant. The type of tissue needed for fetal tissue transplantation generally comes from first or early second trimester fetuses.

55. Harbaugh, (no page number is given); Harbaugh states that any institutional review board would reject such a study as an act of madness or barbarism.

56. U.S. House Subcommittee, testimony by Burtchaell, p. 2; and testimony by Crutcher, p. 11. Crutcher makes the point that the need for informed consent on the part of subjects used for medical experimentation applies in circumstances where the proposed research is intended to benefit the experimental subject, and rarer cases in which the subject will not benefit but vital medical information will be obtained or another individual will benefit. Since the fetus neither benefits nor gives consent to such research, Crutcher wonders if research on such individuals can be justified under any circumstances.

57. Burtchaell, "A Rebuttal," p. 9.

58. Bopp and Burtchaell, p. 49. They state that there is nothing inherently unethical in research or experimentation upon the remains of humans who are victims of homicide, provided that consent is given, as is normally required, by the surviving guardian or next-of-kin and that the experiment does not enact indignity upon the deceased. They maintain, however, that such consent is not possible in the case of the use of fetal tissue for transplantation obtained from induced abortions.

59. Burtchaell, "A Rebuttal," p. 9; and Bopp and Burtchaell, p. 49.

60. Robertson, p. 5-6. Robertson reasons that since research with human remains is dignified, then fetal tissue research dignifies the fetal remains. He states that next-of-kin have interests in controlling the disposition of human remains even in the case of abortion. Robertson contends that even if they have forfeited or waived their decisional authority the use of fetal remains for research and therapy may still occur with dignity.

61. *Ibid.*, p. 6.

62. Freedman, p. 3. Freedman makes an analogy to demonstrate that the absence of a positive warrant should be no bar to the use of tissue. "Your patient urgently requires some blood factor. The required sample is found in the pathology lab, but its label has fallen off. Ordinarily, you might have contacted the patient from whom the factor has been extracted for his consent to this use of the sample; and routinely, he or she would have granted the consent. Again, were there a labeled sample which could serve equally well and to the use of which consent can be obtained, you might prefer to use that one. But there is no other sample available. If you are to treat, you will have to use the anonymous sample, with no positive authorization. The blood factor, in the alternative, will simply be discarded, and the treatment foreclosed." Freedman concludes, "It is to my mind obvious that you are justified in employing the sample without any positive authorization — that you are, in fact, morally obligated to use it in that fashion, as one instantiation of your general obligation to treat patients Like fetal transplantation, the case of the blood factor represents the only possible recourse . . . the alternative to use is ignominious disposal."

63. Burtchaell, "A Rebuttal," pp. 9-10.

64. Harris, p. 2.

65. Burtchaell, "University Policy," p. 8.

66. *Ibid.*

67. *Ibid.*

68. *Ibid.*

69. Congregation for the Doctrine of Faith, *Instruction on Respect for Human Life in Its Origin and the Dignity of Procreation: Replies to Certain Questions of the Day*. (Authorized Vatican Translation), San Francisco: Ignatius Press, 1987. The *Instruction* was approved on February 22, 1987. The *Instruction* "does not intend to repeat all the Church's teaching on the dignity of human life as it originates and on procreation, but to offer, in the light of the previous teaching of the Magisterium, some specific replies to the main questions being asked in this regard."

70. *Ibid.*, pp. 12-13. The *Instruction* quotes from a previous Congregational document, "Declaration on Procured Abortion": "From the time that the ovum is fertilized, a new life is begun which is neither that of the father nor of the mother: it is rather the life of a new human being with his own growth. It would never be made human if it were not human already. To this perpetual evidence . . . modern genetic science brings valuable confirmation. It has demonstrated that, from the first instant, the program is fixed as to what this living will be: as a man . . ." The *Instruction* admits that the scientific evidence does not and cannot prove the existence of a soul at the moment of conception but the evidence does "provide a valuable indication for discerning by the use of reason a personal presence at the moment of the first appearance of a human life."

71. *Ibid.*, p. 13.

72. *Ibid.*, p. 15. The *Instruction* also states, "Medical research must refrain from operations on live embryos, unless there is a moral certainty of not causing harm to the life or integrity of the unborn child and the mother, on the condition that the parents have given their free and informed consent to the procedure."

73. Some, like Paul Ramsey, have argued that nontherapeutic experimentation on children who cannot give consent for themselves violates a "canon of loyalty" which society owes to incompetent children. (cf. Paul Ramsey, *The Patient as Person*. New Haven: Yale University Press, 1970, pp. 12-13.) What Ramsey says here about children can be applied to the fetus especially as it is understood in the third ethical model.

74. *Ibid.*, p. 16. The *Instruction* states "If the embryos are living, whether viable or not, they must be respected just like any other human person; experimentation on embryos which is not directly therapeutic is illicit. No objective, even though noble in itself, such as a foreseeable advantage to science, to other human beings or to society, can in any way justify experimentation

on living human embryos or fetuses, whether viable or not, either inside or outside the mother's womb. The informed consent ordinarily required for clinical experimentation on adults cannot be granted by the parents, who may not freely dispose of the physical integrity or life of the unborn child."

75. The second ethical model views the fetus as a cadaver and presupposes that the consent to use the fetal tissue is given only after the fetus is dead. However, since delaying consent *post mortem* may result in less "fresh or sterile" tissue, it may not be the preferred method of obtaining fetal tissue. Consent before the fetus is dead may be preferable.

76. *Instruction*, pp. 16-17.

77. Joseph Boyle, "Moral Outrage and Medical Benefits," *Ethics & Medics*. 16 (4), April, 1991, p. 4.
