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FETAL TISSUE TRANSPLANTS*

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Fetal tissue divides readily and contains the precursor cells for many important somatic functions. Tissue transplant from aborted fetuses may thus restore function in persons suffering from degenerative neurological diseases, from diabetes and from a variety of blood and immune system disorders. Although still highly experimental, the clinical potential of fetal tissue warrants further investigation.

Yet many people have voiced strong ethical objections to fetal tissue transplants.[1] Right to life groups fear that it will legitimate and encourage abortion.[2] Others foresee women becoming pregnant and aborting to produce fetal tissue, possibly creating a market for abortion. The most extreme opponents urge legal prohibitions on tissue transplants from induced abortions and a ban on federal funding of fetal tissue re-

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1. While research with live fetuses *ex utero* and fetuses about to be aborted has previously been the subject of controversy, research on dead aborted fetuses has long occurred without much conflict. The novelty of fetal brain tissue transplants has reopened an ethical, legal and policy debate about disposition of aborted fetuses.

2. Lewin, *Medical Use of Fetal Tissue Spurs New Abortion Debate,* N.Y. Times, August 16, 1987, at 1, col. 5.

search. More moderate opponents call for strict regulation of the circumstances in which fetal tissue is obtained, including a ban on the sale of fetal tissue and intrafamilial or designated tissue donations.[3]

The emerging controversy over fetal tissue transplants illustrates once again the power of medical innovation to challenge ethical norms and social practices. The challenge must be met if medical progress in this important area is to occur. To guide the development of public policy, this article examines key ethical, legal and policy issues presented by fetal tissue transplants.

I. BENEFITS, TISSUE SOURCE AND CONTROVERSY

Scientists have engaged in research with fetal tissue for many years, but only recently has the possibility of transplanting fetal tissue to cure or alleviate symptoms in sick patients seemed feasible on a large scale.[4] Before addressing ethical and legal issues, a brief description of the potential benefits and sources of fetal tissue transplants and the ethical controversy they have engendered is in order.

A. *Potential Applications*

While physicians have performed relatively few transplants to humans thus far, considerable animal research involving human fetal tissue suggests that it may be an effective therapy for at least two severe chronic diseases—Parkinson's disease and diabetes. Research also indicates human fetal tissue has potential application to a wide variety of other disorders.

Parkinson's disease is a chronic, progressive degenerative disease that affects more than 1.5 million Americans. The disease causes the brain to lose the capacity to produce essential neurotransmitters. As a result, the patient suffers from tremors, rigidity, paralysis and eventually dies. Extensive work with animal models suggests that inserting fetal cells in the affected part of the brain will produce the missing neurotransmitters in quantities sufficient to alleviate symptoms and prevent further deterioration.[5] Patients suffering from other central nervous system disorders,

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3. For a discussion of these issues, see *infra* notes 140-57 and accompanying text.

4. *See* Lewin, *supra* note 2.

5. Rohter, *Fetal Tissue Aids Two Parkinson Cases*, N.Y. Times, Jan. 7, 1988, at B13, col. 1; Fine, *The Ethics of Fetal Tissue Transplants*, HASTINGS CENTER REP., June-July 1988, at 5. Fine describes the disease as occurring

> when neurons degenerate in the region of the midbrain called the substantia nigra. Nor-

such as Alzheimer's disease, amytropic lateral sclerosis, and Huntington's chorea, may also benefit from fetal transplants.[6]

Fetal transplants also offer a promising therapy for the million Americans who suffer from juvenile diabetes. While the disease is manageable to varying degrees with exogenous insulin, the lives of these people are often shortened by accelerated atherosclerosis, renal disorders and other serious problems. Extensive animal studies suggest that transplantation of fetal pancreatic islet cells into the diabetic patient could produce a normal supply of insulin and prevent further symptoms. Successful fetal islet transplants could benefit an estimated 700,000-900,000 of these patients, at great savings to the community.[7]

While patients with Parkinson's disease and diabetes are the most likely beneficiaries of fetal tissue transplants, other patients may also benefit. Fetal liver, the source of the hematopoietic cells which produce the blood and immune system, may provide an effective remedy for radiation sickness, aplastic anemia and other hemoglobinopathies. Future applications to sickle cell anemia and thalassemia, to diseases of the immune system, such as AIDS and rheumoarthritis, and to diseases of aging are also possible.[8]

Research with fetal tissue may also yield essential information about the oncogenesis of early development cancers; the regulation, growth, development and regeneration of tissue as an alternative to transplant therapy; the effect of environmental factors on the fetus; the genesis of diseases of development, such as respiratory distress syndrome and hemoglobinopathies; and the pathogenesis of the HIV virus implicated in AIDS. Fetal tissue may also serve as a source of biologic substances for research and therapy.[9]

> mally, fibers from these cells secrete the chemical dopamine in forebrain regions important for regulating movement. In the absence of normal dopamine secretion, the patient suffers from a variety of impairments including rigidity, difficulty initiating movements and tremors.

Id.

6. *See supra* note 2.

7. Statement of Kevin Lafferty, Ph.D., National Disease Research Interchange Meeting on Fetal Transplants (April 11, 1988).

8. Statement of Dr. Robert Gale, National Disease Research Interchange Meeting on Fetal Transplants (April 11, 1988).

9. Statement of Dr. William Raub, National Disease Research Interchange Meeting on Fetal Transplants (April 11, 1988).

B. Source and Supply of Fetal Tissue

The one and a half million abortions performed annually in the United States appear adequate to supply fetal tissue for research and therapy for the foreseeable future. Nearly eighty percent of induced abortions are performed between the sixth and eleventh weeks of gestation, at which time neural and other tissue is sufficiently developed to be retrieved and transplanted.[10] Abortions performed at fourteen to sixteen weeks provide fetal pancreases used in diabetes research, but it may be possible to use pancreases retrieved earlier.

Past research with fetal tissue has used fetal tissue obtained through informal contacts between researchers and physicians doing abortions, usually in the same institution. Recently, intermediary organizations that retrieve fetal tissue from abortion facilities and distribute it to researchers have arisen.[11] One may expect more such bodies to develop, with most fetal tissue retrieved by specialized tissue or organ procurement agencies. In some cases, for-profit firms that specialize in processing the tissue for transplant may enter the field.[12]

Answers to several questions related to the needed supply of fetal tissue must await further research. For example, the number of fetuses needed to produce a successful neural or pancreatic graft is unknown.[13] Progress in replicating and growing fetal cell lines in culture may reduce the number of aborted fetuses needed for therapeutic purposes. The ability to freeze fetal cells will enhance the ability to tissue-type and study for infection, and allow retrieved tissue to be transported long distances as solid organs and other tissue now are. Major questions about histocompatibility remain unsolved. In the long run, drugs that directly supply the missing biological factors or substances will probably replace fetal tissue transplants.[14]

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10. Fine, *supra* note 5, at 6-7.

11. The National Disease Research Interchange of Philadelphia, Pennsylvania is one such intermediary.

12. Hana Biologies, Inc., a publicly traded company, is now acquiring fetal tissue to study the possible development of fetal islet cells for transplant to diabetic patients.

13. Statement of Drs. Kevin Lafferty and Lars Olson, at NIH Panel on Fetal Tissue Transplantation Research (Sept. 21, 1988).

14. Statement of Dr. William Moscona, NIH Panel on Fetal Tissue Transplantation Research (Sept. 21, 1988).

C. *The Ethical Controversy*

Ethical duties of beneficence require curing disease and alleviating suffering wherever possible. If fetal tissue transplants will help patients suffering from Parkinson's disease, diabetes and other disorders, a prima facie obligation to pursue those remedies exists, defeasible only if fetal tissue could not be ethically obtained.[15]

Fetal tissue for transplant is obtained from intentional destruction of fetuses—a legal practice that many persons view as immoral.[16] In their view, research or therapy with aborted fetuses legitimizes or even encourages abortion, opening the door to women conceiving and aborting solely to get tissue for transplant. The good to patients, in their view, is outweighed by the harm to fetuses and the denigration of women that thereby occurs.

The fetal tissue transplant controversy thus has an architecture similar to many bioethical debates, with a novel twist because of the contested status of the fetus and abortion. Respect for the needs of sick patients appears to conflict with respect for prenatal human life and larger societal moral concerns. Closer analysis is necessary to show whether this apparent conflict is real and how it may or should be resolved.

The following discussion assumes that the experimental or clinical use of tissue from aborted fetuses is medically justified to cure, alleviate symptoms of, or greatly improve the quality of life of patients suffering from a variety of life-threatening or seriously debilitating diseases.[17] It first analyzes ethical objections based on fetal and maternal welfare and then discusses legal and regulatory issues.

II. ISSUES OF FETAL STATUS AND WELFARE

The main ethical objection to fetal tissue transplants is the need to rely

15. Lewin, *supra* note 2. These issues arise even though tissue is obtained from a fetus that is clearly dead. Further ethical problems would arise if tissue had to be procured from an aborted fetus that was still alive. *See infra* notes 175-82 and accompanying text.

16. Wide opposition to *Roe v. Wade*, 410 U.S. 113 (1973) continues to exist. *See* ABORTION AND THE CONSTITUTION (D. Horan, E. Grant & P. Cunningham ed. 1988).

17. The assumption of great benefit subtly changes the nature of the current debate, since there is no guarantee at the present time that the great potential of fetal tissue transplants in curing disease or alleviating symptoms will be achieved. The case for incurring the symbolic costs of creating and destroying fetuses to obtain tissue for transplants weakens considerably as the certainty or magnitude of benefit falls. (For a definition of "symbolic costs" see *infra* note 51). The success factor should thus be factored into the ethical and legal analysis that follows.

on induced abortions to obtain fetal tissue.[18] Like cadaveric organ procurement, fetal transplants depend upon a death to enable good to another to occur. But cadaveric organs are obtained only after the tragic death of the organ source, with strict protections ensuring that the source's interests are not compromised for the purpose of procuring organs.[19]

By contrast, the death of the fetus that provides tissue for transplant is deliberate. The donor—the woman providing the tissue—chooses to kill the fetus for reasons usually unrelated to tissue procurement. Although the abortion producing the tissue is legal and occurs for reasons unrelated to tissue procurement, many people who view abortion as immoral argue that procuring fetal tissue disrespects and exploits the aborted fetus. They fear that fetal tissue transplants will legitimize and further entrench abortion, and even lead to pregnancy and abortion to produce tissue for transplant.[20] Accordingly, they would drastically limit or even prohibit all fetal tissue transplants, or at least remove the government from funding research or therapy with fetal tissue.

Because ethical objections based on concern for the fetus are at the heart of the fetal tissue transplant debate, an extended analysis of the ethical legitimacy of fetal tissue transplants from induced abortions follows. A key distinction in this analysis is between tissue obtained from fetuses aborted for family planning reasons and fetuses aborted to obtain tissue for transplant.

A. Use of Fetuses Aborted For Family Planning Purposes

Over a million and a half abortions occur in the United States every year, and over ninety-five percent of them occur in the first trimester.[21] Whether pregnancy occurs from contraceptive failure or sheer negligence, most of these abortions are done to avoid an unwanted preg-

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18. Tissue from spontaneously aborted (miscarried) fetuses is not an adequate substitute because of the probability that fetal pathology triggered the miscarriage, and the indeterminate delay between fetal death and expulsion from the uterus. In addition, enormous logistical problems in recovering and processing such tissue can arise. *See* Fine, *supra* note 5, at 6.

19. Cadaveric organ sources must be brain dead, as determined by physicians who have no role in the transplant itself. The death of the organ source usually results from events such as trauma, accident, suicide or homicide that are illegal or socially undesirable. The person consenting to use of the cadaveric organs does not usually cause the death of the organ source.

20. Lewin, *supra* note 2.

21. Henshaw, Binkin, Blaine & Smith, *A Portrait of American Women Who Obtain Abortions*, 17 FAMILY PLANNING PERSPECTIVES 90, 91 (1985).

nancy—broadly speaking, for family planning purposes.[22] The aborted fetuses, often macerated or a mass of tissue, are then incinerated or otherwise discarded.[23] Fetal tissue transplants would, presumably with the mother's consent, salvage some of that tissue to benefit patients suffering from serious disease.

Two ethical arguments have been made against use of tissue from abortions induced to end an unwanted pregnancy.[24] Both rest on the premise that abortion is morally abhorrent, a premise not universally held in our pluralistic society. If the premise is rejected, the use of fetal tissue from family planning abortions poses no major ethical problem.[25] Even assuming the immorality of abortion, however, it does not follow that tissue transplants from such abortions are also immoral. These ethical objections are insufficient to justify a ban on tissue transplants from fetuses aborted to end an unwanted pregnancy.[26]

1. Complicity in Abortion

A major ethical objection to use of tissue from family planning abortions is the idea of complicity in the abortion that provides the fetal tissue. The premise here is that knowingly profiting from an evil done to others makes one a moral accomplice in the commission of that evil.[27] If

22. The term "family planning abortions" might seem unnecessarily euphemistic to some persons. The intent is to denote those abortions that will occur regardless of research with fetal tissue or fetal tissue transplants. In most cases they are sought because of the woman's desire to avoid taking on family or childrearing responsibilities, and thus are designated, for want of a better term, abortions done for "family planning" purposes.

23. Some jurisdictions have enacted fetal disposal laws that aim to protect public health or demonstrate respect for aborted fetuses. *See infra* note 134.

24. A third "ethical" objection is that research is further "exploitation" of the fetus that has already been "exploited" by the abortion. But this objection misundertands the practice at issue. Fetal tissue for transplant is obtained from dead fetuses. Once dead, the fetus no longer can be "exploited" or harmed. Statement of Dr. John Wilkie, National Right to Life Committee, NIH Panel on Fetal Tissue Transplant Research (Sept. 22, 1988).

25. Other ethical issues such as the content, the process and the timing of obtaining informed consent and the risk of commercialization would also arise, but these pose no major barrier to conducting such research.

26. However, recipients, physicians, and other participants in the transplant process who object to use of fetal tissue from aborted fetuses should be entitled to know the source of fetal tissue that is being transplanted, so that they may refuse to participate.

27. People's practice in this regard is inconsistent and not easily subject to clear lines. It is said that behind every great fortune lies a crime, yet we seldom seek to parse out those connections. As Henry Fairlie has noted, "[W]ith whatever corruptions and brutality an American fortune has been amassed, it is laundered within one generation. The money sticks, but not the filth." Fairlie, *Shamala: A Washington Success Story*, THE NEW REPUBLIC, Aug. 22, 1988 at 21, 22. Thus, by not

induced abortions are evil, transplanting fetal remains makes one morally complicitous in the evil that makes the transplant possible.

Yet even proponents of the complicity argument are not quite so extreme, recognizing that not all situations of later benefit make one an accomplice in the evil act from which benefits are derived. For example, James Burtchaell, a leading articulator of the complicity objection, claims that complicity occurs not merely from partaking of benefit, but only when one enters into a "supportive alliance" with the underlying evil that makes the benefit possible.[28] In discussing different relationships to an underlying evil, he distinguishes "a neutral or even an opponent and an ally from the way in which one does or does not hold oneself apart from the enterprise and its purposes."[29] Later he states that "it is the sort of association which implies and engenders approbation that creates moral complicity. This situation is detectable when the associate's ability to condemn the activity atrophies."[30]

In light of Burtchaell's analysis of complicity, it is unclear why he finds the researcher using fetal tissue from an elective abortion necessarily to be an accomplice to the abortionist and the woman choosing abortion. The researcher and transplant patient ordinarily will be removed from the abortion process: they will not have requested the abortion, and will have no knowledge of who performed it or where it occurred. A third party intermediary will procure the tissue for the researcher.[31] The abortion will have occurred for reasons unrelated to tissue procurement. The researcher and transplant patient might even be morally opposed to abortion, and surely will suffer no moral disintegration because they

inquiring closely into the origin of the money used in most transactions, the market system "dirties" everyone's hands. The grocer who sells food to the physician who performs abortions enables the physician to continue his work and the grocer is paid with the proceeds from previous abortions. See G. HIGGINS, KENNEDY FOR THE DEFENSE 34-35 (1980) for a graphic presentation of this dilemma for a criminal defense attorney.

28. Burtchaell, *Case Study: University Policy on Experimental Use of Aborted Fetal Tissue*, IRB: A REVIEW OF HUMAN SUBJECTS RESEARCH, July-Aug. 1988, at 7. He acknowledges that complicity is a contingent relationship which depends on judgment over which reasonable persons might disagree. *Id.* at 8. While Burtchaell poses the question as one of complicity, one might argue that the problem is really one of "dirty hands" or association with the previous evil, which raises a different set of concerns. The extent to which one's hands are "dirtied" is even more clearly a matter of judgment.

29. *Id.* at 9.

30. *Id.*

31. *See supra* notes 11, 12, and *infra* notes 102-06 and accompanying text.

choose to salvage some good from an abortion that will occur regardless of their research or therapeutic goals.

The donation of organs and cadavers from homicide victims provides a useful analogy. Families of murder victims (or coroners if no family is known) are often asked to donate organs and bodies for research, therapy and education. If they consent, organ procurement agencies will coordinate the retrieval and distribution of organs. No one would seriously argue that the surgeon who transplants the victim's kidneys, heart, liver, or corneas into a needy recipient is thereby an accomplice in the homicide that made the organs available for transplant, even if he knows their source. Nor is the recipient of the transplanted organs or the medical student who uses the cadaver of a murder victim to study anatomy an accomplice in the homicide.

If organs from murder and accident victims may be used without complicity in the murder or accident that makes the organs available, then fetal remains could also be used without complicity in the abortion.[32] The physician and patient benefiting from the homicide or abortion do not, by salvaging some good from an independently caused death, become moral accomplices in the death that makes organs available.

Burtchaell's approach to the problem of complicity assumes that researchers necessarily applaud the underlying act of abortion, thereby allying themselves with it. One may benefit from another's evil act, however, without applauding or approving of that evil. *X* may disapprove of *Y*'s murder of *Z*, even though *X* gains an inheritance or a promotion as a result. Indeed, one might even question Burtchaell's assumption that *X* has complicity in *Y*'s prior act even if he subsequently applauds it. Applauding *Y*'s murder of *Z* might show a design to bring about the murder it the first place, or be viewed as insensitive or callous. But it alone would not make one morally responsible for—an accomplice in—the murder that has already occurred. In any event, the willingness to derive benefit from another's wrongful death does not create complicity in that death because it is a contingent event over which the persons who benefit had no control.[33]

32. For example, 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 to *A*, he should be free to consent to donation of the dead fetus' organs to *B* as well, even though the fetus has been intentionally killed. Intentional, legal killing by abortion should not change *B*'s ability to obtain fetal organs for transplant.

33. The question of encouraging future abortions, which are performed to obtain tissue for

The complicity argument against use of aborted fetuses often draws an analogy to the reluctance to use the results of unethical medical research carried out by the Nazis. Burtchaell and others have argued that it would make us retroactive accomplices in the Nazi horrors to use the products of their unethical and lethal research.[34] As our discussion of organ donation from homicide victims shows, however, the idea of retroactive complicity from accepting benefits produced from an earlier evil act claims more than most people are prepared to accept.[35] A clear separation between the perpetrator and beneficiary of the immoral act breaks the chain of moral complicity for that act.

Thus, one could rely on Nazi-generated data without approving the horrendous acts of Nazi doctors that made such knowledge possible. Nor would it necessarily dishonor those unfortunate victims. Indeed, it could reasonably be viewed as retrospectively honoring them by saving others. The Jewish doctors who made systematic studies of starvation in the Warsaw ghetto in order to reap some good from the evil being done to their brethren were not accomplices in that evil.[36] Nor should one

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transplant, is more accurately described as a problem of complicity. This subject is treated *infra* notes 37-39 and accompanying text.

34. Burtchaell distinguishes between use of tissue specimens left over from a lethal experiment, and use of a drug that was developed on the basis of that research, without explaining why complicity would occur in the one case but not in the other. *See* Burtchaell, *supra* note 28 at 10. Note that the claimed complicity is not in torturing the subjects by experimentation, but in benefitting from the unethical experiment done by others.

Others have objected to citing Nazi data, as demonstrated by a recent controversy over whether the Environmental Protection Agency (EPA), in considering regulation of certain gasses, should rely on data from lethal experiments that the Nazis performed on concentration camp victims. The EPA refused to rely on the data, in order to demonstrate its horror and disapproval of the Nazi practices. Shabecoff, *Head of E.P.A. Bars Nazi Data in Study on Gas*, N.Y. Times, March 23, 1988, at 1, col. 5. While other data may have been available that made reliance on the Nazi studies unnecessary, one commentator noted that to use unethically obtained data even to save lives "would put us at risk of retrospectively participating in their torture and death." Howard Spiro, *Let Nazi Medical Data Remind Us of Evil*, Letter to the Editor, N.Y. Times, April 19, 1988, at 30, col. 5. A similar issue has arisen over whether Nazi hypothermia studies may be used in devising ways to save people swept into icy seas. *Minnesota Scientist Plans to Publish Nazi Experiment on Freezing*, N.Y. Times, May 12, 1988, at 28, col. 3. At issue here are questions of "dirty hands" and retroactive approval rather than complicity in the strict sense. *See supra* note 28.

35. *See supra* notes 31-32 and accompanying text.

36. L. TUSHNET, THE USES OF ADVERSITY: STUDIES OF STARVATION IN THE WARSAW GHETTO (1966). Indeed, on a recent visit to a former concentration camp in Austria, the Pope commented that the Holocaust is "a great gift" to us, because it forces us to confront and reflect on the evil in man. Are we in complicity with the evil done by the Nazis if we make use of this "gift" that grows out of the evil destruction of millions of persons? *John Paul Cites Suffering of Jews*, N.Y. Times, June 26, 1988, at 6, col. 1.

consider accomplices the doctors and patients who now benefit from their studies.

Thus, persons opposed to abortion could reasonably find that use of fetal tissue from abortions occurring for reasons unrelated to tissue procurement does not make one an accomplice in the abortion that makes the tissue available. If the complicity claim is doubtful when the underlying immorality of the act is clear, as with Nazi-produced data or transplants from murder victims, it is considerably weakened when the act making the benefit possible is legal and its immorality is vigorously debated, as is the case with abortion. The risk of retroactive complicity in an abortion performed for reasons unrelated to tissue procurement does not ethically justify denying fetal tissue to researchers or needy transplant recipients.

2. *Legitimize, Entrench and Encourage Abortion*

A second objection is that salvaging tissue for transplant from aborted fetuses will make abortion less morally offensive and more easily tolerated both for individual pregnant women and for society. Those who object believe the result will be to so dilute the perceived immorality and undesirability of abortion as to transform it into a morally positive act. This will encourage abortions that would not otherwise occur, and dilute support for reversing the legal acceptability of abortion, in effect creating complicity in future abortions.[37]

But the feared impact on abortion attitudes is highly speculative, particularly at a time when few fetal transplants have yet occurred. There is good reason to think that fetal tissue transplants will have little effect on abortion attitudes and practices. For example, the possibility of donating tissue for transplant may have little effect on individual abortion decisions. The main motivation for most abortions is the desire to avoid the burdens of an unwanted pregnancy. The fact that fetal remains may be donated for transplant may be of little significance in the total array of factors that lead a woman to abort a pregnancy.

Even if women feel better for having donated fetal tissue, the possibility of donation alone would lead few women to abort who would not otherwise have done so. Tissue donation may even have little impact on

37. While fetal tissue donations might, on the margin, produce more abortions than would otherwise occur, the concern is not with women who conceive for the purpose of obtaining tissue for transplant. *See infra* notes 47-60.

those women who are highly ambivalent or undecided about abortion, particularly if the decision to abort must first be made before notice of the opportunity to donate is offered.[38] Of course, some women might find the chance to donate fetal tissue the deciding factor, but it seems unlikely that this possibility will greatly increase the number of abortions that will occur. Speculation of such effects alone does not justify losing the substantial benefits that fetal tissue transplants can bring.

Nor does the mere fact that fetal tissue is donated for research and transplant mean that a public otherwise ready to outlaw abortion would refrain from doing so. The continuing legal acceptance of abortion flows from the wide disagreement that exists over early fetal status. If a majority agreed that embryos and fetuses should be respected as persons despite the burdens placed on pregnant women, such possible secondary benefits of induced abortion as fetal tissue transplants would most likely not prevent a change in the legality of abortion. At the very least, there is enough doubt about the point to prevent such speculations from stopping the great good that fetal tissue may provide.[39]

Indeed, one could make the same argument against organ transplants from homicide, suicide and accident victims. One could argue that the willingness to use their organs might encourage or legitimate those practices, or at least make it harder to enact lower speed limits, or seatbelt, gun control and drunk driving laws to prevent them. After all, the need to prevent fatal accidents, murder and suicide becomes less pressing if

38. It is difficult to tell whether a general knowledge that fetal tissue transplants occur will influence the decision of women contemplating abortion even when they are not specifically asked to donate until after they have decided about the abortion. In a somewhat analogous context, the right to donate organs for transplant is not thought to lead families to remove life support systems prematurely. The issue of whether informed consent to abortion constitutes an inducement is discussed *infra* note 82.

39. Although people strongly opposed to abortion might disagree with this analysis, one could reasonably find the effect of fetal transplant on individual and social practices of abortion to be marginal, especially if techniques to separate abortion and retrieval of fetal tissue are firmly in place. Any resulting encouragement of abortion is likely to be too slight to justify foregoing the more likely benefits from fetal tissue research and therapy.

To pursue the point somewhat further, suppose that fetal tissue transplants increased the number of abortions by X over the next 5 years, but fetal transplants saved $X + Y$ lives over that same period. At low values of X and high values of Y fetal transplants would not be unethical, since X measures unknown or statistical increases in abortion, not unlike the statistical lives lost in selecting a particular automobile or road design, or building tunnels and suspension bridges. Nor does the fact that the increased deaths from abortion will occur intentionally change the outcome. Laws permitting the possession of handguns also produce intentionally caused deaths (usually illegally). Such statistical risks of intentional or unintentional death become an acceptable cost of achieving the social policies in question.

some good to others might come from use of victim organs for transplant. However, the connection is too tenuous and speculative to ban organ transplants on that basis. It is also tenuous and should be rejected as a basis for prohibiting fetal tissue transplants.

In sum, fetal tissue transplants, though dependent on abortions induced to prevent unwanted pregnancy, can be sufficiently divorced from such abortions as to be separately evaluated. Given that abortion is legal and occurring on a large scale, the willingness to use resulting tissue for transplant neither creates complicity in past abortions nor appears to encourage substantially more abortions than would otherwise have occurred. Such ethical concerns are not sufficient, given the possible good to others, to justify banning use of fetal tissue for research or therapy.

B. Aborting to Obtain Tissue for Transplant

A more widely shared ethical objection to procuring tissue from induced abortions is the incentive that it will give women to become pregnant and abort solely to obtain tissue for transplant. Most commentators assume that conception and abortion for tissue procurement is so clearly unethical that the prospect hardly merits discussion. To discourage such a practice, they would ban all tissue transplants from related persons.[40] Indeed, some persons would even ban any use of fetuses aborted for family planning reasons simply to minimize the risk that conception and abortion for transplant purposes will occur.

1. The Need: Unlikely at Present Time

The need to abort solely for transplant purposes could arise in two situations that do not presently exist. One situation would arise if histocompatibility between the fetus and recipient were necessary for effective fetal transplants. In that case, tissue from abortions done currently for family planning reasons would be less desirable or even useless for transplant purposes.[41] Female relatives, spouses or even unrelated compatible persons engaged for that purpose might then seek to get pregnant

40. Mahowald, Silver & Ratcheson, *The Ethical Options in Transplanting Fetal Tissue*, HASTINGS CENTER REP., Feb. 1987, at 9. *See also* Fine, *supra* note 5. An exception is Mary Warren, in a brief comment that appeared before the current debate arose. Warren, Maquire & Levine, *Can the Fetus Be an Organ Farm?*, HASTINGS CENTER REP. 23-25 (1978).

41. However, random matching of tissue and immunosuppression of poorer matches would still occur, as it does with solid organ transplantation, so that family planning abortions might still be an important source of tissue for transplant.

in order to obtain properly matched fetal tissue for transplant.[42]

The second situation would arise if the supply of tissue from family planning abortions proved inadequate to meet the demand for fetal tissue. For example, the supply of fetal tissue would be reduced if the incidence of surgical abortions were lowered due to medical alternatives such as RU 486 or more effective contraceptive practices.[43] On the other hand, demand for fetal tissue would greatly increase if fetal tissue transplants proved successful for a large class of patients, such as those suffering from Parkinson's disease or diabetes.[44] Pressure on supply might also occur if tissue from several aborted fetuses were needed to produce one viable transplant.

At this stage of research, however, it appears likely that the million plus abortions that occur annually in the United States to end unwanted pregnancies are more than adequate to supply fetal tissue for most current research and transplant purposes.[45] Histocompatibility between tissue source and recipient does not appear necessary for effective fetal tissue transplants. Indeed, fetal tissue may be immunologically privileged or easily rendered so, thus reducing the chance of rejection and the need for genetic matching. Progress in propagating cell lines from aborted fetuses will reduce even more the number of fetuses that are needed. As research progresses, fetal transplants may be eventually replaced by the chemical that the transplant serves to produce.[46]

At present, the question of aborting to obtain tissue for transplant is a red herring, because there is little advantage to be gained from such abortions and no one is recommending them. Yet the fear that women will conceive and abort to produce tissue for transplant has figured so largely in the current controversy that the ethics of the practice deserve careful attention—in the unlikely event the need for such abortions arises. Anal-

42. In most instances the conception would probably occur via artificial insemination, with appropriately matched or chosen sperm. However, *in vitro* fertilization and egg donation for matching purposes might also occur.

43. RU 486 is an experimental hormonal drug which terminates early pregnancies without the use of a surgical procedure. Cousinat, Le Strat, Ulmann, Baulieu & Schaison, *Termination of Early Pregnancy by the Progesterone Antagonist RU 486 (Mifepristone)*, 315 NEW ENG. J. MED. 1565 (1986). Kolata, *France and China allow Sale of a Drug for Early Abortion*, N.Y. Times, Sept. 24, 1988, at 1, col. 1.

44. Fine has shown that current abortions could supply patients suffering from Parkinson's disease, but would be inadequate if fetal tissue transplants successfully treated additional diseases such as diabetes. Fine, *supra* note 5, at 6.

45. *Id.*

46. *See supra* note 14.

ysis will show that such a practice is ethically more complex and defensible than most commentators have assumed.

2. *A Hypothetical Situation*

What if the hypothetical possibility became real and diabetes or other diseases could be effectively treated only with tissue from a fetus that was genetically related to the recipient? Or the supply of fetal tissue from elective abortions did not meet the needs of persons with Parkinson's disease? Consider first the situation where a woman eight weeks pregnant with her husband's child learns that tissue from her fetus could cure severe neurologic disease in herself or a close relative, such as her husband, son or daughter, father or mother, or brother or sister. May she ethically abort the pregnancy to obtain tissue for transplant to the relative or herself? Further, if she is not yet pregnant, may she conceive a fetus that she will then abort to obtain tissue for transplant to herself or to her relative?[47]

To focus analysis of this situation on fetal welfare, assume in each case that no other viable tissue source exists, and that the advanced state of the neurologic disease has become a major tragedy for the victim and family. The woman has voluntarily raised the possibility of abortion to obtain tissue without any direct pressure or inducements from the family or others. Her husband agrees to an abortion for transplant purposes if she is willing, but exerts no pressure on her to abort or to conceive for transplant purposes.

The main concern in this situation is the harm done to the fetus.[48] We discuss first the ethics of aborting for this purpose when the woman is already pregnant, and then we discuss the situation of conceiving in order to abort for transplant purposes.

a. *The Woman is Already Pregnant*

If the woman is already pregnant, the question is whether an abortion

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47. If conception and abortion for intrafamilial donation is acceptable, the question of impregnating an unrelated woman for this purpose, presumably by noncoital means such as artificial insemination, may then be addressed. Patients without female relatives available to produce fetal tissue may have to recruit unrelated persons for this purpose. No doubt all patients needs would not be met unless the donor were paid, which raise the troubling issue of commercialization. *See infra* notes 155-56 and accompanying text.

48. Concerns about maternal health and welfare would also arise, but these would seem comparable to or less than similar concerns regarding bone marrow and kidney donations, which are permitted—indeed, are applauded. *See infra* notes 72-77 and accompanying text.

may ethically be done to obtain tissue for transplant, when in the absence of the need for tissue, the pregnancy would be carried to term. In short, may a first trimester fetus be sacrificed to procure tissue for transplant?

Assuming a clear and substantial benefit to the recipient, ethical assessment of this situation depends on the value placed on early fetuses and the reasons deemed acceptable for abortion. Although some people think that fetuses (and even fertilized eggs and preimplantation embryos) have the full value of persons, many people find the fetus' inherent status to depend on the stage of gestational development.[49] An ethically sound distinction may be made between fetuses that have developed to such a level of neurologic and cognitive capacity that they are sentient and thus have interests in themselves, and those which are so neurologically immature that they cannot experience harm. While aborting fetuses at that earlier stage prevents them from achieving their potential, it does not harm or wrong them, since they are insufficiently developed to experience harm.[50]

Although aborting the fetus at that early stage presumably does not harm the fetus, it may impose "symbolic costs" in terms of the general reduced respect for human life that a willingness to abort early fetuses connotes.[51] Still, the abortion may be ethically acceptable if the good

49. The following analysis assumes that early abortions are ethically acceptable. A more complete analysis of this position is found in Robertson, *Gestational Burdens and Fetal Status: A Defense of Roe v. Wade*, 13 AM. J. L. & MED. 189 (1988). It should also be noted that rejection of this premise in favor of treating the fetus as a moral subject with rights from the time of conception would not necessarily lead to the conclusion that abortion is impermissible, as Judith Jarvis Thomson has shown in Thomson, *A Defense of Abortion*, 1 PHIL. & PUB. AFF. 47 (1971). In those instances, e.g., rape, contraceptive failure, etc., a woman would not violate the fetus's right in terminating the pregnancy in order to produce tissue for transplant. Her motivation in avoiding gestation would not affect her right to do so because she has no independent obligation to continue the pregnancy. Under this approach, however, a woman would not have a right to abort if she had conceived for that purpose.

50. All fetuses may have the potential to develop into persons, but only some fetuses—the later ones—have advanced to the point of sentience and thus have interests in themselves. Potentiality alone does not give interests or rights in the not yet existent entity who could be brought into being. Bigelow & Pargetter, *Morality, Potential Persons and Abortion*, 25 AM. PHIL. Q. 173, 178 (1988); Singer & Dawson, *IVF Technology and the Argument from Potential*, 17 PHIL. & PUB. AFF. 87, 95-96 (1988). The point at which the fetus develops interests may be drawn at viability because roughly at this stage the fetus attains sufficient physiologic development to be sentient and thus have interests in its own right. *See* Robertson, *supra* note 49.

51. The symbolic costs consist of that impact on the lives of actual persons, including the moral tone or atmosphere of society, that results from the attitude toward potential persons symbolized by the willingness to prevent their emergence into being after conception has occurred. The existence and magnitude of those costs is, of course, a matter of debate and controversy.

sought by abortion sufficiently outweighs the symbolic devaluation of life that occurs when fetuses that cannot be harmed in their own right are aborted. Many persons find that the burdens of unwanted pregnancy outweigh the symbolic devaluation of fetal life. Others would require a more compelling reason, such as protecting the mother's life or health, avoiding the birth of a handicapped child, or avoiding the burdens of a pregnancy due to rape or incest.

Compared to these reasons for abortion, terminating a pregnancy to obtain tissue to save one's own life or the life of a close relative seems equally, if not more, compelling. Indeed, aborting to obtain tissue would seem as compelling as even the most stringent reasons for permitting abortion, e.g., saving the mother's life or health, avoiding a handicapped birth, or avoiding pregnancy due to rape or incest. And certainly if abortion in the case of an unwanted pregnancy is deemed permissible, abortion to obtain tissue to save another person's life is.

If tissue from the fetus is transplanted into the mother to save her own life, the situation is very close to one in which abortion is justified to save the mother's life or health.[52] If the mother may abort to save her own life, however, should she be disqualified from aborting to save the life of another? To say "yes" would elevate narcissism over altruism. In short, aborting an early fetus to get tissue to save oneself or one's close relative seems as ethically sound a reason for aborting as other reasons that are generally accepted. In fact, many persons would find this motive more compelling than the desire to end an unwanted pregnancy.

Of course, aborting a wanted pregnancy to prevent severe neurologic disease in oneself or a close relative would hardly be done joyfully, and would place the mother in an excruciating dilemma, not unlike the situation in William Styron's *Sophie's Choice*.[53] In this case, a fetus that could be carried to term would have to be sacrificed to save a parent, spouse,

52. The difference here is that the fetus itself is not threatening the mother's health, but is the means by which the mother's life will be saved. Yet in each case the death of the fetus protects the mother. If an innocent fetus can be sacrificed in one case, could it be sacrificed in another? If the fetus had the moral status of a person, this distinction would be crucial if the mother were not otherwise permitted to terminate the pregnancy. *Supra* note 49. Indeed, the fetus could not in that case be sacrificed even to save many lives. Thomson, *The Trolley Problem*, 94 YALE L.J. 1395 (1985).

53. Styron presents the dilemma of the Nazis forcing a mother to select one of her children to be murdered, or lose them both. If the early fetus does not itself have rights, the Sophie's Choice analogy is inapt, since the choice in the fetal context is between a potential child and an actual child or adult. However, the choice is still painful because the potential child would have become actual but for the need to produce tissue for the person in need. (I am indebted to Judith Areen for this

sibling or child who already exists. Such a tragic choice would engender loss or grief in the mother, whatever the decision reached by her. Yet one cannot say that the choice to abort is ethically impermissible, if early abortion of unwanted pregnancies, or abortion for more compelling reasons, is acceptable. In all such cases the fetus is being sacrificed or used as a means to advance other goals. There is no sound basis for distinguishing use of fetal tissue for transplant, if sacrifice of the fetus to pursue those other goals is permitted.

Public attitudes toward a woman aborting an otherwise-wanted pregnancy to benefit a family member most likely would reflect attitudes toward abortion generally.[54] Those who are against abortion in all circumstances will object to abortions done to treat severe neurologic disease in the mother or a family member. Similarly, persons who accept family planning abortions should have no objection to abortion to procure tissue for transplant, because the fetal status is no more compelling and the interest of the woman in controlling her body and reproductive capacity is similar.

Since neither group forms a majority, however, persons who object to family planning abortions but who accept abortions that are necessary to protect the mother's health, in cases of rape or incest, or to prevent a handicapped birth, will determine whether a majority of people approve of abortions for transplant. It is conceivable that many persons in this swing group would find abortion acceptable if performed to obtain tissue for transplant into a family member. The benefit of alleviating severe neurologic disease is arguably as great as the benefits in the cases they accept as justifiable abortion.[55] Indeed, they are likely to view abortion for transplant purposes as more compelling than abortions done for family planning purposes. If this group accepts abortion to procure tissue for transplant to a family member, a clear majority in favor of the practice would exist.[56]

analogy). For this reason the abortion may be more difficult than abortion of a pregnancy undertaken to obtain tissue for transplant.

54. Public attitudes alone do not determine the ethical acceptability of a practice. They do, however, show that the ethical analysis presented may be in keeping with the considered judgment of many persons.

55. If they accept abortion to prevent serious harm to the mother, then they should approve an abortion to procure tissue for transplant to the pregnant woman. *But see supra* note 49. If the fetus may be sacrificed to save the mother, then abortion to procure comparable benefits to others should also be permitted.

56. *America's Abortion Dilemma*, NEWSWEEK, Jan. 14, 1985, at 22.

b. *Conceiving and Aborting for Transplant Purposes*

What then about the situation where the woman is not yet pregnant, but seeks to conceive in order to abort and obtain tissue for transplant? If histocompatibility between tissue source and recipient is needed, most pregnancies would have to be deliberately planned for that purpose. If a woman already pregnant may abort to obtain tissue for transplant, is there an ethical objection to conceiving for that purpose and then aborting?

In terms of fetal welfare, no greater harm occurs to the fetus conceived in order to be aborted, as long as the abortion occurs at a stage at which the fetus is insufficiently developed to experience harm, such as during the first trimester.[57] Of course, such deliberate creation may have greater symbolic or moral significance, because it denotes a willingness to use fetuses as a means to serve other ends. However, aborting when already pregnant to procure tissue for transplant (or to save the mother's life, prevent a handicapped birth, or avoid unwanted pregnancy) also denotes a willingness to use the fetus as a means to other ends. Deliberate creation of fetuses to be aborted may enhance the perception that human life is being systematically devalued, but reasonable persons could find that the additional symbolic devaluation is negligible, or in any case, insufficient to outweigh the substantial gain to recipients that deliberate creation provides. As long as abortion of an existing pregnancy for transplant purposes is ethically accepted, conceiving in order to abort and procure tissue for transplant should also be ethically acceptable when necessary to alleviate great suffering in others.[58]

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57. The situation is thus distinguishable from one in which the entity created did develop interests before being sacrificed for the good of others. *See also supra* note 53.

58. Some insight into the symbolic concerns that arise when fetuses are created and then aborted for transplant purposes may be gained by considering analogous situations with embryo research, embryo farming and fetal reduction.

The ethics of embryo research generally accept research with excess embryos produced in the attempt to achieve pregnancy through *in vitro* fertilization (IVF) for legitimate scientific purposes. *See* Robertson, *Embryo Research*, 24 U.W. ONTARIO L. REV. 15, 35-36 (1986). Yet several national ethics bodies have recommended and two Australian states have enacted legislation against conceiving embryos solely for research purposes, even though similar British and Canadian bodies have approved it. *Id.* at 35-36.

Because embryo research is permitted if the embryos were by-products of IVF attempts at pregnancy, such research poses no greater harm to embryos when they are created solely for research purposes. The opposition to creating embryos for research purposes is a symbolic, moral concern that should be balanced against the need to obtain embryos in this way to conduct research. Given that important research on egg freezing and the microinjection of sperm cannot be conducted otherwise, there is a strong argument for permitting research on embryos created for that purpose. The

Many people will resist this conclusion, even if they accept abortion to procure tissue when the woman is already pregnant. Whether rationally or not, they assign moral or symbolic significance to the fact of deliberate creation for abortion, and are less ready to sanction such a practice. Others who accept abortion for tissue procurement when the woman is already pregnant will find insufficient differences in deliberate creation to outweigh the resulting good. Public acceptability of such a practice thus

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situation is distinguishable, however, because unlike fetuses conceived and aborted to obtain tissue, the preimplantation embryos in question have not developed even the rudiments of a neurologic system or differentiated other organs.

A variation on this issue would arise if embryos produced by IVF could be grown in culture outside of the body long enough to produce the tissue necessary for transplant. Since embryos cannot develop *in vitro* for more than six to eight days, they are not now a source of tissue for transplant. Suppose, however, that it became possible to culture embryos long enough for tissue farming purposes. Because implantation in a woman does not occur, there is no pregnancy to be aborted. However, an early embryo would be created and destroyed in order to obtain tissue for transplant. If obtained very early in development, the embryo would not have developed to the point at which it itself had interests or rights, and thus would not be harmed by the practice. Yet symbolic concerns with deliberately creating and destroying human life would still arise. The policy issue would be whether the benefits from this tissue source outweighed the symbolic costs of creating and destroying embryos to obtain tissue for transplant. *See* Robertson, *Embryos, Families and Procreative Liberty: The Legal Structure of the New Reproduction*, 59 S. CAL. L. REV. 939, 985-86 (1986).

The growing practice of selective reduction of multiple fetuses resulting from the use of fertility drugs or the transfer of several IVF-produced embryos also presents an issue of deliberately creating fetuses that will be destroyed to serve other goals. Selective reduction or abortion of quintuplets or quadruplets to twins can be justified by the benefits to the mother and to the surviving fetuses. Selective reduction increases the chance of a full term delivery and healthy survival, rather than premature birth and a high risk of death or serious handicap in all. Berkowitz, *Selective Reduction of Multifetal Pregnancies in the First Trimester*, 318 NEW ENG. J. MED. 1043 (1988).

The problem, however, is that the need for the selective reduction usually arises from the mother's decision to take fertility drugs to achieve pregnancy, knowing that multifetal pregnancy and hence need for selective reduction might arise. The mother's wish to reduce the number of fetuses seems less ethically justified when the need results from her deliberate actions, rather than arises naturally. Again, the ethical concern is symbolic—the deliberate devaluation of fetal life that occurs in the willingness to risk creating fetuses that will then be aborted. Of course, the good of achieving pregnancy might be taken to outweigh the symbolic harm, particularly if the abortion is early in the first trimester. *See* Holder & Henifin, *Case Studies: Selective Termination of Pregnancy*, HASTINGS CENTER REP., Feb.-March 1988, at 21 (1988).

Other instances of creating embryos or fetuses with the intention or high risk that they would be destroyed arise with reports of "pregnancy doping" by eastern european female athletes and abortion or embryo selection for sex determination purposes. In the first instance women are reported to have become pregnant in order to raise hormone levels to enhance athletic performance, and then abort. In the second, women abort to avoid the birth of a child of a gender that is undesired because of its association with X linked genetic disease (usually male) or for social reasons (usually female). The ethics of these practices depends upon the stage of development at which abortion occurs, the importance of the benefits derived, the risks to the women and the symbolic costs associated with intentional destruction of prenatal life.

depends on how the swing group views the fact of deliberate creation for the purpose of abortion, assuming it would accept abortion to procure tissue when the pregnancy is not planned for that purpose.

In sum, deliberate creation of fetuses to be aborted for tissue procurement is more ethically complex and defensible than the widespread dismissal it has received would suggest.[59] Such a practice is, of course, not in itself desirable, but, in a specific situation of strong personal or familial need, may be justified. Further ethical analysis of the situation should await actual development of the need. In the meantime, the fear that fetal tissue transplants will encourage women to abort to obtain tissue for transplant should be more carefully scrutinized as the main concern driving policy. If the specific need arises, aborting to obtain tissue for a family member may be more defensible than many previously thought.

III. Issues of Maternal Autonomy and Welfare

While the controversy over fetal tissue transplants has centered on fetal status, issues of maternal autonomy and welfare also deserve consideration. Respecting the woman's decision to abort and to dispose of fetal remains, however, may conflict with the need to protect women from undue pressure and inducements to abort, to donate fetal tissue, or to change the timing and method of abortion. Are limitations on the woman's choice about abortion and disposition of fetal remains ethically justified, or do they constitute unnecessary paternalism? The following discussion considers these issues in the context of the mother's role in disposing of fetal tissue, the process of obtaining consent, and changes in the timing and method of abortion.

A. *Maternal Disposition of Fetal Remains*

Maternal autonomy over the decision to abort and to donate fetal tissue is a central ethical concern once fetal tissue transplants are deemed acceptable. Yet some ethicists would deny the woman authority to donate fetal remains because she has chosen abortion, or because they fear that dispositional authority will induce women to become pregnant and abort in order to produce fetal tissue. This discussion considers each argument separately.

59. Most commentators who recommend a ban on such abortions have not thoroughly analyzed the issue, perhaps because the need for such abortions has not yet arisen. Mahowald et al, *Transplantation of Neural Tissue from Fetuses*, 235 SCIENCE 1308-09 (1987) (letter to editor).

1. The Mother's Right to Dispose of Fetal Tissue

Federal research regulations and the Uniform Anatomical Gift Act, effective in every state, give the mother the right to make or withhold donations of fetal remains for research or therapy.[60] Some ethicists, however, would deny women this right on the ground that the decision to abort disqualifies her from playing any role in disposition of fetal remains.[61] This argument is mistaken on two grounds and would lead either to procuring fetal tissue without parental consent or to a total ban on fetal transplants.[62]

The major premise of this argument is that the person disposing of cadaveric remains acts as a guardian or proxy for the deceased. Because the mother has chosen to kill the fetus by abortion, she is no longer qualified to act as the proxy or guardian of the fetus that she has abandoned.[63]

One mistake here is the assumption that the person who disposes of cadaveric remains acts as a guardian or proxy for the deceased. Deceased persons or fetuses no longer have interests to be protected, as persons with guardians or proxy decision-makers have. Rather, control of human remains is assigned to next-of-kin because of their own interests in making anatomical gifts and in assuring that the remains are treated

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60. UNIF. ANATOMICAL GIFT ACT § 3, 8A U.L.A. 8-9 (West Supp. 1987). The UAGA makes the mother's consent determinative "unless the father objects." *See also* 45 C.F.R. § 46.209(d) (1987). These provisions require that the father also consent to use of fetal tissue unless he is unavailable to consent.

61. Mahowald, *Placing Wedges Along a Slippery Slope: Use of Fetal Neural Tissue for Transplantation*, 36 CLINICAL RESEARCH 220 (1988); Burtchaell, *supra* note 28, at 8. Presumably they would disqualify the father who agreed to the abortion from consenting as well. Only where the father opposed the abortion would he have a right to donate fetal tissue for transplant.

This argument might have some force in the case of a parent who kills a child or a spouse who murders a spouse. Although determining burial or organ donation rights is usually not an incentive to murder, perhaps the murderer should lose the right to determine organ donation and burial in those cases, just as they lose the right to collect inheritance or life insurance. Riggs v. Palmer, 115 N.Y. 506, 513, 22 N.E. 188, 190 (1889). A woman who aborts is not committing murder, however. She is doing a legal act, indeed, a legal act enshrined as a basic constitutional right.

62. The latter is the goal of some persons taking this position. Burtchaell, for example, uses the claimed inappropriateness of the mother as disposer of fetal remains to argue that they should not be used at all, because it would be "undignified" to use human remains without the consent of next-of-kin. Burtchaell, *supra* note 28, at 8. This position is thus another way to challenge the ethical acceptability of fetal tissue transplants.

63. In an analogous situation, a woman who aborts does not automatically lose custody of an infant born alive as the result of an abortion procedure that attempted to kill the fetus. She is entitled to both substantive and procedural due process before her parental prerogatives may be terminated. *See* Keith v. Daley, 764 F.2d 1265, 1271 (7th Cir. 1986); Wynn v. Carey, 599 F.2d 193, 195 (7th Cir. 1979).

respectfully by burial or cremation. It is not a right which they earn because they have protected the kin's interest when alive. Nor is the right assigned to them because they are best situated to implement the deceased's prior wishes concerning disposition of his cadaver.[64] Indeed, the latter concern is particularly inappropriate in the case of an aborted fetus, which could have had no specific wishes concerning disposition of its remains.

A second mistake is the assumption that a woman has no interest in what happens to the fetus that she chooses to abort. As a product of her body and potential heir that she has for her own reasons chosen not to bring to term, she may care deeply about whether fetal remains are contributed to research or therapy to help others. Given that interest, there is good reason—and no compelling contrary reason—to respect her wishes, as current law presently does.[65] Indeed, in cases of conflict between the mother and the father over disposition, one could argue that the mother's wishes should control because the fetus was removed from her body.[66]

Thus, granting the woman who aborts the right to dispose of fetal remains does not undermine or conflict with any of the purposes served in giving next-of-kin dispositional control of human remains. There is not good reason to override existing law and traditional practice in this area.

Alternative policies would pose even greater problems, requiring either that fetal remains be used without parental consent or not at all. Neither

64. Some persons argue that the next-of-kin is to decide how the deceased would want to be treated if able to tell us, or how they would have wanted to be treated if previously asked about it. Caplan, *Should Fetuses or Infants be Utilized as Organ Donors*, 1 BIOETHICS 135 (1987). There is little evidence that this idea underlies the family's traditional right to decide on burial.

65. *See supra* note 60. The law treats the aborted fetus as the woman's property for the purpose of disposition and anatomical gifts, just as other excised tissue is treated as property in this sense. Although the fetus is genetically different than other removed body parts, its source in the woman's body makes her claim to dispose of it a strong one. (Would not a kidney that had been transplanted to a patient be that patient's if later removed?) Perhaps a more accurate description is that the aborted fetus is the woman's "quasi-property," because her dispositional authority is not unlimited. She may have no right to sell it or display it publicly. Even if she could not demand payment for donation to research, she could still determine whether donation for research will occur. *Cf.* Moore v. Regents of the Univ. of Cal., No. BO 21195, slip. op. (Cal. App. July 21, 1988).

66. Both the Uniform Anatomical Gift Act and federal research regulations permit the father to veto her decision to donate. *See supra* note 60. It is unclear why he should have this authority, however, because donation for research will create no later obligations in him, as might occur if the woman donated a frozen embryo to another couple without his consent and a child were born. If conflicts of this sort arise, the right of the father to veto the mother's donation should be reconsidered.

alternative is acceptable. Public policy in the United States has vigorously rejected routine salvage of body parts without family consent as a way to increase the supply of organs for transplants.[67] Even presumed consent, which presumes the family's consent in the absence of actual objection, has been largely rejected.[68] Depriving the mother (and father who agrees to the abortion) of the power to veto fetal tissue transplants would single out fetal tissue for transplant use without family consent. Such a radical change in tissue procurement practice is not necessary to satisfy the need for fetal tissue and would serve only to punish women who abort.[69]

A proposed alternative to a policy of fetal tissue procurement without maternal consent is to ban fetal tissue transplants altogether in order to prevent the mother from donating fetal tissue. However, this solution burns the house to roast the pig, in effect making tissue transplants from aborted fetuses ethically unacceptable. As we have seen, however, a ban on all fetal transplants, whether to discourage abortions or to symbolize opposition to abortion, is not justified.[70]

In sum, the ethical case for denying dispositional control of fetal remains to the woman who aborts is not persuasive. The woman cannot require that fetal remains be used for transplant because no donor has the right to require that intended donees accept the anatomical gift,[71] but she should retain the existing legal right to veto use of fetal remains for transplant or other purposes. Her consent to donation of fetal tissue should be routinely sought by those who retrieve fetal tissue.

67. Robertson, *Supply and Distribution of Hearts for Transplantation: Legal, Ethical and Policy Issues*, 75 CIRCULATION 77, 79 (1987).

68. Only twelve states allow presumed consent for cornea donations. DEPARTMENT OF HEALTH AND HUMAN SERVICES, ORGAN TRANSPLANTATION: ISSUES AND RECOMMENDATIONS, REPORT OF THE TASK FORCE ON ORGAN TRANSPLANTATION, April, 1986, p. 30.

69. Such a result would not, however, violate any fundamental right to control disposition of bodily parts. *See infra* note 125. Nor would it violate any moral right of the woman per se according to ethicist Albert R. Jonsen, Jonsen, *Transplantation of Fetal Tissue: An Ethicist's Viewpoint*, 36 CLINICAL RESEARCH 215, 219 (1988).

70. *See supra* notes 20-46 and accompanying text. Indeed, there would also be serious constitutional problems as well. *See infra* notes 92-101 and accompanying text.

71. The Uniform Anatomical Gift Act permits the designated donee to reject the anatomical gift. Indeed, persons who sign organ donor cards often have their gifts refused before they reach the donee, because organ procurement agencies generally require more authorization to donate than a signed organ donor card.

2. *Will Maternal Consent Encourage Abortion?*

A second reason for denying women dispositional control of fetal remains is the fear that it will lead them to become pregnant and abort in order to obtain fetal tissue for transplant. As we have seen, there is little reason now to think that women will abort to obtain tissue for transplant. The possibility of donation will be a minor factor in the decision to abort, and no need now exists to seek fetal tissue from sources other than abortions performed to end unwanted pregnancy.

If the need to abort to produce fetal tissue did arise, however, the mother's dispositional control over fetal remains would be essential. Unless she could donate fetal remains for transplant and designate the recipient, it would be difficult to draw upon this source of fetal tissue.

Three arguments against a woman's voluntary use of her reproductive capacity in this way can be made. The first argument, based on respect for the welfare of the fetuses that are conceived only to be aborted, has been discussed above, and found wanting in situations where a close family member would be saved from death or serious loss of health.[72]

A second argument, briefly treated here, is the need to protect women from the physical burdens of a pregnancy and abortion they would not otherwise undergo. Banning conception and abortion to procure fetal tissue on paternalistic grounds cannot be reconciled with a woman's autonomy. The physical and psychological burdens of an abortion are not so substantial that women should for their own good be barred from freely assuming them. If women are already pregnant, aborting will probably be less physically hazardous and intrusive than going to term, even though grief and psychological complexities doubtlessly may occur.[73]

If women conceive in order to abort, the physical and psychological risks incurred by them may be reasonably viewed as equivalent to or less than the risks associated with kidney or bone marrow donation, both of which ordinarily entail greater physical intrusion.[74] The benefits to the

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72. *See supra* notes 47-59 and accompanying text.

73. Depending on the circumstances and previous experiences and psychological make-up of the woman, the abortion might be experienced with at least the grief that accompanies a miscarriage, which can be substantial. The feeling of loss here will by compounded by the notion that this was a pregnancy that might have gone to term. On the other hand, the satisfaction at doing good for a close relative could overcome or negate these feelings.

74. Although the physical intrusion may be less in abortions, the woman loses a fetus and potential child, and not just renewable tissue or a functionally superfluous kidney. The psychologi-

recipient are comparable in each case, and the sacrifice made by the donor should be equally permitted—and applauded. In terms of maternal welfare, there is no reason to treat pregnancy to procure tissue for transplant differently than kidney and marrow donations.[75]

A third argument is that women would thereby be viewed as "vessels" or "machines" to produce fetal tissue, thus denigrating their inherent worth as persons. The problem with this argument is that the same charge can be made against any living donor, whether of kidney, bone marrow, blood, sperm or egg. Insofar as persons donate body parts, they may be viewed as mere tissue or organ producers, with their full reality as persons obliterated by their tissue-producing role. Indeed, women who bear children are always in danger of being viewed as child-breeders. Such views oversimplify the complex emotional reality of organ and tissue donation and of human reproduction. While perceptions of pregnancy and procreative capacity may eventually be affected, the danger that fetal tissue donors would be so narrowly viewed would not justify barring women from freely assuming that role to provide sick patients needed tissue for transplant.[76]

Such donations, however, are ethically acceptable only because the risks are freely chosen. To assure that consent is protected, special attention should be given to consent procedures that will protect the woman from being coerced or unduly pressured by prospective donors and their families, just as occurs with living related kidney and marrow donors. Special consent procedures, including waiting periods, consent advisors and monitors, and other devices to guarantee free, informed consent are

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cal impact will accordingly be greater, since loss of a fetus cannot be equated with loss of a kidney or bone marrow.

75. This is true even if the donor is unrelated to the recipient and is recruited solely for that purpose, because unrelated bone marrow and even kidney donations do occur. Paying the donor to conceive and abort does not change the balance of risks, even though it may induce certain women to volunteer for this procedure. A ban on such donations would deny recipients a great benefit, a factor that should be considered in deciding whether to interfere on paternalistic grounds with the autonomous choice of the woman. In any event, the donor's decisional process should be closely monitored to assure that it is free and informed.

76. This argument assumes that no money will be paid for her donation. *See infra* notes 91-102 and accompanying text. Even so, the practice of using one's reproductive capacity to produce tissue for transplant may alter or at least complicate perceptions of female reproductive function. Indeed, it would be surprising if some such effect did not occur. That does not mean, however, that women would be so depersonalized that they should be deprived of these choices over their bodies, and needy recipients deprived of transplants.

clearly justified, even though a total ban on such donations is not.[77]

B. *The Process of Obtaining Consent*

If the woman retains the right to determine whether fetal tissue is used for research or therapy, tissue procurement procedures should respect that right. The main ethical concern then is to assure that her choice about tissue donation and the abortion is free and informed.

To that end, current federal regulations require, and many commentators recommend, that consent to tissue donation be clearly separated from consent to the abortion. A clear separation of the two decisions will assure that tissue donation is not a prerequisite to performance of the abortion.[78] Also, it will prevent the prospect of donating fetal remains from influencing the decision to abort.[79]

At present, the recommended procedure is to have the request to donate fetal tissue made only after the woman has consented to the abortion. The alternative of waiting until the abortion has been performed may not be practical.[80] In addition, the person requesting consent to tissue donation and performing the abortion should not be the person using the donated tissue in research or therapy. This constraint is widely followed in cadaveric organ procurement.

While these procedures are, on the whole, sound, two problems should be noted. Withholding information about fetal tissue donation until after consent to abort is obtained may deprive women of information that is material to their decision to abort, thus preventing their decision from being fully informed. However, only a small group of women would be materially affected by this constraint. Information about tissue donation will not be material to women who choose to abort without that knowledge, since their decision is not affected by the possibility of donation. In

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77. *See* Robertson, *Taking Consent Seriously: IRB Intervention in the Consent Process*, IRB A REVIEW OF HUMAN SUBJECTS RESEARCH, May 1982, at 1.

78. Cases might rarely arise in which a physician would not do the abortion unless it were specifically for transplant purposes. This, however, will not be the case with tissue retrieved from family planning abortions.

79. A clear separation of the abortion and donation decisions would prevent the prospect of donating fetal remains from influencing the decision to abort except to the extent that publicity about fetal transplants will make women generally aware of the prospect of donation.

80. The woman's capacity to consent after the abortion may be diminished due to anesthesia or the emotional effects of the abortion itself, and the time that viable fetal tissue may be retrieved is short.

any event, they will be informed of donation options after they decide to abort.

The group most affected by this policy are women who decide against abortion after discussing the matter with a physician or abortion facility, but who would have chosen to abort if they had been informed that they might donate fetal tissue for transplant. This group would probably not be large. Further, women who are so ambivalent about abortion that tissue donation would reverse a decision against abortion could be required to raise the issue themselves.[81] Given the small size of the group and the benefits of clearly separating the abortion and donation decision in family planning abortions, the policy is defensible.[82]

A second potential problem is that separating the person requesting the tissue donation from the person performing the tissue transplant might not effectively guard the woman from pressure to donate. This practice would not prevent the person who obtains consent for the abortion from also requesting the tissue donation, albeit at a later point in time. If the same person requests both, particularly if it is the physician performing the abortion, and the abortion facility has a financial interest in maximizing tissue procurement, the risk of undue pressure or manipulation of the woman to donate might occur. Since abortion facilities will not be able to sell fetal tissue,[83] this danger may be minimal. To reduce

81. At that point, the person obtaining consent could inform them of that possibility or even refuse to discuss it until after the decision to abort is made. But if such knowledge is generally in the air, the ambivalent woman may take it into account or condition her acceptance of the abortion on use of the remains in research or therapy.

Informing women of the chance to donate if they are ambivalent is not, however, an "inducement ... offered to terminate [the] pregnancy. . ." that is prohibited by the federal regulations. 45 C.F.R. § 46.206(b) (1987). Even if the information is given before consent to the abortion, it is not an inducement unless offered specifically for the purpose of "inducing" the woman to terminate the pregnancy and donate the tissue. It would simply be informing the woman of her option to donate fetal tissue.

82. If women undecided or ambivalent about abortion do raise the question, the physician should inform them of fetal tissue donation options. Providing such information should not be considered an illegal inducement to abortion, even if it has the effect of leading women to choose abortion when absent the information they would not have done so, because no valuable consideration to abort is offered. *See* National Institutes of Health, Report of the Panel on Fetal Tissue Transplantation Research, (forthcoming). When the woman does not inquire and thus is not informed of donation options, however, it is unclear whether legal doctrines of informed consent have been violated. Only women who would have aborted if so informed, but who choose not to because ignorant of that possibility, could make such a claim.

83. *See infra* notes 103-04 and accompanying text. Although abortion facilities cannot sell fetal tissue, they can recoup the expenses of procuring the tissue. Loose accounting of reimbursable costs could make it financially advantageous to them to retrieve as much tissue as possible. A payment of

such influences, perhaps the person who obtains consent to the abortion should not also request the tissue donation.

C. *Changes in Timing and Method of Abortion*

Federal regulations (and most commentators) state that "no procedural changes which may cause greater than minimal risk to the fetus or pregnant woman will be introduced into the procedure for terminating the pregnancy solely in the interest" of the research activity.[84] Although this policy is partially intended to protect fetuses from later or more painful abortions,[85] a main concern is to protect women from postponing pregnancy or undergoing more onerous abortion procedures than they otherwise would, solely to obtain tissue for transplant. Once again, a potential conflict arises between maternal autonomy and paternalism.

Some changes in abortion procedures to enhance tissue procurement pose little additional risk to the woman and should be permitted. For example, reductions in the amount of suction, use of a larger bore needle, and ultrasound-guided placement of the suction instrument in evacuation abortions might facilitate the retrieval of tissue and organs from first trimester aborted fetuses by increasing the chance that tissue will be removed whole and unmacerated.[86]

More problematic would be changes in abortion methods that increase the risks and burdens of the abortion. Such methods include substitution of prostaglandin induction or hysterotomy[87] for less risky methods, or postponement of an early first trimester abortion to later in the first trimester, or to the second trimester. Apart from her desire to facilitate

$25-$50 per fetal pancreas retrieved may be financially attractive to abortion facilities and lead them to seek donations and cut corners in the consent process. Strict rules about what counts as reimbursable procurement costs may be necessary to prevent profiteering in this way.

84. 45 C.F.R. § 46.206(a)(3)-(4) (1987).

85. This would be a concern later in the second trimester when the nervous system is so developed that the aborted fetus experiences pain. Also, delaying abortion might be viewed as using the fetus as a means that symbolically devalues human life. *See supra* note 51. If abortion at the later time is otherwise ethically acceptable, the issue is similar to the problem of creating embryos or fetuses solely for research or tissue procurement purposes. *See supra* notes 57-59 and accompanying text.

86. Statement of Dr. George Allen, *supra* note 5. The use of ultrasound might involve some increased cost, which all persons undergoing abortion would then pay. However, this change could be independently justified as in the patients' interest to protect against perforations and should be routinely done even though it is not now the practice.

87. A hysterotomy is a surgical incision into a uterus to remove a fetus, or abortion by Caesarean section.

tissue donation, these changes would appear to be against the woman's interest.

Can such paternalistic interference with the mother's choice be justified? While a libertarian might disagree, asking the woman to take on these extra burdens can be ethically justified only if they were necessary to obtain viable tissue. If sufficient tissue can be obtained without such changes, then it would not be ethically sound to ask a patient to assume extra burdens, even the burdens of slightly delaying the abortion.[88] Sufficient fetal tissue for research and therapy may now be obtained without changes in individual abortion procedures, therefore, the federal rules against such changes remain sound.

A different policy should be considered if changes in timing or method of abortion become necessary to procure viable tissue for transplant. If the need were clearly shown, there is no objection in principle to asking a woman to assume some additional burdens for the sake of tissue procurement. If the woman is already pregnant and determined to have an abortion, the additional risks of postponing the abortion a few weeks, or even changing to a prostaglandin abortion, would seem well within the range of risks that persons may voluntarily choose to benefit others.[89] Indeed, the risks would seem no different than those that a woman who conceives for transplant purposes assumes, or the risks that a kidney or marrow donor takes on. Special IRB review[90] and other consent procedures to protect the woman's autonomy, however, would be in order.

IV. COMMERCIALIZATION OF FETAL TISSUE

In addition to ethical concerns about fetal and maternal welfare, opponents of fetal tissue transplants have raised the specter that fetal tissue procurement will lead to a commercial market in abortions and in fetal tissue. Paying money to women to abort, or to donate once they abort, is generally perceived as damaging to human dignity. Commercial buying

88. This is a basic principle of medical ethics, evident in research rules, which do not permit a subject to accept freely all risks, but only those risks that have a reasonable chance of procuring useful knowledge. *See* 45 C.F.R. § 46.111(a)(2) (1987). Further, the risks to the subject must be so outweighed by the sum of the benefit to the subject and the importance of the knowledge to be gained, as to warrant a decision to allow the subject to accept those risks.

89. Abortion by hysterotomy raises a more difficult issue, because it is major surgery no longer used to terminate pregnancy. It would be a rare case, however, in which a hysterotomy would be necessary to obtain viable tissue for transplant.

90. IRB refers to Institutional Review Boards, established by Congress to oversee federally-funded scientific research. *See* 46 C.F.R. § 101-409 (1987).

and selling of fetal tissue raises similar concerns. Such market transactions risk exploiting women and their reproductive capacity, and denigrating the human dignity of aborted fetuses by treating them as market commodities.[91]

Most commentators and advisory bodies that have considered fetal tissue transplants recommend that market transactions in abortions and fetal tissue be prohibited.[92] The National Organ Transplant Act of 1984, which bans the payment of "valuable consideration" for the donation or distribution of solid organs, was amended in 1988 to ban sales of fetal organs and "any subparts thereof."[93] In addition, several states prohibit the sale of fetal tissue and organs.[94]

At present such policies are easily supported, for they would appear to

91. For opposition to markets in body products generally, see R. TITMUSS, THE GIFT RELATIONSHIP: FROM HUMAN BLOOD TO SOCIAL POLICY (1972); Radin, *Market Inalienability*, 100 HARV. L. REV. 1849 (1987); Murray, *Gifts of the Body and the Needs of Strangers*, HASTINGS CENTER REP., April 1987, at 30-35 (1987).

92. *See supra* note 61.

93. The National Organ Transplant Act, Pub. L. No. 98-507, 1984 U.S. CODE CONG. & ADMIN. NEWS (98 Stat) 2339 (codified at 42 U.S.C. § 274e (Supp. II 1984)). This law originally did not list the brain as an organ covered by the Act, though the liver and pancreas were listed. Arguably, pancreatic islet cells and fetal liver tissue were covered, even if fetal brain cells were not, on the theory that such cells and tissue were a subpart of the covered organ, and that Congress could not have intended only to ban the sale of the full organ and not subparts such as tissue and cells. Congress amended the Act in 1988 by changing the definition of "human organ" to mean "the human (including fetal) kidney, liver, heart, lung, pancreas, bone marrow, cornea, eye, bone and skin or any subpart thereof and any other human organ (or any subpart thereof, including that derived from a fetus) specified by the Secretary of Health and Human Services by regulation." CONG. REC. H10214, Oct. 13, 1988. Fetal cells and tissue of the named organs as subparts are now more clearly covered. Presumably the brain, as an organ, could be added to the list by the Secretary. Fetal neural tissue of interest to Parkinson's disease patients would then be covered as a subpart of the brain. However, payment for fetal brain tissue would not be banned until the Secretary issued the necessary regulation.

Assuming that fetal tissue is covered as a "subpart" of the named organs, a major issue that arises under the act will be whether firms that obtain, process and distribute fetal tissue for transplant may be able to "sell" the processed tissue to doctors and patients and receive profit in addition to their processing costs. If the act does not permit profit as part of the "reasonable payments" for processing tissue, it could have a negative effect on future developments in this field. For further discussion of this point, see *infra* notes 101-106, 156 and accompanying text.

94. ARK. STAT. ANN. § 82-439 (Supp. 1985); FLA. STAT. ANN. § 873.05 (West Supp. 1987); ILL. ANN. STAT. ch. 38, § 81.54(7) (Smith-Hurd 1983); LA. CIV. CODE ANN. art. 9:122 (Supp. 1987); ME. REV. STAT. ANN. tit. 22, § 1593 (1964); MASS. GEN. LAWS ANN. ch. 112, § 1593 (1964); MICH. COMP. LAWS ANN. § 333.2690 (West 1980); MINN. STAT. ANN. § 145.422 (West Supp. 1986); MO. REV. STAT. § 188.036 (1988); NEV. REV. STAT. § 451.015 (1985); N.D. CENT. CODE § 14-02.2-02 (1981); OHIO REV. CODE ANN. § 2919.14 (Anderson 1985); OKLA. STAT. tit. 63, § 1-735 (1987); PA. CONS. STAT. § 3216 (Purdon 1983); R.I. GEN. LAWS § 11-54-1(f) (Supp. 1987); TENN. CODE ANN. § 39-4-208 (Supp. 1987); TEX. PENAL CODE ANN. §§ 42.10, 48.02 (Vernon 1974

have little impact on the supply of fetal tissue for research and therapy. Given the general willingness of Americans to donate blood, organs and other tissue, there is little reason to think that women who abort unwanted pregnancies would not donate fetal tissue altruistically.[95] Indeed, many women who abort are likely to donate fetal remains in the hope that some additional good might result from the abortion.[96] Paying them to donate—buying their aborted fetuses—is thus unnecessary.

Nor at present is there any need to hire women to conceive and abort to provide tissue for transplant. As noted previously, the million plus annual abortions for family planning reasons is more than adequate to supply fetal tissue needs for the near future. Even if histocompatibility between the fetal tissue and recipient became essential, relatives rather than paid recruits would be the prime candidates for pregnancies and abortions to produce fetal tissue.[97]

But what if altruistic donations did not produce a sufficient supply of fetal tissue for transplant, or the need for histocompatible tissue required hiring women to be impregnated to produce a sufficient supply of fetal tissue? Would such payments be unethical? Should current legal policy still be maintained? Answering those questions would require balancing the risks of exploitation and the symbolic costs of perceived commodification (i.e. making fetuses subject to market transfer) against the need to increase tissue supply to benefit needy patients and the rights of women to determine use of their reproductive function.

No doubt many people would object to hiring women to conceive and abort, and insist on maintaining current laws. However, if pregnancy and abortion to produce fetal tissue is ethically defensible, then money payments in some circumstances may also be defensible, given obligations of beneficence and respect for persons, the lack of alternative tissue sources, and social practices in which some tissue donors are paid.[98]

and Supp. 1988); WYO. STAT. § 35-6-115 (1986). *See also* Note, *Regulating the Sale of Human Organs*, 71 VA. L. REV. 1015 (1985).

95. Physicians testified at the NIH Panel on Fetal Tissue Transplant Research that over 90% of women who were asked to donate fetal tissue agreed, a rate that compares favorably with the 70% rate of cadaveric organ donation from families of brain dead persons. *See* Task Force Report, *supra* 68, at 28.

96. It does not follow, however, that the donation is the determinative factor in deciding to abort, even if women who donate feel better about their decision to abort.

97. However, some unrelated women would be recruited for this purpose, since many patients might not have a relative available who is willing to conceive and abort to provide them with fetal tissue. One can imagine the creation of agency or brokerage services to provide this service for a fee.

98. For example, sperm donors are generally paid, and the emerging custom with egg donation

Legal policy might then be reconsidered to permit payments when essential to save the life or protect the health of transplant recipients who have no other alternatives.[99] Resolution of this difficult issue, however, should await the actual occurrence of the need to pay to obtain fetal tissue for transplant.

Current bans on buying and selling fetal tissue do not—and should not—prohibit reasonable payments to recover the costs of retrieving fetal tissue. Although paying organ donors is illegal under federal law, the law and ethics of organ procurement allow for payment of costs incurred in the acquisition of organs.[100] Organ donor families, for example, are not asked to pay for the costs of maintaining brain dead cadavers or for surgically removing the organs that they donate. The same principle should apply to fetal tissue donations.[101] Two related issues concern paying the donor's abortion expenses and paying other tissue retrieval costs.

A. *Paying Abortion Expenses*

Paying the cost of the abortion should be ethically and legally acceptable only in those instances in which the abortion is performed solely to obtain tissue for transplant. In that case, paying for the abortion is not a fee to donate tissue, but rather is payment of the costs of acquiring the donated tissue, comparable to paying the cost of the nephrectomy that makes a kidney donation possible. Other out-of-pocket costs incurred by the donor could also be reimbursed without violating federal law or ethical constraints.

In contrast, when the abortion is performed for reasons unrelated to

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is to pay women up to $1200 to undergo ovarian stimulation and surgical removal of eggs under general anesthesia. Robertson, *Technology and Motherhood: Legal and Ethical Issues in Human Egg Donation*, 39 CASE W. RES. (1988) (*forthcoming*).

99. In fact, the laws prohibiting hiring women to conceive and abort might unconstitutionally violate a patient's right to effective medical care. *See infra* notes 155-56 and accompanying text.

100. 42 U.S.C. § 274e (Supp. II 1984). However, state organ sale laws are not always consistent in allowing recovery of the reasonable expenses of organ procurement. *See supra* note 94, at 1031-32. Also, state laws against sale of aborted fetuses might not distinguish payments for the expenses of the abortion from sale of the aborted fetus.

Note also that while most states ban baby selling, they do permit the payment of medical expenses associated with the birth of the baby that is then adopted. *See, e.g.*, N.J. STAT. ANN. § 9:3-54 (West Supp. 1988).

101. Paying expenses may not violate state and federal laws against selling organs and tissue, but it is unclear whether they would constitute an "inducement" within the federal research regulations. *See supra* note 81.

tissue procurement, paying abortion expenses amounts to paying the women to donate the tissue. This payment would constitute a sale of fetal tissue and should not be tolerated as long as fetal tissue sales are prohibited.[102] In any event, the willingness of most women to donate without a fee should make payment of abortion expenses unnecessary.

B. Retrieval Costs and Tissue Retrieval and Processing Agencies

Because physicians who will use fetal tissue clinically ordinarily will not perform the abortion that provides the tissue, a system of specialized agencies that acquire fetal tissue from abortion clinics and distribute it for research or clinical use is likely to develop. These agencies may remove the relevant tissue from the aborted fetus and process it in certain ways to prepare it for therapeutic use, including propagating a line of cells from smaller tissue samples. Such agencies may be nonprofit or for-profit.

What role will money payments play in the operation of retrieval and processing agencies? Under existing law the agencies will be unable to pay women to donate fetal tissue. However, they should be free to pay the costs of personnel directly involved in retrieval, whether employees of the procurement agency or of the facility performing the abortion. For example, a tissue retrieval agency may reimburse the abortion clinic for using its space and staff to obtain consent for tissue donations and to retrieve tissue from aborted fetuses.[103] However, the abortion facility could not charge the agency a fee beyond reasonable expenses incurred in retrieving fetal tissue at their facility.[104]

In distributing fetal tissue to researchers and physicians, retrieval agencies should, of course, be able to recoup the expenses of procuring the tissue, including overhead and other operating expenses of the agency itself. Such payment is consistent with organ transplant recipients (or their payors) paying for the costs of organ procurement, including overhead and other operating costs of the organ procurement agency involved.

102. This is an example of how workable lines can be drawn that can minimize commercialization without preventing tissue procurement. *See infra* notes 104-06.

103. Statement of Fred Voss, Vice-President, Hana Biologics, Inc., NIH Panel on Fetal Tissue Transplantation Research (Sept. 21, 1988).

104. It will be important to develop clear lines here so that abortion facilities do not sell fetal tissue and thus offer inducements to persuade undecided women to donate or even to abort. Some dilemmas may arise in implementing such rules. Liberal reimbursement rules for the facility's retrieval costs, for example, could enable them to offer abortions to poorer women at reduced rates.

If the firm processing tissue is a for-profit enterprise, some profit margin should also be recognized in the amount it charges the recipient of the tissue. While some persons might argue that recognizing any profit amounts to a sale of fetal tissue that risks treating fetal tissue as a market commodity, a clear distinction can be drawn between buying and selling fetal tissue, and reimbursing for-profit tissue processing agencies for their costs of providing tissue, including the cost of inducing capital investment in the firm.[105] Persons who organize resources and invest capital to provide viable fetal tissue for transplant are performing a useful social activity. Fears about treating donors and fetuses as commodities might justify policies against selling fetal tissue, but they should not prevent giving for-profit firms the incentives necessary to organize and provide the services in question.[106]

V. Legal Barriers to Fetal Tissue Transplants

Our examination of the ethical issues shows that transplants of tissue from aborted fetuses may ethically occur in many circumstances. Nevertheless, some legal barriers to research and therapeutic use of tissue from aborted fetuses exist. The analysis first addresses state bans on research and therapeutic use of aborted fetuses, and then considers the constitutionality of such restrictions.

A. State Bans on Research With Aborted Fetuses

The Uniform Anatomical Gift Act specifically permits use of tissue from aborted fetuses for research, education and transplantation.[107] Yet eight states have enacted statutes that prohibit research with aborted fetuses, and proposals for similar laws in other states can be expected.[108]

105. While lines here might get blurry, this would seem no more objectionable than paying Federal Express to ship tissue, which payment would include some "profit" or return on capital to Federal Express. Furthermore, it would seem no more objectionable than the "selling" of organ transplants, medical services, drugs and hospital space in which for-profit entities throughout the health care system engage.

106. The concerns really center on symbolic perceptions from allowing for-profit firms to operate in this area. But the physicians who transplant the tissue, the overnight agency that ships it, the hospital in which the transplant occurs, etc. all are making a profit. There is no good reason why the firm processing the tissue should not profit as well, especially if no other entity would provide the service. The wisdom and constitutionality of laws banning all "commercialization" of fetal tissue may thus be questioned. *See infra* note 155.

107. National Conference of Commissioner on Uniform State Laws, UNIFORM ANATOMICAL GIFT ACT (UAGA), 8A U.L.A. 34 (1987).

108. ARIZ. REV. STAT. ANN. § 36-2302 (1986); ARK. STAT. ANN. § 82-438 (Supp. 1985); ILL.

State laws that make it a crime to acquire or use tissue from aborted fetuses for research or therapy could have a major impact on further development of and access to fetal tissue transplant therapies. The scope of existing laws and their constitutionality thus deserve attention.

The eight states that now ban research with aborted fetuses enacted those laws as part of an effort after *Roe v. Wade* to restrict abortion and limit fetal experimentation.[109] Because legislative history is sparse and these provisions were usually part of a comprehensive regulation of abortion and fetal experimentation, it is difficult to ascertain the precise purpose of each state law. One surmises that a main purpose was to remove an incentive for abortion, even though there was little evidence of women aborting solely for research purposes.[110] No doubt a second purpose was to make a symbolic statement about the perceived immorality of abortion, by preventing any legitimating benefit from use of aborted fetuses. Legislators may also have been concerned with protecting fetuses that had been or were going to be aborted from the harm of experimentation.[111]

The extent to which these statutes prohibit use of fetal tissue from induced abortions depends, of course, on their precise wording.[112] None of them draw a distinction between research on fetuses aborted to get

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ANN. STAT. ch. 38, para. 81-54(7) (Smith-Hurd 1983); IND. CODE ANN. § 35-1-58.5-6 (West 1986); LA. REV. STAT. ANN. § 1299.35.13 (West 1986); N.M. STAT. ANN. §§ 24-9A-3, 24-9A-4, 24-9A-5 (1986); OHIO REV. CODE ANN. § 2919.14 (Anderson 1985); OKLA. STAT. tit. 63, § 1-735 (Supp. 1981).

Missouri has enacted a law that prohibits physicians from performing, and persons from utilizing, fetal tissue or organs for "medical transplantation," if they know that the woman procured the abortion to obtain tissue or organs for transplant to herself or another. H.B. No. 1479, 84th Gen. Ass., 2d Reg. Sess. (1988) (to be codified at MO. REV. STAT. § 188.036). Because this statute does not apply to "medical transplantation" of fetal tissue or organs from abortions that occur for reasons other than tissue procurement, it will not prevent research or therapeutic transplants with fetal tissue from family planning abortions. The constitutional validity of such a ban is considered *infra* notes 140-56.

109. Baron, *Legislative Regulation of Fetal Experimentation, printed in* GENETICS AND THE LAW III, 431-35, (Milunsky & Annas ed. 1985).

110. *Id.* Terry, *"Alas! Poor Yorick," I Knew Him Ex Utero: The Regulation of Embryo and Fetal Experimentation and Disposal in England and the United States*, 39 VAND. L. REV. 420 (1986).

111. *See* Baron, *supra* note 109; Fletcher and Ryan, *Federal Regulations for Fetal Research: A Case for Reform*, 15 LAW, MEDICINE AND HEALTH CARE, 126-28 (Fall 1987). While fetuses that were to be aborted or that had emerged alive from the abortion could be harmed by experimentation, it is difficult to see how fetuses that were dead due to an induced abortion could be harmed by experimentation. For example, proper respect for the dead does not preclude research, education and transplantation use of cadavers.

112. In some cases these statutes may prevent research with spontaneously aborted fetuses as well.

tissue for experimentation and those aborted for family planning purposes.[113] In addition, six of the eight states only prohibit "experimentation" with aborted fetuses.[114] Thus, tissue from aborted fetuses could be used for therapeutic, but not experimental, purposes in those states.[115]

Moreover, all research uses of fetal tissue from induced abortions are not necessarily banned. Oklahoma, Ohio, Louisiana, Indiana, and Illinois make criminal the act of "experimenting upon the remains of a child or an unborn child resulting from an abortion."[116] But experimental use of fetal tissue is not necessarily research "upon" that tissue. For example, a research project that transplants fetal brain tissue into persons with Parkinson's disease is an experiment upon the recipient of the transplant, and not upon "the remains of a child or unborn child." Because criminal statutes are to be strictly construed, such a reading is cogent and tenable in those five states.

Statutes in Arizona, New Mexico and Arkansas are more broadly worded, and would exclude experimental transplants that clearly have the recipient as the experimental subject. The Arizona law states that "no person shall knowingly use any human fetus or embryo, living or dead, or any parts, organs, or fluids of such fetus resulting from an induced abortion for any medical experimentation or scientific or medical investigation."[117] Similarly, the New Mexico law prohibits clinical research activity "involving" a fetus.[118] These laws would prohibit experimental transplants (but not nonexperimental therapy) in the respective states, but it would not prohibit the procurement of fetal tissue in those states for experimental or other use in other states.[119]

The Arkansas law is the most broadly worded. It states that no person "shall possess either a fetus born dead as a result of a legal abortion, or any organ, member, or tissue of fetal material resulting from a legal abortion."[120] Under this wording, no fetal tissue or organs could be "pos-

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113. An exception is the recently enacted Missouri statute. *See supra* note 108.

114. Arkansas is the exception because of its ban on "possession" of the organ, tissue or material of an aborted fetus. ARK. STAT. ANN. § 82-438 (Supp. 1985).

115. However, under the laws as now written, the research could be done in a state where it is legal, and therapy based on that research could be provided in states which now ban experimentation.

116. *See, e.g.*, OHIO REV. CODE ANN. § 2919.14 (Anderson 1985).

117. ARIZ. REV. STAT. ANN. § 36-2302 (1986).

118. N.M. STAT. ANN. §§ 24-9A-3, 24-9A-5 (1986).

119. However, Indiana would prohibit use of such tissue procured out of state as well. IND. CODE ANN. § 35-1-58.5-6 (West 1986).

120. ARK. STAT. ANN. § 82-438 (Supp. 1985).

sessed" in Arkansas for any reason, whether medical or educational, research or therapeutic, and whether or not procured in Arkansas. Presumably possession would include the possession of fetal tissue for the period of time from when it is obtained until after it is transplanted, thus placing the persons performing and receiving the tissue transplant in violation of the statute.[121]

B. *Constitutionality of State Bans on Research with Aborted Fetuses*

Existing state bans on research with aborted fetuses are vulnerable to attack under the United States Constitution on several grounds, including lack of a rational basis, vagueness, overbreadth and substantive due process interference with fundamental rights of pregnant women, and perhaps even of transplant recipients. In the only legal challenge to date, a federal district court struck down the Louisiana law on the grounds that it served no rational purpose, interfered with the right to have an abortion, and was vague.[122] The Fifth Circuit Court of Appeals affirmed the district court on the ground of vagueness only, finding that the definition of "experimentation" was too imprecise to give adequate notice about which medical uses of aborted fetuses were permitted and which were not.[123] The court thus left open the question of whether a better drafted statute would withstand substantive attack.[124]

In assessing the substantive arguments against bans on use of fetal tissue, it is useful to distinguish between bans on use of tissue procured from abortions performed for family planning reasons and abortions performed solely to obtain fetal tissue. Since existing laws do not make this distinction, they are vulnerable to arguments under either rubric.

1. *Bans on Use of Fetal Tissue From Family Planning Abortions*

Laws banning research or other use of fetal tissue from abortions performed to avoid pregnancy would strike at the heart of fetal tissue research, and make further progress in this field exceedingly difficult. By

121. The recipient would "possess" the fetal tissue as well because it would be in his body at all times, and as a result of a choice on his part, assuming he knew the source.

122. Margaret S. v. Edwards, 597 F. Supp. 636 (1984), *aff'd*, 794 F.2d 994 (5th Cir. 1986).

123. Margaret S. v. Edwards, 794 F.2d 994 (5th Cir. 1986). A concurring judge was willing to find the Louisiana statute invalid on grounds other than vagueness. *Id.* at 999-1004 (Williams, J., specially concurring). *See also* Note, *State Prohibition of Fetal Experimentation and the Fundamental Right of Privacy*, 88 COLUM. L. REV. 1073 (1988).

124. In theory, a statute void for vagueness can always be redrafted to overcome the vagueness problem.

banning all experimental use of fetuses from induced abortion, eight states have such laws at the present time, and more may be in the offing. Even if problems of vagueness are overcome, such laws could be attacked as lacking a rational basis, interfering with the woman's right to abort and infringing the recipient's right to receive health care.[125]

a. Is There a Rational Basis?

Banning experimental or therapeutic fetal tissue from abortions occurring for family planning reasons might not even satisfy the minimal rational basis test for legislation under either a due process or equal protection rubric.

Opponents of such laws would argue that they violate basic due process because no rational purpose is served in banning research (or therapeutic) uses of aborted fetuses.[126] The abortions have been performed to end unwanted pregnancy, and not to procure tissue for transplant. A ban on research will not protect the fetus, which is dead and no longer has interests to be protected. Nor is a ban necessary to show respect for human life, since research or therapeutic use of human cadavers has long been consistent with proper respect.

Such laws may also be effectively challenged as lacking a rational basis on equal protection grounds.[127] Several current statutes permit therapeutic but not experimental use of aborted fetuses. In addition, none of

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125. *See infra* note 126. Such laws are not subject to attack on the basis of a fundamental right to dispose of tissue independent of the abortion decision. As Commonwealth v. Edelin, 371 Mass. 497, 359 N.E.2d 4 (1976), makes clear, the right to abort does not necessarily give the woman the right to control disposition of the aborted fetus. If the aborted fetus is alive she may have a legal duty to treat it, despite her wishes to the contrary. Nor is there a fundamental right in the next-of-kin to control disposition of cadaveric or fetal remains. Tillman v. Detroit Receiving Hospital, 138 Mich. App. 683, 360 N.W.2d 275 (1984); State v. Powell, 11 Fla. 557, 497 So. 2d 1188 (1986), *cert. denied*, 107 S. Ct. 2202 (1987). Thus, laws prohibiting or mandating anatomical gifts would not violate a fundamental right to dispose of cadaveric remains from oneself or others.

126. If the interest protected is not fundamental, due process requires that the legislation be rationally related to a valid state purpose. Williamson v. Lee Optical Co., 348 U.S. 483, 491 (1955). *See* Roe v. Wade, 410 U.S. 113, 173 (1973) (Rehnquist, J., dissenting). However, in *Roe v. Wade* the Supreme Court majority held that a woman's interest in making the decision to abort is protected as a fundamental right. *Id.* at 152-53. Therefore, a state statute interfering with this right would be subject to strict judicial scrutiny. Strict scrutiny requires that the state interest be compelling and the state's means be narrowly drawn to protect only the compelling state interest. *Id.* at 155.

127. Even if the interest protected were not fundamental, and thus not judged under a strict "compelling interest" test, the legislation must still be "rationally related to a legitimate government interest." City of Cleburne v. Cleburne Living Center, 473 U.S. 432 (1985). If the purpose of the law was to demonstrate the human worth of the fetus, it would be irrational to ban research on aborted fetuses while permitting therapeutic uses of aborted fetuses.

the eight states forbid the experimental use of other human remains, such as victims of accident or violent crime. Thus, one could argue that these distinctions are irrational, because no valid purpose is served by singling out aborted fetuses for an experimental ban while permitting therapeutic uses of aborted fetuses and permitting both experimental and therapeutic uses of other human remains.[128]

Proponents, on the other hand, would argue that such laws are rationally related to discouraging abortion, because it will prevent women undecided about abortion from deciding to abort on the basis of tissue donation. Also, such laws serve the purpose of announcing the state's strong respect for prenatal life, even if that life has been taken, by reminding us that prenatal life is not to be exploited for the good of others.[129] Further, restricting experimental but not therapeutic use of aborted fetuses is justified as rational at a time when no therapeutic uses have been clearly established and the full costs of a broader ban are not clear. Nor, given the special need to protect fetuses subject to abortion, is it irrational to ban experiments on aborted fetuses but not other human cadavers. Finally, this ban might discourage doctors from persuading women to abort to obtain fetuses for research.

While the rational basis test is notoriously easy to meet, courts may well find (as did the district court and one judge at the appellate level in *Margaret S. v. Edwards*)[130] that such broad restrictions, particularly when therapeutic use of aborted fetuses and other human cadavers is permitted, serve no rational purpose. Resolution of the issue may well depend on whether judges considering such a challenge perceive such a broad ban as serving a state goal of protecting prenatal life in any meaningful way. Arguably, it does not.

b. Interference with the Right to Abort

If courts found such bans rational, the laws would still have to satisfy a stricter standard of scrutiny if they interfered with or significantly burdened the woman's decision to abort.[131] Because these laws do not pre-

128. *See* Margaret S. v. Edwards, 794 F.2d 994 (5th Cir. 1986) (argument that statute unconstitutional under rational basis test) (J. Williams, concurring); Margaret S. v. Edwards, 597 F. Supp. 636 (1985) (invalidated statute under rational basis test).

129. The state may take steps to protect prenatal life as long as it does not impinge on fundamental rights in doing so. Maher v. Roe, 432 U.S. 464 (1977).

130. *See supra* notes 122-23.

131. *See supra* note 126.

vent abortions sought solely for family planning purposes, but only restrict disposition of fetal remains, it may be hard to show an interference with reproductive decisionmaking.

One ground for finding such interference would be that a ban on research impinges on the woman's future reproductive decisionmaking, by preventing her from obtaining information directly relevant to her future decisions about pregnancy and childbearing.[132] Research on topics unrelated to reproduction, however, such as Parkinson's disease or diabetes, would not fall into that category.[133] A more narrowly drawn statute could meet that objection.

Another argument would be that such a statute necessarily impinges on the decision to abort because the very purpose of the law is to influence perceptions of fetal status so that women will not seek abortions in the future. Official elevation of fetal status in this way burdens or interferes with the autonomy of women contemplating family planning abortions, by announcing the state's support of prenatal life, thus leading women, who otherwise would abort, not to abort.[134] Indeed what other

132. A ban on research with aborted fetuses (whatever the reason for the abortion) might also interfere with a decision to abort, or with other reproductive decisions to the extent that it prevents the development of information that would affect abortion and other reproductive decisionmaking. *See* Note, *State Prohibition of Fetal Experimentation and the Fundamental Right of Privacy*, 88 COLUM. L. REV. 1073, 1078-85 (1988). For example, the district court in Margaret S. v. Treen, 597 F. Supp. 636 (E.D. La. 1984), *aff'd on other grounds sub nom.*, Margaret S. v. Edwards, 794 F.2d 994 (5th Cir. 1986), found that a prohibition on research on fetal tissue could deny a woman information that might influence her own future pregnancies. In addition, a prohibition on research might curtail the development of prenatal diagnostic techniques such as amniocentesis by making it impossible to examine fetal tissue that had been aborted. However, these considerations would apply only insofar as the statute banned research on those topics; they would not apply to interference with other kinds of research.

133. *See supra* note 132. However, one could argue that successful tissue transplants for those diseases would lead women to get pregnant and abort in the future solely to obtain tissue for transplant.

134. *See* Reproductive Health Serv. v. Webster, 851 F.2d 1071, 1076-77 (8th Cir. 1988). Also instructive here is the fate of fetal disposal laws. While constitutional challenges to fetal disposal laws have usually succeeded on vagueness grounds, some federal district courts have struck down for other reasons disposal laws that required aborted fetuses to be interred, buried or cremated. The courts held that the laws convey the message that a fetus is a human being deserving the respect and dignity of a formal burial, thus equating abortion with the taking of a human life. If such laws were shown to burden the woman's decision to abort, they would be invalid. Such a burden was found when the law required the woman to choose the means of disposal prior to the abortion. Leigh v. Olsen, 497 F. Supp. 1340 (D. N.D. 1980). In another case the burden was less clear because the woman would be informed of these options 24 hours after the abortion procedure. Margaret S. v. Edwards, 794 F.2d 994, 997-98 (5th Cir. 1986) (struck down on other grounds). *See also* Planned Parenthood Ass'n v. City of Cincinnati, 822 F.2d 1390, 1399 (6th Cir. 1987).

purpose can attend such a ban, but an attempt to show the worth of the fetus so that women will refrain from abortion?

The assumption underlying this objection, however, is that the state must remain neutral about protecting prenatal status, and can never "speak" on the issue for fear that its speech will persuade listeners to change their future behavior. As the abortion funding cases make clear, however, the state is not disqualified from speaking on abortion as long as no interference thereby occurs.[135]

Prohibiting the donation of fetal remains for research or therapy announces the government's view of the importance of respecting prenatal life, but it does not prevent abortions for women who are not aborting to produce fetal tissue for transplant. They may consider the government's message and act on it or not, as they choose. If the state is free to communicate its views about prenatal status, the ban on use of fetal remains will not unconstitutionally interfere with the decision to abort, even if some women then decide not to abort.[136]

c. *The Right to Life or Health of the Recipient*

Even if laws against tissue transplants with fetuses aborted for family planning reasons met a rational basis test and did not impermissibly interfere with a woman's right to abort, they still might interfere with the right of potential transplant recipients to receive medical treatment necessary for their life or health.

While the interest in receiving medical treatment has not, except in the context of abortion and contraception, received explicit constitutional protection, a cogent argument for such a right can be made.[137] Consider

135. Harris v. Mcrae, 448 U.S. 297 (1980); Beal v. Doe, 432 U.S. 438 (1977); Poelker v. Doe, 432 U.S. 519 (1977) (per curiam). For further development of this point, see Hirt, *Why the Government Is Not Required to Subsidize Abortion Counseling and Referral*, 101 HARV. L. REV. 1895 (1988).

136. Some cases have suggested that the state's right to communicate its views regarding prenatal life is limited, because the purpose is to influence the woman's abortion decision. Of course, that may be the purpose, but if the influence occurs merely from the presentation of information (here, the information that the state takes a negative view of abortion), unconstitutional interference does not occur. It is another matter, however, if the purpose of the law is to deprive women of dispositional rights because they have aborted. Although a woman has no independent fundamental right to control disposition of fetal or other tissue removed from her, depriving her of control over fetal remains is not valid if the purpose is to penalize the underlying choice of procuring tissue by abortion.

137. *Roe v. Wade* talks about the "right of the doctor and his patient to decide upon medical care." However, courts have not recognized this point explicitly in other cases, with the exception of Ballard v. Andrews, 498 F. Supp. 1038 (S.D. Texas 1980). The district court in *Margaret S. v. Treen*

a situation in which a willing physician and patient wish to treat a life-threatening illness with fetal tissue freely donated for that purpose—a treatment shown by extensive research abroad to be safe and effective for its intended purpose.[138] State law, however, prohibits transplants with tissue from aborted fetuses in order to make a symbolic statement about its view of the worth of fetuses. Would such a law, which we assume would meet a rational basis test, be valid?

The validity of such a law would turn on whether the fourteenth amendment right not to be deprived of "life or liberty without due process of law" protects the right to receive safe and effective medical treatments from willing physicians. A strong argument for subjecting such a statute to a scrutiny stricter than rational basis can be made on the basis of the plain meaning of the constitutional text.[139] The state, by this prohibition, would be directly depriving the patient of "life," for without the tissue transplant he would die. Moreover, the state prohibition would deprive him of "liberty" if the ban on treatment impaired the patient's physical mobility (as would be the case if severe Parkinson's disease or diabetes were not treated). In either case, under strict scrutiny, the purpose of deterring abortions or making a symbolic statement of fetal worth would not justify the state's interference with the patients's life or liberty.

While such an expansion of due process is novel, judicial recognition of a person's fundamental right to receive medical treatment necessary to restore life or physical movement should lie within accepted parameters of constitutional interpretation. Requiring the state to show more than disapproval of abortion to justify deprivation of a person's life or liberty

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also recognized such a right in finding that a ban on research with aborted fetuses might violate the "right to health" of the woman by denying her information of medical benefit beyond reproductive decisionmaking by prohibiting procedures of immediate medical benefit to her, such as pathological examination of tissues. 597 F. Supp. 636, 673 (E.D. La. 1984) *aff'd on other grounds sub nom.*, Margaret v. Edwards, 794 F.2d 994 (5th Cir. 1986). *See also* Planned Parenthood v. Ashcroft, 462 U.S. 476, 486-87 (1983) (state may require pathological examination of fetal tissue from abortions done in abortion clinics to protect health and safety of woman).

138. A more exotic hypothetical will focus the point even more sharply. Suppose the patient's life depends upon taking a certain medicine derived only from the roots of a naturally occurring plant—ginseng—that flourishes in the upper Midwest. A religious minority has come to believe that removal of ginseng from the ground will cause the death of persons somewhere in the world, and persuades the state to ban sale and possession of ginseng. Would such a law, which would deprive other persons of the means necessary for them to live, be constitutional? In deciding that question, should not a test more rigorous than rational basis be applied?

139. *See supra* note 127.

(by preventing access to the only effective treatment possible) is not an arbitrary judicial decision even if the ban on fetal tissue transplants from aborted fetuses survives other attacks, it should not survive this one.

2. *State Bans on Intrafamilial Transplants and Donor Designation of Recipients*

Rather than a broad ban on all use of fetal tissue, such as those that currently exist in eight states, many commentators recommend a more discriminating approach. They would ban fetal tissue transplants only from abortions and pregnancies undertaken solely for that purpose, and not from all family planning abortions. To achieve this purpose, they recommend enacting a ban on fetal tissue donations to friends or family members, or alternatively, denying the woman who aborts the right to designate the recipient of a fetal tissue donation.[140] Since future developments might create a need for such abortions, the constitutionality of such bans deserves attention.

Bans on donor designation of recipient or intrafamilial donations create a "Chinese Wall" between the tissue source and recipient to prevent women from becoming organ farms, to prevent "abuse" or "degradation" of the reproductive process and to protect women from family pressures to conceive and abort to provide tissue.[141] Concerns for fetuses undoubtedly also enter into the movement for such laws.

While these purposes would easily satisfy a rational basis test, they would appear to interfere with a woman's reproductive rights and the recipient's right to effective health care.

a. *Interference with the Right to Abort*

A two-step evaluation is necessary to assess the impact on reproductive decisionmaking of laws that limit the donor's designation of recipients of fetal tissue. The first step is to consider their effect on women who are already pregnant and wish to abort in order to donate fetal tissue to a relative or friend in need. The second step considers the effect of such laws on decisions to become pregnant in order to produce fetal tissue for transplant.

A ban on donor designation of fetal tissue recipients would prevent a

140. *See, e.g.*, Danis, *Fetal Tissue Transplants: Restricting Recipient Designation*, 39 HASTINGS L.J. 1079 (1988). For a statute that is framed in terms of the woman's motivation, see MO. REV. STAT. § 188.036 (1988).

141. *See* Danis, *supra* note 140, at 1092.

pregnant woman from aborting in order to provide fetal tissue to a particular recipient. Does removal of a particular motivation for abortion interfere with or burden the fundamental right to terminate pregnancy?

The argument is strong that it does. *Roe v. Wade*[142] appears to create a right to terminate pregnancy regardless of the woman's motive for the abortion. While the Court emphasized a woman's interest in avoiding unwanted children as the underlying value or interest at stake in the abortion decision, it imposed no limits on her right to terminate based on her reasons for choosing to abort.[143] The clear implication is that a pregnant woman's motive in ending her pregnancy is irrelevant, and that state laws that conditioned abortion on particular motivations would be invalid.[144] Dislike of pregnancy and children, vanity, personal convenience or sheer malice may all motivate a woman in deciding to terminate pregnancy. A legal right to end pregnancy in order to obtain tissue for transplant thus follows.

If this reading of *Roe* is correct, then prohibiting a pregnant woman from aborting to provide fetal tissue by denying her the right to designate a donor, or to donate to a relative, is invalid absent a compelling state interest for this interference with the abortion decision.[145] Clearly, the goal of preventing abortions or protecting fetuses from degradation would not suffice as compelling state interests because the woman's right to devalue the fetus relative to other values is protected. Nor would preventing her from being coerced or pressured into aborting for a family member suffice either, because there are less restrictive ways of protecting her autonomy without banning all abortions to produce tissue.[146] A

142. 410 U.S. 113 (1973).

143. *Id.* at 155.; *see* Robertson, *supra* note 49.

144. An inquiry into motive for aborting a pregnancy would, in any case, be difficult to enforce because a woman could easily lie about her motives for the abortion, claiming that her purpose was to avoid the gestational burdens that pregnancy invariably involves. *But cf.* MO. REV. STAT. § 188.036 (1988).

145. The point is quite subtle, because the woman who may not designate the recipient is still free to abort. Also, the woman has no inherent right to dispose of fetal tissue or designate the recipient. Yet denying this right could interact with the abortion decision by limiting her autonomy over that choice. An analogy would be a law that required all profits from publication of sexually explicit, but nonobscene, films and books go to charity to help abused women. Although one could still publish such material, the incentive to do so is lost if profits cannot be made. Since motivation in publishing protected material is irrelevant to its legitimacy, such a ban would be unconstitutional. Similarly, a ban on designating the recipient of fetal tissue should also be unconstitutional, because it interferes with a motive for abortion, even though it does not prohibit the abortion per se, anymore than publication of the sexual material is prohibited per se.

146. Doctors have developed such techniques for recruiting family members for kidney trans-

ban on research use of aborted fetuses, enacted to prevent abortions done to obtain fetal tissue, would thus appear invalid.

b. *Interference with the Right to Conceive*

If the state could not ban abortion to produce fetal tissue when the woman is already pregnant (either directly or by banning intrafamilial or donor designation of fetal tissue recipients), could it nevertheless ban conception and pregnancy undertaken to procure tissue for transplant? To pursue that goal, it would have to fashion a law that banned only conceiving for that purpose, because, as argued in this Article, the woman's right to abort to produce tissue—once pregnant—is protected.[147] Would a precisely drafted law that penalized only conception to procure tissue for transplant, and not the abortion itself, be valid?

The validity of such a law would depend upon whether a woman has a right to initiate a pregnancy in order to produce fetal tissue for transplant by abortion. Judicial recognition of such a right would depend on several factors, including whether the parties are married, the woman's relationship to the intended recipient, and whether conception occurs coitally or noncoitally.

A strong argument for such a right (and against such a law) would arise in the case of a married couple that conceives to produce tissue for one of the partners, their offspring, or parents. The Supreme Court has been so protective of the sexual privacy of married couple that any restriction on marital conception would probably be subject to the strictest scrutiny.[148] Preventing fetuses from being treated as "mere means," or protecting women from the physical and symbolic effects of being a "tissue farm" would not seem substantial enough to justify the intrusion on the couple's sexual privacy.[149]

The Court is more likely to uphold a law directed against coital conception by unmarried persons for tissue procurement purposes. The key

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plants. They interview the potential donor and if they find that he has been pressured or is reluctant to donate, the physicians then inform all parties that the donor is excluded on medical grounds.

147. A ban on donor designation of recipients or on intrafamilial donation would not achieve the purpose of banning only conceiving to procure tissue for transplant because it would also ban *abortions* to procure tissue for transplant. Drafting and implementing such a law would, therefore, be difficult. *But cf.* MO. REV. STAT. § 188.036 (1988).

148. *See, e.g.*, Griswold v. Connecticut, 381 U.S. 479 (1965); Robertson, *Procreative Liberty and the Control of Conception, Pregnancy and Childbirth*, 69 VA. L. REV. 405 (1983).

149. No doubt the married couple's privacy would be protected even if conception occurred noncoitally.

is whether the Court would recognize a fundamental right of heterosexual sexual privacy. If it did, unmarried coitus would presumably be protected to the same extent as marital sex, whatever the motivation (and result) of the coitus. If unmarried coitus were not constitutionally protected, then the state could prohibit unmarried sexual intercourse performed with any motivation, including a desire to produce fetal tissue for transplant. Given the Court's restrictive view of sexual privacy in *Bowers v. Harwick*,[150] one cannot be confident that laws against conception by unmarried persons for transplant purposes would fall.

What then about noncoital conception to produce fetal tissue by a woman not married to the intended recipient or source of sperm? The right asserted here is not sexual autonomy per se, but the right to control one's body and reproductive capacity. The Court's decisions concerning birth control and abortion, however, have not been based on a general right to control one's body or reproductive capacity. Even though unmarried persons have a right to avoid conception and gestation, or to carry a pregnancy to term once they have conceived, it does not follow that single persons have a right to conceive in order to go to term, or conceive in order to abort.[151] If confronted with the question, the Court is more likely to reject rather than recognize such a right.

Yet even restrictions on unmarried conception might be vulnerable to attack if the woman is artificially inseminated to provide fetal tissue for a sibling, a parent, a child or herself. Protection of one's own health and family autonomy would then be added to the claim of a right to control one's body and reproductive capacity. Given the blurry contours of family autonomy, courts may well recognize the right to conceive when the intended recipient is the woman's child, parent or sibling, the woman herself, or the intended recipient has provided the sperm to produce the fetal tissue in question.[152] By contrast, a woman unrelated to the recipi-

150. Bowers v. Hardwick, 478 U.S. 186 (1986), upheld a state sodomy statute applied to homosexual activity on moral grounds alone, because homosexuals did not have a fundamental right of sexual privacy. Although *Bowers* dealt with homosexual rights, it hardly reassures persons who claim a right to heterosexual privacy outside of marriage. It may be that courts will also decline to apply strict scrutiny to fornication and sodomy laws applied to heterosexuals, thus allowing the enforcement of particular moral views to satisfy the rational basis test courts use for legislation that does not interfere with fundamental rights.

151. *See* Robertson, *supra* note 148, at 416-17.

152. While the Court has extended the notion of family privacy in the context of zoning restrictions, Moore v. City of East Cleveland, 431 U.S. 494 (1977), and decisions to marry or raise children, Zablocki v. Redhail, 434 U.S. 374 (1978), it is difficult to predict how it would treat the novel question presented here. In any event, in the absence of laws specifically banning such conception,

ent probably could be barred from conceiving to produce fetal tissue that is not genetically related to the recipient.[153]

In sum, laws that prohibit the woman who aborts from designating the recipient of fetal tissue are invalid because they would prevent women from aborting to obtain tissue for transplant. In addition, they might infringe on the right of married couples to conceive as they will, and the possible right of family members to contribute tissue or organs from their body to save the life of a family member. However, arrangements to produce fetal tissue that is not genetically related to the recipient could be banned without interfering with fundamental *reproductive* rights.

c. *The Recipient's Right to Medical Treatment*

Even if laws against designation of donees, aimed at preventing abortion and becoming pregnant to produce fetal tissue, did not interfere with reproductive rights, they would still have to be tested against the recipient's right to receive essential health care. As we have seen, one can make a cogent argument for such a right when conception and abortion are necessary to obtain the fetal tissue essential to save the life or health of a sick patient.[154] The courts should then require that the state have a more compelling purpose than demonstrating respect for fetuses or preventing women from becoming "organ farms" if such interference with the life and liberty of sick patients is to be justified. Absent more compelling justification, such laws would be invalid.

The patient's right to health care would even cast doubt on laws that banned payments to women to get pregnant and abort. If family planning abortions did not meet demand for fetal tissue transplants or if histocompatibility became important, it might be essential to pay women to undergo conception and abortion in order to provide the needed tissue.

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the incest laws are not themselves a barrier to noncoital conception by a relative with the gametes of a family member in order to provide them or others with fetal tissue. Of course, artificial impregnation with the sperm of a family-related recipient or the relative of a recipient might raise powerful psychological feelings in the woman, the recipient or the sperm donor, and brush up against some of the policies behind incest and consanguineous marriage laws. The difference is that neither sexual intercourse, which incest laws ban, nor marriage and birth of offspring, which laws against consanguineous marriage aim to prevent, is occurring. *See generally* Coleman, *Incest: A Proper Definition Reveals the Need for a Different Legal Response*, 49 MO. L. REV. 251 (1984).

153. States could ban such practices because conceiving to produce fetal tissue that is not genetically related to the recipient presumably does nothing to further one's own health or family autonomy. States may thus be able to stop programs that rely on nonrelated women to produce fetal tissue for transplant without violating *reproductive* freedom.

154. *See supra* notes 137-39 and accompanying text.

Laws banning payment would then interfere with the life or liberty of recipients, and should be tested by a stricter scrutiny than if the effect on recipients were marginal. With such serious deprivations, symbolic concerns about commodification or denigration of human dignity might be found to be an insufficient justification for such laws.[155]

Even if payments to donors are not necessary to procure tissue, fees paid to for-profit agencies organized to retrieve and process fetal tissue from aborted fetuses may be. Statutes banning the sale of fetuses may be worded in ways that would prevent for-profit firms from charging the profit that is essential for them to operate in this field.[156] If they did have that effect, however, and nonprofit firms did not fill the gap, the courts should apply the same rigorous scrutiny in determining the constitutionality of the law they would apply to any restrictions that deprived recipients of the tissue transplants necessary for their health.

VI. Federal Research Funding and Regulation of Fetal Tissue Transplants

Federal regulations and federal funding policies for human subject research will play an important role in the development and diffusion of fetal tissue transplants. Federal research regulations will have a strong influence on fetal tissue procurement and research practices far beyond research that is directly funded by the federal government.[157] In addition, as a major player in biomedical research, federal funding may be essential for the research necessary to perfect tissue transplants.

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155. These concerns might not amount to a compelling state interest because they are moralistic concerns over which reasonable people widely disagree. In general, symbolic or moralistic concerns do not trump fundamental rights. The same argument could be made against federal and state laws that prohibit sale of organs. *See supra* notes 93-94. The constitutionality of laws against organ sales has not yet been challenged, perhaps because the lack of organs for transplant is due to considerations other than the lack of financial incentives to motivate donors. *See* Robertson, *supra* note 67, at 80.

156. A statute that banned all "commercial use" of aborted fetuses, such as exists in Nevada, would arguably prevent for-profit firms from processing and distributing fetal tissue for profit. NEV. REV. STAT. § 451.015 (1985). The benefits to patients of for profit operations, however, may clearly outweigh the symbolic gains of not sanctioning any commercial operations with fetal tissue. After all, physicians are paid to perform abortions. *See supra* notes 93, 101-06 and accompanying text.

157. This is because institutions that receive federal funds generally must comply with federal research regulations even if the research itself is not federally funded. 45 C.F.R. § 46.201-211 (1987). Also, such regulations have great influence, and are likely to be followed even when not legally obligatory.

A. *Current Federal Regulations for Fetal Research*

In 1975, in the aftermath of *Roe v. Wade* and great controversy over fetal research, Congress created the National Commission for Protection of Human Subjects of Biomedical and Behavioral Science Research to advise on policy for research with fetuses and other human subjects.[158] Its recommendations for federally funded fetal research were promulgated in 1976 as regulations[159] that specify additional duties of institutional review boards "in connection with activities involving fetuses [and] pregnant women."[160]

While these regulations focus on research with live fetuses that have been or were intended to be aborted, one provision addresses the use of dead fetuses in research. That provision states: "Activities involving the dead fetus, macerated fetal material, or cells, tissue, or organs excised from a dead fetus shall be conducted only in accordance with any applicable state or local laws regarding such activities."[161]

A striking feature of this regulation, which is still in effect, is that it implicitly rejects the arguments against fetal tissue research canvassed in this article. Research with dead aborted fetuses may be conducted as long as state or local law permits it. With a few exceptions, state or local law permits research with aborted fetuses when the mother consents. Indeed, most states currently permit even research with fetuses conceived and aborted to obtain tissue for transplant.[162]

Other provisions of the regulations restrict the circumstances of fetal tissue procurement. They require that:

> (3) Individuals engaged in the activity will have no part in: (i) Any decisions as to the timing, method, and procedures used to terminate the pregnancy, and (ii) determining the viability of the fetus at the termination of the pregnancy; and
>
> (4) No procedural changes which may cause greater than minimal risk to the fetus or the pregnant woman will be introduced into the procedure for terminating the pregnancy solely in the interest of the activity.
>
> (b) No inducements, monetary or otherwise, may be offered to terminate pregnancy for the purposes of the activity. . . .[163]

158. National Research Act, Pub. L. No. 93-348, § 202(b), 88 Stat. 342 (1974).

159. 45 C.F.R. § 46.201-211 (1987).

160. National Commission for Protection of Human Subjects of Biomedical and Behavioral Research, Report and Recommendations: Research on the Fetus. 45 C.F.R. § 46.205 (1987).

161. 45 C.F.R. § 46.210 (1987).

162. *See supra* notes 108-20 and accompanying text.

163. 45 C.F.R. § 46.206(3),(4) (1987).

These restrictions are typical of the protections recommended by other commentators and advisory bodies for fetal procurement, and generally are sound.[164] However, some potential problems should be noted. A restrictive interpretation of "inducement" could prevent any discussion with a pregnant woman prior to a decision to abort of her right to donate fetal remains even though she might seek such information.[165] If changes in the timing or method of abortion become necessary to procure viable tissue, the regulations would prevent obtaining the tissue, even though the woman freely consented and the changes did not so increase the risk to the mother or to the fetus as to be ethically unacceptable.[166] Finally, there are limitations on who may request such changes, which could block access to fetal tissue.[167] If such provisions become barriers to obtaining fetal tissue, they should be reexamined to assure that they are ethically justified.

B. Federal Funding of Fetal Tissue Research and Therapy

While existing federal regulations permit transplants with tissue from aborted fetuses, the question of whether the federal government should

164. *See supra* notes 77-89 and accompanying text.

165. Providing her with the requested information may be prohibited because it might serve as the motivating factor in deciding to have an abortion. But this interpretation of "inducement" should be rejected. *See supra* note 81.

166. *See supra* notes 84-89 and accompanying text.

167. The question here is whether the person requesting permission for the abortion or consent to donation could request the woman to postpone the timing or change the method of abortion in order to procure viable tissue for transplant. The answer to this question depends upon the interpretation of the term "activity" as used in 45 C.F.R. § 46.206 (1987).

If the "activity" is the use of the donated tissue for research, then the person requesting permission for abortion and donation is not, strictly speaking, "engaged in the activity" and could make the request. This interpretation views the tissue recipient as the subject of research and not the fetus that is aborted or the pregnant woman.

On the other hand, if the "activity" is the abortion producing the fetal tissue, then even a person on the staff of the abortion facility who does not request consent to or perform the abortion may be unable to request such changes from the woman. So restrictive an interpretation would mean that no such requests could ever be made unless proposed by the woman undergoing the abortion. Such an interpretation should lead to a reevaluation of the policy behind the regulation. If concerns about risk are met, and there is no threat of undue influence or making access to abortion contingent on consent to postponement or a riskier method, then it is not clear what is gained by such a restrictive interpretation of the regulations—other than blocking access to fetal tissue.

It appears that the Office of Protection of Research Risks (OPRR), which is the main implementing agency of these regulations, takes the position that the woman and fetus that is going to be aborted are the subject of the activity. However, it is not clear that the OPRR would find that personnel at the abortion facility are barred from proposing such changes to a woman who has already agreed to undergo an abortion.

fund fetal tissue research nevertheless remains.[168] A special panel was recently convened by the National Institutes of Health (NIH) to advise the Assistant Secretary for Health on whether research programs involving fetal tissue transplants should be supported within or without NIH.[169] The panel recommended support for such research, with restrictions on tissue procurement comparable to the existing federal regulations.[170]

The question of federal funding of fetal tissue research merely repeats the issues discussed earlier in this article. Because funding decisions ordinarily to not interfere with or infringe constitutional rights, the government is not obligated to fund fetal tissue research (or therapy), no matter how desirable it appears.[171] As the NIH panel found, however, the arguments strongly favor funding of such research. Of overriding importance is the potential benefit to thousands of patients suffering from severe disease. Federal research funding may be necessary to develop new therapies, such as fetal tissue transplants, to treat those diseases. Federal funding will also allow the government to play a more active oversight role than if it leaves the field entirely to private funding, as occurred with *in vitro* fertilization research.[172]

The arguments against federal research funding come from right-to-life groups that would remove the federal government entirely from any financial support of abortion in the United States. They fear that federal financing of fetal tissue research will place an imprimatur of legitimacy on abortion, and encourage abortion in subtle or even direct ways.

The NIH panel found that the abortion producing fetal tissue for transplant research is sufficiently independent of research with that of fetal tissue that federal funding of abortion may occur without implicating the government in abortion. Fears that research with tissue from family planning abortions will legitimize abortion or retroactively impli-

168. The federal government has funded research with fetal tissue for many years. Last year, for example, $12,000,000 of such research was funded. It is only the prospect of fetal brain transplants that has led to the concern about funding of such research, perhaps because of the greatly increased demand for fetal tissue that is foreseen.

169. Kolata, *Federal Agency Bars Implanting of Fetal Tissue*, N.Y. Times, April 16, 1988 at 1, col.5.

170. Specter, *Fetal Tissue 'Acceptable' for Research*, Washington Post, Sept. 17, 1988, at 1, col. 3.

171. The United States Supreme Court made this clear in finding that governmental refusal to fund abortions for the indigent did not violate their constitutional rights. *See supra* note 135.

172. By funding no IVF research the federal government has left the field to private sector actors, who are free to research as they wish without any federal oversight.

cate the government and recipients in the abortion itself are too speculative to justify foregoing the potential benefits of fetal tissue transplant research.[173]

One can make the same arguments for funding research even when pregnancy and abortion have occurred for the purpose of producing tissue for transplant. Such a decision would, of course, be politically and ethically more controversial. If the need were established, however, the government could still fund the resulting research without also funding the abortion that makes the research possible, though arguments that the government is too closely implicated in such abortions will be strongly voiced.

If the politics of abortion lead to withdrawal of direct government funding of research with tissue from family planning abortions, the government should continue to fund other unrelated research at institutions that conduct research with aborted fetal tissue with nonfederal funds.[174] While the government is free to so restrict its research funds, the symbolic gains of refusing to fund other medical research in institutions doing nonfederally funded research with aborted fetuses are too few to justify the burden on researchers. Surely at that point the government's link to abortion is too attenuated to claim any complicity in or encouragement of abortion.

Finally, the symbolic costs that arise when one considers federal support of fetal tissue research would also arise if fetal tissue transplants became a proven therapy for Parkinson's disease, diabetes or other diseases. While the government is not constitutionally obligated to fund a given therapy, the arguments for federal funding of treatment are even stronger than for federal funding of research, because the benefits to patients are clearer. A policy of denying Medicare or Medicaid funding for therapeutic procedures using tissue from induced abortions would deprive needy patients of essential therapies in order to avoid speculative concerns about governmental complicity and encouragement of abortion. A more prudent approach would be to fund all therapies that meet the general funding standards for these programs. At the very least, the gov-

173. *See supra* notes 27-39. A person opposed to abortion might reasonably conclude that the pro-life cause is set back only marginally, if at all, by government funding of research with fetuses aborted for reasons unrelated to tissue procurement. In any event, the government will not be funding the abortion that produces the tissue for transplant.

174. *See* Grove City College v. Bell, 465 U.S. 555 (1984). This case would permit the government to withold such funds if it chose.

ernment's funding policies should distinguish between therapies dependent on tissue retrieved from family planning abortions and those dependent on tissue from abortions performed to provide tissue for transplant.

VII. TISSUE RETRIEVAL FROM LIVE FETUSES

The analysis of fetal tissue transplants has assumed that the fetus is dead when the tissue is taken. This assumption is realistic because ninety percent of abortions occur in the first trimester by suction curretage, which invariably fragments the fetus, killing it in the process.[175] In some cases, especially when the abortion occurs later in the pregnancy and different abortion methods are used, fetuses may emerge alive, though nonviable, from the abortion procedure. Could tissue be taken (with the mother's consent) from such fetuses if other sources of viable tissue were not available?

Fetuses that are alive and separate from the mother are legal persons, and have all the rights of newborn infants even though their prematurity is the result of a legal attempt through abortion to cause their death. If they are viable, legally they must be kept alive and reasonable efforts made to resuscitate them.[176] If they are nonviable but still alive (e.g., have spontaneous heart and lung action, or are not yet brain dead), there is no legal obligation to resuscitate or to attempt to sustain their life.[177]

However, retrieving tissue or organs for transplant from nonviable living fetuses before their death is legally restricted. Federal regulations narrowly limit the activities that may be carried out on nonviable fetuses *ex utero*. A nonviable *ex utero* fetus cannot be a subject in an activity unless: (1) "vital functions of the fetus will not be artificially maintained," (2) "experimental activities which of themselves would terminate the heartbeat of respiration of the fetus will not be employed," and (3) the purpose is "the development of important biomedical knowledge which cannot be obtained by other means."[178]

Under this regulation, nonviable fetuses could not be artificially maintained until organs and tissue were removed, unless the purpose of the

175. Fine, *supra* note 5, at 5-6.

176. Commonwealth v. Edelin, 371 Mass. 497, 359 N.E.2d 4 (1976).

177. There may be a legal obligation to attempt to sustain their life if the brief continuation of their lives is in their interest. Terminally ill and inevitably dying patients still might have interests in having their lives prolonged, even though they cannot be prolonged for very long.

178. 45 C.F.R. § 46.209 (1987).

research was to enable fetuses to survive to the point of viability.[179] In addition, organs and tissue could not be harvested if the harvest procedure itself "would terminate the heartbeat or respiration of the fetus," and the removal of organs and tissue for experimental transplants was itself considered part of the "experimental activity."[180]

State homicide laws would also restrict tissue retrieval from nonviable *ex utero* fetuses until they were pronounced dead under normal heart-lung or brain dead criteria. Removal of tissue or organs before death would technically constitute murder, if the removal were the immediate cause of death. The burdens and benefits of amending the law should be considered when the need to retrieve organs and tissue from nonviable, *ex utero* fetuses is shown.[181] In any event, even though commentators sometimes do not distinguish between ethical objections to procuring tissue from live, nonviable fetuses and the quite different objections to obtaining tissue from dead fetuses, policy should clearly separate the two. Ethical and legal objections to taking tissue from live, nonviable fetuses do not apply when the aborted fetus is dead.[182]

VIII. POLICY ISSUES IN DISTRIBUTING FETAL TRANSPLANTS

Resolution of the ethical issues that arise in fetal tissue procurement is essential for research to proceed with fetal tissue transplants. If supply side issues are solved and fetal transplants prove to be an effective therapy for Parkinson's disease, diabetes and disorders of the blood and immune system, difficult demand side issues will then arise. These issues include the costs of such therapies, whether they should be financed with both public and private funds, and whether special qualifications should be required of physicians who offer fetal tissue transplants. If scarcity of

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179. Protocols for maintaining anencephalic newborns on respirators for seven days after birth in order to determine brain death for organ donation purposes thus would be prohibited, if the infant involved qualified as a fetus under the federal regulations. *See* Walters & Ashwal, *Organ Prolongation in Anencephalic Infants: Ethical and Medical Issues*, HASTINGS CENTER REP. Oct.-Nov. 1988 at 19.

180. See discussion of this point at *supra* notes 176-77.

181. Robertson, *Relaxing the Death Standard for Pediatric Organ Donations*, in ORGAN SUBSTITUTION TECHNOLOGY: ETHICAL, LEGAL AND PUBLIC POLICY ISSUES 69-77 (Mathieu ed. 1988).

182. However, problems may arise in determining brain death in a very premature infant. Uniform standards for determining brain death in such infants do not exist. Fine, *supra* note 5, at 6. The federal regulations define "dead fetus" as a "fetus *ex utero* which exhibits neither heartbeat, spontaneous respiratory activity, spontaneous movement of voluntary muscles, nor pulsation of the umbilical cord (if still attached)." 45 C.F.R. § 46.203(f) (1987).

viable tissue becomes a problem, important issues of allocation and distribution of fetal transplants will also arise.

Discussion of these issues is premature until more is known about the success of fetal tissue transplants for particular disorders. In any event, cost and scarcity issues are not unique to fetal tissue transplants. They would arise with any new treatment that could drastically improve the lot of millions of patients, and exist now with organ transplantation. The demand side, however, might affect the number of fetuses needed to serve patient needs, and thus cannot be ignored completely as long as abortion remains controversial.

IX. CONCLUSION

This survey of issues suggest that ethical and legal concerns should not bar research with fetal tissue transplants as a therapy for serious illness. Although many persons have ethical reservations about abortion, a wide range of opinion would likely support many research uses of fetal tissue, particularly when the abortions occur for reasons other than tissue procurement. In any event, constitutional status bars the government from banning all research and therapeutic uses of aborted fetuses, though it is not required to fund research or therapy with fetal tissue.

The use of fetal tissue inevitably implicates the strong feelings that abortion engenders. The disparate issues raised, however, can be treated separately, so that ethical concerns and the politics of abortion do not impede the progress of important research. For example, transplants with fetal tissue from family planning abortions do not necessarily entail approval of pregnancy and abortion undertaken to produce tissue for transplant. Nor will recognition of the mother's right to donate fetal tissue inherently cause fetuses to be bought and sold, or women to be paid to abort.

In the final analysis, fetal tissue transplants raise questions of symbolic costs as much as questions of rights. The symbolic costs involved in using fetal tissue to cure serious disease cut in many directions. Sorting out the symbolic and rights-based concerns about fetal tissue transplants will help to respect both important ethical values and progress in medical science.