Special Section: The Power of Choice:
Autonomy, Informed Consent, and the Right to Refuse

# *Gamete Retrieval after Death or Irreversible Unconsciousness: What Counts as Informed Consent?*

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The first reported case of postmortem sperm retrieval occurred in 1978, involving a man who became brain dead after a motor vehicle accident and whose wife requested removal of his sperm so that she could be artificially inseminated. Physicians performed the retrieval by surgically excising the ducts that transport sperm from the testes (the epididymis and vas deferens) and removing sperm from them.[1] Since that time, several other methods for retrieving sperm from such patients have been reported,[2] and at least 141 cases have been documented in which requests were made for removal of sperm from men who were dead or irreversibly unconscious.[3] Moreover, there have been several reports of pregnancies and births resulting from assisted reproduction using sperm retrieved in such cases.[4]

Although gametes might be removed from dead or irreversibly unconscious patients for nonprocreative purposes, such as research, this paper focuses on cases in which the intent is procreative. To date, all cases of such gamete removal have involved male patients, but in the future it might be possible to remove and use oocytes or ovaries of women who have died or become irreversibly unconscious.[5] In this paper, most of the discussion deals with sperm retrieval because this is the type of case currently being confronted. However, the views I defend apply to cases involving oocyte or ovary retrieval as well.

Although the issue of sperm removal after death or irreversible unconsciousness has been discussed in a number of publications, many of which are cited herein, an important topic that has received little attention is the question of what counts as ethically acceptable consent by the man. In some cases, the claim has been made that the man verbally stated a desire to have his sperm removed after death or irreversible unconsciousness, but he had made no written statement documenting this. An example is the case of the British couple Stephen and Diane Blood. Following several years of marriage, they began trying to have a child. Two months later, Stephen became ill with bacterial meningitis and became comatose with no reasonable chance of recovery. Diane requested that Stephen's sperm be retrieved. She stated that she and her husband had read an article about a widow who became pregnant with her dead husband's sperm, and they decided they would do the same in similar circumstances. The physicians removed the sperm and froze it.[6] However, the Human Fertilisation and Embryology Authority refused to grant a license to store the sperm and use it for insemination on the grounds that the Human Fertilisation and Embryology Act 1990 requires a man's written consent for

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storage of his sperm.[7] Such cases raise the issue of whether, if informed consent is an ethical requirement, it must be stated in writing. What counts as the man's informed consent, and what counts as sufficient evidence of consent? These questions are the main focus of this paper.

Before discussing these questions about consent, I should acknowledge that some deny that these questions need to be addressed. This denial derives from two distinct sources. Some would argue that conceiving a child after death or irreversible unconsciousness is not ethically justifiable, regardless of whether the man gives informed consent for sperm removal. In this view, a resolution of the overall issue is obtained without worrying about what counts as informed consent. Others maintain that the man's consent is not necessary for the ethical justifiability of sperm removal. In this view, consent by the wife, or perhaps in some cases consent by another surviving relative or significant other, is sufficient to justify sperm removal, and thus the issue of what counts as the man's informed consent is not a central problem. Given these views, it is necessary to make some preliminary remarks with the aim of showing that these views are mistaken and that it is important to discuss what counts as the man's informed consent.

## Reproduction after Death or Irreversible Unconsciousness

Against those who maintain that procreation following death or irreversible unconsciousness is not ethically justifiable, the main reply is to point out that there are important reasons to respect the freedom of persons to engage in such procreation. Because this reply has been discussed elsewhere, I shall only summarize the main points here.[8] Freedom to pursue ordinary procreation, by which I mean the more common form of procreation in which a couple conceives through sexual intercourse and then raises the child who is born, is worthy of respect not only because freedom in general is important but also because of the special meanings that persons can attach to having genetic children. It turns out that some of these special meanings can be found in procreation following death or irreversible unconsciousness. In particular, some couples might value such procreation because it involves participation in the creation of a person or because they regard it as an affirmation of mutual love and acceptance. Admittedly, a desire or plan to procreate after one dies or becomes irreversibly unconsciousness would not play as important a role in one's life as procreation in the ordinary context. Even so, decisions to attempt procreation after death or irreversible unconsciousness can be meaningful to some persons for the reasons mentioned. Moreover, for the surviving wife, such procreation could have a significance that is comparable to that of procreation in the ordinary context. These considerations lend support to the idea that freedom to procreate following death or irreversible unconsciousness deserves at least some degree of respect.

A main objection to this type of procreation is that it would be harmful to the child to bring it into being with only one parent to provide nurture and support. In reply, there is a serious problem with this objection. Namely, the objection focuses exclusively on harms to the child, without consideration of benefits to the child. It makes this mistake because it overlooks the fact that without the procreation, the child would not exist. If one holds that bringing a child into being in a single-parent household can result in harms to her, then

one must also hold that bringing a child into being into a single-parent household can result in benefits to her. It would be arbitrary to make one claim but deny the other. In assessing the objection, it is necessary to consider the benefits as well as the harms. And there would be benefits in these cases. After all, the procreation gives the child a life. Life generally is a good thing. One can expect that the child will experience pleasures associated with being alive and that she will have many good experiences. It is reasonable to expect that the benefits will outweigh the harms—that the child will have a good life on balance. If the child benefits on balance, then no wrong is done in creating her, at least as far as harms and benefits are concerned.

## Is the Patient's Consent Needed?

Some believe that it can be ethical to remove sperm without the man's consent, as is evident from the fact that such retrieval has been performed in a number of cases.[9] In reply, it can be argued that consent is required—that it is wrong to use the gametes or preembryos of persons for procreation without their informed consent. This principle can be illustrated using the well-known cases at the infertility clinic of the University of California, Irvine. Preembryos were transferred to recipient infertile women without the knowledge or consent of the couples who were progenitors of the preembryos. In some cases, these transfers resulted in the births of children.[10] There was uniform agreement among commentators that this use of the preembryos was wrong.[11] An important reason against such use of gametes and preembryos is that respect for persons requires that we give due regard to the special significance that procreation can have for persons. The potential significance to persons of decisions to procreate were discussed above. In addition, there are reasons why freedom *not* to procreate is valuable to persons. One is that it permits people to avoid having children when the rearing circumstances would, in their view, be undesirable. It is understandable that some of the Irvine progenitor couples might not have wanted their offspring to be reared by others. Similar considerations might apply to procreation after death or irreversible unconsciousness. Some men might be opposed to creating a child when they would be unable to contribute to rearing.[12] Because of these considerations, respect for persons requires that we allow individuals to make their own reproductive decisions. Using persons' gametes or preembryos for procreative purposes without their concurrence violates their right not to procreate and fails to treat them as ends in themselves.

A possible objection is that a wife has special standing that gives her grounds to use the man's sperm if his wishes are unknown. It might be claimed that marriage and procreation go hand in hand, and unless the man had explicitly refused such use of his sperm, marriage carries with it the expectation that the wife is entitled to use his sperm. In reply, we should reject this argument because there does not appear to be any basis for this supposed right of the wife's. There is no explicit statement addressing this in the wedding vows,[13] nor is it implied by the marriage agreement. The fact is, marriage and procreation do not always go together. Spouses sometimes disagree over whether to have children, when to have them, and how many to have. To claim that a wife's right to sperm retrieval without the man's consent is implied by the wedding contract amounts to saying that such entitlement is part of our widely

held expectations concerning what is involved in getting married. But sperm retrieval after death or irreversible unconsciousness is too new and unusual for it to be reasonable to say that there is a widely held expectation that the wife has a right to the sperm in such scenarios.

It has been argued that when the man is irreversibly unconscious, the wife should have access to his sperm. Gladys White has pointed out that when the man is dead, the wife is free to remarry. However, when the man is irreversibly unconscious, the wife remains married unless she obtains a court order establishing otherwise. A wife in this situation might choose not to get a divorce; yet, a conjugal relationship with her husband would not be possible. White stated that she sees no reason why the wife in such circumstances should be denied an opportunity for pregnancy using her husband's sperm.[14] In reply, as I argued above, removing sperm without his consent would fail to give him the respect owed to persons and, specifically, would violate his right not to procreate. The situation White described is tragic, but there is no basis for the view that being married makes the wife's desire override the respect owed to the man.

These considerations support the view that the man's consent is an ethical requirement.

## What Counts as Informed Consent?

I have argued that sperm retrieval after death or irreversible unconsciousness can be justifiable provided there is ethically acceptable consent by the man. However, there is additional controversy. In discussions of sperm retrieval after death or irreversible unconsciousness, different commentators seem to mean different things by the expression "explicit prior consent." For example, I have used the term to mean "written or verbal consent that the man gives to health care professionals."[15] By contrast, other commentators consider a written statement by the man—an advance directive—that is presented to physicians after death or irreversible unconsciousness to constitute consent.[16] One reason it is valuable to discuss relatively exotic issues like postmortem sperm retrieval is that doing so sometimes leads us to reexamine basic assumptions. In particular, this disagreement over the meaning of the term suggests that we need to examine the question of what counts as explicit prior informed consent.

To address this question, let us consider the following scenarios, which represent different ways information about the man's wishes concerning sperm removal after death or irreversible unconsciousness might be communicated to the physicians.

***Scenario 1.*** Voluntary consent is given orally by the man directly to the physician who will perform the sperm retrieval. This occurs after the physician explains, and the man understands, the risks (such as the possibility of viral transmission or poor sperm quality), benefits, alternatives, and other implications. The man specifies the intended recipient of the sperm. This type of scenario might occur if, for example, the man is near death and too ill to produce sperm on his own. Two versions of this scenario can be distinguished: (a) The man signs a written consent form that documents all of this, and the physician places the form in the medical record. (b) The physician documents all of this by entering a note in the medical record.

***Scenario 2.*** Voluntary consent is given orally by the man directly to a physician, but not the one who will perform the sperm retrieval. This occurs after the physician explains, and the man understands, the risks, benefits, alternatives, and other implications. The man specifies the intended recipient of the sperm. Again, two versions of this scenario can be distinguished: (a) The man signs a written consent form that documents all of this, and the physician places the form in the medical record. (b) The physician documents all of this by entering a note in the medical record.

***Scenario 3.*** A written, signed, notarized statement is made by the man, expressing his wishes to have sperm removed after death or irreversible unconsciousness and stating the intended recipient. This statement is presented to the physician after the man is dead or irreversibly unconscious.

***Scenario 4.*** The wife and other family members report conversations with the man in which he stated he would want sperm removal after death or irreversible unconsciousness so that his wife could become impregnated. There are several reports by different persons, which are in agreement and corroborate each other. The man did not make a written statement.

***Scenario 5.*** The wife states that her husband said he would want sperm retrieval after death or irreversible unconsciousness so that she could be impregnated, but no one else can corroborate this.

***Scenario 6.*** The wife states that it was never discussed, but she is sure her husband would want sperm removal.

Let us ask in which of these scenarios it would be reasonable to say there is explicit prior informed consent. Scenarios 1a and 1b represent paradigms of informed consent. There is direct communication between the patient and the physician who will perform the procedure. There is a meeting of minds between them. The patient is adequately informed and voluntarily consents. Calling this a paradigm is based on the idea that informed consent is properly regarded as a relationship involving understanding and agreement between the health professional who is performing a certain action (such as a medical procedure) and the patient on whom the action is performed. In this example, all of the elements of the relationship are fulfilled. Scenarios 1a and 1b differ only in the manner in which informed consent is documented.

We can think of the remainder of the scenarios as presenting a casuistry of consent. We can ask how far away from the paradigm of scenarios 1a and 1b can we move and still have explicit prior informed consent.

What about scenarios 2a and 2b? What is missing here is a direct communication between the patient and the physician who performs the procedure, but the other elements of the paradigm are present. The man is adequately informed and voluntarily states that he wants the sperm removed. I am inclined to say that scenarios 2a and 2b also should be regarded as involving explicit prior informed consent. Generally, in current medical practice they would be regarded as such. The physician who performs a medical procedure is not always the one who obtains informed consent. Often this is delegated to another physician, perhaps a resident, or to a nurse. These scenarios are close enough to the paradigm to be reasonably regarded as constituting explicit prior informed consent, assuming the patient is adequately informed by the person obtaining consent.

In scenario 3 there is a written advance directive, but two important elements of the paradigm are missing. First, there is no meeting of the minds—no

agreement—between the patient and any physician. Second, the patient does not receive information that is necessary for consent to be *informed*. There can be no agreement or informing because the line of communication is one-way; the physician receives information created by the patient, but the patient receives no information from the physician. Because there is no agreement between the patient and any health professional, it is questionable to characterize this scenario as one in which consent is given. Instead, it would seem more appropriate to regard this scenario as one in which the concept of substituted judgment would be applicable. If one were to use substituted judgment, one would ask whether it is reasonable to believe the man would consent if somehow he were adequately informed and able to tell us what he wants. To answer this question, one would look at the available evidence, which would include the man's written statement as well as any information about his wishes that might be forthcoming from the man's family and friends. If the evidence supported the view that the man would give informed consent if somehow he were able to do so, then it would be reasonable to hold that the consent requirement defended in the previous section of this paper is satisfied. This approach involving substituted judgment is better described as deciding whether it is reasonable to *infer* the man's informed consent, rather than being a case in which he gives explicit prior informed consent. These considerations support the view that an advance directive is not the same thing as informed consent. It is worth noting that, in cases involving other types of advance directives, such as living wills, courts in the United States generally have not regarded such directives as constituting informed consent. Rather, courts have tended to regard living wills as evidence used in making substituted judgments about withholding life-preserving treatment from now-incompetent patients.[17]

Scenario 4 also involves substituted judgment, not explicit prior consent. Here there is no written statement by the man, but there is information provided by family and friends concerning the man's verbal statements about retrieving his sperm. Again the question is whether it is reasonable to infer that the man would give informed consent if he were able to do so. Similarly, scenarios 5 and 6 do not involve explicit prior consent, but raise the question of whether it is reasonable to infer the man's consent.

Not only has the term "explicit prior consent" been used differently by different authors, but there has been disagreement over whether it is ethical to retrieve sperm in the absence of "written consent." In the case of Stephen Blood, the Human Fertilisation and Embryology Authority refused to authorize posthumous storage and use of his sperm because he had not given prior written informed consent.[18] Similarly, some medical institutions in the United States require the man's "written consent" for sperm retrieval after death or irreversible unconsciousness.[19] Other health care facilities allow such retrieval without written consent if there is reasonable evidence the man would have wanted to have his sperm harvested for the purpose in question.[20] These conflicting approaches raise the following question: What counts as sufficient evidence that the man would want his sperm retrieved to make it ethically justifiable to extract it?

Again let us refer to the scenarios listed above. In which of these scenarios is the evidence that the man would want retrieval sufficiently strong to make it ethical to remove his sperm? With regard to scenarios 1a, 1b, 2a, and 2b, it seems clear that there is sufficient evidence. The man gives consent directly to

a physician, and this is documented in the medical record. It is worth noting that although there is sufficient evidence in scenarios 1b and 2b, in neither is it true, strictly speaking, that there is "written consent"—the man does not write or sign anything. In scenario 3, where there is a written advance directive, it is necessary to apply substituted judgment. The man's written document would seem to constitute sufficient evidence concerning his wishes, unless the content of the document is unclear or is contradicted by other evidence. For example, it is possible that a family member or friend might claim that the man changed his mind after he had signed the document or that if he had known certain key information he would not have signed. In the absence of such conflicting evidence, it would be ethically justifiable to remove the man's sperm in scenario 3.

What about scenario 4? A main problem is that the persons providing evidence concerning the man's wishes have a conflict of interest. A surviving wife's claim about her husband's statements might be biased by her own interest in becoming pregnant. Other family members might also be biased by their own interests or the interests of the wife. Such bias tends to reduce the credibility of their statements. This raises the question concerning what standard of evidence should be used in attempting to infer the man's wishes. Perhaps the courts can be a source of moral guidance in this area. I would argue in support of the standard of clear and convincing evidence, which has been explicated by courts in contexts other than sperm retrieval after death or irreversible unconsciousness. Courts in the United States have held that this standard is appropriate when the individual interests at stake are both particularly important and more substantial than mere loss of money.[21] My discussion above concerning the importance of procreative freedom suggests that a person's interest in avoiding unwanted procreation is sufficiently important to warrant a standard of clear and convincing evidence in determining whether the person would want gametes removed after death or irreversible unconsciousness. Guidance can also be obtained from the courts concerning what counts as clear and convincing evidence. In the case of Nancy Cruzan, the Missouri Supreme Court held that a single conversation Nancy had with a friend concerning her desire not to be kept alive in a vegetative state did not constitute clear and convincing evidence. In contrast, the Court held that if Nancy had signed a Living Will, that would have constituted clear and convincing evidence.[22] Moreover, when additional friends came forward to testify that Nancy would not want to be kept alive in a vegetative state, a lower court held that the combined statements of these various friends constituted clear and convincing evidence.[23] These considerations can be applied to scenario 4, in which several family members make corroborating statements. We might imagine them agreeing on the details of what the man said and the occasions on which he said it. In that event, I believe that such statements could, in some cases, overcome the problem of bias and constitute clear and convincing evidence.

These considerations also help explain why the advance directive in scenario 3 counts as sufficient evidence of the man's wishes. In the absence of evidence contradicting it, an advance directive can reach the level of clear and convincing evidence.

In scenario 5, the problem with the credibility of evidence is more serious. Again, the wife who is providing evidence has a conflict of interest, but there

is no one who can corroborate her account of what her husband had said. One might try to get around the problem of bias in this case by asking whether there are independent grounds for inferring that the man would consent to retrieval. Is it plausible to infer, for example, that a married man with no children would agree to his wife's being impregnated with his sperm? In support of such an inference, one could point to the apparent strong desire of most married people to procreate. It could be claimed that most married men want to beget children with their wives. Many men want to have children who will carry on the family line after they die. Moreover, a man might agree to retrieval if he knew, somehow, that it is what his wife wanted. This conclusion is supported by the assumption, which seems reasonable at least sometimes, that a man would desire to promote the interests of his surviving wife. However, other considerations pull us in the opposite direction. Some men might not want to beget children in circumstances in which they would be unable to participate in rearing. Some might not want the family line to continue if they cannot influence the child's development. Because of these conflicting possibilities, there do not appear to be independent grounds for inferring that the man would consent. Any inferred consent would have to be based on specific statements that he had made.

Because the evidence concerning the man's statements comes from only one source and this person has a conflict of interest, the evidence does not appear to reach the level of being clear and convincing. Therefore, in scenario 5 we should not consider the evidence concerning the man's wishes to be sufficient to justify sperm retrieval.[24]

In scenario 6, the concept of substituted judgment is applicable, but there simply is no evidence upon which to base a substituted judgment. Sperm should not be retrieved.

## Conclusion

The above discussion allows us to state some necessary conditions for the ethical justifiability of sperm retrieval after death or irreversible unconsciousness. A main condition is that the man either gives explicit prior informed consent, as illustrated by consent scenarios 1a, 1b, 2a, and 2b, or it is reasonable to infer that he would give informed consent if he were able to do so, as illustrated in consent scenarios 3 and 4. When there is explicit or reasonably inferred informed consent, the reasons for valuing the man's freedom to procreate after death or irreversible unconsciousness become applicable. Another condition is that the woman designated by the man as the recipient of the sperm—typically the wife—also desires the sperm retrieval so that she can attempt to be impregnated. If she does not desire this, then the sperm should not be retrieved. When there is explicit or reasonably inferred informed consent from the man and informed consent from the woman, then the reasons for valuing her freedom to procreate become germane.

The views I have defended would also hold in cases involving removal of oocytes or ovaries for procreative purposes following death or irreversible unconsciousness. The reasons one could have for valuing procreation after death or irreversible unconsciousness would apply to women as well as men. Based on the arguments given above, procreation using a woman's oocytes after her death or irreversible unconsciousness is at least sometimes ethically

justifiable. Also, the woman's informed consent would be required for the ethical justifiability of removing and using her oocytes or ovaries for such purposes. Carrying out such actions without her consent would violate her freedom not to procreate and would fail to give her the respect owed to persons. In addition, the standards of evidence concerning the woman's consent would be the ones defended above.

There are a number of ethical issues concerning gamete retrieval after death or irreversible unconsciousness that are not discussed in this paper because of length limitations. This essay has attempted to identify circumstances in which it is ethically permissible to retrieve gametes after death or irreversible unconsciousness. This is distinct from identifying the circumstances in which a hospital should, as a matter of policy, permit gamete retrieval, or in which society should, through its laws, allow such retrieval. Even if retrieval is ethically permissible in a certain type of scenario, it is conceivable that a hospital, or society, might be able to defend a policy that does not allow such retrieval. However, ethical permissibility is addressed here because it is a basic question that must be answered before issues of policy can be addressed. The reader is referred elsewhere for a discussion of whether we should have policies that forbid gamete retrieval without explicit prior consent.[25] Discussions of the following issues can also be found in other sources: whether physicians have a duty to carry out such requests[26]; what the terms of the gamete storage agreement should be[27]; and whether the ethics of retrieval is altered when the patient and the woman who would become pregnant are not married.[28] In addition, a number of legal issues have been discussed, including the current legal status in the United States of consent to retrieval of gametes after death or irreversible unconsciousness.[29]

## Notes

1. Rothman CM. A method for obtaining viable sperm in the postmortem state. *Fertility and Sterility* 1980;34:512; Allen JE. Woman pregnant by sperm from corpse. *Associated Press Online*, REF5323 (July 16, 1998).
2. Other methods include epididymal aspiration, which involves inserting a syringe into the epididymal tubule without resecting the epididymis, and needle biopsy of the testis; for discussion of these methods see Marmar JL. The emergence of specialized procedures for the acquisition, processing, and cryopreservation of epididymal and testicular sperm in connection with intracytoplasmic sperm injection. *Journal of Andrology* 1998;19:517–26. Another approach involves rectal insertion of an electrical probe to induce ejaculation; see Townsend MF, III, Richard JR, Michael A, Witt MA. Artificially stimulated ejaculation in the brain-dead patient: A case report. *Urology* 1996;47:760–2.
3. One hundred thirty-one requests for posthumous sperm retrieval were reported in a survey discussed in Hurwitz JM, Macdonald JA, Lifschitz LV, Batzer FR, Caplan A. Posthumous sperm procurement: An update. *Fertility and Sterility* 2002;78(Suppl. 1):S242. Cases involving irreversibly unconscious patients have been reported in Ohl DA, Park J, Cohen C, Goodman K, Menge AC. Procreation after death or mental incompetence: Medical advance or technology gone awry. *Fertility and Sterility* 1996;66:889–95; Iserson KV. Sperm donation from a comatose, dying man. *Cambridge Quarterly of Healthcare Ethics* 1998;7:209–17; Andrews LB. The sperminator. *New York Times Magazine* March 28, 1999:62–5; Belker AM, Swanson ML, Cook CL, Carrillo AJ, Yoffe SC. Live birth after sperm retrieval from a moribund man. *Fertility and Sterility* 2001;76:841–3.
4. Anonymous. Woman pregnant by dead husband. *The Commercial Appeal*, Memphis, Tennessee 1998 Jun 28:A2; see note 1, Allen, 1998; Lota L. Baby born from dead father's sperm. *Associated Press Online*, REF5876 (March 26, 1999); see note 3, Belker et al. 2001:841–3; Anonymous. Diane

Blood gives birth to second son. *The Guardian* 2002 Jul 18, available at: www.guardian.co.uk/genes/article/o,2763,757083,00.html.

5. Women who are irreversibly unconscious could, in theory, receive superovulation drugs and have oocytes removed. These oocytes could either be frozen or fertilized and stored as frozen preembryos for future use. Approximately 100 infants have been born worldwide from cryopreserved oocytes; see Johnson K. Oocyte cryopreservation: Hope or hype? *Ob/Gyn News* 2004 Oct 15:19. Alternatively, ovarian tissue could be removed and slices of it cryopreserved for future use. The latter would be the more likely approach for women who are brain dead; see Finnerty JJ, Thomas TS, Boyle RJ, Stuart S, Howards SS, Logan B, Karns LB. Gamete retrieval in terminal conditions. *American Journal of Obstetrics and Gynecology* 2001;185:300–7. Technology for in vitro maturation of the follicles in ovarian tissue is not yet developed; see Smitz J, Cortvrindt R. In-vitro maturation of oocytes: Where do we stand? *Abstracts from 1st Congress on Ovarian Cryopreservation & Transplantation* 2003 Jun 27–28, Brussels, Belgium, available at http://www.rbmonline.com/issue/46 (last visited July 16, 2003).
6. Dyer C. Whose sperm is it anyway? *British Medical Journal* 1996;313:837.
7. Brahams D. Widow appeals over denial of right to husband's sperm. *Lancet* 1996;348:1164.
8. Strong C. Ethical and legal aspects of sperm retrieval after death or persistent vegetative state. *Journal of Law, Medicine & Ethics* 1999;27:347–58.
9. For example, 25 such cases were identified in a survey reported in Kerr SM, Caplan A, Polin G, Smugar S, O'Neill K, Urowitz S. Postmortem sperm procurement. *Journal of Urology* 1997;157:2154–8.
10. Kelleher S, Christensen K. Records show UCI egg misuse. *Orange County Register* 1995 May 19:1; Gianelli DM. Fraud scandal closes California fertility clinic. *American Medical News* 1995 Jun 19:1.
11. Jonsen AR, Macklin R, White GB. Assisted reproduction: A process ripe for regulation? A conference of the National Advisory Board on Ethics in Reproduction. *Women's Health Issues* 1996;6:117–21; Cohen CB. Unmanaged care: The need to regulate new reproductive technologies in the United States. *Bioethics* 1997;11:348–65.
12. For a discussion of other reasons for valuing freedom not to procreate, see Strong C. *Ethics in Reproductive and Perinatal Medicine: A New Framework*. New Haven, Conn.: Yale University Press; 1997:27–40.
13. Of course, we could imagine a modification to the wedding vows. The minister could say to the groom, "Do you take this woman to be your lawfully wedded wife, and do you promise to let her use your sperm if death do you part?" For those who like the idea of writing their own wedding vows, this might be something to keep in mind.
14. White GB. Commentary: Legal and ethical aspects of sperm retrieval. *Journal of Law, Medicine & Ethics* 1999;27:359–61.
15. See note 8, Strong 1999.
16. See note 14, White 1999:360; Soules MR. Commentary: Posthumous harvesting of gametes—A physician's perspective. *Journal of Law, Medicine & Ethics* 1999;27:362–5.
17. 49 A.L.R. 4th 812, at 814–15 (1986). See also *Cruzan v. Director, Missouri Department of Health*, 497 U.S. 261, at 279, where the Court states, "[A]n incompetent person is not able to make an informed and voluntary choice to exercise a hypothetical right to refuse treatment or any other right. Such a 'right' must be exercised for her, if at all, by some sort of surrogate."
18. See note 7, Brahams 1996:1164.
19. This is reported to be the policy at the University of Iowa and the Lahey Clinic. See note 5, Finnerty et al. 2001:304. What counts as written consent at the University of Iowa is not stated; the Lahey Clinic considers a notarized advance directive to count as "written consent."
20. This is the reported policy at the University of Michigan and New York Hospital/Cornell. See note 5, Finnerty et al. 2001:304.
21. *Santosky v. Kramer*, 455 U.S. 745, at 756 (1982).
22. *Cruzan v. Harmon* 760 S.W. 408, 424–5 (Mo. 1988) (en banc).
23. For a discussion of the Cruzan case see, e.g., Fletcher JC, Lombardo PA, Marshall MF, Miller FG, eds. *Introduction to Clinical Ethics*, 2nd ed. Hagerstown, Md.: University Publishing Group; 1997:165–7.
24. This implies that, for example, Diane Blood's statement concerning her husband's wishes, in the absence of corroborating statements, would not constitute clear and convincing evidence. Nevertheless, Diane received court approval to transport the sperm to Belgium, where she was impregnated with it. See note 4, Anonymous 1998:A2. She gave birth to a son Liam on

December 11, 1998. Subsequently she became pregnant again with her dead husband's sperm and gave birth to a second son Joel Michael on July 17, 2002, as reported by *The Guardian*, available at http://www.guardian.co.uk/genes/article/0,2763,757083,00.html (last visited November 21, 2004).
25. See note 8, Strong 1999:354–5.
26. Strong C, Gingrich JR, Kutteh WH. Ethics of sperm retrieval after death or persistent vegetative state. *Human Reproduction* 2000;15:739–45.
27. See note 26, Strong et al. 2000:743–4.
28. Strong C. Consent to sperm retrieval and insemination after death or persistent vegetative state. *Journal of Law and Health* 1999–2000;14:243–69, at 261.
29. See note 28, Strong, 2000:243–69.