2016

Ethical Implications of Posthumous Reproduction

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I was a posthumous child. My father's eyes had closed upon the light of this world six months, when mine opened on it. There is something strange to me, even now, in the reflection that he never saw me; and something stranger yet in the shadowy remembrance that I have of my first childish associations with his white grave-stone in the churchyard, and of the indefinable compassion I used to feel for it lying out alone there in the dark night.

Charles Dickens, David Copperfield, 1850

To be posthumously born—born after the death of a parent—is neither new nor usual. Throughout time, mothers have died delivering their children into the world and fathers have gone off to war and never returned. Though tragic and undoubtedly formative for the child, such upbringings are unplanned and unavoidable—the product of fate. To be *posthumously conceived*, however, is much rarer and has only been made possible by recent technological advances that allow long-term maintenance of egg, sperm, and embryos outside of the body, including in vitro fertilization and cryopreservation techniques. Posthumous reproduction differs from posthumous birth because the *conception* occurs after the parent's death, and the act is intentional rather than a product of fate—sometimes it is even planned for prior to death. This new and unusual reproductive method raises broad and complex social questions about the meaning of life and death, what motivates the surviving would-be parent to make such a request, what parenthood means to both parent and child, the ethics of bringing a child into the world, and the limits of ethical medicine.

The ethical implications of posthumous reproduction vary with the unique factors of a case: does it involve postmortem retrieval of gametes or stored tissue? Who is requesting the posthumous reproduction, and what is the nature of their relationship with the decedent (potential scenarios include romantic partner, family member, or stranger)? Did the decedent show any interest in procreating while alive, and what, if anything, do we know about their wishes after death? Is there either adequate informed consent by the deceased or does the act respect the deceased's wishes? Will posthumous reproduction fulfill the motivations and goals of the surviving partner? Are there protections for the best interests of the child? Are third parties like physicians adequately informed before they become involved?

These considerations will be addressed from the perspectives of key stakeholders implicated in posthumous reproduction. When a request for posthumous reproduction is made, first, we consider the interests of the deceased: what do we know about their reproductive goals and their

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J.M. Goldfarb (ed.), *Third-Party Reproduction: A Comprehensive Guide*,
DOI 10.1007/978-1-4614-7169-1_18,

wishes before and after death? Next we consider the point of view of the requestor, whether a romantic partner or other loved one, whose autonomy and reproductive interests may be linked to those of the deceased. The well-being of the resulting child, the only party unable to have some say in whether posthumous reproduction occurs, must be considered carefully, particularly given the child's inability to protect his or her own interests. Lastly, the third parties who are instrumental in the practice, including gestational carriers, physicians, and society, also play a role in whether such requests are honored. Our analysis focuses on the social, legal, and ethical context of the United States and, as such, is primarily rights based—premised on the idea that individuals are morally or legally entitled to certain things to be provided by society or other individuals and which often come with corresponding responsibilities or duties.

The Deceased

Decedents generally have two primary interests affected by posthumous reproduction: (1) controlling the affairs surrounding one's death and (2) reproduction and its unique significance to the individual.

Generally, as is demonstrated by customs and laws surrounding wills, we respect a deceased person's right to control certain postmortem events, including donation of organs, transfer of property, and naming of beneficiaries to an estate. We do so to protect the rights and interests of the decedent and his or her family, particularly the right to control how one will be remembered after death and "the opportunity to be the conclusive author of a highly significant chapter of his or her life"—to control the content and outlines of one's life [1]. Furthermore, social norms require broad respect for the *bodies* of the dead. We allow people to dictate, while living, whether they would like to donate organs or donate their bodies to science, and we place stringent limits on the use of the dead in research and medical education. Our respect for the dead is an extension of our respect for persons and our respect for bodily integrity arising from respect for individuals' autonomy and their right to be free from bodily invasion, as well as respect for the deceased person's memory and their loved ones. Posthumous reproduction raises fundamental questions about the special significance of reproduction, respect for persons, and respect for the dead.

Reproduction carries special significance for individuals and contributes significantly to their personal identities and their lives' meaning, whether they have or intend to have children or to remain childless. Ethicists have argued that ideally individuals should have liberty to decide whether and when to reproduce based on their own personal wishes and values about the meaning and responsibilities of parenthood and judgment about what circumstances are optimal for having and raising a family [2, 3]. Retrieving gametes from the deceased or the comatose is incredibly controversial when the deceased has not given prior consent, particularly because the procedure is not done for any type of medical benefit. Even though organ retrieval and cadaver donation also do not offer the deceased any medical benefit, they require consent. And while autopsy moves forward without the deceased's express consent, the family is involved, and the process furthers clear public goods like public health and safety. One ethicist has gone so far as to call posthumous retrieval of gametes without consent as the moral equivalent of rape because of the magnitude to which it offends one's bodily integrity without the consent of the individual [4].

Yet, the level of respect afforded to a deceased person's reproductive interests is unclear. While many scholars may believe that carrying out the wishes and protecting the interests of the dead is not only desirable but a moral obligation, it could also be argued that harm cannot come to a person after death because a dead person "can no longer be said to have interests" [2]. (In the most extreme version of this view, the only possible harm of posthumous reproduction is the fear, while alive, that one will not be able to control one's reproduction after death [2].) If there is *no way* a decedent will experience the violation of his or her liberties, beliefs, or desires, does it still "count"? It is crucially important to draw a bright line

between the actually dead and the unconscious or mentally impaired; a comatose person may regain consciousness unexpectedly. To find that one has reproduced without one's consent while unconscious would be both disturbing and an affront to one's right to self-determination. A dead person, who has *no chance* of experiencing such violations, may not need or deserve the same rights as persons who are alive and have some level of capacity, however minimal or unpredictable, that would allow them to perceive these violations.

Alternatively, even if the dead are presumed to have no interests in reproduction, benefits of posthumous reproduction that may accrue to them during life ought to be respected. While posthumous parents do not experience many of the meaningful aspects of having children that we attribute to the living—gestation, birth, raising the child, or even the certain knowledge that they have reproduced genetically—a person who planned a posthumous conception may have derived some value or fulfillment from to the idea of living on after death through the child or affording a loved one the opportunity to have a child. To understand the legitimacy of a request, it is important to define which meaningful aspects of reproduction are fulfilled for that unique individual in the case of posthumous reproduction [2].

Given uncertainty about how much respect to afford the deceased (over reproduction, bodily interests, or decisions related to death), in cultures that emphasize individual liberty and accept a plurality of beliefs about life after death (such as the United States), the greatest protection we can afford the deceased is some measure of legitimate and meaningful informed consent for posthumous reproduction.

Two case studies demonstrate the different types of informed consent in posthumous reproduction: presumed consent and express consent.

Presumed Consent: The Case of Stephen Blood

After several years of marriage, Stephen Blood contracted bacterial meningitis. Given that there was no reasonable chance of recovery, his wife, Diane, requested that Stephen's sperm be retrieved and cryopreserved while he was still comatose, arguing that this was what her husband would have wanted. While the pair had not discussed posthumous reproduction, they had been trying to become pregnant in the months leading up to Stephen's illness and ultimate death.

Because Stephen Blood did not explicitly consent to sperm retrieval while he was comatose, such a case raises questions about bodily integrity and ensuring that the decedent is not used as a means to someone else's reproductive end. Families and spouses play an important role in consenting to certain procedures like organ retrieval and autopsies in death or medical procedures when the individual is incapacitated, yet this role is challenged when tissue that has reproductive potential is involved [5, 6]. Family members may pressure or persuade their loved ones to have children, but they do not have direct or legitimate control over whether and when this might occur. And, while spouses' reproductive interests may be linked to the deceased, even they do not have an interest that exceeds that of their spouse (more on this in the next section).

The main issue in Blood's case is whether he gave adequate consent not just for the retrieval of sperm but also the use of that sperm by his wife to become pregnant. The burden was on Diane to demonstrate that her husband Stephen would have wanted posthumous reproduction. There is some evidence that the surviving partner does not always accurately guess what their partner would have wanted—in one recent study of couples seeking fertility treatment, 25 % of respondents guessed incorrectly what their partner would have wanted [7].

Even in cases when the deceased demonstrated a strong interest in having children while living by, for example, gamete banking, trying to have a child, or building a nursery, it does not follow that this indicates a desire to have children posthumously. Posthumous reproduction remains incredibly rare, and most people do not anticipate that their gametes will be used after their death. And even where there is some evidence that the deceased accepted the idea of not

knowing genetically related children (as in the case of a deceased man who had donated sperm anonymously in the past), it still does not follow that the man would have wanted children posthumously with his partner and to be known and identified as a parent after his death [6].

On the other hand, a decedent who did not wish to reproduce would not experience some of the reasons he or she may have wished to avoid it—childrearing, financial, or other parental responsibilities. Requiring implied consent, or proof that this is what the deceased would have wanted, hinges on a belief that most people would not want to reproduce posthumously and/or that such reproduction is in some way harmful or undesirable rather than neutral or positive. But is this accurate? The study cited above found that 78 % of members of couples seeking fertility treatments would want the surviving partner to use their stored gametes after their death [7]. Yet, posthumous reproduction is fairly new, and many, perhaps event most, people have not had cause to consider the possibility of posthumous reproduction. There are a range of positions one might take about it. Some people might not want to *raise* children, but see no problem with reproduction that does not involve childbearing or childrearing. Some might feel that, even though they have no particular interest in reproducing, they also have no objection to it. Some might wish to benefit a grieving partner by enabling the conception of a posthumous child. The Stephen Bloods of this world, who might want their legacies continued in this way, may have neglected to specify it because they are in good health and do not anticipate dying. Though it would require greater public awareness of the existence of posthumous reproduction, an opt-out social convention would allow those who probably or definitely do *not* want their genetic material reproduced after death (who, for example, have religious or philosophical objections to the practice or who desire a tightly controlled family reputation or legacy) to specify their preference in advance care directives, wills, registries, or the like. Alternatively, as in the next case, some might choose to explicitly state a desire to reproduce posthumously.

Express Consent: William Kane

Before committing suicide, wealthy and eccentric William Kane deposited sperm at a fertility clinic and executed both a directive and a will that expressly gave consent for his girlfriend, Deborah Hecht, to use his sperm to have his baby after his death. Kane and Hecht discussed posthumous reproduction while Kane was still alive and even agreed to a name for the child: Wyatt.

The ideal situation, from the perspective of the decedent's rights, is William Kane's, in which he provided express written informed consent and we have some idea of his motivations for wishing to reproduce posthumously. Both the American Society for Reproductive Medicine (ASRM) and the European Society of Human Reproduction and Embryology (ESHRE), two reproductive medicine specialty societies, encourage written informed consent at the time of storing gametes to provide some indication of the deceased's wishes after death. These recommendations are made out of respect for autonomy and prevent individuals' gametes from being used without their knowledge or consent [8, 9].

Though this case is ideal in the sense that it is devoid of ambiguity about the wishes of the deceased, the deceased's desire to posthumously reproduce does not necessarily mean that an act of posthumous reproduction should occur. While some may argue that granting the deceased's wishes respects and even extends his or her autonomy, others might argue that it is impossible to ever fully understand the consequences of posthumous reproduction enough to consent to it [10].

To best protect decedents' interests in posthumous reproduction, we recommend either presumed or expressed informed consent be sought:

- Informed consent requires that the individual demonstrate decision-making capacity, have adequate knowledge to inform the decision, and provide voluntary consent without undue coercion.
- Requests for posthumous reproduction should not be honored if the deceased explicitly refused posthumous reproduction while alive.

- Informed consent may be presumed if there is strong evidence that having a child after death is what the deceased would have wanted.

A discussion about posthumous reproduction also requires a recognition of the limits to the individual's *right* to posthumously procreate. It was clear that Deborah Hecht consented (indeed, sought) to have Kane's child, but what if Kane had requested that 1,000 strangers be inseminated with his sperm, or his daughter, or an elephant [11]? Even the clearest consent does not take into account the ramifications of the act for other parties, including the willingness and interest of the surviving partner, the well-being of the potential child, and the obligation of a physician or clinic to fulfill the decedent's wish [5]. We will consider these interests in the remainder of the chapter.

The Surviving Partner or Other Requester

While the decedent's interests are important, there is another key stakeholder involved: the surviving partner or loved one who makes the request for posthumous reproduction. Some requests come from a person who was romantically involved with the decedent, while other requests come from family members, including parents or siblings. In the United States, where reproduction has been seen as an intensely personal choice, relatives have little claim because they are not socially considered to have a stake in the party's reproductive interests even when alive, unlike romantic partners, who often reproduce together. Special caution is therefore necessary when the requests come from family. But does *anyone* have a claim to use a dead person's genetic material for reproduction? Techniques to cryopreserve eggs have been slower to develop than techniques to preserve sperm; thus, the majority of posthumous reproduction requests to date have dealt with deceased men. The surviving partner's motivations are important to assess the legitimacy of his or her claim to the dead partner's genetic material.

Romantic relationships or marriages and childbearing do not always go hand in hand, and respect for persons dictates that the grieving partner has no overriding right to the individual's gametes, in death or in life [3]. The living partner is free to find other ways to fulfill a desire to have children in general, by having children with another person, using egg or sperm donation, pursuing adoption, or another method. However, the grieving widow's or partner's intentions to have a baby with *this* person will die with him or her if posthumous reproduction is not undertaken. As Blood said, "I have the most right to my husband's sperm and I desperately want his baby" [12]. For some, posthumous reproduction may be a way to preserve or extend the relationship with the deceased partner over time [1, 9], to wrest something positive from the death, or simply process the grief of losing a partner.

The desire to reproduce is often a shared interest; allowing the remaining individual to have the deceased's child fulfills that collective intentionality [13]. Posthumous reproduction specifically may even have special meaning for the couple, as with Hecht and Kane, who planned for the sperm banking together. In such cases, posthumous reproduction would not be using the dead as means to someone else's end, but instead honoring the wishes of both parties, and may therefore be considered acceptable from the perspective of the decedent's wishes.

But what harm may come to the surviving parent if posthumous reproduction is undertaken? There is a risk that the parent's feelings will change over time: that he or she will come to regret having the child or see the child as an unwelcome reminder of the death [1]. Often these concerns can be eliminated by ensuring truly informed consent on the part of the surviving partner. Retrieval or continued storage of gametes for a period can give the surviving partner time to consider his or her wishes and motivations and to grieve before making decisions about whether to pursue posthumous reproduction. For this reason, ESHRE encourages a waiting period before the survivor uses the gametes [9].

As with decedents, we recommend the surviving partner or other requestor is best protected by ensuring adequate informed consent:

- Informed consent requires that the individual demonstrate decision-making capacity, have

adequate knowledge to inform the decision, and provide voluntary consent without undue coercion. This may involve a waiting period in which grieving people can consider their wishes.

The Child

Even in the "ideal" situation, when the rights of the deceased and living would-be parents have been adequately protected, the well-being of the resulting child must also be considered. Unlike all of the other stakeholders, for whom informed consent is emphasized, the child does not have a voice in this debate—and his or her entire existence hinges on the decision of whether to approve posthumous reproduction or not.

The most common critique of posthumous reproduction from the child's perspective is that it will in some way harm the child. Will the child be harmed by growing up with only one parent, and is this any different than a child growing up with only one parent for other reasons [1]? Will the child feel he or she was conceived merely as a means to someone else's end, whether to cope with grief or replace a lost parent, and will that negatively affect him or her [14]? There is a risk that the surviving partner will treat the child as nothing more than a commemoration of the dead, placing expectations on the child that he or she cannot live up to or blurring the child's identity into that of the deceased [1, 9]. This is more likely if the surviving partner pursues the reproduction process partly because of the expectations of the deceased's family, a perceived duty to carry out the deceased's wishes, or survivor's guilt, all of which could be further exacerbated by societal pressures on women to have and raise children [9, 11].

In addition to family dynamics, there might be other ramifications. Will the child be stigmatized by others for his or her way of coming into the world? This may greatly depend on the family's reasons for posthumously procreating as well as social perceptions of the practice. Will the child have adequate financial support, especially given that posthumously conceived children may not be able to inherit or receive Social Security from the deceased parent [15, 16]?

At this point, in the absence of adequate empirical research about the consequences of posthumous reproduction for offspring, we can only speculate about whether the posthumously conceived child's experience is different than that of other children born after a parent's death [17]. In general, though, any harms of being posthumously conceived could only be avoided if the child never existed, a state numerous ethicists consider unambiguously worse than whatever the avoided harms [1, 2]. The argument presumes that being alive is better than having not been born—an issue that features prominently in ethical discussions about the validity of wrongful life lawsuits [18].

Key Third Parties

A variety of other entities have a stake in posthumous reproduction, among them the gestational carriers who take part in third-party reproduction if the deceased is female, the physicians and clinics who must decide whether to participate, and society at large.

Gestational carriers are necessary in posthumous reproduction for deceased women. Medical specialty guidelines agree that a gestational carrier should be informed when a pregnancy she would carry is posthumously conceived [8, 9], to allow her the choice of whether to participate. The underlying reason is to respect the values, wishes, and autonomy of the carrier and to acknowledge the special and intimate role she plays and the significant time and emotional involvement she invests in third-party reproduction.

In the US context, where little regulation exists at either the state or the federal level to guide the practice, physicians are ultimately the frontline responders tasked with deciding whether to honor or refuse requests for posthumous reproduction. Physicians are involved at a number of levels: they may be asked to retrieve gametes from a deceased or comatose patient or to transfer stored embryos and gametes for in

vitro fertilization. ASRM and ESHRE have developed professional guidelines to aid physicians in making these decisions. ESHRE statements require physicians to consider the welfare of the child and not take part in posthumous reproduction if there is a high risk of serious harm to the child—such as evidence of child abuse [19].

Ultimately, ethicists and professional societies have left it to the individual physician whether to take part in posthumous reproduction. In this way, it is much like other morally controversial practices in medicine (abortion, emergency contraception, physician-assisted suicide) about which physicians may invoke the right to conscientiously object in a morally pluralistic society. Some physicians may believe it is their ethical or moral duty to assist in such endeavors to alleviate suffering and promote the surviving spouse's reproductive interests, while other physicians may feel the act of intentionally bringing a child into the world with one parent deceased is unethical or burdensome for society.

Recent data suggest that physicians are undecided about whether posthumous reproduction is ethical. A minority (16 %) supported posthumous parenting, and a larger percentage opposed the practice (32 %), but the majority (51 %) did not have an opinion, which reflects both a divergence of views on the practice and the possibility that physicians are not adequately informed or aware of it [20].

To what extent do (and should) these morally divergent views influence both individual practice and professional society guidance in posthumous reproduction specifically? Given the important interests at stake for all parties, physicians who morally oppose the practice may wish, at minimum, to consider referring patients to a colleague who is willing to consider the practice, especially when the request reflects the wishes of both the deceased and surviving partners and there is informed consent.

We recommend that third-party interests be carefully considered in posthumous reproduction:

- Parties like gestational surrogates or physicians should be informed when they are being asked to participate in posthumous reproduction and should have the ability to refuse, in order to respect pluralistic views among medical professionals and the public.

Lastly, the role of posthumous reproduction in society must also be considered. Social implications and norms may play a significant role in how children resulting from posthumous reproduction might view themselves and whether they are stigmatized, as well as whether posthumous reproduction will become more widely accepted into medical practice. As with other assisted reproduction technologies, such as in vitro fertilization for living couples with fertility problems, society may limit, regulate, or encourage the practice. In Israel, for example, the policies are often strongly pronatalist owing to cultural emphasis on the importance of parenthood, and policies there strongly support implied consent, presuming that the deceased would want their loved one to use their gametes to have children after their death [21]. Researchers in the United States are only now beginning to collect widespread data on the public's perspective. Recent data (a cross-sectional survey of 1,049 men and women between the ages of 18 and 75 living in the United States) suggest that about half of the public support posthumous reproduction and about 70 % think that informed consent should be required [22]. Given continuing legal struggles over the inheritance rights of these children, including whether they can collect Social Security on behalf of the deceased parent, society may have a responsibility to make sure that such children (as with children born into poverty) are not disadvantaged by the circumstances of their birth. The public may look upon posthumous reproduction poorly if it creates burdensome social and financial responsibilities for society. The public must also situate discussions about posthumous reproduction within the wider context of their occurrence. For example, posthumous reproduction may be occurring unwittingly in third-party reproduction with fertility clinics that do not have systematic ways to determine when a donor has died. If the public largely opposes posthumous reproduction, it may wish to consider whether this practice is ethically distinct.

Conclusion

The broad social implications of posthumous reproduction for what it means to be a parent, for how we as a society cope with death, and how we view our children are key areas of interest that we will better understand in the future as posthumous reproduction is studied further. For now, in the absence of social consensus about this prospect that would allow us to make assumptions about what people in general would want, the proper primary considerations when deciding whether a specific case of posthumous reproduction should occur are meaningful informed consent and knowledge about the wishes of the specific decedent and the surviving partner, the freedom of third parties like physicians and gestational surrogates to participate as their ethics inform them, and the well-being of the child.

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