

## REPRODUCTIVE ETHICS

# Why two arguments from probability fail and one argument from Thomson's analogy of the violinist succeeds in justifying embryo destruction in some situations

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The scope of embryo research in the UK has been expanded by the Human Fertilisation and Embryology (Research Purposes) Regulations 2001. Two advisory bodies—the Chief Medical Officer's Expert Group and the House of Lords' Select Committee—presented various arguments in favour of embryo research. One of these is the view that, just as lottery tickets have relatively little value before the draw because of the low probability of their being the winning ticket, early embryos have relatively little value because of the presumed low probability that they will mature into more developed embryos. This (first) argument from probability is questioned in this paper, as well as the contention that allowing embryo destruction is incompatible with the view that embryos have full moral status. Although I challenge Savulescu's view that early embryos should be entered into a lottery in which they are subjected to the probability of being destroyed (the second argument from probability), a revised version of Thomson's analogy of the famous violinist defies the view that the position that the embryo has full moral status is incompatible with qualified support for embryo destruction.

referred to as "moral status") that many people consider should be granted to all human beings born.<sup>1–3</sup> In the first part of this paper, I deal with the argument that this follows from the position that early embryos are like lottery tickets (the first argument from probability). I question the validity of this argument. In the second part of this paper, I examine whether these advisory bodies are correct in suggesting the view that the embryo has moral status is incompatible with embryo destruction. This claim has been contested by Savulescu,<sup>4</sup> who argues that, even if the assumption is made that early embryos have moral status, they should nevertheless be entered into a lottery in which some are randomly selected to be sacrificed for the benefit of others. Every embryo would have a probability of being sacrificed for research purposes. I challenge this second argument from probability, and then examine Thomson's<sup>5</sup> analogy of the famous violinist, developed in the context of a discussion on abortion. I argue that a revised version of Thomson's analogy undermines the claim that a position of limited support for embryo destruction is incompatible with the view that an embryo has moral status.

### THE FIRST ARGUMENT FROM PROBABILITY: ARE EARLY EMBRYOS LIKE LOTTERY TICKETS?

Just as lottery tickets have only a small probability of becoming valuable after the draw, the relatively low value of early embryos is sometimes perceived as being determined by the view that the probability of their survival beyond a certain critical stage or stages—for example, successful implantation or gastrulation—is small.

Even though an explicit account of this argument from probability is absent in the Chief Medical Officer's Expert Group report, this argument may underlie the claim that the early embryo is "a potential human being".<sup>1</sup> Although the committee's reasoning is by no means clear, the committee's aim is to reject the view that the early embryo is a human being with moral status, rather than that the early embryo is a human being, as the committee recognises that the early embryo is a "developing human life".<sup>1</sup> A plausible explanation for this claim is that the relatively high death

In January 2001, the UK heralded a new era for embryo research by passing the Human Fertilisation and Embryology (Research Purposes) Regulations 2001, adding new purposes of embryo research to those allowed under the Human Fertilisation and Embryology Act 1990 (Statutory Instrument 2001 number 188).<sup>1</sup> Thus, it became the first state to approve of embryonic stem cell research, including "therapeutic cloning", or the creation of embryos by somatic cell nuclear transfer for research purposes aimed at finding treatments. This legal change revived controversy on the status of the embryo.

Two advisory bodies have been closely associated with the UK legal change—namely, the Chief Medical Officer's Expert Group (charged by the UK Government with assessing the expected benefits and risks and alternatives of new areas of research using embryos) and the House of Lords' Select Committee (appointed to consider and report on the issues connected with stem cell research and human cloning arising from the new regulations). Their reports offer several arguments supporting the claim that early embryos lack the equal, full moral status (henceforth simply

<sup>1</sup>The term *embryo* refers to the human embryo and is used to refer to early life from conception until the eighth week. The term *early embryo* is used to refer to embryos less than 14 days old.

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rate of early embryos counts against assigning moral status to them. Although the committee may adopt a “middle ground” position or the view that “the respect due to the embryo increases as it develops” at least partly, because the embryo obtains more valued properties throughout his or her development or actualises more potentialities, my focus here is on an alternative or additional interpretation of this text: the suggestion that what increases the embryo’s value is the sheer fact of the embryo’s overcoming more developmental hurdles towards reaching the valued end state of birth—that is, the rising probability of a successful outcome.<sup>13</sup> The same view may underlie the House of Lords’ Select Committee’s contention that the following information is consistent with its “gradualist view” (the view that the embryo’s value increases gradually): “Although would-be parents may feel sad at the natural loss of early embryos before implantation, there is no public mourning ritual associated with it, nor is there for the loss of surplus embryos left over from IVF treatment”.<sup>2</sup> In one of the preceding paragraphs, this natural loss rate is estimated to be “as high as 75 per cent”.<sup>2</sup> My focus here is not on whether the absence of a public mourning ritual is relevant for determining the embryo’s value, but on whether the view that there is a high probability that early embryos may decay naturally, if true, justifies the view that they lack moral status or the view that the natural loss of embryos is morally equivalent with the loss of embryos through intentional destruction. This argument is by no means absent from the ethics literature.<sup>6,7</sup> A positive answer to this question is suggested by the text quoted here, and was also given in a public lecture by Harries,<sup>8</sup> the Committee’s Chairman at the University of Newcastle, UK, on 20 April 2004.

One problem with this argument is that it aggregates the survival odds of every embryo. If 75% of early embryos die before birth, this still does not establish that every early embryo has only a 25% chance of survival. Some early embryos may have only a 2% chance and others, a 90% chance. If the argument from probability is valid, these advisory groups should argue that some early embryos (those with a 90% chance) are more valuable than others (those with a smaller chance of surviving), rather than that all early embryos lack moral status because of their averaged survival chance. But should we really assign a different value to some early embryos simply because they have a smaller chance of surviving up to a certain stage than other early embryos? By analogy, we may argue that this justifies assigning a lower value to a child who is unlikely to live for more than 5 years than to another child who has a high chance of reaching adulthood. Most, if not all, people would find this unacceptable, holding instead that they have equal value (without implying, however, that they must also be treated in the same way). What is equally problematic is the view that all early embryos have a lower value than some more developed humans simply because early embryos are more likely to die soon. The following analogies show that the argument is flawed. In some places, mortality in children is high, yet this does not justify killing them. The probability that I die tomorrow may be high, yet I suspect (and hope) the reader agrees that this does not give you licence to kill me. If the fact that I may die tomorrow does not justify your killing me today, then it is not clear why the killing of embryos should be allowed simply because they may die before, for example, being implanted or being born. One might counter that, for example, in the context of embryo selection after in vitro fertilisation, the word “killing” does not apply as—in the words of Walton of Detchant (the person who proposed that the UK Government set up the aforementioned select committee)—“those carrying abnormal genes will simply be allowed to degenerate naturally, as indeed many do during the process of

normal conception”.<sup>9,11</sup> A similar aim may underlie the House of Lords’ Committee’s choice of words where it uses the words “the loss of surplus embryos” in the context of writing about the lack of public mourning ritual related to the natural loss of early embryos.<sup>2</sup> The aim is to present the intentional destruction of early embryos as a natural event (ie, an event not caused by human agency), presumably because there is an implicit understanding that natural loss sounds more acceptable than destruction or killing. The conceptual shift from “killing” to “loss” or “natural degeneration” is fuelled by the view that many early embryos die naturally anyway. The problem with this way of reasoning is that we all die naturally, and yet, that does not justify killing. Therefore, it is not clear why the loss of in-vitro-fertilised embryos resulting from deliberate destruction should be morally equivalent to the natural loss of embryos during pregnancy. If Walton of Detchant’s reasoning is valid, the implication is that, when nutrients and an environment conducive to the maintenance of life are withheld from any newborn child with “abnormal genes”, this can also be called allowing them to degenerate naturally. Although I do not dispute that sometimes it may be right to withhold or withdraw treatment for the benefit of the child, withholding care simply because the child may die soon owing to its abnormal genes is unacceptable. Besides the problematic nature of the concept of abnormal genes being ignored, the argument that humans with abnormal genes are less valuable than those with normal genes simply because of their reduced chances of surviving beyond a certain stage is flawed. Compare the following scenarios. If the assumptions are made that a child with Down’s syndrome has abnormal genes and that I had such a child, I might be justified in allowing my child to degenerate once he or she is terminally ill and the systems begin to fail beyond the hope of recovery. If, however, I choose to allow my healthy child with Down’s syndrome to degenerate by denying him or her access to food by locking him or her out of the kitchen, the term killing is more appropriate than the words allowing to degenerate—and killing under these circumstances is clearly not justified. No argument is presented for why allowing embryos to degenerate should have more in common with the first scenario than with the second. Despite many claims to the contrary, the status of in-vitro-fertilised embryos is, therefore, not different from that of other embryos.<sup>7</sup>

To sum up, I have established that the first argument from probability fails, as the claim, if true, of a high probability of early embryos not surviving to become more developed embryos or fetuses does not justify the conclusion that they lack moral status. Whereas lottery tickets have a probability of becoming valuable only before the draw, there is no reason why the sheer probability of early embryos not surviving beyond a certain point should affect their value. I conclude that killing early embryos is not justifiable on the basis that early embryos may have only a low probability of surviving to become more developed embryos.

## THE SECOND ARGUMENT FROM PROBABILITY: SHOULD EARLY EMBRYOS BE ENTERED INTO A LOTTERY ANYWAY?

The Chief Medical Officer’s Expert Group has claimed that the position of those who support the view that the early embryo has full human status is necessarily incompatible with support for embryo research.<sup>1</sup> Similarly, the House of Lords’ Select Committee writes that “it is true that if an embryo had full .....

<sup>11</sup>See also UK Parliament Human Fertilisation and Embryology Act 1990. London, HMSO, 1990: 190 where the Act uses similar language in the context of the destruction of spare embryos by stating that after the statutory storage period they ‘shall be allowed to perish’.

human rights it would be inconsistent to do anything that had the effect of destroying it".<sup>2</sup> The remainder of this paper will deal with the question of whether this position can be maintained. Savulescu<sup>4</sup> has contested this view by arguing that even if we assume that the early embryo has moral status, this does not imply that killing early embryos can never be justified. The negative value of killing such embryos may be outweighed by positive values that cannot be obtained without killing. The need for such a trade-off is also implicit in the Human Fertilisation and Embryology (Research Purposes) Regulations 2001, which stipulate that embryo research may be permitted for "developing treatments for serious disease". For research to be justified, the positive value of research must outweigh the negative value of embryo destruction. The relative importance of research is correlated positively with the seriousness of the disease. Every research proposal must be assessed and expected to be the lesser evil than not carrying out the research project. Incidentally, this balancing approach had already been endorsed by the Chief Medical Officer's Expert Group and the House of Lords' Select Committee, for example, where the Chief Medical Officer's Expert Group expresses its support for embryo research if it "has the potential to lead to significant health benefits for others" and if the use of embryos is "necessary to realise those benefits."<sup>1 2</sup> Although both advisory groups agree that embryo destruction may simply be the lesser evil, the necessary price to pay for reaping research benefits, they also claim that such a position is incompatible with attributing moral status to the embryo.

Savulescu provides an interesting challenge to this position as he provides an elaborate account of how such a balancing approach can justify embryo destruction even if it is assumed that the embryo has moral status. According to Savulescu, it may be ethical for embryos to be entered into what he calls the "Embryonic Stem Cell Lottery". In this second argument from probability, the situation is as follows: if the overall chance of living for each of the embryos is increased in a world in which embryonic stem cell research is allowed, early embryos should be entered into a lottery in which there is a small probability of their being sacrificed for stem cell research. This view arises from his conviction that "it is not wrong to deliberately create embryos for research if that embryo is part of a larger class of embryos, and the benefits to that class of killing some outweigh the harms".<sup>4</sup> Savulescu puts forward several thought experiments to support this view, of which the most sophisticated is the following. He imagines the explosion of a nuclear reactor, which leaves his 1-year-old child exposed to nuclear fallout. Numerous children develop leukaemia, including his own. Bone marrow can now be generated most successfully by reprogramming brain cells, which are more resistant to radiation damage than bone marrow cells. Unfortunately, a whole brain must be destroyed. The extracted stem cells can be reprogrammed to treat 10 children. Savulescu would enter his child with other children in a lottery to decide who should be killed to provide stem cells for others.<sup>4</sup> Although a 1 in 11 chance of certain death seems preferable to a (presumably) 100% chance of imminent death, the reason for preferring the second option relates to the fact that the 1 in 11 chance includes intentional killing, which is unacceptable in these (as in most) circumstances. Savulescu disagrees, arguing that "it is ES [embryo stem] cell research, like organ transplantation, that is respectful of human dignity in its reverence for the lives of the living".<sup>4</sup> Savulescu's reference to organ transplantation prompts me to make the following analogy. If the prospects for recipients of organ transplantations were such that, on average, they could live 20 years longer with the transplant than they would without, Savulescu's reasoning forces us to conclude that we should all enter into an

"organ donor lottery", in which some of us would be sacrificed for organ donation (given the shortage of donor organs in many countries), with the understanding that organs will be available to all of us (except for those sacrificed) in case we should need them in the future. After all, the net balance in terms of aggregate life years gained would be positive, as at least seven organs per person sacrificed could be transplanted, leading to a total increase in life expectancy of 140 years for those who are not sacrificed. In this way, a great number of people who are dying now because of a shortage of organs can be saved. The problem is that I suspect very few of us would be willing to enter into such a lottery, holding instead that our lives should not be sacrificed for achieving the benefits of such a utilitarian calculus.

I conclude that, if we cannot even voluntarily accept the probability of being sacrificed for others (eg, by entering into an organ donor lottery) despite an overall increase in life expectancy, it is not a coherent policy to subject children or embryos to the probability of being killed for others simply because the probability of their survival would be compromised in a world in which no children or embryos are being killed for the benefit of others. The question of whether or not a being has moral status or is a suitable candidate for destruction should not depend on that being's relative chances of survival beyond a certain stage.

#### THE ARGUMENT FROM THOMSON'S VIOLINIST: ARE EARLY EMBRYOS IN SITUATIONS LIKE THOMSON'S VIOLINIST?

Should we therefore conclude with the House of Lord's Select Committee that attributing moral status to embryos is incompatible with support for some forms of embryo destruction? Thomson<sup>5</sup> has contested this view in a way that is different from Savulescu's. In the context of discussing abortion, Thomson developed the following analogy to argue that some forms of killing are justifiable. She asks us to imagine waking up in a hospital and discovering tubes going from our body to the body of an unconscious person, a famous violinist, who has a potentially fatal kidney disease. We are told that we are the only people with the correct blood type and that we were kidnapped, so that our circulatory system could be connected to that of the diseased person. In this way, our kidneys would clean the violinist's blood. We are also told that the diseased person will die unless we remain connected for 9 months. As Thomson believes that, despite the negative consequences that this may have, we are nevertheless entitled to disconnect ourselves, we can argue that pregnant women therefore also have, in some situations, the right to kill.<sup>5</sup> Thomson did not claim that all embryos are in situations such as the violinist's, but that some are. She suggested the need for a dividing line between circumstances when killing is acceptable and circumstances when it is not. She first considers embryos posing a threat to the mother's life, comparing it with the scenario when the kidnapped person would die because of the strain on the kidneys. Thomson argues that killing is acceptable in these circumstances, and also in cases of contraceptive failure when "all reasonable precautions against having a child" have been taken and when "assuming responsibility for it would require large sacrifices".<sup>5</sup>

Thomson is right in saying that killing embryos should be acceptable in situations when the continuation of pregnancy poses a serious risk to the life of the pregnant woman. The following analogy illustrates the reason for allowing this. We do not compel parents of children who need a kidney transplant to have a reasonable chance of avoiding imminent death to donate a kidney, even if there is a good tissue match, and even if the risk for the parents may be relatively small

compared with the risk of continuing with an ectopic pregnancy. Therefore, it is not reasonable to expect mothers to bear the risks associated with situations such as ectopic pregnancies. If, however, we start from Thomson's premise that embryos have moral status, she is wrong to suggest that the need to make "large sacrifices" after contraceptive failure is sufficient reason for embryo destruction. The reason why her "argument from the lesser evil because of the need to make large sacrifices after failed contraception" is unacceptable relates to the following disanalogies, which are overlooked by Thomson. Firstly, whereas the person whose body is plugged into the violinist's body has not been able to consent to being connected, a plausible view is that not all women who have sexual intercourse are coerced into having it. Secondly, the kidnapped person's consent to go to sleep did not include the consent to be kidnapped, whereas many people consenting to sexual intercourse, even when it is not aimed at procreation, also consent to the possibility of conception. Indeed, many people know that even the best contraceptives can fail. These disanalogies are morally relevant. Consider the following scenario. Imagine that I became pregnant after consenting to intercourse not aimed at procreation, owing to contraceptive failure. My pregnancy was smooth and I did not need to make large sacrifices. On giving birth, however, I find that my child is severely handicapped. I may now want to kill my child because both I and others would have to make large sacrifices to care for my child, for a period much longer than 9 months. Although nothing in Thomson's argument would prevent me from doing so, I doubt if Thomson would find the killing of my child (presuming that it is not in the child's best interests) acceptable. If embryos have moral status, killing embryos is not acceptable for this reason either.

For women who are coerced into intercourse, however, Thomson's analogy is relevant. Their situation is sufficiently similar to that of someone who has been kidnapped and plugged into the body of her violinist. Moreover, supporting the existence of embryos thus conceived may prolong the trauma caused by the immoral sexual act considerably. Even if the assumption is made that embryos have moral status, their destruction is justified in such situations. Infanticide would not be tolerable as the infant is not the means by which the violation of one's bodily integrity is prolonged, as the infant is no longer dependent on the body of the mother for its survival. Beckwith,<sup>10</sup> however, has objected to this argument. He argues that, if raped women are allowed to abort, one must also allow sperm donors—whose sperm had been stolen and inseminated into women—to kill any resulting children, if they are forced to pay a large sum of money for child support by an unjust court. Therefore, both abortion after rape and the killing of children in the "unjust court" scenario should not be permitted. Beckwith's analogy is flawed. The objection is that unjust financial burdens do not carry the same weight as allowing and supporting the forced physical presence of an unborn human being. If Beckwith's analogy were valid, it would allow anyone with financial difficulties resulting from injustice, not just sperm donors, to kill their children if it were financially beneficial. No matter how serious financial injustice is, the taking of a life cannot be the right way to resolve such situations. By contrast, taking the life of an embryo conceived after rape must be allowed as, similar to the kidnapers in Thomson's scenario, rapists do not have the right to subject their victims to the possibility of being coerced into supporting the existence of a human being with their own body. To sum up, most embryos are not in situations such as that of Thomson's violinist, yet some are, and the killing of these embryos may be the lesser evil when the women who carry them have been coerced into having intercourse, or are at

serious risk of losing their lives by continuing with the pregnancy. Contrary to what the House of Lords' Select Committee claims, this conclusion is valid even if the assumption is made that embryos have moral status.

I now consider the question of whether the advisory bodies are also wrong in claiming that attributing a moral status to embryos is incompatible with embryo research. Having argued that the killing of an embryo is justifiable when the pregnant woman is at serious risk of losing her life if she continues with the pregnancy—for example, in the case of an ectopic pregnancy—we can argue that embryos should also be legitimate candidates for destruction if embryonic material can be used to save other people who are at risk of losing their lives because of serious disease. A morally relevant difference, however, exists between sacrificing an embryo for the sake of those who may benefit from embryo research and sacrificing an embryo to save the mother. The following analogy makes this clear. Many people agree that it can be morally right to kill out of self-defence, while agreeing also that killing is not acceptable to harvest organs that may save others. As killing an embryo to save a person's life is an example of the first scenario, it is permissible. As killing for the sake of deriving possible benefits from embryo research has more in common with the second scenario, it is incompatible with the view that the embryo has moral status. If the embryo has moral status, the current legal climate in the UK, and in many other countries, fails to protect embryos not created after a coercive act and those that do not pose a serious risk to the life of the pregnant woman. If the premise is valid, legal provisions must be created to assess formally whether those considering embryo destruction are in situations that include either coercion or serious risk, and research should be considered only on such embryos (who would therefore not be destroyed for the sake of research).

## CONCLUSION

I have argued that the advisory bodies associated with the Human Fertilisation and Embryology (Research Purposes) Regulations 2001 have failed to establish that early embryos lack moral status by appealing to the first argument from probability. Early embryos are not like lottery tickets, as their value should not depend on the probability of a successful outcome. I have also argued, contrary to what these advisory bodies claim, that attributing moral status to the early embryo is compatible with a position of limited support for embryo destruction. Although Savulescu rightly makes this point, I have shown that his option for a balancing approach—the second argument from probability—in which embryos are entered into a lottery, with some being destroyed for the benefit of others, is flawed. A revised interpretation of Thomson's analogy of the famous violinist was proposed to illustrate the point that embryo destruction can be the lesser evil even if the premise that the embryo has moral status is accepted. If the embryo has moral status, the current UK legislative framework (and legislation in many other countries) related to the destruction of early human life must be revised in the light of this interpretation.

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