Embryo Research: Are There Any Lessons from Natural Reproduction?

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John Harris gives a comprehensive and generally valid defense of embryo research. Although nearly all his arguments are valid, one—the argument comparing natural reproduction to embryo research—is problematic in several important ways. I focus here on that argument.

Harris begins his provocative paper in this way: I make two appeals to consistency, or to “parity of reasoning,” that I believe show that no one who either has used or intends to use sexual reproduction as their means of procreation, nor indeed anyone who has unprotected heterosexual intercourse, nor anyone who finds in vitro fertilization (IVF) acceptable, nor anyone who believes that abortion is ever permissible can consistently object on principle to human embryo research nor to the use of embryonic stem cells for research or therapy. (p. 353, and see notes cited therein) Harris is concerned with “consistency [of treatment] of stem cell research with what is regarded as acceptable and ethical with respect to normal sexual reproduction (p. 361)” Harris makes four (not two, as he claims) appeals to parity of reasoning about embryo research and

1. engaging in sexual reproduction
2. intending to engage in sexual reproduction
3. IVF, and
4. abortion.

Although his arguments for the third and fourth are successful, his arguments for the first and second fail. I will argue that the lessons from natural reproduction are different from those that Harris wishes to draw. The following is Harris’s argument in full. Let us start with the free and completely unfettered liberty to establish a pregnancy by sexual reproduction without any “medical” assistance. What are people and societies who accept this free and unfettered liberty committing themselves to? What has a God who has ordained natural procreation committed herself to? We now know that for every successful pregnancy that results in a live birth many, perhaps as many as five, [note 47: Robert Winston gave the figure of five embryos for every live birth some years ago in a personal communication. Anecdotal evidence to me from a number of sources confirms this high figure, but the literature is rather more conservative, making more probable a figure of three embryos lost for every live birth. See: Boklage CE. Survival probability of human conceptions from fertilization to term. International Journal of Fertility 1990; 35(2)75–94. See also: Leridon H. Human Fertility: The Basic Components. Chicago: University of Chicago Press; 1977.]

Again, in a recent personal communication, Henri Leridon confirmed that a figure of three lost embryos for every live birth is a reasonable conservative figure. Early embryos will be lost or “miscarry” . . . . How are we to think of the decision to attempt to have a child in the light of these facts? One obvious and inescapable conclusion is that God and/or nature has ordained that “spare” embryos be produced for almost every pregnancy and that most of these will have to die in order that a sibling embryo can come to birth. Thus, the sacrifice of embryos seems to be an inescapable and inevitable part of the process of procreation. It
may not be intentional sacrifice, and it may not attend every pregnancy, but the loss of many embryos is the inevitable consequence of the vast majority (perhaps all) pregnancies. For everyone who knows the facts, it is a conscious, knowing, and therefore deliberate sacrifice; and for everyone, regardless of “guilty” knowledge, it is part of the true description of what they do in having or attempting to have children. We may conclude that the production of spare embryos, some of which will be sacrificed, is not unique to assisted reproduction technologies (ART); it is an inevitable, (and presumably acceptable, or at least tolerable?) part of all reproduction.

Both natural procreation and ART involve a process in which embryos, additional to those that will actually become children, are created only to die. I will continue to call these “spare” embryos in each case. If either of these processes is justified it is because the objective of producing a live healthy child is judged worth this particular cost. (p. 362) Harris argues that there is no difference between intending to bring about an outcome and merely foreseeing it. One example he gives is that it would be wrong to use a mobile phone near a pregnant woman if using that phone exposed the woman to a high chance of having a miscarriage.

For Harris, if

• an act that has the foreseeable consequences of bringing into existence a new life and causing the death of four embryos is permissible, then

• an act that has the foreseeable consequences of saving an existing life and causing the death of four embryos is permissible. Harris assumes, plausibly, that we have as much reason to save an existing life as we do to bring a new life into existence. He also assumes, again plausibly, that embryo research will result in the saving of existing lives.

Where This Argument Fails

Nonmaleficence

Harris’s mobile phone example is important. The mobile phone user in his example violates a principle of nonmaleficence. Nonmaleficence is usually defined as “not harming.” But we should clarify or extend this definition to include not exposing people to unreasonable risks of harm. The moral of the mobile phone story is that we should not expose people to unreasonable risks.

Does natural reproduction expose the embryo to unreasonable risks? If the embryo is not a person with rights, the question is redundant. But Harris, although he believes the embryo is not a person, attempts to set this issue aside. He is trying to get leverage on those who may believe the embryo is a person but nonetheless believe natural reproduction is permissible despite the high embryo wastage it entails.

It is debatable whether natural reproduction imposes any risk at all on any embryo. The risk of dying (let us assume it is 80%) is inherent to the embryo’s nature. It is not as if the same embryo could have been created without that chance of dying. Let us assume for argument’s sake, however, that natural reproduction can be said in some sense to have imposed an 80% chance of dying on the embryo. This is very high. If I gave you a drug that had an 80% chance of killing you, I would be acting very wrongly. But in deciding whether this risk is reasonable to impose on the embryo, we must ask what the alternative is. In the embryo’s case, the alternative is nonexistence. A 20% chance of a good life is better than nonexistence. So, the imposed risk, if there is one, is reasonable. Consider the sick child analogy.
Imagine your child is certain to die of a disease in a remote village in Africa (option A). Instead of certain death, you could undertake a journey in which there is a four-fifths chance of being killed by natives. But if you make it to the city, there is a hospital where your child can be cured (option B). Option B is better than option A. Taking the journey imposes an 80% chance of being killed, but this risk is reasonable compared to certain death.

If the risk is reasonable when the alternative is death, then it is also reasonable when the alternative is nonexistence. Some might object to this. Consider the genetic disorder analogy. Both members of a couple have a rare genetic disorder such that any child of theirs is certain to be born with a genetic condition. The child will develop in utero, but this condition has an 80% mortality immediately after birth. However, if the child survives, it will likely be normal. Some people believe that it is wrong to knowingly conceive a child with a high chance of having a severe genetic condition. Before the advent of prenatal diagnosis, some couples, having discovered they are at risk of having a child with a genetic disorder, chose to refrain from having more children. These couples believed it was better not to have a child than to have a child with a severe genetic disorder. It is not clear whether these couples were rational or right in choosing to remain childless rather than risk having a child with a disorder. However, even if it is permissible, right, or rational to do as these couples did, this does not bear on the genetic disorder analogy or natural reproduction for two reasons. First, they may have been right because it was in their interests not to have a child with such a disorder. However, if a couple wish to have a child with genetic disorder, it may be in their interests to have such a child. Second, the child in these scenarios was likely to live with a severe genetic condition and severely impaired quality of life. In both the genetic disorder analogy and natural reproduction, the condition is possibly lethal but does not affect quality of life if the human survives. It may be wrong to bring into existence a child who will suffer enormously. It is not clearly wrong to bring into existence a child who merely has a low chance of surviving but will likely otherwise have a very good life. Natural reproduction gives every embryo the greatest chance it could have of becoming a baby. And that baby has a high chance of having a good life. The principle that drives intuitions about the wrongness of mobile phone use in Harris’s example does not bear on natural reproduction at all. Although the risk of an embryo dying in natural reproduction is high, perhaps as high as 80%, it is the lowest it could be.

This is quite different from embryo research. Embryo research imposes new risks on embryos either created as part of infertility programs or specifically for research. I will next examine whether this risk is reasonable or unreasonable.

Instrumentalization

Harris claims that Catholics and prolife advocates “are treating the 1–4 embryos that must be sacrificed in natural reproduction as a conscious (though not intended) means to have a live birth” (p. 364).

This may be so. It is important to distinguish, however, between being treated as a means and as a mere means (as Harris himself has done in many of his other articles). Kant’s dictum is that one should treat human beings always as an end, never merely as a means. It is only the latter that Kantians object to and that represents instrumentalization.

Here is the difference between being treated as a means (and also as an end) and being treated as a mere means:

• A couple want to have a child, so they create an embryo. They do everything they can to help that embryo become a baby, but, alas, it dies from natural causes. They treated it as a
means to having a child but also did everything they could to help it to survive, and so also treated it as an end in itself.

• A couple have a sick child who will die without a bone marrow transplant. So, they create an embryo for the purpose of destroying it for its stem cells. This treats the embryo as a mere means to securing the health of their existing child (assuming, as I have been, that the embryo has rights and interests).

Creating embryos by natural reproduction does not instrumentalize them as mere means even if they are highly likely to die. Harris claims, “Given that decisions to attempt to have children using sexual reproduction as the method (or even decisions to have unprotected intercourse) inevitably create embryos that must die . . .” (p. 363). This is false. Some people fall pregnant the first time they try to have a child. These acts of sexual reproduction do not create embryos that must die. So, it is not inevitable that engaging in sexual reproduction results in embryos that must die, even if it is highly likely. Harris gives an example of what he believes is instrumentalization:

A woman has two fertilized eggs and is told it is certain that if she implants both only one will survive but that if she implants only one it will not survive. Would she be wrong to implant two embryos to ensure a successful singleton pregnancy? (p. 364)

This is not instrumentalization. What is characteristic about instrumentalization is that it reduces the chance of an embryo surviving for some other purpose. In this case, however, there is no such reduction in risk. Both embryos have the greatest chance of surviving that they could have. Each is in this way treated as an end in itself, even if this is a means to increasing the chances of a couple having a baby.

Harris gives another example of instrumentalization: Suppose that for some biological reason there was a condition that required that, for one embryo to implant, it was necessary to introduce a companion embryo that would not, and we could tell in advance which would be which. (p. 365) This is not instrumentalization, either. Again, each embryo has the greatest chance it could have of surviving. The fact that there is another benefit—increasing the chance of another embryo surviving or the couple having a baby—does not compromise this. To put the issue in the plainest possible terms, we need to distinguish two ways in which embryos perish in order that a live child is born:

1. Each embryo has a one in five chance of becoming a child.

2. An embryo, A, would not form a child normally. However, if another four embryos, B–E, were destroyed and cells taken from these and inserted into the first, then the first would definitely survive. (This mirrors the situation of multifetal reduction in which a woman has quintuplets. All five babies are likely to die. But if four are killed, the remaining one has a high chance of surviving.) The first does not involve instrumentalization; the second does. But the second is not what happens in nature. Consider a case of true instrumentalization. Imagine that embryos have a 20% chance of surviving. Imagine that, by splitting an embryo, we give each embryo a 15% chance of becoming a baby. If both are implanted, the chance of having at least one live born child is 27.75%. This increases the chance of having a baby. But A is destroyed and replaced by two qualitatively identical embryos B and C, each of which has a lower individual chance of producing a baby. This instrumentalizes embryo A for the couple’s purpose of having a baby. Whether it is wrong is another question. But natural reproduction does not involve any such instrumentalization. Harris frequently uses the term “sacrifice”—but no embryos are sacrificed in natural reproduction. Each gets the greatest chance it could have of living. Sacrifice implies instrumentalization—sacrifice for some purpose. “Both natural procreation and ART involve a process in which embryos, additional
to those that will actually become children, are created only to die” (p. 362). “Only to die” here is ambiguous—it could mean “but do die.” Or it could be used in the sense “only for the purpose of dying.” Talk of embryos dying for other embryos and sacrifice suggests the latter interpretation, which is false. In the case of natural reproduction, these embryos are not created for the purposes of giving other embryos a greater chance of life—every embryo gets the best and equal chance of being a baby.

Harris’s claim that embryos in assisted reproduction are instrumentalized (as mere means) is also not entirely correct. In assisted reproduction, a batch of embryos is created at one time. Then each embryo in that batch has some chance of surviving, albeit lower than if fewer embryos had been created or if it had be conceived naturally. However, it is not created only to die. It is a lottery that embryos do die.

Existing versus New Lives

Let us return to Harris’s central argument. Recall that, for Harris, if

• an act has the foreseeable consequences of bringing into existence a new life and causing the death of four embryos is permissible,
then

• an act that has the foreseeable consequences of saving an existing life and causing the death of four embryos is permissible. This argument fails because Harris fails to consider the alternative courses of action. Comparing saving with bringing into existence:

1. We have as much reason to save existing lives as we have to bring new lives into existence.

2. It is reasonable to act so that four embryos die to bring one new life into existence, when the alternative is having no children at all.

3. It is reasonable to act so that four embryos die to save one life, when the alternative is that none live.

4. It is reasonable to act so that four embryos die to save one life, when the alternative is that one person dies and each of four embryos has a 20% chance of surviving. The third may follow from the first and second. However, the fourth does not follow from the first and second or from the first, second, and third. Consider another thought experiment. Imagine that infant mortality is very high—80% of infants born die of natural causes. Harris’s argument would also apply to this case, if we accept a prolife view of the embryo’s moral status:

• Natural reproduction entails that it is acceptable for four infants to die to bring a new life into existence. (P1)

• There is at least as strong a moral reason to save existing lives as there is to bring new lives into existence. (P2)

• If it is permissible for four infants to die to bring one new life into existence, then it is permissible for four infants to die to save one existing life. (conclusion)

It would not be permissible to kill four healthy infants to save one existing life—so the argument is invalid. Harris has assumed, for argument’s sake, that the embryo has a right to life. If that is so, the healthy embryo or infant has the same right to life as anyone else. So, it cannot be right to kill embryos for research. Alternatively, Harris has merely assumed that
the embryo does not have a full moral status, in which case he is begging the question (or assuming what he set out to prove). In that case, his argument would prove nothing.

Embryonic Stem Cell Research on Spare Embryos

I am told that men are often blind to the faults of a beautiful woman. Harris is overly attracted by the sexiness of the analogy with natural reproduction. However, Harris’s approach of appealing to consistency can be resuscitated and applied to spare embryos. What are spare embryos? Ten percent of couples are infertile, and IVF has offered these people the opportunity to have a child. It is an accepted part of IVF that more embryos are produced than a couple may need. These embryos are then frozen to reduce risks to the woman of numerous attempts to obtain eggs from her body, which can cause illness or death. Prior to embryo freezing, several embryos are transferred to the woman at one time, which leads to the high rates of mortality and disability associated with triplets or quadruplets. The consequences of not freezing embryos would be that women would be harmed and children born by IVF would be worse off.

That is why we have about 70,000 frozen embryos in Australia and more in countries like the United Kingdom. Society has made the decision that it is acceptable to reduce the risk to existing women by creating excess embryos. If embryos can be created and destroyed to reduce the risks to women who are infertile, then it would be reasonable to create and destroy embryos to reduce the risk to the health of other people—that is, those who may benefit from stem cell therapies. If we accept IVF and the production of spare embryos as a part of infertility treatment, we should accept the creation of new embryos as part of the research into embryonic stem cells.

Embryo Research and Unreasonable Risk

What are the true lessons from natural reproduction? The main lesson is that imposing risks on the embryo can be acceptable if it is the best strategy to improve the chances of that embryo having a healthy, happy life as a person. I have argued elsewhere that in certain conditions, some destructive embryo research is the best strategy to maximize the chances of a population of embryos surviving to live a reasonable life.

Does destructive research impose unreasonable risk on the embryo? There are two ways in which we can avoid violating a principle of nonmaleficence. The first is to argue that the embryo is not the kind of being that can be harmed by being killed. This is to deny that the embryo has a moral status.

The second is to argue that the embryo that is killed has not been exposed to an unreasonable risk. I have argued, after Harris, that if the embryo is a part of a population of embryos that will benefit from the practice of killing some, then killing may not be wrong. Whether it is wrong turns on the fraction of ART embryos that are killed and what the benefits are to that population. If stem cell therapies will benefit that population in significant ways, then this may be enough to justify killing some.

Unreasonable Risks

I have so far been considering what constitutes a reasonable risk to impose on an embryo from the embryo’s own perspective (assuming it has one). In fact, society imposes very unreasonable risks on embryos all the time. All preimplantation genetic diagnosis and virtually all prenatal testing work against the interests of the embryo tested. Not only is there some risk of harm to the embryo directly, but the only decision that can be made on the basis of these tests that will affect the outcome of the pregnancy is to kill the embryo.
Genetic testing is not done for the embryo’s sake but for the couple’s sake. Indeed, couples are, in practice, allowed to authorize the killing of embryos and fetuses for many reasons.

The reason these practices are permissible is that the embryo has no perspective, and no rights or interests, because it is not a person. Not only are we permitted to expose embryos to reasonable risks, but, if we are consistent with other social practices, we can expose embryos to any risk in research, provided they are not allowed to live on in a damaged state. If we are consistent, as Harris urges us to be, any kind of destructive embryo research—including creating new embryos by IVF or cloning—is permissible.

Notes

