

# On Some Proposals for Producing Human Stem Cells

Lawrence Masek

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*Abstract.* The author argues that an action is morally wrong if any of its steps serves no purpose apart from preventing the existence of a human being. This principle entails that contraception and some proposed techniques for altered nuclear transfer are morally wrong, but it does not preclude producing stem cells through parthenogenesis. His argument depends on the premise that human life always is a good, including human life produced through immoral actions. The immoral action, not the life caused by the action, is the evil that should be prevented. *National Catholic Bioethics Quarterly* 10.2 (Summer 2010): 257–264.

In an earlier issue of the *NCBQ*, I argued that we would act against human life if we obtained human stem cells through altered nuclear transfer (ANT).<sup>1</sup> This essay refines my earlier position and argues that a technique for obtaining stem cells is morally wrong if any of its steps serves no purpose apart from preventing the existence of a human being. This principle entails that some proposed techniques for ANT are morally wrong even if they do not produce or destroy any human embryos. Should advances in stem cell research (such as reprogramming adult stem cells) make

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Lawrence Masek, Ph.D., is an associate professor of philosophy at Ohio Dominican University in Columbus, Ohio. The author thanks Michael Dougherty for comments on earlier drafts of this paper.

<sup>1</sup> See my “A Contralife Argument against Altered Nuclear Transfer,” *National Catholic Bioethics Quarterly* 6.2 (Summer 2006): 235–240. I defend this argument at greater length in my “Treating Humanity as an Inviolable End: An Analysis of Contraception and Altered Nuclear Transfer,” *Journal of Medicine and Philosophy* 33.2 (April 2008): 158–173.

ANT unnecessary, this principle still would be relevant to parthenogenesis, in vitro fertilization (IVF), and contraception.<sup>2</sup>

Suppose I learn that my n'er-do-well brother is considering a weeklong visit to my home. On hearing this news I hire guards to stand at the end of my driveway with instructions to turn him away before he steps on my property.<sup>3</sup> Now suppose that my mother learns of my action and admonishes me for it. She certainly would be surprised if I assured her that I was treating his visit as a good thing because I would welcome him should he slip past my guards. Clearly I cannot treat his visit as a good while also taking steps intended to prevent it. I could treat his visit as a good that I decline in favor of another good if I decided to take a vacation instead of hosting him. Instead, my instruction to the guards treats his visit as an evil, or something to be actively prevented. I contend that my instruction to the guards treats my brother's visit analogously to the way that ANT would treat the good of human life. People cannot treat X as a good while intending to prevent X, and people must intend to prevent X if part of their action serves no purpose apart from preventing X.

### ***Dignitas personae* on Altered Nuclear Transfer and Parthenogenesis**

One disanalogy is that my instruction to the guards could stem from selfishness or malice toward my brother, whereas advocates of ANT have the laudable goal of obtaining stem cells without producing or destroying human embryos. To achieve this goal, ANT, a modified form of somatic cell nuclear transfer, would proceed by altering the nucleus of a somatic cell, transferring the altered nucleus into an enucleated oocyte, and stimulating the new cell to divide. The alteration would ensure that the subsequent transfer would not produce a human embryo.<sup>4</sup> So far, the ethical debate about ANT has focused on whether the biological product would be morally similar to a hydatidiform mole or to a damaged human embryo.<sup>5</sup>

*Dignitas personae* considers proposals for obtaining pluripotent stem cells without producing or destroying human embryos.<sup>6</sup> As examples of such proposals,

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<sup>2</sup>Parthenogenesis, from the Greek for "virgin origin," refers to the process of stimulating an ovum to divide without its being fertilized by sperm.

<sup>3</sup>I should add that this example is in no way autobiographical, as I have only one sibling—a sister who is a successful pilot and a welcome guest!

<sup>4</sup>See William B. Hurlbut, "Altered Nuclear Transfer as a Morally Acceptable Means for the Procurement of Human Embryonic Stem Cells," *National Catholic Bioethics Quarterly* 5.1 (Spring 2005): 145–151.

<sup>5</sup>For a history of the debate (from the perspective of an opponent of ANT), see W. Malcolm Byrnes, "Partial Trajectory: The Story of the Altered Nuclear Transfer-Oocyte Assisted Reprogramming (ANT-OAR) Proposal," *Linacre Quarterly* 74.1 (February 2007): 50–59. I find Byrnes's summary informative, although I do not share his view that proponents of ANT are motivated by "zeal to promote the conservative political agenda" (55) or that they believe in "genetic determinism" (57).

<sup>6</sup>Congregation for the Doctrine of the Faith, *Dignitas personae* (September 8, 2008), n. 30. Pluripotent stem cells are those that have the potential to develop into many different types of specialized cells, such as nerve cells or muscle cells.

footnote 49 of the Instruction mentions human parthenogenesis, ANT, and oocyte-assisted reprogramming (a form of ANT that I discuss below). The Instruction says,

These proposals have been met with questions of both a scientific and an ethical nature regarding above all the ontological status of the “product” obtained in this way. Until these doubts have been clarified, the statement of the Encyclical *Evangelium vitae* needs to be kept in mind: “what is at stake is so important that, from the standpoint of moral obligation, the mere probability that a human person is involved would suffice to justify an absolutely clear prohibition of any intervention aimed at killing a human embryo.” (n. 30)<sup>7</sup>

*Dignitas personae* does not say whether ANT’s producing something other than a human embryo is a sufficient or merely a necessary condition of its moral permissibility.

Some proponents of ANT treat it as a sufficient condition: “We would reasonably expect to obtain precisely the type of stem cells desired by advocates of embryonic stem cell research, without ever creating or killing embryos. This method of obtaining human pluripotent stem cells would not only be morally unimpeachable (assuming nothing unethical is done in obtaining somatic cells or oocytes used in the process), it would have other important advantages over using so-called spare embryos left over from IVF efforts.”<sup>8</sup> This defense of ANT assumes that the technique itself, setting aside the means used to obtain the biological materials for it, is “morally unimpeachable” provided that the alteration prevents the subsequent transfer from producing a human embryo. I maintain that any particular technique for obtaining pluripotent stem cells must satisfy another principle: it must not include any step that serves no purpose apart from preventing the existence of a human being. Any technique that violates this second principle would act against the good of human life.

### An Analysis of ANT and Parthenogenesis

The proposed technique of oocyte-assisted reprogramming (ANT-OAR) would alter the nucleus of the somatic cell by expressing high levels of the gene *NANOG* prior to the transfer. Because *NANOG* is expressed in pluripotent stem cells but not in single-celled embryos, this alteration would be designed to prevent the transfer from producing an embryo. I will assume for the sake of discussion that the alteration would work exactly as proposed. Suppose that someone performing ANT-OAR is asked, why are you overexpressing *NANOG*? To my knowledge, no defender of this technique has given evidence that overexpressing *NANOG* would make the resulting stem cells any more effective in treating diseases. Therefore, the answer must be that overexpressing *NANOG* will prevent the subsequent transfer from producing a human being.

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<sup>7</sup>Ibid. For an explanation and defense of oocyte-assisted reprogramming, see “Production of Pluripotent Stem Cells by Oocyte-Assisted Reprogramming,” Joint Statement with Signatories, *National Catholic Bioethics Quarterly* 5.3 (Autumn 2005): 579–583.

<sup>8</sup>Markus Grompe and Robert P. George, “Creative Science Will Resolve Stem-Cell Issues,” *Wall Street Journal*, June 20, 2005, A14, available at <http://alterednucleartransfer.com/publications/2.pdf>.

A defender of ANT-OAR could suggest that overexpressing *NANOG* serves the end of obtaining stem cells that could be used to treat diseases without producing any human embryos, but this end is a complex end that consists of two parts: obtaining stem cells and not producing human embryos. Overexpressing *NANOG* serves only the second part. More generally, I know of no evidence that stem cells produced by *any* proposed technique of ANT would treat diseases more effectively than stem cells produced by unmodified somatic cell nuclear transfer (i.e., somatic cell nuclear transfer in which the nucleus is unaltered). The proposed alterations in ANT would accomplish nothing apart from preventing the subsequent transfer from producing a human being. Therefore, someone who performed the alteration would act against human life by intending to prevent the existence of a human being.

My earlier essay in the *NCBQ* contended that altering the nucleus prior to transfer would be morally similar to using contraception prior to or after sex because both agents would act against human life.<sup>9</sup> To elaborate on this comparison, both ANT and so-called “contraceptive sex” are complex actions that can be analyzed into components.<sup>10</sup> ANT consists of removing the nucleus from a somatic cell, altering that nucleus, transferring it into an enucleated oocyte, and stimulating the new cell to divide. Contraceptive sex consists of the act of contraception itself (e.g., putting on a condom or taking an anovulent pill) and the act of intercourse. Further, both ANT and many cases of contraceptive sex are motivated by the desire to avoid producing a human being immorally. Most importantly, both ANT (at least in the forms of which I am aware) and contraceptive sex include a component action that is intended to prevent the production of a human being. As the alteration of the nucleus does not contribute to the end of obtaining stem cells to treat diseases, the act of contraception does not contribute to other ends of sexual intercourse (e.g., pleasure and marital intimacy). Therefore, both ANT and contraception treat the existence of a human being as an evil—i.e., as something to be actively opposed—and not as a good that they decline to pursue in favor of other goods.

One objection to my analysis is that someone who performed ANT could intend to avoid acting immorally, not to prevent the existence of a human being.<sup>11</sup> I agree that unmodified somatic cell nuclear transfer would be morally wrong because it would produce human beings apart from marital intercourse and place them in a

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<sup>9</sup>Masek, “Contralife Argument,” 236–238.

<sup>10</sup>I say “so-called” because I agree with Ronald Lawler, Joseph Boyle, and William May that “contracepted intercourse” is a more accurate term. They explain: “Intercourse is the chosen object of one human act, whereas contraception or the impeding of procreation is the chosen object of another human act, namely the contraceptive act.” Lawler, Boyle, and May, *Catholic Sexual Ethics: A Summary, Explanation, and Defense*, 2nd ed. (Huntington, IN: Our Sunday Visitor, 1998), 146. Germain Grisez, Joseph Boyle, John Finnis, and William E. May state, “Thus, those who do choose to contracept plainly do so by a choice and by performances entirely distinct from the choice to engage in marital intercourse and the carrying out of that choice.” See Grisez et al., “‘Every Marital Act Ought to Be Open to New Life’: Toward a Clearer Understanding,” *Thomist* 52.3 (July 1988): 370.

<sup>11</sup>Alexander Pruss suggested this objection in an e-mail correspondence.

situation where they would be killed.<sup>12</sup> The objection fails because the non-existence of a human being would be necessary to prevent the subsequent transfer from being morally wrong. Analogously, suppose that an unmarried woman decides that she would act immorally by conceiving a child. She could refrain from sexual intercourse and pursue goods other than having a child. In that case, she would be analogous to someone who pursues goods other than the stem cells produced by unmodified somatic cell nuclear transfer. Instead, she remains sexually active and takes an anovulent pill. Now she resembles someone who performs ANT. After determining that an action (unmodified somatic cell nuclear transfer or sex) would be morally wrong because it would produce a human being, neither agent foregoes that action altogether. Instead, both perform another action (altering the nucleus or taking the pill) in order to prevent the existence of a human being.

Parthenogenesis could provide a sound alternative to unmodified somatic cell nuclear transfer and ANT. Although parthenogenesis could be used simply as a form of reproduction, it also has been suggested as a way to obtain pluripotent stem cells without producing or destroying human embryos.<sup>13</sup> Like the cells produced by ANT, parthenotes (the products of parthenogenesis) have a disputed moral status.<sup>14</sup> I will suppose for the sake of discussion that a technique of parthenogenesis could be developed in which stimulating the ovum to divide would produce pluripotent stem cells but not a human being. Such a technique would not include a component intended to prevent the existence of a human being. Stimulating the ovum to divide would serve the purpose of obtaining stem cells for treating diseases. Even if we chose this technique of parthenogenesis over other means of obtaining stem cells because it would not produce a human being, we still would not intend to prevent the existence of a human being. If asked why we are stimulating that ovum we could answer that doing so will cause the ovum to divide, which will produce stem cells that can be used to treat diseases. More technical details could be added, but this answer makes the action intelligible without any reference to the non-existence of a human being. Therefore, this technique would not act against human life.

This defense of parthenogenesis assumes that an agent's intentions do not include all the considerations that are relevant in choosing one possible action over another, an assumption that I defend at greater length elsewhere.<sup>15</sup> As evidence, suppose that I am considering trading my small car for a minivan and must decide

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<sup>12</sup>See, for example, CDF, *Dignitas personae*, nn. 28–32.

<sup>13</sup>For an explanation and criticism of parthenogenesis, see Mark S. Latkovic, "The Science and Ethics of Parthenogenesis," *National Catholic Bioethics Quarterly* 2.2 (Summer 2002): 245–255.

<sup>14</sup>For an argument that a parthenote would be a damaged human embryo, see *Ibid.*, 252–254. For an argument that the parthenote would be morally similar to a mole or cyst see Germain Grisez, *The Way of the Lord Jesus*, vol. 2, *Living a Christian Life* (Quincy, IL: Franciscan Press, 1993), 496.

<sup>15</sup>Lawrence Masek, "Intentions, Motives and the Doctrine of Double Effect," *Philosophical Quarterly* 60.240 (July 2010): 567–585.

between two models. Both have significantly worse gas mileage than my car, but model A has slightly better gas mileage than model B. That consideration motivates me to trade my car for model A. Saying that I trade my small car for model A with the intention of saving money on gas would be incorrect, since the trade will cause me to spend more on gas.<sup>16</sup> I assume that the transaction consists of only a trade, not a trade-in followed by a purchase. This trade could be analyzed into components (e.g., signing a piece of paper, handing over the keys, etc.), but I cannot explain any component by saying that it will save money on gas. My end is to acquire model A, and my means is relinquishing possession of my small car. The consideration about gas mileage explains why I choose to trade for model A instead of trading for model B, but spending less money on gas is neither an end nor a means of the trade. This example illustrates the general principle that I can be motivated to choose A over B *because of X* without *intending X*. Therefore, someone can choose parthenogenesis over other methods for obtaining stem cells without acting against human life.

### ***Dignitas personae* and the Value of Immorally Caused Human Life**

So far, I have argued only that ANT-OAR and similar techniques of ANT would act against human life and that parthenogenesis might not. My argument also requires the premise that acting against human life is morally wrong. I will not attempt to establish this premise in this essay, but I will show that it is well supported by Catholic moral teachings, including *Dignitas personae*.

*Dignitas personae* reserves judgment on ANT and parthenogenesis, but it does state that “human life is always a good.”<sup>17</sup> Someone could interpret this statement to mean merely that an *existing* human life always is a good. On this interpretation, people would act immorally by harvesting stem cells from embryos produced by somatic cell nuclear transfer but would act morally by preventing the transfer from producing an embryo in the first place. As evidence against this interpretation, consider the discussion of contraception in *Evangelium vitae*. According to Pope John Paul II, both abortion and contraception result from “a hedonistic mentality unwilling to accept responsibility in matters of sexuality,” and both actions treat potential life as “an enemy to be avoided at all costs.”<sup>18</sup> (This passage does not restrict the criticism of contraception to married couples.) A few paragraphs later, John Paul II rejects contraception, sterilization, and abortion as means of population control.<sup>19</sup> If contraception and sterilization were wrong only because they violated the good of marriage and not of human life, then governments might not act immorally

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<sup>16</sup>This example is a modification of Frances Kamm’s Party Case. See Frances M. Kamm, *Intricate Ethics: Rights, Responsibilities, and Permissible Harm* (Oxford: Oxford University Press, 2007), 95. I present a similar example in my “Intentions, Motives and Double Effect.”

<sup>17</sup>CDF, *Dignitas personae*, n. 8.

<sup>18</sup>John Paul II, *Evangelium vitae* (March 25, 1995), n. 13.

<sup>19</sup>*Ibid.*, nn. 16–17.



if they required contraception or sterilization for unmarried people. Further, John Paul II identifies efforts to make contraception, abortion, and sterilization widely available as part of a “conspiracy against life.”<sup>20</sup> He does not identify contraception and sterilization only as part of a conspiracy against *marriage*.

These three passages in *Evangelium vitae* assume that contraception and sterilization act against human life as well as marriage. They do not act against existing human life as abortion does, but they do act against potential human life, which “becomes an enemy to be avoided at all costs.”<sup>21</sup> These passages provide evidence that the statement in *Dignitas personae* about the goodness of human life should be interpreted as applying to both potential and existing human life.

One objection to my position is that it would prove too much, including the conclusion that attempts to prevent IVF are morally wrong.<sup>22</sup> For example, suppose that a woman who owns a fertility clinic is persuaded by the argument against IVF in *Dignitas personae* and instructs all of her employees not to create any more human embryos in vitro. Some employees are determined to do so anyway so the owner restrains them, either herself or through the police. My position does not entail that the owner acts immorally in this example. She does not act against human life, because she can restrain her employees from creating human embryos without intending to prevent the existence of a human being. IVF is morally wrong—even if it does not result in conception—because it violates the integrity of marriage and treats human life as a technological product.<sup>23</sup> These morally objectionable aspects of IVF occur *before* it has the effect of producing a human being. Likewise, extramarital sex does not somehow become more morally wrong if a child is conceived after the woman ovulates a few days later. Because preventing IVF serves the purpose of promoting respect for marriage and human life, the owner of the fertility clinic does not necessarily intend to prevent the existence of a human being.

To illustrate my analysis of IVF with an absurdly far-fetched situation, suppose that monkeys escape from a zoo and break into the clinic. The monkeys then tip over some equipment which produces a human being in vitro. In this case, the monkeys do not frustrate the owner’s purpose, since their rampage does not cause anyone to disrespect marriage or human life. Unlike the alteration of the nucleus in ANT-OAR, attempts to prevent IVF do serve a purpose apart from preventing the existence of human beings. Therefore, my argument against ANT does not preclude attempts to prevent IVF.

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<sup>20</sup>Ibid.

<sup>21</sup>Ibid., n. 13. For references to other Catholic teachings that reject contraception for being opposed to the good of human life, not merely the goods of marriage, see Grisez et al., “Every Marital Act,” 366–367.

<sup>22</sup>Craig Iffland and Alexander Pruss suggested this objection in e-mail correspondences.

<sup>23</sup>I do not attempt to defend this evaluation of in vitro fertilization here. For a defense, see the discussion of artificial fertilization in Congregation for the Doctrine of the Faith, *Donum vitae* (February 22, 1987), II. See also CDF, *Dignitas personae*, nn. 16–17.

### **The Evil to Be Prevented**

I have argued that some proposed techniques of ANT contradict the view that human life is always a good. I also have defended some forms of parthenogenesis and attempts to prevent IVF. My conclusions do not deny that unmodified somatic cell nuclear transfer, extramarital sex, and IVF violate the principle that humans have a right to be conceived in marriage.<sup>24</sup> This principle means that unmarried people always should choose goods other than the conception of a child. It does not mean that a child who could be conceived outside of marriage may be treated as an evil prior to conception. Neither IVF nor extramarital sex produces human beings whose lives have no value or who would have been better off not existing. Children produced by IVF and by extramarital sex are good despite being conceived by immoral means. If *Dignitas personae* is correct that human life is always a good, then the immoral act, not the child, is the evil to be prevented.

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<sup>24</sup>See CDF, *Donum vitae*, I.6.