Embryo

A defense of human life

Robert P. George and Christopher Tollefsen
Doubleday. New York, New York, USA. 2008.
242 pp. $23.95. ISBN: 978-0-385-52282-3 (hardcover).

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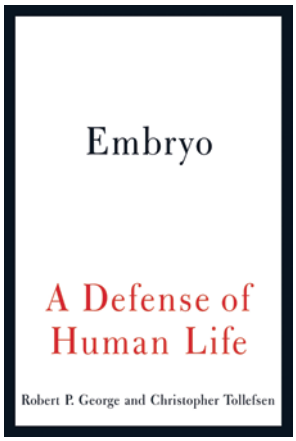

In 2001, I moderated a debate on the ethics of human embryonic stem cell research that was argued on the affirmative side by the writer William Kinsolving and his daughter, Eliza, and on the negative side by the bioethicist and molecular biologist Father Kevin Fitzgerald. At one point, assuming the role of a Sunday morning news show host, I questioned Father Fitzgerald about whether human life began at the time of sentience — ability to experience feelings. Accustomed to answering this question, Father Fitzgerald replied that, in fact, we do not know when human life begins and that, in the absence of that knowledge, we must infer that it began at the time of conception, making embryonic stem cell research (and therapy) unethical.

In their book *Embryo: a defense of human life*, Robert George and Christopher Tollefsen have no doubts about when human life begins. George, a professor of jurisprudence at Princeton University, and Tollefsen, an associate professor of philosophy at the University of South Carolina, assert that human life begins at the time of conception. They are not swayed by philosophical arguments of mind-body dualism dating back to Plato and revisited during the Enlightenment by Descartes. They assert that a person is not an immaterial entity that is different from the body and capable of an independent existence.

Likewise, the authors are not swayed by more recent scientific arguments about the pluripotency of early embryonic blastomere cells. Early embryos can be disaggregated to yield embryonic stem cells that can differentiate into specific cell types, such as insulin-producing β cells for treatment of diabetes mellitus — the goal of the Kinsolvings' quest. Alternatively, each cell can be cultured to form a new multicellular embryo that can be implanted separately to form twins, triplets, or multiples of limitless numbers. Or, cells from two embryos can be aggregated to form a chimera that develops into a normal individual (or a true hermaphrodite, if the embryos were of opposite sex) (1). Yet most human embryos are chromosomally abnormal and do not have the potential to develop into human babies. Rather, failure to implant into the uterus or to divide past a certain stage, or the formation of abnormal structures such as hydatidiform moles, is perhaps more the norm than the exception during early human development. Neither totipotency nor lethal defectiveness alters the authors' views. Embryos are human beings from the moment of fertilization, period.

The debate about the ethics of human embryo research is not new. In 1994, I acted as an advisor to Paul Marks, the co-chair of the NIH Human Embryo Research Panel. In my position paper, I argued that not only would human embryonic stem cell research lead to a potentially promising therapy, but that embryo research would provide insight into early embryonic human development, human birth defects, and infertility — insights that have carried over into my own research (2). Model organisms, such as the mouse, are not an adequate substitute for studying early human development because they differ from humans in size, appearance, longevity, physiology, genetics, and performance. It is well known that the panel recommended that the NIH should fund human embryo research, a step that was not taken by the Clinton administration. It was only during the administration of George W. Bush that funding was made available for research on previously established embryonic stem cell lines. This position was put forth as a compromise by the President's Council on Bioethics, of which Robert George is a member. Clearly, George was not in the voting majority. In fact, in *Embryo*, George seems to be settling old scores with some of the other members of the Council.

Recognizing the implications of their views, George and Tollefsen propose that all research on cultured human embryonic cells should be prohibited in the United States, that funding should be increased for research into adult, amniotic, and placental stem cells and for distinguishing dead from living cryopreserved embryos, and that the production of human embryos in IVF procedures should be limited only to those that will be implanted (a limitation that has been imposed by the Italian government). They also recommend that adoption procedures should be established for the millions of currently cryopreserved embryos.

This book is a thoughtful treatise that is drawn from the premise that human life begins at the time of conception. Quite remarkably, research on human abortus material, permissible under NIH and institutional review board guidelines if the abortion was not performed for the purpose of research, is not discussed in this book. Reasonable people can consider the same evidence and draw opposite conclusions. Let the debate proceed on a higher plane.

1. Yu, N., et al. 2002. Disputed maternity leading to identification of tetragametic chimerism. *N. Engl. J. Med.* **346**:1545–1552.
2. Ostrer, H., Wilson, D.I., and Hanley, N.A. 2006. Human embryo and fetus research. *Clin. Genet.* **70**:98–107.