The Ethics of Embryonic Stem Cell Research

The ethics of Embryonic Stem Cell Research will be explored in this paper. I present a utilitarian argument for embryonic stem cell research and counter with the “sanctity of life” opposition. Recently, at Emory University in Atlanta, a team of neurosurgeons implanted stem cells into the spinal cords of 3 patients with Amyotrophic Lateral Sclerosis (aka ALS / Lou Gehrig’s disease). This was the first U.S. clinical trial of stem cell injections into the spinal cord for the treatment of ALS.¹

Embryonic stem cell research (ESCR) has shown great potential to eventually treat and cure debilitating diseases such as Alzheimer’s and Parkinson’s diseases, among many other currently incurable diseases. Similarly, ESCR has shown great promise in treating spinal cord injuries.

ESCR involves studying, manipulating and growing embryonic stem cells. However, using embryos in stem cell research destroys their ability to grow, thus ending their ability to develop into functional human beings, creating the ethical debate surrounding ESCR.

What are Stem Cells?

To describe my ethical position I need to provide some detail about the stages of the early embryo and what a stem cell is. At the time of conception, or fertilization, a sperm enters the egg to create a zygote. The zygote begins to divide into a mass of 50 to 100 undifferentiated cells, called a blastocyst, as it migrates up the fallopian tube towards the uterus. However, it takes up to 14 days before the blastocyst implants in the uterus.
Undifferentiated stem cells have the ability to develop into one or more of the four different types of tissue that make up the organs of our body, but have not yet done so. The stem cells of the blastocyst are the most versatile of the 4 types of stem cells, able to differentiate into all 4 types of human tissue, thus making them the most valuable to medical research.

I emphasize this point as it is critical to my utilitarian position - the stem cells of the blastocyst remain undifferentiated for roughly the first two weeks after fertilization, and these undifferentiated stem cells have not yet taken on the characteristics of human tissue. Only after that do the stem cells begin to grow and create three distinct layers, called germ layers. The cells of the germ layers grow into the various organs of the body.

The stem cells used in ESCR come from the blastocyst-stage embryo, defined as an embryo that has not been implanted into a uterus about 5 days after being fertilized by in vitro fertilization. These stem cells are removed within the first week after in-vitro fertilization and placed in culture where they continue to divide as undifferentiated stem cells. They then become what are considered a “line of stem cells”. During in vitro fertilization, many excess blastocyst-stage embryos are created.

The Utilitarian Case for Embryonic Stem Cell Research

Based on the above discussion, a blastocyst-stage embryo is an undifferentiated mass of cells and is not yet viable. Therefore, prior to implantation, conception does not imply personhood or individuality. The embryo deserves respect and has potential value, but it is not yet a living person. Supporting my view is Louis M. Guenin, who presents an alternative concept – “… the matter comes to rest on one necessary condition of personhood. Until day 14, the possibility of monozygotic twinning (and recombination) remains. That is, until day 14, identity
of an individual is not established. “No entity,” said the philosopher W.V. Quine, “without
identity.” In comparing the status of fetuses and embryos, Robertson states “those holding this
view about pre-viable fetuses view pre-implantation embryos, which are much less developed than
fetuses, as too rudimentary in structure or development to have moral status or interests in their
own right.” Robertson continues “…they are not harmed by research or destruction when no
transfer to the uterus is planned.”

In addition, thousands of excess blastocysts are created each year during in vitro
fertilization that are frozen and set aside for destruction. These points, taken together, form the
basis for my rule utilitarian argument to ethically justify ESCR. Based on strict rules for use,
ESCR creates the most utility, producing the most “beneficial consequences for society.” ESCR
offers the potential to treat and cure numerous diseases and injuries for all humanity while
destroying excess, non-viable blastocysts that are destined for destruction anyway. Just think of a
world in which Parkinson’s disease, Lou Gehrig’s disease, Multiple Sclerosis, kidney disease
and spinal cord injuries can be treated and cured. Guenin again assists me by setting rules for
use of embryonic stem cells: These stem cells must:

1. be derived from blastocysts at about day 5 of gestation
2. be created in vitro in an assisted reproduction procedure
3. remain in storage after completion of all intrauterine transfers requested by the mother
   (these blastocysts are slated for destruction); and
4. have departed parental control according to instructions to the attending physician that
   the embryo shall be given to research and that there shall not occur any transfer to a
   uterus…

Under these rules, Guenin claims that ESCR is “permissible at least for embryos that are less
than 2 weeks old.” Because these embryos are to be destroyed anyway, and based upon the above rules of usage, no more additional harm can be done by using them in stem cell research.

The writings of Gene Outka support my argument. Outka takes what he calls a “middle region” and invokes and extends the “nothing is lost” principle first introduced by Paul Ramsey. While Ramsey totally opposed the intentional killing of innocent life, he was willing to attach two exempting conditions to his position. As stated by Outka, Ramsey held that “One may directly kill when two conditions obtain: a) the innocent will die in any case; and b) other innocent life will be saved.” While Outka admits that extending the “nothing is lost” principle to ESCR is a stretch, he argues that “it is correct to view embryos in reproductive clinics (in vitro fertilization) who are bound either to be discarded or frozen in perpetuity as innocent lives who will die in any case, and those third parties with Alzheimer’s, Parkinson’s, et. al., as other innocent life who will be saved by virtue of research on such embryos.” Outka defends his extension “as a move to the effect that a) nothing more is lost, and b) less is lost, or at least, someone is saved.” In his article, Outka goes into immense detail about his position, too much to discuss in this paper, but well worth reading. As long as in vitro fertilization for infertility purposes continues to create thousands of excess, unimplanted embryos, these embryos will continue to be frozen in perpetuity or destroyed, and will die in any case. Therefore nothing is lost, or nothing more is lost, by using these embryos for ESCR.

The Case against ESCR

The main argument against ESCR originates from the Catholic Church and other conservatives. Their view is that the embryo achieves human status and personhood at the time of conception, thus deserves the inherit dignity, respect, and sanctity of life afforded to all
humans. To destroy an embryo to create embryonic stem cells for research, in essence, is killing a human person. Doerflinger considers the embryo as a human individual deserving full moral status – “The human individual, called into existence by God and made in the divine image and likeness,… must always be treated as an end in himself or herself, not merely as a means to other ends….” Sansom, citing the works of Peters, Lebacqz and Bennett, introduces substance dualism – the view “that God gives soul to the body at conception, and hence it should be respected as having inherent dignity and consequently should not be destroyed for its stem cells.” There are other arguments against ESCR that derive directly from the “sanctity” argument above, such as moral complicity including the possibility that some may gain from ESCR, and the inevitability that the excess embryos will be destroyed, but these will not be addressed in this paper. Oduncu claims that human embryos are Kantian persons from the time of conception and ESCR uses them as a means to an end.

To counter this “sanctity” argument, the stem cells of the blastocyst-stage embryos used in ESCR have not yet differentiated into human tissue and are not viable because, as excess embryos, they have no potential to be implanted into a uterus. Therefore I do not believe that these embryos, while being biological tissue, achieve the status of being persons deserving full moral status. Both Guenin and Manninen turn the tables on those employing the Kantian second imperative to support the “sanctity” argument against ESCR. Manninen claims that Kant defines personhood as having the ability to reason. Guenin concurs “But for Kant, the basis of dignity is autonomous reason; humanity includes only rational beings. Embryos are not rational.” Using this definition, blastocyst-stage embryos do not possess the ability to reason, therefore are not persons. Guenin goes on to use Kantiasm in support of my utilitarian argument. “In general, Kant holds that as rational beings we should act on those maxims that, without
contradicting ourselves, we can will as universal laws. That a woman may decide against intrauterine transfer and donate an epidosembryo [blastocyst] is such a universalizable maxim.

We also have a duty of beneficence. We cannot decline to will that aid be given those in need if we wish it to be given us should we be in need. As soon as we imagine ourselves in the place of those who suffer in ways that epidosembryo research could prevent, we are impelled to the universalizable maxim that we should foster that research.”¹⁸

**Conclusion**

From a sheer numbers standpoint, there are more than half a million frozen embryos left over in fertility clinics in the US alone. Until the techniques of in vitro fertilization result in no excess embryos languishing in frozen perpetuity, this is the reality. What do we do with them? I feel we show these embryos more respect by using them in ESCR to alleviate human suffering than by discarding them down clinic drains – a very disrespectful fate. ESCR can be justified using this utilitarian argument.

¹ Emory University, www.emory.edu/EMORY_REPORT/stories/2010/05/03/alc_study.html
² University of Minnesota, Center for Bioethics, Human Stem Cells, An Ethical Overview, http://www.ahc.umn.edu/img/assets/26104/Stem_Cells.pdf, p 7
⁵ James Fieser, "Ethics," Internet Encyclopedia of Philosophy
⁷ Ibid
10 Ibid
11 Ibid
15 Oduncu, Fuat S. Stem Cell Research in Germany: Ethics of Healing vs. Human Dignity. *Medicine, Health Care and Philosophy*. Volume 6, Number 1, p. 5-16.
18 Ibid