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Ethics Analysis of the Human Embryonic Stem Cell Research Debate

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Abstract

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Controversy regarding Human embryonic Stem Cell (hESC) research is evident in the medical and scientific community, legislative, judicial, and executive branches of the government, private companies, religious affiliations, special interest groups, and among the general American public. Stem cells are derived from adult stem cell resources, which are termed non-embryonic or from the cells of immature blastocytes termed embryonic stem cells. Non-embryonic cells do not have the ability to differentiate into other specialized tissues, whereas embryonic cells are capable of differentiating into almost any type of tissue. hESC research, which is the focus of this paper, includes the direct creation and therapeutic cloning of human embryos, known as somatic cell nuclear transfer (SCNT) during the blastocyte-stage of development, the use of surplus embryos from in vitro fertilization, and from tissue derived from extracted embryos through abortion. The purpose of hESC research is threefold: (1) to advance science and medicine, (2) prevent disease, and (3) cure certain diseases. hESC research is an ethical dilemma facing the United States of America. Opponents of hESC often cite the rights of the embryo and define the embryo at conception. Supporters of hESC research include the scientific and medical community, and private hESC research companies. The unique political system of the United States has allowed for a dichotomous policy to arise, where federal funding of hESC is prohibited, but private companies and individual states are able to legally forge a path in hESC research. The prohibition of federal funds has created an abyss between states who choose to fund hESC research and those who prohibit it. It has also set the stage for yet another private corporation to advance in hESC and place profit above the American public. The embryo is the only silent member in this debate.

Key Words: Stem cell research, embryo, ethical dilemmas, President Bush Stem Cell Policy

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Lori Kahn, MS DPT

Controversy regarding Human embryonic Stem Cell (hESC) research is evident in the medical and scientific community, legislative, judicial, and executive branches of the government, private companies, religious affiliations, special interest groups, and among the general American public. Stem cells are derived from adult stem cell resources, which are termed “non-embryonic” or from the cells of immature blastocytes termed “embryonic” stem

cells (Korobkin, 2007). Non-embryonic cells do not have the ability to differentiate into other specialized tissues, whereas embryonic cells are capable of differentiating into almost any type of tissue (Korobkin, 2007). hESC research, which is the focus of this paper, includes the direct creation and “therapeutic cloning” of human embryos, known as somatic cell nuclear transfer (SCNT) (Snead, 2005) during the blastocyte-stage of development, the use of surplus embryos from in vitro fertilization (Dickens and Cook, 2007), and from tissue derived from extracted embryos through abortion. The purpose of hESC research is threefold: (1) to advance science and medicine, (2) prevent disease, and (3) cure certain diseases. The most useful type of stem cell is the “pluripotent stem cell” and is derived directly from the blastocyte during the five to seven days after fertilization (Korobkin, 2007). This limited time period for optimization of hESC research suggests a greater need for SCNT to provide embryos specific to this stage of development for optimal differentiation of tissues. Others continue to argue that “we simply do not know which type of stem cell research is the most promising”. The opposition argument often refers to the unique problems related to pluripotent embryonic stem cell development, including the probability of forming certain prolific tumors due to uncontrolled cell division (Dickens and Cook, 2007).

Early 20th century American medical controversies centered on eugenics, birth control, population control, and planned reproduction (Marshall and Donovan, 1992). Similar reproductive themes including hESC and cloning, one century later, have erupted in American society. The majority of the American public agrees that human cloning for reproductive purposes should be banned. However, the debate regarding the use of cloned embryos for research purposes remains volatile. Religious ethicists provide arguments according to moral motivation and guidance. Catholic religious ethicists argue against hESC research based on grounds of “murder of the embryo”. Judaism presents a more complex and rich argument with exceptions allowed for *in vitro* fertilization embryos, tissue extracted from abortive fetuses already destined for destruction, and “therapeutic cloning” based on the embryos decreased status when outside the womb (Dorff, 2002). The Islamic viewpoint is not as clear with some siding with the Catholic stance on hESC research and other scholars quoting a termination date of 56 days post fertilization as the acceptable period for extraction processes (Dabu, 2005; Syed, 2006). Many religious and secular opponents to hESC research fear this type of “therapeutic cloning” will be used in future generations for actual cloning of human beings (Snead, 2005). An example of this perspective is reflected in the Weldon Bill, which proposed criminalization of all cloning, including “therapeutic cloning” (Pasquele, 2002). Secular opponents including women’s rights groups also oppose the harvesting of eggs for hESC to respect the autonomy and true voluntary consent of women, acknowledging the possibility of coercion of women from poor socio-economic backgrounds for egg harvesting procedures.

At the other end of the spectrum is the scientific community who view hESC through a utilitarian lens where the ends (cure of disease through hESC) is used to justify the means of “human cloning”. Some view hESC as leading to the repetition of historical atrocities and cite examples from World War II theories of attaining a “perfect race”, experimentation with genetic alteration, and unnatural population control method. In a fictitious worst case scenario, *The Boys from Brazil*, referred to by Korobkin (2007), is a novel from the 1970s which highlights the negative aspect of embryonic stem cell research possibilities where cloning falls into the “wrong hands” and the very real historical Nazi concentration camp scientist, Josef Mengele, makes several clones of Adolph Hitler (Korobkin, 2007). Other rule utilitarian approaches consider

hESC research as opportunity for the advancement of women, autonomous decision making in a complex male dominated society, and to choose the perfect qualities for future generations, free of disease. They cite specific rules that, if endorsed, would protect the public from extreme measures of research, including reproductive human cloning (Korobkin, 2006).

In 2001, serious concerns about the ethics of embryonic stem cell research as they relate to values of respect for human dignity, informed consent related to donors, possibility of financial coercion and manipulation of donors were raised by Chair of the President's Council on Human Bioethics, Dr. Leon Kass (Kass, 2003). The main ethical question considered among the research regarding hESC can be posed in four main questions. What do we owe to developing human life? What do we owe to science and the possible alleviation of human suffering and disease by using hESC research? What rights does the embryo have? What rights do the people have in relationship to furthering science for alleviation of human suffering?

In 1975, a federal rule was enacted that disallowed for any research to be done on in vitro fertilization products until reviewed and accepted by the Ethics Advisory Board (EAB). This appeared to be an early attempt to acknowledge the "potentiality of autonomy" of the embryo and right to respect and dignity. The rule was directed toward embryos resulting directly from in vitro fertilization and may have also been a reaction to protect abortive embryos from scientific experimentation from the 1973 *Roe Vs Wade* ruling. However, in 1979, the EAB gave the approval to fund embryonic research under certain circumstances. In 1980, the federal rule remained in place that required the EAB to approve all funding for hESC, however the EAB's charter expired, leaving a "defacto moratorium" on embryonic stem cell research. This problem was soon resolved when President Clinton, in 1993, reminded the public of the rights of society to advance medical treatments that would benefit society and rescinded the rule that required EAB approval and allowed for HESC research to resume (Snead, 2004).

In 1996, the Dickey Amendment was passed with the "Department of Labor, Health, Human Services, Education, and Related Agencies Act", which again discontinued federal funding of hESC. The battle continued regarding federal funding of hESC, however, when the Dickey Amendment was interpreted narrowly to allow federal funding but only on "private hESC research lines" (Balanced Budget Down Payment Act, 1996). The rule disallowing federal funds to be placed toward hESC research while private companies are able to legally advance hESC through silent policy of the government is a product of our pluralist governmental system. Religious ethics regarding "embryo dignity" have been tested against those who hold a form of *prima facie duties* perspective where "exceptions, when they conflict with other duties, have greater importance in a given situation" (Gabard and Martin, 2003). Some also argue, from a Kant duty ethicist perspective, whether embryos that have the potential for rationality, but are not, in essence, rational human beings at the blastocyte stage, be considered "rational" for purposes of protection.

In August 2001, President Bush, seemingly supporting a rights ethicist viewpoint in regards to human embryos, stated that "human embryonic stem cell research is morally wrong" and proclaimed that he would not fund any hESC research lines created after August 9, 2001 (Address to the Nation, Document 1149, 2008). President Bush, however, has been criticized for inconsistency in his argument regarding hESC funding and the failure to halt any private research on hESC as well as the presidential endorsement and funding of contrary policies regarding fundamental value of adult human life in issues surrounding the Iraq War,

Guantanamo Bay, the “acceptable” use of torture, and failure to provide adequate aid to Hurricane Katrina victims during his presidency (Khan, 2005).

Shortly after the presidential ban on hESC research, Congress considered a ban on human cloning altogether. However, this failed to materialize because of the difficulties arising from problematic terminology restricting “all cloning” which could lead to restrict even therapeutic adult cell tissue “splicing” of tissue from individuals with disease for regeneration of healthy tissue (Pasquele, 2002). Those in favor of a cloning ban included the United States Conference of Catholic Bishops, The Family Research Council, and the Methodist Church. The banning of cloning has been described by religious and secular communities in terms of “negative immortality”, the continual regeneration and preservation of life at all costs, as opposed to “positive immortality”, the belief that extending one’s own life is not as desirable as leading a good life (Pasquele, 2002). Some bioethicists have raised distinctive concerns termed the “created-discarded” ethics of allowing for embryos “slated for destruction” to be saved for hESC, but not accepting those lines of hESC which would promote creation of more embryos than necessary solely for research purposes (Devolder, 2005).

The National Organ Transplant Act (NOTA) enacted in 1984 prohibits the sale of tissues, with the exception of blood and sperm, for purposes of transplantation, but not for research purposes. In 2005, the National Research Council (NRC) provided guidelines for the scientific community for research directly related to human embryonic stem cell research. The National Institute of Health, the American Academy of Pediatrics, and the state of California have adopted similar laws for donors. Guidelines recommended no payment to the donors of embryonic stem cell lines with intentions to reduce the probability of unethical coercion of the subjects and possible persuasion to create more IVF embryos than needed for fertilization for purpose of sale, increase the altruistic nature of the applicants who donate, and maintains human dignity (Korobkin, 2007).

In 2006, the House and Senate passed the Stem Cell Research Enhancement Act to allow federal funding of hESC; however, the bill was quickly vetoed by President Bush and the House was unable to override the veto (Stohlberg, 2006). Despite the controversy over legal issues involving human embryonic stem cell research and the prohibition on funding hESC lines after August 2001, currently no law prohibits hESC research in the United States (Korobkin, 2006). Judicial influences have traditionally upheld due process in the law making process and have found unenumerated rights to be a part of substantive due process. Supporters of hESC have argued that a ban on hESC would deny Fifth and Fourteenth Amendment rights of life and liberty to have safe and effective medical treatments that allow people to be free of pain and disability (Robertson, 2006).

States have become directly involved in funding human stem cell research, with funding strictly prohibited in only thirteen states but many other states taking advantage of the laxity in federal law and raising funds specifically for hESC research. California’s Proposition 71 in 2004 was the first of the state endeavors that raised approximately 3.3 billion dollars to promote human embryonic stem cell research in conjunction with a private biotechnology company (Korobkin, 2007). Other states soon followed suit to begin partnerships with universities and private companies for promotion of embryonic stem cell research.

This rift between the federal law on one side and the majority of states and companies on the other begins to create an imbalance and potential problem for the American public who may not be involved in the biotechnological advances once they are marketed within the health care arena. Private companies tend to profit from such ventures and create treatments for the wealthy, would be at a great competitive advantage to a government and some states that have refused to fund any hESC beyond the original August 2001 deadline. Distributive justice is breeched when access to health care involving hESC research will be limited for the general public, the socioeconomically disadvantaged, and those who live in states who do not support this type of research or treatment. Distributive justice must also include the “embryonic” tissue, which calls into question the actual definition of a five to seven day old blastocyte and the moral obligation of the embryo/blastocyte at stake. Terminology has traditionally termed the cells in order from conception as blastocyte, zygote, embryo, and fetus by the scientific community. However, recent terminology changes initiated in science textbooks across the country by pro-life groups with primarily protestant and Catholic religious roots, have reflected the often debated subject by creating only one term the “embryo” to describe all stages prior to the “fetus”. This provides for a legal and ethical background to support the ban on hESC research at any level of development as a “basic right” of the embryo (Robertson, 2006).

In conclusion, hESC research is an ethical dilemma facing the United States of America. Opponents of hESC often cite the “rights” of the embryo and define the embryo at conception. Supporters of hESC research include the scientific and medical community, and private hESC research companies. From a utilitarian perspective, they also cite “rights”, but refer to the rights of the adults who need advancement in medical care and cures for current debilitating diseases and do not consider a 5-7 day old blastocyte as more than cellular mass to be used in research purposes. The unique political system of the United States has allowed for a dichotomous policy to arise, where federal funding of hESC is prohibited, but private companies and individual states are able to legally forge a path in hESC research. The prohibition of federal funds has created an abyss between states who choose to fund hESC research and those who prohibit it. It has also set the stage for yet another private corporation to advance in hESC and place profit above the American public. The embryo is the only silent member of this debate.

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