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Government 2302

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## Of Mice and Men: Human Stem Cell Research Politics

To advance human good and avoid harm, biotechnology must be used within ethical constraints. It is the task of bioethics to help society develop those constraints and bioethics, therefore, must be of concern to all of us.

--Edmund D. Pellegrino, Chairman President's Council on Bioethics

Stem cells are cells that can give rise to other types of cells; they are produced both during embryonic development and in the adult body. Embryonic stem cells begin with the ability to become any cell type, and quickly differentiate into cells committed toward a certain type of tissue, (e.g., blood, skin, or neural stem cells). These stem cells are termed multipotential stem cells because they further divide into cells with a particular function, such as red and white blood cells and platelets. Multipotential cells are also present in adults. Stem cells are capable of dividing for indefinite periods in culture (Stem Cells).

With the advent of recent medical microbiological therapies, scientists (physicians and biochemical engineers) have looked for new ways to mitigate and/or cure diseases. A relatively recent promising new development involves the use of stem cells—cells that are precursors to other types of cells. Stem cells occur both in prenatal (embryonic) and postnatal (adult) cells. Generally, adult cells possess considerable differentiation (a liver stem cell will remain some sort of liver cell) and therefore express less flexibility or potential for repairing cells in other tissues (e.g. nervous system). Since embryonic stem cells, cells from embryos, possess greater potential (the ability to become any type of cell needed), they present scientists with the greatest opportunity for curing currently incurable diseases or conditions such as Alzheimer's disease or

paralysis. With the advent of in vitro fertilization (as well as other fertility techniques), embryos not utilized in the actual creation of an infant historically have been simply destroyed. Many scientists find this practice to be wasteful, and some have attempted to find means of utilizing embryonic stem cells in their research.

If this fact were the sole consideration—the utilization of nonessential cells—then there would be no controversy. However, many people with strong religious or moral convictions believe that these embryos do not merely represent potential humans; they contend that these embryos are humans replete with souls. In their eyes, destroying these embryos is tantamount to murder. Consequently, destroying these embryos to harvest embryonic stem cells is considered anathema to them. This difficult situation, finding cures for the desperately ill versus murder (or experimenting on humans), is a truly political question and it has captured the attention of aspects of the American government as well as the American people.

In 1995, President Bill Clinton authorized the “Dickey Amendment” (federal legislation passed by United States Congress) that prohibited the federal government from providing funding for research which utilized embryos (Dickey). In 2001, President George W. Bush addressed the nation via press release and stated his personal moral opposition to the use of embryos in research (Bush). He maintained that other avenues such as the use of post-natal placental tissues, adult stem cells as well as tissues from umbilical cords were possible and might afford scientists answers or solutions without crossing a line of morality. His reasoned opposition to human embryonic stem cell research is based upon the reality that all embryos have the potential to become an adult human. Additionally, he noted that experimentation with human embryos could lead to the development of cloned human beings (a notion that has severe religio-

moral implications—can one person share a soul with a clone?) and to the abhorrent notion of children bred for replacement parts—slaves cultivated to be harvested like cattle or sheep.

While many people have expressed dissatisfaction with the president's ability to communicate orally, he carefully and cogently expressed the conundrum at the heart of this issue:

As I thought through this issue, I kept returning to two fundamental questions: First, are these frozen embryos human life, and therefore, something precious to be protected? And second, if they're going to be destroyed anyway, shouldn't they be used for a greater good, for research that has the potential to save and improve other lives? (Bush)

President Bush then detailed that he would appoint a stem cell research council comprised of leading scientists, doctors, ethicists, lawyers, and theologians under the guidance of Dr. Leon R. Kass, a leading biomedical ethicist from the University of Chicago to provide him with sagacious advice. Today, the council is chaired by Edmund D. Pellegrino, M.D. President Bush exercised a prerogative of the Executive Branch and issued Executive Order 13237 which created the council to advise the presidency regarding stem cell research and the ethical underpinnings/ramifications of such research. The council is not limited to matters regarding stem cell research but to all areas of science treating

uses of knowledge and techniques derived from human genetics or the neurosciences, and end of life issues. The Council may also study broader ethical and social issues not tied to a specific technology, such as questions regarding the protection of human subjects in research, the appropriate uses of biomedical technologies, the moral implications of biomedical technologies, and the consequences of limiting scientific research.

(Executive Order 13237)

In his address, President Bush noted that he is not only the leader of the executive branch of the government, but he also serves as the ceremonial head of state—the keeper of the nation’s conscience.

Another display of the role of the executive branch occurred on July 19, 2006 when President Bush chose to exercise his first veto as president when he vetoed legislation (H.R. 810) that would have expanded “...federally supported embryonic stem cell research” (Stolberg). President Bush defended his action when he noted that permitting this research “... would needlessly encourage a conflict between science and ethics that can only do damage to both, and to our nation as a whole.” That President Bush chose to exercise his sole veto so far is rather telling. Critics and pundits suggested that the veto was triggered more by political expediencies (2006 Congressional elections) than by moral objections. Regardless, this exercise of executive power is a strong signal to the American public and the international community.

Congress, the legislative branch of the government, has increasingly supported the expansion of human embryo stem cell research as was evidenced by the passage of H. B. 810 (“Stem Cell Research Enhancement Act of 2005”); this legislation would have expanded the funding of human embryo stem cell research to permit research and experimentation utilizing excess embryos donated by couples. Congress had reasoned that since these embryos would be destroyed, a greater good would be served by permitting scientists who made benefit from federal funding to utilize donated embryos (Stem Cell Research Enhancement Act of 2005). When President Bush vetoed this resolution, Congress unsuccessfully attempted to override the presidential veto (Bush’s only veto):

Within hours of the East Room ceremony, the House hurriedly took up a measure to override the veto,

but the vote, 235 to 193, fell 51 short of the two-thirds majority required. Fifty-one Republicans, 183 Democrats and 1 independent voted to override, while 4 Democrats joined 179 Republicans in voting to keep the veto intact. (Stolberg)

In order for Congress to be able to override a presidential veto, a super-majority (two-thirds) is required. As alluded to earlier, this bill (H.R. 810) is not the only time that Congress has expressed an opinion on the matter of human embryonic stem cell research—the Dickey Amendment, a rider to funding for the Department of Health and Human Sciences—was approved by President Clinton in 1995. Congress has expressed interest in this issue as it is a concern for many representative and senatorial constituents. Some examples of legislation follow: 2003 H.R. 534—Human Cloning Prohibition Act of 2003 (prohibited both reproductive and therapeutic cloning, and includes a criminal penalty of up to 10 years for violation of the provisions of the bill); 2003 H.R. 801—Cloning of Humans (prohibited reproductive cloning but would permit therapeutic cloning), 2003 H.R. 916—Human Cloning Research Prohibition Act; 2003 H.R. 938—Human Cloning Prevention Act of 2003; as well as H.R. 2059/S. 723, H.R. 2096/S. 1349, H. Con. Res. 17, H.R. 2747, H.R. 2838, H.R. 2863, and H.R. 4011 (Archived). All of this legislation shows that Congress believes that this issue is a vital concern to the American people—in both private and public sectors. To put it crassly, if someone can find a cure for cancer or Alzheimer’s disease, the potential for profit would be staggering (not to mention the human benefit—freedom from the shackles of debilitating disease).

In addition to introducing legislation controlling or funding embryonic stem cell research, Congress has conducted hearings to ascertain the state of science, the state of advancement, and the moral/ethical ramifications of human embryonic stem cell research. On September 5, 2001 (less than a week prior to the destruction of the New York Trade Center), the Senate Committee

on Health, Education, Labor, and Pensions hosted hearings regarding human embryo stem cell research (Hearings). As recently as October 1, 2006, during the during the 109th Congress, the Senate Appropriations Subcommittee on Labor, Health and Human Services, and Education (Senator Arlen Specter [R-PA], Chairman) conducted hearings focusing on legislation which fund research into methodologies for deriving pluripotent stem cells (cells with the ability to develop into multiple cell types including all three embryonic lineages forming the body organs, nervous system, skin, muscle, and skeleton) without using human embryos (Office). While the cynical might state the hearings are little more than showcases for politicians to show feigned interest, it is certainly a public forum for the airing of issues of vital interest to most Americans.

This issue of embryonic stem cell research will not quickly disappear and will probably concern Americans for years to come. Consequently, one additional avenue for the legislative branch to express itself on the issue of human embryonic stem cell research would be through the Senate's power to approve presidential judicial nominees in a manner analogous to the abortion issue as a litmus test for Supreme Court nominees. Congress could exert its influence and political agenda(s) by affirming judicial nominees it views as friendly to the majority's position on the issue of embryonic stem cell research.

Historically, it generally takes time for current issues to filter into the courts. However, in May 2001, seven prominent researchers charged the Bush Administration with "causing 'irreparable harm' [to the American public] by delaying potential therapies" through the administration's failure "to fund work on human pluripotent stem cells" (Vogel). This case preceded the administration's decision to fund research in human embryonic stem cell research, so it is clear that the threat of litigation brought sufficient pressure to coerce the government into action. While there are few challenges to the current administration's policies toward embryonic

stem cell research, current pending litigation treats aspects of embryonic stem cell research. Strangely enough, lawsuits regarding patent law have filtered to the Supreme Court regarding the patents granted to the Wisconsin Alumni Research Foundation for research conducted by James Thompson, the discoverer of stem cells and developer of stem cell research techniques. One might not expect patent law to be an area that impinges upon the embryonic stem cell research controversy, but intellectual property rights comprise much of the litigation to date:

On May 15, [2006] in the case of eBay versus Merc Exchange, the Supreme Court ruled that an injunction

is not mandatory in cases of patent infringement, reversing a ruling by the U.S. Court of Appeals for the Federal Circuit Court requiring that an injunction be issued in the case.

(Vanden Plas)

This decision is important as it will permit scientists to conduct research using patented basic techniques developed by Thompson on stem cell lines cultured by Thompson as well. Many professionals in the field of biotechnology believe that the patents granted to the Wisconsin Alumni Research Foundation are overly broad; they liken it to granting a patent on the formula for water. Consequently, if individuals are unfettered by patent restrictions, then they may perform much needed research into procedures/cures for debilitating and life threatening conditions.

In another instance of court involvement in the issue of embryonic stem cell research, the state of California passed an initiative providing state funding to researchers. On April 22, 2006 San Francisco Chronicle staff writer Bernadette Tansey noted that the California Proposition 71 was found to be in accord with California state law (Court). If upheld by the California Supreme Court, this case will eventually be reviewed (or at least appealed for review) to the U. S.

Supreme Court. But this Proposition 71 was at odds with the previously noted patent infringement and this patent infringement threatens to quash or otherwise deflate the stem cell research balloon.

In mid-March, the Wisconsin Alumni Research Foundation, or WARF, announced that the state of California must sign a legal contract and pay user fees to the foundation if any state-funded scientists want to work with human embryonic stem cells of any kind.

(Washburn)

This patent infringement means that the Wisconsin Alumni Research Foundation owns the embryonic stem cells—all of them in current existence; this monopoly is perpetuated by the current administration's decision to maintain a moratorium on the cultivation of new embryonic stem cell lines. This situation will not be permitted to continue indefinitely.

While the government is deeply involved in all aspects of the promising new technology of human embryonic stem cell research, it is not the only player in the game. The private sector is profoundly interested in the vast pool of profits that this technology represents. The potential for profit that a cure (or even just a protocol) for Parkinson's disease or Alzheimer's disease alone would be staggering. Human embryonic stem cell research could also present the opportunity to extend life by creating new organs—replace a failing a heart with new one—not with one transplanted from a dead human, but one cultivated from cells (or tissues). Perhaps, potential liver transplant recipients would no longer need to be placed on a waiting list and reluctantly hope for someone else to die. If hospitals possessed the ability to create new organs to replace failing organs, then the potential to end human suffering and the potential for income would be considerable. Americans have been accused of possessing strictly parochial and insular view of the world: while we might debate the ethics of the issue, another country may

permit its biotech businesses unfettered by governmental strictures to steal a march on the cure for everything.

Additionally, as the American public continues to age, the need for treatments for senescence (the process of growing old) and the ailments attendant with aging will be demanded by the entire populace. After all, who wants to grow old? Human stem cell research could help find ways to end diabetes by assisting in the creation of functioning pancreatic cells. It is conceivable that new eyes—new nerves—new everything—could be generated to correct the natural errors in DNA replication that occur over the lifetime of the aged. While life might not be prolonged indefinitely, perhaps the suffering attendant with senescence could be mitigated. Additionally, perhaps some of the trials and tribulations attendant with physical birth defects could be eliminated.

Michael J. Fox, a noted actor and advocate for human embryonic stem cell research, recently appeared in an advertisement endorsing Missouri senatorial candidate Claire McCaskill (Democrat) as McCaskill supports human embryonic stem cell research. During the ad, it is obvious that Mr. Fox suffers from Parkinson's disease. Conservative radio and television talk show host, Rush Limbaugh took umbrage with Fox's support of a Democrat and opined that Fox was acting (or making no effort to control the convulsions that wrack the victims of Parkinson's disease) (Montgomery). After apologizing for what might be characterized as a callous, ignorant, and insensitive remark (the trademark Limbaugh *ad hominem* attack), Limbaugh lamented that Fox permitted himself to be a shill for the Democrats. Somehow, his apology seems disingenuous. Fox subsequently defended his appearance during an interview aired on CBS Evening News with Katie Couric, and he stated that his apparent dyskinesia was actually the result of overmedication (not under medication as suggested by Limbaugh) (Couric).

These two celebrities represent the ends of the political pendulum regarding human embryonic stem cell research. The conservative position of the pro-life advocates follows the reasoning that if a premature infant still has a soul, then an unborn infant—a fetus—also possesses a soul; by logical extension, then if a fetus possesses a soul, then a proto-fetus—an embryo—must also possess a soul. Then from this line of reasoning, the destruction of an embryo is tantamount to killing an unborn child: the destruction of an embryo should then be construed as an act of abortion. Additionally, these unborn citizens should enjoy the rights that the Constitution guarantees. Such an act is morally objectionable to the conservative position. The other extreme of the pendulum maintains that an unborn child is a thing therefore it does not possess the inalienable rights of citizens. Given this position, to create and/or destroy embryos is little more than an exercise in biochemistry: the chemicals which comprise the embryo are materials that can be purchased, bartered, crafted, and sold.

Between the years 2001-2006, Congress and President George W. Bush provided federal funding for human embryonic stem cell research totaling approximately one hundred million dollars. While people want to end paralysis, diabetes, Alzheimer's, Parkinson's as well as many other debilitating and devastating diseases, many find that the cultivation of human embryonic stem cells—the cells with the most potential for providing “cures”—morally questionable. It is disturbing to think of human embryonic stem cells as patentable property. By the extension of the reasoning of pro-life positions, the embryos that are utilized in embryonic stem cell research are more than potential human beings—they are unborn persons with a right to life; if these beliefs are factual and true, then these unborn people cannot ever be considered property—for these strands of DNA and the chemicals that comprise them are people in their own right protected by the full weight of the American Constitution.

I find the possible benefits of human stem cell research to be promising. I have friends who have diabetes, and someday soon maybe they will not have to worry about checking their blood sugar. My grandmother has macular degeneration of the retina—human stem cell research might provide her with healthy retinae, so she could she see my smile once again. If human embryonic stem cell research can help correct problems at the cellular level, and if there is truth to the theory that people who possess XXY chromosomes are more inclined to be violent criminals or sociopaths, then perhaps a therapeutic protocol could be developed to correct the XXY error. Of course, then this notion of correcting genetic errors opens the Pandora's Box of eugenics (controlled human breeding based on notions of desirable and undesirable genotypes); if the XXY pattern is undesirable (and correctable), what else could be corrected: height, orientation (is there a gay gene?), eye color, skin color? I am uncertain regarding this issue of the morality of using embryonic stem cells for research as I do not find the use of a clump of cells to be morally objectionable, but I only know that if these cells possess a soul, I would hate to try to explain my decisions at the Pearly Gates.

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