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A CASE FOR FEDERAL FUNDING OF HUMAN EMBRYONIC STEM CELL RESEARCH: THE INTERPLAY OF MORAL ABSOLUTISM AND SCIENTIFIC RESEARCH

Robert E. McGough*

INTRODUCTION

Great leaps in science traditionally precipitate consternation among moral, ethical and legal thinkers. It is the collective conscience of mankind that demands an investigation into the repercussions of humankind's rapidly developing power over nature. Today, this phenomenon is perhaps best illustrated by swift advancements within the field of biotechnology. Rapid progress during the last few decades in biotechnology—specifically alternative reproductive technologies (ART) such as in vitro fertilization (IVF) and human embryology—has consistently outpaced critical thinking by ethicists, theologians and lawmakers with regard to the effect that progress has on humanity.1

Critical thinking on the issue is embodied in the burgeoning field of bioethics, which has been aptly characterized as "a discipline, language, and political movement."2 The relationship between biotechnological

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advancement and bioethical evaluation of that advancement is best described as reactionary. New possibilities generated by scientific research—both good and bad—must be evaluated as they are disclosed. Perhaps the most appropriate analogy to be applied to this relationship’s dichotomy of thought is Sir Isaac Newton’s third law of physics, which demands that for each and every action there is an equal and opposite reaction: “For every new and daring biotechnological advancement... a challenge rooted in complex social, religious, moral and ethical vectors of force” is presented. In the field of cellular biology, such an advancement was reported in November of 1998.

Developmental biologist Dr. James Thomson and his colleagues at the University of Wisconsin reported in Science magazine their ability to successfully culture and sustain stem cells extracted from a human embryo in the laboratory. Their achievement constitutes no less than a revolutionary breakthrough for medical science—the potential benefit to human health that could be realized through research utilizing these cells is currently unlimited.

Stem cells are unspecialized cells that give rise to specialized cells. As discussed in more detail in Section I below, human embryonic stem cells are “pluripotent,” which means they have the potential to develop into virtually any tissue type. The isolation and sustained culture of human embryonic stem cells gives hope to hundreds of millions worldwide who

3. Smith, Judicial Decisionmaking, supra note 2, at 94 (citation omitted).
5. See id.; see also Gwen Carleton, UW Reports Cell Breakthrough; Work Could Revolutionize Transplants, CAPITOL TIMES (Madison, Wis.), Nov. 5, 1998, at 1A.
suffer from a myriad of degenerative ailments. So, why the controversy? The answer is simple. The best sources of the most promising stem cells related to this research are excess cryogenically frozen human embryos from IVF treatments (i.e., embryos that could develop into a full human being if thawed and implanted into a woman's uterus). As discussed further in section I.A. below, there are between 30,000 to 150,000 frozen embryos left over from IVF treatments in the United States alone. If not used for research purposes, these frozen embryos would likely be destroyed.

A ban on federal funding of scientific research that involves either creating, discarding, destroying or otherwise subjecting human embryos to risk of injury or death for research purposes has been in effect since 1996. The ban was the result of a budget compromise between Republicans and Democrats during the government shut down crisis of early 1996. After a series of promising reports on the potential benefits of embryonic stem cell research and a reinterpretation by the Department of Health and Human Services (HHS) of the 1996 Act, the Clinton Administration and the National Institutes of Health (NIH) concluded in 1999 that embryonic stem cell research could be federally funded. However, the issue of federal funding for embryonic stem cell research was revisited and indefinitely delayed by the Bush Administration a short
time after President Bush took office in January 2001. Ultimately, as discussed in greater detail in section II.E. below, the Bush Administration decided to allow federal funding for research on a limited number of stem cell lines already created, but not for research that implicates the further destruction of human embryos.

The debate regarding the ethical implications of using federal funds to sponsor such research has been raging since Dr. Thomson's announcement in November 1998. Although the moral, ethical and legal issues enmeshed with IVF technologies and embryo research had been previously considered, the real debate began in November 1998, when it became evident to the Clinton Administration that the vast benefits of human pluripotent stem cell research would more likely be realized with an infusion of federal funding. While numerous scientists, patient advocacy groups, bioethicists and others hailed the courage of HHS's and NIH's interpretation of the embryo research ban, others decried their actions as tantamount to murder. Moreover, so-called "pro-life" groups have recently become emboldened in their opposition to federal funding for embryonic stem cell research through the election of George W. Bush, Jr. as the nation's forty-third President. President Bush, a Republican and self-described supporter of the pro-life movement, indicated during his campaign that his administration would oppose providing further federal funding for fetal tissue research. However, his statements on

19. The origination of the debate actually precedes Thomson's announcement. However, for purposes of this Comment, it will be assumed that the debate involving the ethics of human pluripotent stem cell research did not mature until it was evident (through Thomson's work) that isolating and culturing human pluripotent stem cells from embryos was possible.
20. See infra Section II.C.
federal funding for embryonic stem cell research, as discussed below in Section II.E., had been somewhat vague until August 9, 2001, when President Bush stated in a nationally-televised address that his administration would support limited federal funding for research on embryos that had already been destroyed.3

Therein lies the dilemma. Is the use of excess frozen embryos for stem cell research, which necessarily implicates their destruction, ethically, morally and legally acceptable? Given the divergence of viewpoints on the issue, it is imperative to balance the benefits of the research against the perceived harms.24 According to George P. Smith, a bioethicist and professor at Columbus School of Law, the "penultimate goal" when balancing the necessity, priorities and values of such a decision is "the formulation and validation of a final action which minimizes human suffering and maximizes the social good."25 After carefully balancing the potential medical benefits and the moral, ethical and legal issues involved, it is clear that the decision to provide federal funding for human pluripotent stem cell research should be upheld, and perhaps even extended. While the legalistic approach taken by the Clinton Administration in navigating around the federal ban on embryonic research is open to criticism (and justly so), federal funding of this research is not only legally, ethically and morally acceptable, it is of paramount importance to humanity.

This Comment is divided into four sections. Section I provides a scientific backdrop of human stem cell research. Section II analyzes the history of the Federal Government's involvement in embryonic stem cell research. Section III examines the moral, ethical and legal implications at issue. In Section IV, after a careful consideration and balancing of all the factors involved, this Comment concludes that one must not sacrifice such great potential for the relief of human suffering based on absolutist views or politically expedient positions. Rather, we, as a society, must make the choice to fully fund this blossoming science so that we may all live better, healthier lives.

http://www.salon.com/politics/feature/2000/ 12/29/embryo/index.html (quoting Bush spokesperson, Scott McClellan, "Bush has 'consistently opposed federal funding for research that requires embryos to be discarded or destroyed.'").

23. See supra note 18.
24. Smith, supra note 2, at 95.
25. Id. at 94.
I. THE SCIENCE OF STEM CELL RESEARCH

Science by itself has no moral dimension. But it does seek to establish truth. And upon this truth morality can be built.26

Stem cell research is not a new discipline. Knowledge of the potential application of stem cell science has accumulated since the early 1970s, when bona fide stem cells were identified in mice.27 In fact, some stem cell therapies are already being utilized.28 However, it was not until 1998, with the success of Dr. James Thomson and his colleagues at the University of Wisconsin, that the possibility of manipulating stem cells to grow specific human tissues toward treating dozens (if not more) of degenerative conditions became a reality.29

In order to draw any ethical, moral or legal conclusions regarding the use of human embryonic stem cells for research purposes, it is necessary to understand the science of stem cells, particularly the sources and characteristics of different types of stem cells as well as their varying applications. In addition, before proceeding to the discussion of the different types of stem cells and their various characteristics and applications, it is appropriate to provide some background on both in vitro fertilization and cryopreservation, two procedures that are of central importance in the science discussed in this Comment. The IVF technique was originally developed to artificially impregnate women who suffered from fallopian tube defects.30 Put simply, IVF involves hormonal stimulation a woman’s ovaries to prematurely ripen as many eggs as possible, collection of those eggs upon maturity, and fertilization in vitro31

27. AAAS REPORT, supra note 8, at 1.
28. See id. The most well-known of these therapies is a form of bone marrow transplant in which patients are infused with stem cells extracted from bone marrow in order to restore tissue destroyed by chemotherapy or radiation therapy. See id. at 1-2.
29. See id.
31. Translated from Latin, in vitro means literally “in glass.” The American Heritage Dictionary defines in vitro as “In an artificial environment outside the
in a laboratory using collected sperm from a donor (usually the husband).\textsuperscript{32} The fertilized eggs are then permitted to develop \textit{in vitro} for a period of time before they are implanted in the woman’s uterus. Before the fertilized eggs are implanted, however, physicians must decide \textit{how many} of them to implant. Implantation of three to four fertilized eggs (embryos) is relatively common.\textsuperscript{33} If there are remaining embryos after implantation, the parents, as “owners,” have the responsibility to decide whether they are donated, destroyed or frozen cryogenically for future use.\textsuperscript{34}

Cryopreservation techniques were developed subsequent to IVF.\textsuperscript{35} Through work pioneered by English and Australian scientists, it became possible to add a protective agent to embryos that insulates them from the hazards of being frozen in liquid nitrogen.\textsuperscript{36} Once frozen, the embryos can be thawed and implanted to induce a successful pregnancy.\textsuperscript{37}

The first successful IVF pregnancy in the United States occurred in 1981.\textsuperscript{38} The first successful birth of a cryogenically frozen embryo in the United States was reported in 1985.\textsuperscript{39} However, data indicates that the success rate attributed to the implantation of cryopreserved embryos lags behind that of embryos that have not been frozen.\textsuperscript{40}

\textbf{A. Sources and Characteristics of Stem Cells}

There are three types of stem cells: (1) human embryonic stem cells (ES cells); (2) human embryonic germ cells (EG cells); and human adult
stem cells (AS cells). ES cells are derived from the blastocyst, which is formed by “totipotent” cells of the early in vitro embryo (first four to fourteen days). EG cells “are derived from primordial germline cells in early fetal tissue during a narrow window of development [first five to nine weeks].” AS cells are extracted from human tissue from post-embryonic development through normal adult life.

1. ES Cells

Human embryonic stem cells are derived from in vitro embryos during early development. After a sperm fertilizes an egg, a single totipotent cell is created. During the next several hours, the single totipotent cell divides into two identical totipotent cells, which continue to divide. After approximately four days, the totipotent cells begin to specialize and form a hollow sphere called a blastocyst. The blastocyst consists of an outer layer of cells as well as an inner cell mass which are the precursors of the placenta and other supporting tissues necessary for development in the uterus. The inner cell mass cells are pluripotent, meaning they can develop into virtually any tissue type. However, they cannot, on their own, develop into a fetus.

It is from this inner cell mass that ES cells are extracted and subsequent cell lines are derived. These pluripotent cells are capable of “unlimited, undifferentiated proliferation in vitro.” They have three essential characteristics: “[1] derivation from the preimplantation or periimplantation embryo, [2] prolonged undifferentiated proliferation, and [3] stable developmental potential to form derivatives of all three

41. Chapman et al., supra note 8, at 2-4.
42. A totipotent cell is a cell whose potential is total, meaning that it has the capacity to develop into a complete organism if implanted into a uterus. NAT. INSTITUTES OF HEALTH, STEM CELLS: A PRIMER (2000) at http://www.nih.gov/news/stemcell/primer.htm [hereinafter PRIMER].
43. Thomson et al., supra note 4, at 1145.
44. Chapman et al., supra note 8, at 3.
45. Id. at 3-4.
46. PRIMER, supra note 42, at 1.
47. Id.
48. Id.
49. Id.
50. Id.
51. Thomson et al., supra note 4, at 1145 (citations omitted).
embryonic germ layers even after prolonged culture." The reason ES cells are capable of prolonged proliferation is their expression of high telomerase activity. High levels of telomerase activity are associated with high replicative life spans in human cell lines, which suggests that embryonic stem cells have the potential to proliferate indefinitely in vitro.

The ability to grow these cells in culture indefinitely represents a major step toward realizing the goal of "[a] renewable, tissue culture source of human cells capable of differentiating into a wide variety of cell types." The characteristics which are unique to ES cell lines, including their longevity and pluripotency (the ability to specialize into virtually any cell type in the human body), engender them with the highest potential for therapeutic application.

2. **EG Cells**

Embryonic germ (EG) cells are derived from fetal tissue aborted between five and nine weeks into development. In November 1998, researchers at Johns Hopkins University reported their isolation, culture and partial characterization. The EG cells that were derived show indications of pluripotency, but their "range of potential fates" was considered to be limited in comparison to ES cells because they were much further along in development. Furthermore, the potential and behavior of these cells is not as well understood due to the fact that there

52. Id.

53. Id. Telomerase is an enzyme produced by dividing cells that is involved in producing telomeres. Telomeres are repeating sequences of DNA that cap the ends of chromosomes. Degradation of telomeres is linked to the longevity of cell lines.

54. Id. See also John Gearhart, *Cell Biology: New Potential for Human Embryonic Stem Cells*, 282 SCI. 1061 (1998). It is this characteristic, along with pluripotency, that make the use of embryonic stem cells preferable to the use of adult stem cells, which share neither of these characteristics.


57. Chapman et al., *supra* note 8, at 3.

58. Id. (citing Michael Shamblott et al., *Derivation of Pluripotent Stem Cells from Culture of Human Primordial Germ Cells*, 95 PROC. NAT'L ACAD. OF SCI. 13726-31 (1998)).

59. Id.
are “fewer data from animal EG cell experiments than from ES cell experiments.”

3. AS Cells

Stem cells are also found in developed tissue. Adult stem (AS) cells are considered “multipotent,” meaning that they are only capable of developing into a limited number of tissue types. AS cells can be found in many adult tissues “or in other tissues that serve as stem cell reservoirs.” One example is adult hematopoietic stem cells, which can be found in adult bone marrow as well as other tissues. Another example is adult neural stem cells, which have recently been shown to have the potential to “generate progeny of various lineages,” including adopting a “muscle fate in vitro.” However, the adult neural stem cells only showed signs of this ability when cultured in the presence of ES cells. Under identical conditions, but in the absence of the ES cells, the adult neural stem cells failed to indicate the ability to assume a muscle fate in vitro. While AS cells, present in every developed human being, “have the capacity for renewal after trauma, disease, or aging,” it has not yet been demonstrated that they have the “developmental repertoire” of ES cells outside the embryonic environment.

B. Potential Therapeutic Applications of Various Stem Cell Types

The extraordinary progress made with regard to stem cell research during late 1998 and throughout 1999 prompted Science magazine to label those achievements “1999’s Breakthrough of the Year.”

60. Id.
61. Chapman et al., supra note 8 at 4.
63. Id.
64. Diane L. Clark et al., Generalized Potential of Adult Neural Stem Cells, SCIENCE, June 2, 2000, at 1660. “Adopting a muscle fate in vitro” is when the stem cells become muscle cells in the petri dish.
65. Id. at 1661.
66. Id.
67. Pittenger, supra note 62, at 143.
68. Clark, supra note 64, at 1662-63.
69. Gretchen Vogel, Breakthrough of the Year: Capturing the Promise of Youth, 286 SCI. 2238 (1999).
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research "raises hopes of dazzling medical applications,"\textsuperscript{70} including potential treatments that might ease or entirely eliminate suffering from cardiovascular diseases, autoimmune diseases, diabetes, osteoporosis, cancer, Alzheimer's disease, Parkinson's disease, severe burns, spinal cord injuries and birth defects.\textsuperscript{71} Moreover, it might be possible to utilize stem cells to grow tissue for transplantation.\textsuperscript{72} However, different stem cell types (AS), have demonstrated characteristics that could limit their application.

The ethical considerations surrounding the use of ES cells (derived from the early \textit{in vitro} embryo) and EG cells (derived from aborted fetal tissue) do not apply to AS cells, which can be derived from adult human tissue.\textsuperscript{73} The presence of stem cells in adult humans does not, however, obviate the ethical dilemma. Studies show that, even though AS cells have tremendous therapeutic applications on their own accord,\textsuperscript{74} they do not appear to approach the level of "malleability" unique to ES cells.\textsuperscript{75} Although adult stem cells do display the capability to differentiate at a level approaching that of ES cells, other characteristics further limit their application. For example, unpublished research from scientists at the University of Minnesota suggests that stem cells extracted from adult bone marrow are capable of forming brain and liver cell precursors, as

\textsuperscript{70} Id.

\textsuperscript{71} \textsc{NAT'L. INSTITUTE OF HEALTH, NAT'L CANCER INSTITUTE, INSTITUTES AND CENTERS ANSWERS TO THE QUESTION: \"WHAT WOULD YOU HOPE TO ACHIEVE FROM HUMAN PLURIPOTENT STEM CELL RESEARCH?\" (Apr. 26, 2000), available at http://www.nih.gov/news/stemcell/achieve.html [hereinafter NIH FACT SHEET]. These diseases currently affect approximately 128.4 million Americans alone. Perry, supra note 9, at 1423.

\textsuperscript{72} Perry, supra note 9, at 1423 (T.1); see also Gill Donovan, \textsc{Stem Cell Funding Renews Debate}, \textsc{NAT'L CATH. REP.}, Sept. 8, 2000, at 6.

\textsuperscript{73} Vogel, supra note 69, at 2238; Donovan, supra note 72, at 6.

\textsuperscript{74} Along with their recognized potential, adult stem cells are used in at least one already existing area of therapy. Adult hematopoietic stem cells are presently utilized to treat patients suffering from hematological malignancies, including chronic myelocytic leukemia, multiple myeloma, chronic lymphocytic leukemia and non-Hodgkin lymphoma. \textsc{Fred Hutchinson Cancer Research Center, Transplantation Biology}, at 3 available at http://www.fhcrc.org/science/scientific_report/clinical/transplantation/ (last modified Jan 9, 1998).

\textsuperscript{75} Gretchen Vogel, \textsc{Can Old Cells Learn New Tricks?}, 287 SCI. 1418 (2000); Pittenger, supra note 62, at 143; Clark, supra note 64, at 1660-63.
well as three types of muscle tissue—heart, skeletal and smooth.  

However, these types of versatile adult bone marrow stem cells are extremely rare, perhaps one in ten billion show such promise. Furthermore, adult stem cells "seem to lose their ability to divide and differentiate after a time in culture." The short "shelf-life" of AS cells "might make them unsuitable for some medical applications." Dr. Margaret Goodell, a stem cell biologist at Baylor University, says, "[t]here are adult cell types that may have the potential to repopulate a number of different types of tissues, but that does not mean they are ES cells. Embryonic stem cells have great potential. The last thing we should do is restrict research." While recent findings are promising and suggest that adult stem cell research should continue, the vast majority of available data indicates that "[a]dult stem cell therapies will complement, but cannot replace, therapies that may be eventually obtained from ES cells."

By contrast, "[t]here is no doubt that human [pluripotent stem cells]
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possess enormous potential for transplantation therapies. Both EG cells and ES cells have several potential applications, including helping to better understand human development, improving gene therapy, expanding the way we test and develop new drugs and, most importantly, generating cells and tissue to be used in transplantation therapies.

Because federal funding for embryonic stem cell research has only just begun and the ability to sustain ES and EG cell lines indefinitely in culture was only recently achieved, practical applications are merely speculative at this point. Nevertheless, research utilizing ES cells extracted from animals suggests a wide range of possible treatments.

Collaborating researchers from the University of Bonn Medical Center, the National Institute of Neurological Disorders and Stroke in Bethesda, Maryland, and the University of Wisconsin reported in July 1999 that they were able to create “normal looking myeline” in the brains of mice who lacked myeline by injecting their brains with ES cells derived from mouse embryos. With respect to potential applications in humans, the scientists concluded that “[t]he availability of human ES cells and the possibility of generating autologous ES cells by nuclear transfer provide exciting perspectives for the treatment of human diseases.” The prospects of their research portend treatment of a range of neurological disorders, including multiple sclerosis, a debilitating disease affecting more than 300,000 Americans.

82. Wang, supra note 9, at e134.
84. Vogel, supra note 75, at 1418.
85. See id.
86. The National Institute of Neurological Disorders and Stroke is an arm of NIH.
87. Myelin is the material that makes up the “myelin sheath” of nerve axons. The myelin sheath is “an insulating layer surrounding vertebrate peripheral neurons, that dramatically increases the speed of conduction.” On-line Medical Dictionary (1997), at http://www.graylab.ac.uk/cgi-bin/omd.
89. Id. at 756.
90. See id.
91. See National Multiple Sclerosis Society MS the Disease, at http://www.nationalmssociety.org/ms%20the%20disease.asp (last visited Jan 3, 2002).
Another dramatic example of a potential ES cell application was reported in December 1999. Researchers at Washington University in St. Louis were successful in restoring some mobility in rats with spinal cord injuries. The injuries were induced in laboratory rats and then treated by implanting immature nerve cells that had been coaxed into development from ES cells extracted from mouse embryos. The researchers were astonished at the results, because "no one had ever seen any improvement in locomotion from an attempt to repair damage to the spinal cord more than 24 hours after an injury." Oswald Steward, a spinal cord researcher at the University of California, labeled "the work 'compelling' and 'an obligatory first step toward a transplantation therapy for spinal cord injury' based on embryonic stem cells."

Laboratory success like that achieved in the studies described above apparently represents only the tip of the proverbial iceberg of the potential applications of ES and EG cell therapies. The ability of ES and EG cells to perpetuate themselves indefinitely in culture, as well as their potential to develop into virtually any tissue type in the human body, suggests staggering possibilities. In a paper released in November 1999, the American Association for the Advancement of Science details several examples of disorders that are potentially treatable using ES and EG stem cell therapy. These disorders include Type 1 diabetes in children, nervous system diseases, immunodeficiency diseases, including immune deficiencies suffered as a result of Acquired Immune Deficiency Syndrome (AIDS), diseases of bone and cartilage and cancer. The paper also describes the research potential of embryonic stem cell biology, including a greater understanding of human developmental biology, as well as a better understanding of pathogenic viruses, transplantation and gene therapy.

93. Id. at 1827.
94. Id.
95. Id. at 1826.
96. Chapman, supra note 8, at 5-6.
97. See id. at 6-7.
II. FEDERAL GOVERNMENT INVOLVEMENT IN STEM CELL RESEARCH

A. Legislative Background

Since the late 1970's, a de facto moratorium on federal funding of human embryo research has been in place. Pursuant to federal regulations in effect at the time, Congress authorized funding of such research only if approved by an Ethical Advisory Board (EAB) appointed by the Department of Health and Human Services. The only EAB appointed to evaluate human embryo research existed between 1978 and 1980. This EAB panel concluded that "the research was ethically acceptable in the abstract provided certain guidelines were followed." Despite the approval, the National Institutes of Health (NIH) never requested funds for a specific project subsequent to that approval. Furthermore, following the election of Ronald Reagan as president in 1980, the terms of the then-current EAB members were allowed to lapse and no other EABs were appointed to explore the issue. Thus, no federal funding was ever provided.

In 1993, Congress acted to nullify the regulatory requirements through the National Institutes of Health Revitalization Act by removing the


99. Feiler, supra note 98, at 2459; Charo, supra, note 98 at 13; see also 45 C.F.R. § 46.204(d) (1993). Appointees to EABs include "specialists and representatives of the general public who evaluate the medical, legal, social, and other issues related to the subject matter of incoming grant applications." Feiler, supra note 98, at 2458, n.211.


101. Id.


EAB approval requirement. At the time, Congress viewed embryo research as a promising area. Some members were concerned that the federal regulatory framework would hinder embryo research and leave privately funded researchers to proceed without adequate medical or ethical oversight.

In the wake of the Revitalization Act, NIH established the Human Embryo Research Panel to investigate not only the moral and ethical ramifications of funding such research, but also to develop guidelines for funding and conducting such research. The panel met six times, heard testimony from more than forty witnesses and reviewed correspondence from over 30,000 individual members of the public. In its September 1994 report, the panel recommended that surplus human embryos left over from IVF treatments and donated voluntarily by parents should be used for research purposes. The panel went further, recommending that the deliberate creation of human embryos for research purposes be allowed. The panel’s report was approved in its entirety by the Advisory Committee to the Director of NIH (ACD) in December 1994, and passed on to the Director himself, Harold Varmus. However, hours after the ACD voted to approve the report, the Clinton Administration decided to forgo any federal funding for the creation of human embryos for scientific research. Although President Clinton publicly directed the NIH not to allocate funds for the creation of human embryos, the Administration did not prevent Varmus from renewing funding for research involving the use of embryos left over from IVF treatments.

Despite tacit approval from the Clinton Administration, the statutory window for federal funding created by the Revitalization Act and seventy

104. Feiler, supra note 98, at 2459.
105. See id. (citing H.R. REP. No. 103-28, at 80 (1993)).
106. Coleman, supra note 100, at 1339.
107. Feiler, supra note 98, at 2460 (citing NATIONAL INSTITUTE OF HEALTH, REPORT OF THE HUMAN EMBRYO RESEARCH PANEL 1, 3 (1994)); see also Coleman, supra note 100 at 1339.
108. Feiler, supra note 98, at 2460.
110. Feiler, supra note 98, at 2460.
111. The Clinton Administration had determined that the deliberate creation of human embryos for research purposes went too far. Feiler, supra note 98, at 2461-62.
112. Id. at 2461.
pending proposals for funding, including eight that had cleared scientific
review, NIH was unable to provide any funding for human embryonic
stem cell research. Before NIH had the chance, during the Government
shut down crisis of early 1996, the Republican-led Congress “shoehorned”
a ban on embryo research into an appropriations act designed to keep
the government operational.

B. The 1996 Ban on Embryo Research

When the Republican party attained a majority in both the House and
Senate in 1994, the atmosphere was ripe for a political challenge to federal
funding for embryo research. As early as March 1995, shortly after NIH
was cleared to provide funds for research involving spare embryos left
over from IVF treatments, the Republican Congress began their attack.
During the government shutdown crisis of 1996, anti-abortion proponents
in the House of Representatives insisted that a ban on research using
embryos be added to any temporary spending bill. In a political
compromise, The Balanced Budget Downpayment Act (1996 Act),
sponsored by Rep. Robert Livingston from Louisiana, was signed into
law. Section 128 of the 1996 Act effectively foreclosed federal funding
of embryo research of any kind. Subsequent appropriations bills in

113. See id. at 2461; Charo, supra note 98, at 14; Coleman, supra note 100, at
1339; Elizabeth Neus, Scientists Aren’t Rushing into Human Embryo Research,

104-99, 110 Stat. 96 § 128) (preventing the use of any Federal funds for the
creation of human embryos for research purposes or research in which embryos
are destroyed, discarded or knowingly subjected to risk of injury or death); see
also Charles Krauthammer, HIV Measures Symbolize Republicans’ Pettiness,

115. See 141 CONG. REC. H4025-4026 (daily ed. Mar. 30, 1995) (statement of
Rep. Dornan). Congressman Dornan, a conservative Republican from California,
referred to ES cell research as “Frankenstein testing on embryos.” Id. at H4025.

116. Shumer, Moody’s Issue Warnings on Debt Limit Impasse (CNN
television broadcast, Jan. 25, 1996).

U.S. House of Representatives/Stopgap Spending Bill, AFX NEWS, Jan. 26, 1996,
LEXIS, Nexis Library, ALLNEWS file.

26, § 128. Section 128 read as follows:
SEC. 128. None of the funds made available by Public Law 104-91
1997\textsuperscript{19} and 1998\textsuperscript{20} continued to withhold all federal funding of embryo research.\textsuperscript{121}

\section*{C. The Clinton Administration}

\subsection*{1. The HHS opinion}

Dr. Thomson's laboratory success in 1998 prompted the Clinton Administration to reevaluate the efficacy of the ban. In November 1998, President Clinton asked the National Bioethics Advisory Commission (NBAC) to investigate the issues associated with human stem cell research and to balance all ethical and medical considerations.\textsuperscript{122} Furthermore, at the request of Harold Varmus, then Director of NIH, the Department of Health and Human Services (HHS) took a closer look at the 1996 Act to determine whether or not it applied to pluripotent stem cell research.\textsuperscript{123} In January of 1999, Harriet Rabb, general counsel for

\begin{verbatim}
may be used for —
(1) the creation of a human embryo or embryos for research purposes; or
(2) research in which a human embryo or embryos are destroyed, discarded, or knowingly subjected to risk of injury or death greater than that allowed for research on fetuses in utero under 45 C.F.R. 46.208(a)(2) and 42 U.S.C. 289g(b).

For purposes of this section, the phrase "human embryo or embryos" shall include any organism, not protected as a human subject under 45 C.F.R. Part 46 as of the date of enactment of this Act, that is derived by fertilization, parthenogenesis, cloning or any other means from one or more human gametes.

\textit{Id.}
\end{verbatim}


\textsuperscript{121.} Feiler, \textit{supra} note 98, at 2461, nn.236, 237.

\textsuperscript{122.} \textsc{Nat'l Bioethics Advisory Comm'n.}, \textsc{Ethical Issues in Human Stem Cell Research}, Executive Summary 1, available at http://www.bioethics.gov/stemcell_exec_intro.html (1999) [hereinafter Ethical Issues].

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HHS, determined that the ban did not cover pluripotent stem cell research. The legal opinion concluded that pluripotent stem cells do not fall within the definition of "human embryo" under the Act. Rabb's opinion was based on the Act's characterization of a human embryo as an "organism." Because the term "organism" was not defined under the 1996 Act or its progeny, Rabb's "legal opinion relie[d] on 'the commonly accepted or scientific understanding of that term,' namely, 'an individual constituted to carry out all life functions.' Based on this interpretation, Rabb concluded that previously extracted embryonic stem cells are not covered by the statute because, on their own, they lack the capacity to develop into an "organism" when implanted in the uterus.

After the HHS released its opinion, the possibility of federal funding was quickly realized. Acting on the authority of the HHS determination, NIH Director Varmus convened a thirteen member working group to devise draft guidelines for conducting pluripotent stem cell research. In September 1999, the NBAC released its report on the ethical considerations involved in human stem cell research. The report concluded that human embryonic stem cell research is legally, ethically and morally acceptable if certain guidelines are followed. On December 2, 1999, following the release of the NBAC report, the NIH working group released its draft guidelines.

124. See M. Therese Lysaught, Holy Grail or Pandora's Box?: Evaluating Human Embryonic Stem Cell Research; Statistical Data Included, WORLD AND I, Nov. 1, 1999 at 186.

125. "Human embryo," as defined under the 1996 Act and its progeny is: "any organism, not protected as a human subject under 45 C.F.R. Part 46 as of the date of enactment of this Act, that is derived by fertilization, parthenogenesis, cloning, or any other means from one or more human gametes" or human diploid cells. Pub. L. No. 104-99, 111 Stat. 26, § 128.


127. Id.


129. ETHICAL ISSUES, supra note 122, at 3.

comments, NIH published its final guidelines in the Federal Register on August 25, 2000, which became effective immediately.\textsuperscript{131} The guidelines were intended to “help ensure that NIH-funded research in [the] area is conducted in an ethical and legal manner” and to “enhance both the scientific and ethical oversight of this important arena of research and the pace at which scientists can explore its many promises.”\textsuperscript{132}

2. \textit{NIH guidelines}

In order to ensure compliance with the new guidelines, NIH prescribed procedural, oversight and documentation requirements and also indicated exactly which research would be eligible for funding and which research would not.\textsuperscript{133} NIH limited federal funding of pluripotent research to those cells that “were derived (without federal funding) from human embryos that were created for the purpose of fertility treatments and were in excess of the clinical need of the individuals seeking such treatment.”\textsuperscript{134} The guidelines also required that no monetary or other inducements be offered for the donation of excess embryos and that there be a “clear separation between the decision to create human embryos for fertility treatment and the decision to donate human embryos in excess of clinical need for research purposes to derive pluripotent stem cells.”\textsuperscript{135} Furthermore, under the guidelines only those excess embryos that have been cryogenically frozen could be used.\textsuperscript{136} Finally, and perhaps most importantly, the guidelines put the final decision-making authority in the hands of the individuals whose gametes were used to create the embryos, \textit{i.e.}, the \textit{parents}. The guidelines further required that informed consent be granted by those individuals who sought the fertility treatment.\textsuperscript{137} Before stem cells derived from excess embryos may be utilized in federally-funded research, the guidelines stipulated that potential donors should be informed that the cell lines derived from their excess embryos may be kept alive for several years, that they may be used in transplantation

\begin{itemize}
\item \textsuperscript{131} \textsc{Nat’l Institute of Health, Guidelines for Research Using Human Pluripotent Stem Cells}, 65 Fed. Reg. 51,976 (Aug. 25, 2000) [hereinafter \textit{Stem Cell Guidelines}].
\item \textsuperscript{132} NIH Fact Sheet \textit{supra} note 71.
\item \textsuperscript{133} \textit{Id.}
\item \textsuperscript{134} Stem Cell Guidelines, \textit{supra} note 131, at 51,979.
\item \textsuperscript{135} \textit{Id.}
\item \textsuperscript{136} \textit{Id.} at 51,980.
\item \textsuperscript{137} \textit{Id.}
\end{itemize}
research, that the research may have commercial potential and that the research is not intended to provide direct benefits to the donors.\textsuperscript{138} The guidelines were subsequently withdrawn in favor of the criteria set forth by President Bush on August 9, 2001.\textsuperscript{139}

\textbf{D. Current Legislative Initiatives}

\textit{1. The 106th Congress}

The 106th Congress failed to enact legislation either codifying NIH’s guidelines or specifying that embryonic stem cell research is indeed illegal. Senator Arlen Specter (R-PA), the chairman of the Senate Appropriations Labor, Health & Human Services and Education Subcommittee, introduced legislation in January 2000 that would not only allow for statutory adoption of the guidelines proposed by the NIH, but would extend federal funding to actual derivation of stem cells.\textsuperscript{140} After the bill was introduced, it was referred immediately to the Senate Committee on Health, Education, Labor and Pensions for consideration, where it remained until September 28, 2000.\textsuperscript{141}

A vote on Senator Specter’s bill, co-sponsored by Senators Tom Harkin (D-IA) and Ernest Hollings (D-SC), took place prior to Congress’ winter recess because of the failure to achieve a Senate quorum on the date the bill was considered.\textsuperscript{142} However, prior to the failure to achieve a quorum, Senator Specter demonstrated the strong bipartisan support for embryonic stem cell research, even among pro-life senators.\textsuperscript{143} Moreover,

\begin{footnotesize}
\begin{enumerate}
\item The guidelines also required that informed consent state that the donors make the donation without restriction, that information that could identify the donors be removed prior to derivation, that the donors will receive no financial remuneration for their donation, and that the embryos donated will not be implanted into a woman’s uterus and will not survive the process. \textit{Id.}
\item 146 CONG. REC. S9447-48 (daily ed. Sept. 28, 2000).
\item \textit{Id.} at S9448. Sen. Specter noted for the record that Sens. Strom
\end{enumerate}
\end{footnotesize}
Senator Specter stated that the 1996 Act, which contained the prohibition against the use of federal funds for stem cell research, originated from the subcommittee that he chairs.\textsuperscript{144} His explanation is significant: "When the prohibition was imposed, there was no one who really knew the miraculous potential of stem cells . . . . This [knowledge] only came into existence with the research disclosed in November of 1998."\textsuperscript{145}

2. The 107th Congress

Not a moment was wasted before the issue of federal funding for embryonic stem cell research was brought to the forefront of the 107th Congress. On January 30, 2001, a bipartisan bill supporting a congressional resolution favoring federal funding of embryonic pluripotent stem cell research was introduced.\textsuperscript{146} Presently, there are no less than six different bills before the 107th Congress devoted solely to the issue.\textsuperscript{147}

\begin{thebibliography}{999}

\bibitem{} Thurmond (R-SC), Gordon Smith (R-OR), and former Sen. Connie Mack (R-FL), all adamantly "pro-life," have made statements supporting such legislation. \textit{Id.} Conservative Republican John McCain is also in favor of supporting stem cell research. Susan Baer, \textit{Bush's Moves on Abortion Issue Chilling to Research Community; Scientists Fear Funding Curbs for Promising Stem Cells}, \textit{BALT. SUN}, Feb. 1, 2001, at 1A.

\bibitem{} 144. 146 CONG. REC. S9448 (daily ed. Sept. 28, 2000).

\bibitem{} 145. \textit{Id.}

\bibitem{} 146. H.R. Con. Res. 17, 107th Cong. (2001) (introducing resolutions by Reps. Constance Morella (R-MD) and Caroln Maloney (D-NY). There are currently eighty-four total cosponsors of the resolution. The resolution was intended to express the support for federal funding of pluripotent stem cell research. \textit{Id.} The bill was referred to the House Committee on Energy and Commerce's Subcommittee on Health on February 14, where it remains).

Collectively, these bills display varying degrees of support for federal funding of embryonic stem cell research. However, it is not a stretch to suggest that federal funding of embryonic stem cell research enjoys wide-reaching bipartisan support, considering the pro-federal funding positions taken by some former self-described pro-life Senators in Congress.

This legislative activity is due in part to the recent change in administrations. The election of George W. Bush worried many advocates of pluripotent stem cell research. President Bush is on record as an opponent of federal funding for similar research, including research on fetal tissues retrieved from induced abortions.

E. The Bush Administration

In a question-and-answer session during a meeting with Democratic and Republican governors, newly-elected President Bush reiterated his campaign position that the Federal Government ought not provide funding for "research from aborted fetuses." During the same meeting, President Bush provided a vague response to whether or not he would act to ban federal funding for embryonic stem cell research by saying "I believe there's [sic] some wonderful opportunities for adult stem-cell research." The President's Press Secretary, Ari Fleischer, similarly evaded direct questions on whether President Bush would act to deny federal funding to embryonic stem cell scientists. Mr. Fleischer responded to a direct question regarding federal funding for fetal tissue and embryonic stem cell research during a transition team news briefing by stating:

During the campaign, President-elect Bush said that he would oppose using taxpayer funds to support fetal tissue research

Administration) and New Century Health Advantage Act, H.R. 2838, 107th Cong. (Sept. 5, 2001). See supra Section II.C.
148. Id.
149. See supra note 143. See also, Aaron Zitner and Marlene Cimons, L.A. TIMES, Jan. 18, 2001, at A13 (noting that former Republican Senator Connie Mack from Florida has "personally contacted senior members of the Bush team to urge them not to block the NIH plan."). Id.
150. See Joan Lowy, Where the 4 Candidates Stand on Key Issues, SCRIPPS HOWARD NEWS SERVICE, Oct. 17, 2000, LEXIS, Nexis Library, ALLNEWS file.
152. Id.
from induced abortions. He said that as president he would oppose federally-funded research or experimentation on embryonic stem cells that require live human embryos to be discarded or destroyed.\textsuperscript{153}

When pressed further on the issue, Mr. Fleischer limited President Bush's opposition to federal funding for research or experimentation that "is done as a result of an induced abortion."\textsuperscript{154} At the time, embryonic stem cell research approved for federal funding neither utilized nor allowed for the use of embryos that were obtained through induced abortions.\textsuperscript{155}

Bush's sidestepping of the issue raised the hope of scientists and angered some abortion opponents. Judie Brown, president of the American Life League, described the President's pre-decision stance as either "terribly misinformed" or "intentionally misleading."\textsuperscript{156} The feelings of many abortion opponents are summarized by her sentiments: "He claims to be pro-life. Well, what's his problem?"\textsuperscript{157}

Under the NIH's guidelines formulated in connection with the Clinton Administration's interpretation, the deadline for funding requests was March 15, 2001.\textsuperscript{158} That deadline came and went without action from the Bush Administration. Shortly after, Richard Doerflinger, an outspoken critic of federal funding for embryonic stem cell research, argued that, "the timeline will continue and [the government will] fund things that the president is against."\textsuperscript{159} It turns out that Mr. Doerflinger was partially correct.

Given President Bush's campaign statements and the vagaries

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\textsuperscript{153} FED. DOCUMENT CLEARING HOUSE, POLITICAL TRANSCRIPTS, ARI FLEISCHER HOLDS NEWS BRIEFING, Jan. 4, 2001.

\textsuperscript{154} Id.

\textsuperscript{155} STEM CELL GUIDELINES, supra note 131, at 51,979.


\textsuperscript{157} Id.


\textsuperscript{159} Enda, supra note 156.
propounded by members of his staff during the first few months of his administration, it was no wonder that both supporters and opponents of embryonic stem cell research were beset by anxiety. Moreover, a further blurring of the administration's position on federal funding for embryonic stem cell research came with confirmation (by a unanimous vote) of Tommy Thompson as Secretary of HHS. As governor of Wisconsin, Secretary Thompson, a Republican and stated opponent of abortion, "championed privately financed stem cell research at the University of Wisconsin." During his State of the State address in 1999, then-governor Thompson heralded the work of Dr. James Thomson, the first to isolate and culture embryonic stem cells, as a "bold pioneer" in a field of research that would help "to combat Parkinson's disease and childhood diabetes, and one day grow human organs for transplants." As recently as March 2001, Secretary Thompson stated under Senate questioning that he is "troubled" by the 1996 Act and its ban on research involving human embryos.

Research advocates and scientists had been cautiously optimistic regarding Thompson's nomination. They saw his vocal support for the science and his political pragmatism as positive indicators that he would not act to ban federal funding for a number of requests that would be submitted to NIH by March 15, 2001. As that date passed, and with the moratorium imposed by the administration on any review of the proposals that were submitted by the March 15 deadline, speculation intensified. Supporters saw political pressure from the right as a serious threat to federal funding for embryonic stem cell research, and, as it turns out, they too were correct in part.

160. Id.

161. Nancy McVicar, A Question of Life and Health; Moral Concerns About Stem Cell Research Will Lead to a Review by President Bush and His New Secretary of Health and Human Services, SUN-SENTINEL (Fort Lauderdale, Fla.), Jan. 28, 2001, at 1G.

162. Craig Gilbert, Tones Differ in Nominees' Senate Hearings; Issues, not Clashes, Are Awaiting Thompson, MILWAUKEE J. SENTINEL, Jan. 18, 2001, at 1A.


164. Sharon Schmickle, Medical Scientists Welcome HHS Nominee; Several Researchers Say Tommy Thompson's Passion for Biotechnology May Offset the Influence His Abortion Stance Will Have on Such Research as Embryo Stem-Cell Studies, STAR TRIB. (Minneapolis, Minn.), Jan. 5, 2001, at 10A.
Jeffrey Kahn, director of the Center for Bioethics at the University of Minnesota noted that "[a]ll it takes to change [federal funding for embryonic research] is for George W. Bush to sign a different executive order." That is exactly what happened.

On August 9, 2001, President Bush ended the speculation in a nationally-televised address devoted solely to his administration's decision on whether to provide federal funding for embryonic stem cell research. In what can only be described as a politically expedient maneuver, the Bush Administration chose a path that provides for limited federal funding of embryonic stem cell research. This decision fully satisfies only a few of those in favor of such research.

The President's plan allows for federal funds "to be used for research on... existing stem cell lines, where the life-and-death decision has already been made." As further explained in subsequent papers issued by NIH, the plan contemplates federal funding for research utilizing some sixty-four embryonic stem cell lines that already exist. Funding for research involving stem cells that were derived after the President's address will not be permitted. The administration has identified what it deems to be sixty-four separate, viable embryonic stem cell lines that exist in ten different laboratories throughout the world. However, serious

165. Id.
166. See National Address, supra note 18 at A12.
168. National Address, supra note 18, at A12.
170. Id. at 2. In order to be eligible for funding, the derivation process to obtain embryonic stem cells must have been initiated prior to 9:00 EDT on August 9, 2001, the exact time that President Bush addressed the nation.
171. Id. These sixty-four lines are reported to exist at the following laboratories: BresaGen, Inc., Athens, Georgia (four lines); CyThera, Inc., San Diego, California (nine lines); Karolinska Institute, Stockholm, Sweden (five lines); Monash University, Melbourne, Australia (six lines); National Center for Biological Sciences, Bangalore, India (three lines); Reliance Life Sciences, Mumbai, India (seven lines); Technion-Israel Institute of Technology, Haifa, Israel (four lines); University of California, San Francisco, California (two lines); Göteborg University, Göteborg, Sweden (nineteen lines); Wisconsin Alumni
questions have been raised regarding the Bush Administration's characterizations of the viability and usefulness of these lines, as well as their availability to U.S. researchers. 172

Only time will tell if the Bush Administration's decision on federal funding will prove effective. 173 President Bush's policy, however, offers little solace for both those who support and those who oppose federal funding. Cardinal Theodore E. McCarrick, the Roman Catholic Archbishop of Washington, D.C., views any “allotment of federal funding . . . for [embryonic stem cell research] to be morally wrong,” while Betty Ann Krahne, who suffers extensive paralysis as a result of Lou Gehrig's disease, feels that the Bush Administration should have gone further in their support for the research. 174 The Bush Administration's policy neither provides assurance that the research will be thoroughly supported, nor does it provide any protection to those who believe it to be morally wrong.

Research Foundation, Madison, Wisconsin (five lines). See also Press Release, Tommy G. Thompson, Secretary of Health and Human Services (Aug. 27, 2001) (regarding stem cell lines) (on file with author).

172. See, e.g., Ceci Connolly & Rick Weiss, Stem Cell Colonies' Viability Unproven; Some in NIH List of 64 Termed Young, Fragile, WASH. POST, Aug. 28, 2001, at A1; T.R. Reid, U.S. Count of Stem Cell Lines Surprised Swedes, WASH. POST, Aug. 30, 2001 at A20 (noting that Swedish fertility expert Lars Hamberger of Göteborg University identified only “three defined cell lines, and four that [they] are trying to develop, and perhaps a dozen others that could possibly be developed in the future.”) (emphasis added). This seriously belies the so-called nineteen “viable” embryonic stem cell lines identified by the administration as existing at Göteborg University.); Ceci Connolly, Justin Gillis & Rick Weiss, Viability of Stem Cell Plan Doubted; Bush Policy Could Limit Research, Scientists Say, WASH. POST, Aug. 20, 2001 at A1; Gina Kolata, Researchers Say Embryos In Labs Aren’t Available, N.Y. TIMES, Aug. 26, 2001, at A1; How Many Lines?, Editorial, WASH. POST, Aug. 31, 2001, at A22.


III. THE LEGAL, MORAL AND ETHICAL CONSIDERATIONS

_In civilized life, law floats in a sea of ethics._ \(^{175}\)

A. The Legal Status of the Human Embryo In the United States

Although the topic has been commented on in great depth, there are few decisions or statutes that purport to define the legal status of human embryos. There is certainly no consensus among American jurisdictions that have attempted to do so.\(^{176}\) What little jurisprudence that does exist generally arises in the context of the legal status of extracorporeal (outside the womb) embryos cryopreserved through infertility treatments.\(^{177}\)

There appear to be three possible views on the legal status of the embryo: (1) embryos as “juridical persons”; (2) embryos as property; and (3) embryos as neither juridical persons nor property, but deserving of “special respect.”\(^{178}\)

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175. SIMPSON, _supra_ at note 26 (quoting United States Supreme Court Chief Justice Earl Warren, N.Y. TIMES, Nov. 12, 1962).

176. _See_, e.g., LA. REV. STAT. ANN. § 9:123 (West 1991) (defining the human embryo as a “juridical person”); _Davis v. Davis_, 942 S.W.2d 588, 594-95 (Tenn. 1992) (refusing to accord “preembryos” legally cognizable interests as persons under Tennessee law).


178. _See_ Thomas, _supra_ note 30 (identifying these three possibilities as potential legal classifications of the status of the embryo and arguing that abandoned frozen embryos should be treated as property under Texas law); Patricia A. Martin & Martin L. Lagod, _The Human Preembryo, the Progenitors, and the State: Toward a Dynamic Theory of Status, Rights, and Research Policy_, 5 HIGH TECH. L.J. 257, 261 (1991) (identifying three possible legal classifications for embryo status); Alise R. Panitch, _Note, The Davis Dilemma: How to Prevent Battles Over Frozen Preembryos_, 41 CASE W. RES. L. REV. 543, 553 (1991) (noting that scholars will pick either person, property or neither in commentary); Weldon E. Havins & James J. Dalessio, _The Ever-Widening Gap Between the Science of Artificial Reproductive Technology and the Laws Which Govern that Technology_, 48 DEPAUL L. REV. 825, 835 (1999) (noting the three legal classifications of the status of the embryo).
1. Embryos as “juridicial persons”

The reasoning that embryos should be treated as “juridicial persons” emanates primarily from the anti-abortion movement. This movement, associated with Christian doctrine and tradition, particularly Roman Catholic, believes that a human being with cognizable legal rights is created upon conception. Courts have not adopted this position, and generally view the legal status of the embryo, whether in utero or extracorporeal, either in the context of property rights or the non-property “special respect” category.

Apart from the law of Louisiana, American jurisprudence has balked at the idea of the embryo as a “juridicial person.” Beginning with the seminal Supreme Court decision in Roe v. Wade, courts have refused to recognize the embryo or nonviable fetus as a person with cognizable legal rights. The Court held in Roe that prior to viability (at the end of the first trimester of pregnancy), states have no “compelling” interest in protecting any legal interests of the potential life because, presumably, the embryo or fetus has no chance for survival outside of the womb. This holding placed viability over conception as the threshold for the recognition of cognizable rights. In Planned Parenthood v. Casey, though rejecting the trimester approach, the High Court sustained the central holding of Roe, reiterating its recognition of viability, not conception, as the developmental watershed for determining the legal status of the embryo.


180. Thomas, supra note 30.

181. See La. Rev. Stat. Ann. § 9:123 (West 1991); see also Havins and Dalessio supra note 178, at 845. It is noteworthy that all three of the state statutes that have criminalized embryo experimentation have been held unconstitutionally void for “vagueness.” Margaret S. v. Edwards, 794 F.2d 994 (5th Cir. 1986) (holding that a Louisiana statute that criminalized non-therapeutic experimentation on embryos was held unconstitutionally vague for the failure to properly define the terms “experiment” and “therapeutic”); Jane L. v. Bangerter, 61 F.3d 1493 (10th Cir. 1995) (holding that a Utah statute criminalizing embryo experimentation unconstitutionally vague for failure to properly define the terms “experimentation” and “benefit”); Lifchez v. Hartigan, 735 F. Supp. 1361 (N.D. Ill. 1990) (holding an Illinois statute criminalizing embryo research unconstitutionally vague for failure to define the term “therapeutic”).


183. Id. at 163.

or fetus.\textsuperscript{185}

While neither \textit{Roe} nor \textit{Casey} address directly the legal status of extracorporeal embryos, they both stand for the proposition that embryos are not juridicial persons. This proposition is rooted in pervasive judicial recognition that a woman’s right to terminate her pregnancy during the period of nonviability overrides the state’s interest in protecting nonviable human life. Consequently, both \textit{Roe} and \textit{Casey} provide an analytical framework for evaluating the legal status of the extracorporeal embryo either as the property of the gamete providers (the biological parents) or as an entity, not endowed with the full legal rights of a developed juridicial person, but deserving of special respect.

2. Embryos as property

Defining embryos as property in order to evaluate their legal status does not necessarily entail equating them to tangible or physical property as the traditional notion might suggest. Instead, the definition provides a means of determining who has ultimate control over their disposition.\textsuperscript{186} Courts that have addressed the question of dispositional authority over frozen embryos have relied on the tenets of both property and contract law.\textsuperscript{187}

The first case in the United States to deal with the legal issues surrounding the disposition of extracorporeal embryos was \textit{Del Zio v. Presbyterian Hospital of New York}.\textsuperscript{188} The Del Zios, unsuccessful in their attempts to have a child due to blockages in Mrs. Del Zio’s fallopian

\textsuperscript{185} \textit{Id.} at 870-73.

\textsuperscript{186} John A. Robertson, \textit{Reproductive Technology and Reproductive Rights: In the Beginning: The Legal Status of Early Embryos}, 76 VA. L. REV. 437, 455 n.48 (1990). Robertson states that ‘property’ and ‘ownership’ are for some persons loaded, charged, or even pejorative terms, which use of the term ‘quasi-property’ only partially easies. Having a property or ownership interest in early embryos, however, should not be thought of as identical to having a property interest in furniture or cars, though there are many similarities. \textit{Id.} Robertson clarifies further by stating that “applying such terms as ‘ownership’ or ‘property’ to early embryos risks misunderstanding. Such terms do not signify that embryos may be treated in all respects like other property.” \textit{Id.} at 454.

\textsuperscript{187} \textit{See infra} notes 183-221 and accompanying text.

tubes, learned of and pursued the then experimental procedure of *in vitro* fertilization through their doctor at Presbyterian Hospital in New York. On September 12, 1973, Mrs. Del Zios underwent the procedure to extract and fertilize her eggs. The fertilized eggs were subsequently placed in an incubator, where they were to remain for four days. When the department supervisor doctor (Dr. Vande Wiele) learned of it, he ordered the culture removed from incubation and placed in deep freeze, which effectively destroyed the culture.

The Del Zios sued Vande Wiele and Presbyterian under two separate theories: intentional infliction of emotional distress and conversion. The jury ultimately found for the Del Zios, and awarded them damages in excess of $50,000 for intentional infliction of emotional distress. The conversion theory was based on the argument that the fertilized egg in culture was their property, and Vande Wiele’s destruction of the culture interfered with their rights over that property. As to the theory of conversion, the jury found for the defendants. On appeal of the verdicts, however, the Federal District Judge noted that “[t]he jury could reasonably have found liability on the conversion claim, but rendered a verdict for defendants on the basis that the amount of the damage for conversion was too speculative to be determinable.”

The next case to recognize the property interest of the gamete providers in the disposition of frozen embryos created through an IVF procedure was *York v. Jones*. In *York*, the Eastern District of Virginia upheld a breach of contract action brought by the Yorks against a fertility clinic in Norfolk, Virginia. The Yorks sought infertility treatment at the

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189. *Id.* at *2-3.
190. *Id.*
191. *Id.*
192. *Id.* Dr. Vande Wiele, Chief of the Obstetrical and Gynecological Service at Presbyterian Hospital, consulted with his superiors regarding the procedure and they all agreed that the procedure, which had not been approved, should be stopped. *Id.* at *3-4.
193. *Id.* at *1.
194. *Id.* at *11.
195. *Id.*
196. *Id.* at *16.
198. *Id.* at 423.
They underwent four unsuccessful attempts at IVF at the Institute. Prior to the fourth attempt, however, and in anticipation of further attempts in the future, the Yorks signed an informed consent agreement (Cryopreservation Agreement) which detailed the couple's rights in any frozen embryos generated by the treatment. As a result of the fourth and last attempt at IVF at the Institute, six eggs were fertilized. Five were implanted, but none resulted in a successful pregnancy. The last remaining embryo was cryogenically frozen.

During the course of IVF treatment at the Institute, the Yorks moved to California. In May, 1988, the Yorks sought to have their last remaining frozen embryo transferred to a clinic in Los Angeles, California. The Institute refused to transfer the frozen embryo, stating that the Cryopreservation Agreement did not establish any protocol for inter-institutional transfer. The Yorks subsequently filed suit claiming breach of contract. The Virginia court sided with the Yorks, adopting their argument that the Cryopreservation Agreement recognized the Yorks' property interest in the frozen embryo. The court held that the Cryopreservation Agreement created a bailment contract, and that the Yorks, as bailors, exercised ultimate control over the disposition of the frozen embryo. The court in York, therefore, recognized the property interest of the gamete providers in frozen embryos, and interpreted the Cryopreservation Agreement as a legally enforceable contract.

The question of control over the ultimate disposition of frozen embryos arose again in Kass v. Kass. In Kass, the Court of Appeals of New York held that, in the presence of a valid, legally enforceable informed consent agreement detailing dispositional authority over frozen embryos, the

199. Id.
200. Id. at 423-24.
201. Id. at 424. The relevant portion of the cryopreservation agreement stated that the Yorks had "principle responsibility to decide the disposition" of their frozen embryos. Id.
202. Id.
203. Id.
204. Id.
205. Id. at 425.
206. Id.
207. Id.
language of the agreement controls. Prior to their divorce, the Kasses underwent an IVF treatment that yielded five frozen embryos. After the divorce, Maureen Kass sued for possession of the frozen embryos on the basis that it was her only chance for genetic motherhood. Steven Kass claimed that the informed consent agreement that the couple signed with the fertility clinic controlled. The informed consent agreement vested dispositional authority over the frozen embryos in the IVF clinic should the couple, no longer desiring implantation, be unable to arrive at a decision regarding the disposition of their frozen embryos. The court determined that the language of the consent agreement controlled, and granted dispositional authority over the embryos to the IVF clinic.

In arriving at its holding, the New York Court of Appeals again concluded that frozen embryos are not recognized as "persons" for constitutional purposes. After expounding on the "abundant commentary" regarding the disposition of the embryos, the court determined that because this was a contractual issue, it did not have to define the legal status of embryos. Furthermore, the court declined to decide whether embryos are entitled to "special respect." Although the court did not explicitly categorize frozen embryos as property, its holding regarding the controlling aspect of the informed consent agreement over the dispositional authority of the frozen embryos suggests a property

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209. _Id._ at 179.

210. _Id._ at 175.

211. _Id._

212. _Id._ The informed consent agreement that the couple signed stated that, in the event of divorce the disposition of the embryos would be determined in a property settlement. If the couple should decide to forgo implantation of the frozen embryos, or were unable to reach a decision regarding their disposition, authority over the disposition of the frozen embryos would vest in the IVF program. _Id._ at 176-77. In arriving at its decision, the court cited _Davis v. Davis_, 842 S.W.2d 588 (Tenn. 1992) to support the proposition that both gamete providers, the mother and the father, enjoy procreative autonomy, which "includes an interest in avoiding genetic parenthood as well as an interest in becoming a genetic parent." Kass, 696 N.E.2d at 178. For a more detailed analysis of the holding in _Davis_, see _infra_ Part III.A.3.


214. _Id._ at 182.

215. _Id._ at 179 (citing _Roe_, 410 U.S. 113 (1973)).

216. _Id._

217. _Id._
metaphor with regard to the legal status of frozen embryos.\textsuperscript{218}

3. \textit{Embryos as neither persons nor property, but deserving of "special respect"}

Increasingly, commentators, institutions, and courts may be inclined to classify the embryo as neither person nor property, but as a physical entity deserving of "special respect."\textsuperscript{219} For example, the American Society for Reproductive Medicine (formerly known as the American Fertility Society) set forth, in its ethical standards, the view that the early embryo "deserves respect greater than that accorded to human tissue but not the respect accorded to actual persons."\textsuperscript{220}

The Supreme Court of Tennessee, in a case involving the disposition of frozen embryos, adopted the American Society for Reproductive Medicine's view of the definition of an early embryo. In \textit{Davis v. Davis},\textsuperscript{221} the court held that the interest a divorced couple had in embryos created by an IVF procedure prior to their divorce was not a "true property interest," but an "ownership" interest to the extent that they had dispositional authority over the frozen embryos.\textsuperscript{222} In keeping with the

\footnotesize{\textsuperscript{218} Kayhan Parsi, \textit{Metaphorical Imagination: The Moral and Legal Status of Fetuses and Embryos}, 2\textsuperscript{nd} \textit{DePaul J. Health Care L.} 703, 754 (1999) (illustrating the potential for the misunderstanding of the classification of embryos as property). John Kerry, then executive director of the New York State Catholic Conference, stated in response to the \textit{Kass} decision: "I think the fundamental problem here is that the unborn treatment of children are being treated as if they were products, not human beings with all the attendant sanctity and dignity attributable to human life." \textit{Id.}

\textsuperscript{219} See Jennifer P. Brown, \textit{Unwanted, Anonymous, Biological Descendants: Mandatory Donation Laws and Laws Prohibiting Preembryo Discard Violate the Constitutional Right to Privacy}, 28 \textit{U.S.F. L. Rev.} 183, 197-98 (1993) (reporting that the majority of commentators support the "special respect" classification); Jennifer Mariglioano Dehmel, \textit{To Have or Not to Have: Whose Procreative Rights Prevail in Disputes Over Dispositions of Frozen Embryos?}, 27 \textit{Conn. L. Rev.} 1377, 1384 (1995) (noting that a majority of commentators support the "special respect" classification); \textit{see also Ethical Issues, supra}, note 123, at 2; \textit{Davis}, 842 S.W.2d, at 596-97 (adopting the view of the American Society for Reproductive Medicine, formerly known as The American Fertility Society, that preembryos are neither persons nor property, but deserve "special respect").

\textsuperscript{220} \textit{Davis}, 842 S.W.2d at 596 (citation omitted).

\textsuperscript{221} \textit{Davis v. Davis}, 842 S.W.2d 588 (Tenn. 1992).

\textsuperscript{222} \textit{Id.} at 597. Without delving into the mindset of the court, this distinction
holdings in *Del Zio, York* and *Kass*, the court reasoned that the disposition of frozen embryos after the divorce of a couple should begin with the presumptively valid informed consent agreement, if one exists.\(^{223}\) Because there was no agreement between the parties regarding the disposition of the embryos, the case was decided on the basis of procreational autonomy.\(^{224}\) In other words, the Court held that the preferences of the progenitors should control in determining the disposition of frozen embryos.\(^{225}\) If their preferences cannot be ascertained or are in dispute, the court held that the party wishing to *avoid* procreation should prevail.\(^{226}\)

As in the cases evaluating the embryo in the property context, the *Davis* court decided that ultimate authority with regard to the disposition of frozen embryos should lie with the gamete providers. Though the court indicated that the early embryo should be accorded special respect, it did not incorporate this sentiment into its holding. The idea of according special respect to the early embryo helps to distinguish embryos from mere things, and may provide a working basis for future courts that explore the issue.

The idea of classifying the human embryo as an entity deserving special respect is not without its critics. Dr. Edmund Pellegrino,\(^{227}\) considered by many to be the preeminent bioethicist in the United States, points out that the ethical objections of those opposed to embryonic stem cell research seems awfully contrarian.

\(^{223}\) Id.

\(^{224}\) See id at 604.

\(^{225}\) Id.

\(^{226}\) Id.


Dr. Pellegrino is the John Carroll Professor of Medicine and Medical Ethics at Georgetown University in Washington, D.C. He is also the former director of both the Kennedy Institute of Ethics, Center for Advanced Study of Ethics, and the Center for Clinical Bioethics at Georgetown. Dr. Pellegrino is a Master of the American College of Physicians, and a Fellow of the American Association for the Advancement of Science. He has published more than 450 papers relating to medical science, philosophy and ethics, and is a member of numerous editorial boards.

*Id.*
“cannot be over-ridden by the claim that the embryo is entitled to a 'special respect' but that this respect can be violated if there is sufficient benefit to others.”

Dr. Pellegrino's position that the classification of the human embryo as an entity deserving of special respect, but not the full rights and protections enjoyed by fully developed human beings, appears to represent another instance of legalistic word-smithing designed to ease the conscience of those who support the research. Perhaps he is correct. However, as noted, the legal status of unborn and extracorporeal embryos, at the present time, is a settled issue. It can be argued that the term “special respect" as it is applied to the human embryo appeals to a sense of morality, not a sense of the law. Nonetheless, the fact remains that however the human embryo is defined with regard to its cognizable legal rights, reasonable people will still arrive at different conclusions regarding the morality and ethics of embryonic stem cell research.

B. Embryos as Plaintiffs

On March 8, 2001, a suit was filed in the United States District Court for the District of Columbia to stop federal funding of embryonic stem cell research by HHS. The suit seeks to enjoin any action by HHS or NIH based on NIH's recently issued guidelines. In Nightlight Christian Adoptions v. Thompson, the plaintiffs request declaratory and injunctive relief against HHS. Among other things, the complaint alleges that funding of embryonic stem cell research violates the statutory ban enacted in 1996; threatens to financially impair plaintiffs' operations and divert funds from adult stem cell research, greatly reduces potential adoptive parents' chances of adopting human embryos, and that the research itself places the lives of certain named plaintiffs ("Potential Embryo Adoptees") at risk and denies them legal protection.

Most relevant to this discussion is the inclusion of "Potential Embryo

228. Id.

229. See Nightlight Christian Adoptions v. Thompson, No. 01 CV 00502 (D.D.C. filed Mar. 8, 2001). A careful examination of the complaint raises serious questions as to whether the plaintiffs have standing to assert their action. As the case is pending during the writing of this article, it is not for this author to say whether or not the complaint is vulnerable to a motion to dismiss. However, the outcome here could be of great import to the debate.

230. Id.

231. Id. at 28.

232. See id. at 4-13.
Adoptees” as “next friend of” plaintiffs in the action. The complaint characterizes these plaintiffs as “persons and/or individuals under the laws of their domiciles or otherwise and are infants or incompetents that qualify for representation under Fed. R. Civ. P. 17(c).” “Next of friend” plaintiff Nightlight Christian Adoption alleges that implementation of NIH’s guidelines endangers the lives of the potential embryo adoptees and denies them the benefits of the 1996 Act, as amended.

Whether Nightlight Christian Adoption is to be considered a proper “next friend” of potential embryo adoptees is a matter for the federal courts to decide. However, current authority on the issue appears to answer the question in the negative. In Enk v. Brophy, the Seventh Circuit dismissed a suit brought by plaintiff Enk on behalf of two minor children as a “next friend.” Judge Posner, writing for the court, noted that:

[T]he next friend must be an appropriate alter ego for a plaintiff who is not able to litigate in his own right; that ordinarily the eligibles will be confined to the plaintiff’s parents, older siblings (if there are no parents), or a conservator or other guardian, akin to a trustee; that persons having only an ideological stake in the child’s case are never eligible; but that if a close relative is unavailable and the child has no conflict-free general representative the court may appoint a personal friend of the plaintiff or his family, a professional who has worked with the child, or, in desperate circumstances, a stranger whom the court finds to be especially suitable to represent the child’s interests in the litigation.

Moreover, under Roe, the Supreme Court has made it clear that the word “person” does not include the unborn in the context of an equal protection analysis. In Doe v. Shalala, the United States District

233. Id. at 4-5.
234. Id. See also FED. R. CIV. P. 17(c).
236. 124 F.3d 893 (7th Cir. 1997).
237. Id. at 894.
238. Id. at 897 (J. Posner) (citations omitted) (emphasis added).
Court for the District of Maryland noted that not only does Federal Rule of Civil Procedure 17(c) not apply to embryos, in or ex utero, but that appointing a “guardian ad litem” or a “next friend”\(^{(241)}\) for an unspecified number of embryos “would present the Court with an impossible task.”\(^{(242)}\)

It appears, therefore, that the “Potential Embryo Adoptees” are improperly named as plaintiffs in the *Nightlight* action. The fact that *Nightlight*’s interests are ideologically-based, according to Judge Posner, should preclude *Nightlight* from representing the interests of cryogenically frozen embryos that could be potentially adopted.\(^{(243)}\) Groups such as *Nightlight* or the Christian Medical Association are not proper representatives of the interests of these frozen embryos. An embryo’s interests should be, and most often are, represented by its parents.

**C. Moral and Ethical Considerations**

*Morality is neither invented nor legislated. Rather, it is ‘discovered’ by an unpacking, explication, and articulation of individual intuitions about what ought to be undertaken and what ought not be done.*\(^{(244)}\)

Certain to be included in future court decisions regarding the disposition of frozen embryos are the moral and ethical considerations that accompany human embryological stem cell research. As is evident from the range of comment on this and related subjects like fetal tissue research and abortion, the issue is extremely contentious due to differences among reasonable people on the moral status of the human embryo. The schools of thought that have evolved can be broken down roughly into two positions: (1) human embryos should not be considered as human beings and therefore have a relative worth of protection; and (2) human embryos enjoy the same moral status as human beings and


\(^{241}\) These terms are often used interchangeably. However, in the context of a court action, generally a “guardian ad litem” is appointed to represent in the defense of an incompetent or minor child, while a “next friend” is either appointed or approved by the courts to assist the incompetent or minor child as a plaintiff. *See* Enk, 124 F.3d at 895.

\(^{242}\) Shalala, 862 F. Supp. at 1426.

\(^{243}\) *See* Enk, 124 F.3d at 894.

\(^{244}\) Smith, *supra* note 2 at 119.
Moral Absolutism

should merit equal protection.\footnote{Dr. Anne McLaren et al., Ethical Aspects of Research Involving the Use of Human Embryos in the Context of the 5th Framework Programme, compiled in Opinion of the European Group on Ethics in Science and New Technologies to the European Commission No. 12, at 5 (Nov. 23, 1998).}

The political machinations regarding stem cell research includes the ban in 1996, the NBAC report in 1999, the HHS opinion, the guidelines issued by the NIH, and the various congressional bills introduced all evoke the underlying difference in moral perspective between pro-life forces and those who support federal funding of such research.\footnote{From the beginning of the debate, it has been apparent to some that the views of those for and against embryonic stem cell research are "fundamentally different," "extreme" and not likely to be reconciled. Id. at § 1.25 (citing an earlier report issued in 1992 by the European Commission Working Group on Human Embryos and Research).}

Whether or not embryonic stem cell research is a morally acceptable undertaking depends on one's point of view.\footnote{See generally Edmund D. Pellegrino, Value Neutrality, Moral Integrity, and the Physician, 28 J.L. MED. & ETHICS 78 (2000). In his commentary, Dr. Pellegrino rejects the notion that physicians should be morally neutral. In doing so, he recognizes the lack of consensus with regard to issues of morality in medicine, and asserts that ethical beliefs are not "mere preferences, changeable or malleable in the face of practical exigencies." Id. at 79. He also recognizes the right of autonomy in the physician with regard to his or her value-based decisions. See id. at 79-80. This analysis should hold true when extended to everyone, not just physicians or patients.}

The pro-life movement asserts that a human being with fully cognizable legal rights is created at conception. Based on this belief, the movement asserts that a human embryo is the moral equivalent of a child; any process that endangers or destroys the embryo is inherently immoral.\footnote{See, e.g., Leslie Bennetts, Feminists Dismayed by the Election and Unsure of What Future Holds, N.Y. TIMES, Nov. 7, 1980, at A16 (discussing pro-life activists' support for a constitutional amendment "that would accord to the fetus full human and legal rights from the moment of conception")}

The Vatican's Pontifical Academy for Life's Declaration on the Production and the Scientific and Therapeutic Use of Human Embryonic Stem Cells (The Declaration),\footnote{See Charo, supra note 98, at 15-16.} exemplifies the pro-life position toward

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\textsuperscript{245} Dr. Anne McLaren et al., Ethical Aspects of Research Involving the Use of Human Embryos in the Context of the 5th Framework Programme, compiled in Opinion of the European Group on Ethics in Science and New Technologies to the European Commission No. 12, at 5 (Nov. 23, 1998).

\textsuperscript{246} From the beginning of the debate, it has been apparent to some that the views of those for and against embryonic stem cell research are "fundamentally different," "extreme" and not likely to be reconciled. Id. at § 1.25 (citing an earlier report issued in 1992 by the European Commission Working Group on Human Embryos and Research).

\textsuperscript{247} See generally Edmund D. Pellegrino, Value Neutrality, Moral Integrity, and the Physician, 28 J.L. MED. & ETHICS 78 (2000). In his commentary, Dr. Pellegrino rejects the notion that physicians should be morally neutral. In doing so, he recognizes the lack of consensus with regard to issues of morality in medicine, and asserts that ethical beliefs are not "mere preferences, changeable or malleable in the face of practical exigencies." Id. at 79. He also recognizes the right of autonomy in the physician with regard to his or her value-based decisions. See id. at 79-80. This analysis should hold true when extended to everyone, not just physicians or patients.

\textsuperscript{248} See, e.g., Leslie Bennetts, Feminists Dismayed by the Election and Unsure of What Future Holds, N.Y. TIMES, Nov. 7, 1980, at A16 (discussing pro-life activists' support for a constitutional amendment "that would accord to the fetus full human and legal rights from the moment of conception")

\textsuperscript{249} See Charo, supra note 98, at 15-16.

human embryonic stem cell research.

However, before exploring the Declaration, it is imperative to discuss briefly the basis of the opinions contained therein. The Roman Catholic church claims that a human being with inviolate rights is created at conception. This position is partially supported by adopting the scientific “genetic model.” In other words, because the genetic code of the embryo is created and locked upon conception, an individual human being with cognizable moral status is created. Moreover, Roman Catholic doctrine, as embodied in the writings of Pope John Paul II and the Congregation for the Doctrine of the Faith, posits that techniques of artificial reproduction are “morally unacceptable in and of themselves, since they separate procreation from the fully human context of the conjugal act.” These two teachings of the Roman Catholic church aid the foundation of the Vatican’s fierce opposition to embryonic stem cell research.

With regard to the morality of stem cell research, the Vatican’s Declaration raises two highly relevant questions: (1) “[i]s it morally licit to produce and/or use living human embryos for the preparation of ES

The Declaration was released as a direct response to release by the NIH of its guidelines on human embryological stem cell research.


253. Id.

254. EVANGELIUM VITAE, supra note 251, at 25; INSTRUCTION, supra note 251, at II.B.4.a., b.
cells?" and (2) "[i]s it morally licit to use ES cells, and the differentiated cells obtained from them, which are supplied by other researchers or are commercially obtainable?" The Declaration answers both of these questions in the negative. Concerning the usage of human embryos to obtain stem cells for research, the Vatican alleges that "the living embryo is . . . a human subject with a well defined identity" that has a "right to its own life." It characterizes the excision of the inner cell mass from the blastocyte, the method for obtaining pluripotent embryonic stem cells, as a "gravely immoral act." Finally, the Roman Catholic church believes that the human embryo, "from the first moment of its existence, must be guaranteed that unconditional respect which is morally due to the human being in his or her totality and unity in body and spirit." Thus, no end, including the possibility that hundreds of millions of lives might be saved or otherwise improved, justifies embryonic stem cell excision.

The Vatican also condemns the use by publicly-funded scientists of embryonic stem cells supplied by privately-funded researchers. The Declaration argues that there is no moral distinction between using and deriving ES stem cells, stating that using such cells "entails a proximate material cooperation in the production and manipulation of human embryos on the part of those producing or supplying them." The Vatican's position is correct: the use of stem cells excised from embryos and the actual process of excision should not be morally or legally distinguished.

255. DECLARATION, supra note 250, at §§ 3-4. The Declaration also raises the question whether it is morally licit to engage in therapeutic cloning (producing cloned human embryos to obtain ES cells). Because the NIH's guidelines specifically bar federal funding for research utilizing therapeutic cloning techniques, it will not be addressed in this article. STEM CELL GUIDELINES, supra note 131, at 51,978.

256. DECLARATION, supra note 250.

257. Id. (emphasis added).

258. Id. (emphasis added).

259. Id.

260. See id.

261. See id.

262. Id. The NIH's guidelines allow for federal funding of embryonic stem cell research using ES cells obtained from privately-funded researchers who derived them, but does not allow for funding of the derivation itself. STEM CELL GUIDELINES, supra note 131, at 51,978.
The Vatican’s position, though representative of the moral stance of the pro-life movement on human embryonic stem cell research, does not give a complete picture of the pro-life movement’s rhetoric on the issue. Human embryonic stem cell research has been compared to the atrocities committed by the Nazis during World War II, and the syphilis experiments conducted by the U.S. Government on African-Americans in Tuskegee, Alabama. Stem cell experimentation has been described as both “harvesting unborn children for profit” and “Frankenstein” testing. These types of comparisons closely parallel the arguments made by the pro-life movement in its opposition to the government funding of fetal tissue research. Unfortunately, such comparisons exhibit a grave misunderstanding of the nature and the science of the research itself.

Not all religious groups, however, are morally opposed to human embryonic stem cell research. Pope John Paul II, in his Gospel of Life, states that “Christians, like all other people of good will, are called upon under grave obligation of conscience not to cooperate formally in practices which, even if permitted under civil legislation, are contrary to God’s law.” This begs the question—what is God’s law? Prominent theologians from the four major faiths have taken a different view.


264. See Vick, supra note 80.


268. EVANGELIUM VITAE, supra note 251, ¶ 74.

269. Protestantism, Catholicism, Judaism and Islam.

270. Letter from Rabbi Elliot Dorff, professor of philosophy, University of Judaism, Margaret Farley, professor of Christian ethics, Yale University Divinity
a 1999 letter addressed to every member of Congress, theologians voiced their support for federal funding of human embryonic stem cell research.\footnote{271} Position papers commissioned by the NBAC on various religious perspectives confirm this. University of Judaism Professor Rabbi Elliot N. Dorff, Ph.D., comments that from the Jewish perspective, excess frozen embryos have no potential for development while outside the womb; therefore, it is morally acceptable, perhaps even a duty, to utilize them in research that could potentially lead to cures.\footnote{272} Dr. Abjulaziz Sachedina, of the University of Virginia Department of Theological Studies, notes that “in Islam, research on stem cells made possible by biotechnical intervention in the early stages of life is regarded as an act of faith of the ultimate will of God as the Giver of all life, as long as such intervention is undertaken with the purpose of improving health.”\footnote{273}

But not surprisingly, some Roman Catholic theologians support human stem cell research.\footnote{274} Dr. Margaret Farley, a Roman Catholic nun and School, Nancy J. Duff, associate professor of theological ethics, Princeton Theological Seminary, and Abdulaziz Sachedina, Department of Religious Studies, University of Virginia, to all members of Congress (Oct. 12, 1999) (on file with The Catholic University of America, Columbus School of Law, The Journal of Contemporary Health Law and Policy).

\footnote{271} Id. In the letter, the authors agree that all human life must be protected, but hold that their religious beliefs also recognize “a significant difference between an embryo suspended in liquid nitrogen that will never be implanted inside a womb, and an unborn child who is already in the womb.” Furthermore, the authors conclude that the importance of compassion in their various faiths compel them to support federal funding for embryonic stem cell research because of its potential to relieve the suffering of millions. \textit{See id.}

\footnote{272} See NAT’L BIOETHICS ADVISORY COMM’N, ETHICAL ISSUES IN HUMAN STEM CELL RESEARCH, VOL. III, RELIGIOUS PERSPECTIVES. [hereinafter RELIGIOUS PERSPECTIVES] Rabbi Dorff distinguishes the view of using stem cell research to seek out cures from using it to seek out enhancements, which would not be approved by the Jewish faith. Volume III of the NBAC’s report also contains papers that express opposition and/or reservation about stem cell research. The premises of those papers, however, do not differ significantly from the position of the Vatican’s Declaration and have, therefore, not been included in this Comment. \textit{See id.}

\footnote{273} Id. at App. G.

\footnote{274} Roman Catholic theologians who might be placed in the “developmental” school of Catholic thought, which argues that the embryo should not be given personal moral status until sufficient development has occurred, include widely respected thinkers like Bernard Härning, Karl Rahner, Joseph
Professor of Christian Ethics at Yale University Divinity School, who is in support of human embryonic stem cell research states that “there are clear disagreements among Catholics on... embryo research,” and that “a case for human embryo... research can... be made on the basis of positions developed within the Catholic tradition.”275 Furthermore, she argues, the case can be made without “sacrificing the [Roman Catholic] tradition’s commitments to respect human life, promote human well-being, and honor the sacred in created realities.”276 The position of the Roman Catholic church as determined by the Vatican is that these opinions, though offered by individuals who consider themselves Roman Catholic, contradict the official position of the Church and are, therefore, not representative of Roman Catholic doctrine.277

The moral controversy surrounding human embryonic stem cell research centers on the diverse views concerning the inception of human life. For the Vatican and pro-life groups, the dividing line between unprotected and protected forms of human life is at the moment of fertilization.278 For others, the dividing line moves further away from fertilization and closer toward viability of the fetus. In making its recommendations, the National Bioethics Advisory Board took all of the disparate views into account.279 In the executive summary of its report, the NBAC acknowledged that conscientious individuals have arrived at different conclusions with regard to human embryonic stem cell research, but further noted that “the development of public policy in a morally contested area is not a novel challenge for a pluralistic democracy such as that which exists in the United States.”280 The European Community’s equivalent to the NBAC, the European Group on Ethics in Science and New Technologies, made a similar observation with regard to debate among European countries:

Community authorities have to address... ethical questions.

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275. See RELIGIOUS PERSPECTIVES, supra note 272, at App. D (testimony of Margaret Farley, Ph.D.).
276. Id.
278. Charo, supra note 98, at 16.
279. ETHICAL ISSUES, supra note 122.
280. Id.
taking into account the moral and philosophical differences, reflected by the extreme diversity of legal rules applicable to human embryo research, in the 15 Member States. It is not only legally difficult to seek harmonisation of national laws at the Community [sic] level, but because of lack of consensus, it would be inappropriate to impose one exclusive moral code.\textsuperscript{281}

This diversity of views is part of the character of a pluralistic society. Consequently, it is equally inappropriate to impose one exclusive moral code with regard to federal funding of embryonic stem cell research in the United States. This, however, is precisely what conservative Roman Catholics and opponents of embryonic stem cell research propose to do by banning such research. A better solution, discussed \textit{infra}, is a balanced, cautious approach that takes into account all views in order to make an informed decision as to what path to follow.

1. Philosophical quandaries

"Science cannot stop while ethics catches up \ldots and nobody should expect scientists to do all the thinking for the country."\textsuperscript{282}

It is safe to say that most people would agree with the second part of this assertion. Whether science should stop while ethics catches up, however, is another matter. Ethicists have issued commentary, both subjective and objective, on the issue. However, as stated above, the nature of the relationship between biotechnological advancement and bioethics is best described as reactionary. While the principal ethical issue involved in the debate over federal funding for human embryonic stem cell research is the moral status of the embryo, other important ethical issues remain, including whether or not government-funded researchers who utilize embryonic stem cells, but do not destroy them, are complicitous with those who do.

The philosophical question in this context becomes, if one feels that destruction of frozen embryos is immoral, "What constitutes morally wrongful cooperation with evil deeds?"\textsuperscript{283} Philosophers have focused

\textsuperscript{281} See McLaren, supra note 245, at \S 2.4 (emphasis added).

\textsuperscript{282} Simpson, supra note 26 (quoting Elvin Stackman, President of the American Association for the Advancement of Science, \textit{Life Magazine}, Jan. 9, 1950).

\textsuperscript{283} See AAAS Report, supra note 8, at 13.
generally on four ways that would make someone complicitous: (1) actual, direct involvement in the wrongful act; (2) direct encouragement of the wrongful act; (3) indirect encouragement of the wrongful act; and (4) without encouragement, "the appearance of endorsing, conferring legitimacy upon, or diluting the condemnation of the wrongful act."\textsuperscript{284} Human embryonic stem cell research presupposes the destruction of the embryo from which the stem cells are extracted. Therefore, those that believe that the use of frozen human embryos for stem cell research is immoral must extend that belief to those who utilize the cells for research purposes. For those who believe that the use of frozen human embryos for stem cell research is not immoral, there is no wrongful act with which one can be considered complicit. It is this self-evident truth that exposes perhaps the only ethical fallacy of the NBAC's report and the guidelines issued by NIH. In an apparent, and unsuccessful, effort to distance itself from moral and ethical morass of providing federal funds for the destruction of frozen human embryos for research purposes, the NBAC recommended, and the NIH adopted, guidelines against providing federal funding for stem cell extraction. The NBAC, thereby, succumbed to the confusions of the popular culture and political pressures of indecisiveness.

2. Utility or futility?

The forces that are opposed to unfettered federal funding of embryonic stem cell research have taken the position that those that support it have adopted a utilitarian view.\textsuperscript{285} Utilitarianism is defined by \textit{Webster's New World Dictionary} as either "1. the doctrine that the worth or value of anything is determined solely by its utility," or "2. the doctrine that the purpose of all action should be to bring about the greatest happiness of the greatest number."\textsuperscript{286} Those opposed to embryonic stem cell research would argue that the worth of the human embryo should not be determined solely by its utility, and they are correct. However, the limitations that the moniker of this definition of "utilitarianism" impose generally belie the morality and ethos of an approach that supports federal funding for embryonic research.\textsuperscript{287} The second definition, where

\begin{itemize}
\item \textsuperscript{284} \textit{Id.} at 14.
\item \textsuperscript{285} See, e.g., Pellegrino letter, supra note 277.
\item \textsuperscript{286} \textit{WEBSTER'S NEW WORLD DICTIONARY} 1605 (College Ed. 1968).
\item \textsuperscript{287} In fact, philosopher David Hume sees the concept of utility as a central precept of morality. In his work \textit{Moral and Political Philosophy}, Hume states: It appears to be a matter of fact that the circumstance of utility, in all
the utility of stem cell research, and not the utility of the embryo is the focal point, is more appropriate in an ethical and moral evaluation.

For example, recently, eighty Nobel Laureates sent a letter advocating federal funding for embryonic research to President George W. Bush.\textsuperscript{288} In the letter, the Nobel Laureates, unquestionably some of the most brilliant minds in all fields of science and humanity, recognize the ethical dilemma raised by such research:

While we recognize the legitimate ethical issues raised by this research, it is important to understand that the cells being used in this research \textit{were destined to be discarded in any case}. Under these circumstances, it would be tragic to waste this opportunity to pursue the work that could potentially alleviate human suffering. For the past 35 years many of the common human virus vaccines—such as measles, rubella, hepatitis A, rabies and poliovirus—have been produced in cells derived from a human fetus to the benefit of tens of millions of Americans. Thus precedent has been established for the use of fetal tissue that would otherwise be discarded.\textsuperscript{289}

Richard Doerflinger’s (of the National Conference of Catholic Bishops) response to the Nobel Laureates “utilitarian” approach was to say “[n]obody ever said these Nobel prizes are for ethics.”\textsuperscript{290} This tacit implication that the various Nobelists who authored and signed the letter, along with the scores of others who support federal funding of embryonic stem cell research, lack the proper ethical foundation is indicative of the moral absolutism of those opposed to it. Mr. Doerflinger, along with

\begin{itemize}
\item subjects, is a source of praise and approbation; that it is constantly appealed to in all moral decisions concerning the merit and demerit of actions; that it is the \textit{sole} source of that high regard paid to justice, fidelity, honour, allegiance, and chastity; that it is inseparable from all other social virtues, humanity, generosity, charity, affability, lenity, mercy, and moderation; and, in a word, that is a foundation of the chief part of morals, which has a reference to mankind and our fellow creatures.

\end{itemize}

\textsuperscript{288.} Letter from Eighty Nobel Laureates to George W. Bush, President of the United States (Feb. 21, 2001), \textit{available at} http://www.washingtonpost.com.
\textsuperscript{289.} \textit{Id.}
many of the groups aligned with him against the research, fails to see that their conception of morality and ethics is not altogether pervasive. The objective in determining ethically sound policy is to weigh the opinions of all, investigate and understand the facts, and make an informed decision. The NIH, bolstered by the opinion set forth by the leadership of the HHS under the Clinton Administration, did just that. It would be futile to attempt to convince the moral absolutist, who is opposed to embryonic stem cell research, that the path chosen is both morally and ethically acceptable. However, this futility should not be misunderstood to translate into a barrier of defiance among common Americans.

CONCLUSIONS AND RECOMMENDATIONS

R. Alta Charo, an NBAC Commissioner, has noted that the “search for a definitive, intrinsic moral status of the embryo is as doomed as the hunting of [Lewis Carroll’s] illusive snark.”291 She sees this as the fallacy that embodied the Clinton Administration’s approach to providing federal funds for embryonic stem cell research.292 In distinguishing between the derivation and use of stem cells from extraneous cryogenically frozen embryos, the former administration set up its interpretation of the 1996 Act to well-founded criticism that it lacks a moral and ethical foundation. Professor Charo aptly states that the panel would have been served better by “[c]andidly acknowledging that embryo research will violate a cherished ideal of millions—that all human life is inviolate—but arguing that its beneficiaries have a claim to its life-promoting potential for [medical] advances.”293

This observation still holds true. In a pluralistic society, it is inevitable that when a direction is taken on a public policy issue so hotly contested, as this, the philosophical chasm that separates it is magnified, perhaps artificially so. Though pro-life forces have been the most adamant and outspoken opponents of human embryonic stem cell research, some of their constituents, as they have become more familiar with the enormous healing potential that this research promises, have begun to break ranks


292. See Charo, supra note 98.

293. Id. at 27.
and support federal funding of this research. This phenomenon and the reasons behind it are captured in a statement in support for embryonic stem cell research by Dr. Arturo Brito, a pediatrician at the University of Miami School of Medicine, who is, incidentally, a Roman Catholic:

We [the NBAC] were really very careful. We were writing this [the NBAC report] for the American people. Even though I am uncomfortable with abortions, I am comfortable about using embryos that are going to be discarded from IVF (in vitro fertilization), because they've been tossed out for years or decades. If they can be put to use to save lives, then they should be.\(^\text{294}\)

Legalistic approaches and exaggerated appeals to the moral “high ground” on an issue that has no moral high ground simply exposes the path chosen to misunderstanding, confusion and anger. The Bush Administration ought not only to continue the good work of the NBAC and the NIH, but should also seriously consider extending federal funding to the derivation of stem cells. The moral distinction between deriving stem cells from frozen embryos and using them only for research purposes is specious at best, since experimentation with regard to stem cells necessarily implicates derivation. Moreover, adamant opponents of stem cell research perhaps ought to take a step back from such morally absolutist views, and lend a bit more credibility to the position held by millions of other Americans. These supporters either suffer from or have a family member who suffers from a degenerative condition that could ultimately be treated with the fruits of this research. They, like approximately 65% of all Americans,\(^\text{295}\) support federal funding for stem cell research because they believe the potential medical benefits outweigh carefully considered moral and legal conundrums.

While it is true that absolutism can be attributed to either side in this conflict, it is erroneous to claim that there exist only two views with regard to the morality and ethics of embryonic stem cell research. The

\(^{294}\) McVicar, \textit{supra} note 161.

\(^{295}\) Juvenile Diabetes Research Foundation, Juvenile Diabetes Research Foundation International Statement on President Bush's Remarks About Federal Funding of Stem Cell Research, PR Newswire, Jan. 26, 2001, LEXIS, Nexis Library, ALLNEWS file (referring to a poll conducted between January 12 and January 15, 2001 which shows that sixty-five percent of Americans surveyed said they support federal funding for stem cell research)(on file with author).
truth is that there are a myriad of differences in interpretations of the ethical and moral implications set forth with regard to this research. Those differences should be taken into account and carefully weighed as we, as a society, move forward. The best way to ensure that is through full federal funding, which will not only promote the research to its scientific fruition, but will provide also for public oversight in an area that desperately requires it. President Bush’s policy falls far short of this desirable aim. Despite the ferocity of the debate, legally, morally and ethically, federal funding for stem cell research is well supported, and is the right path to a healthier civilization.