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PROMOTING LIFE?: EMBRYONIC STEM CELL RESEARCH LEGISLATION

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Archbishop Trench once commented that "the road to hell is paved with good intentions."[1] In other words, sometimes we want to achieve what we believe to be an honorable goal, but in so doing we inadvertently commit a grave transgression.[2] In no other present political context does this adage fit more readily than the current debate over federal funding for embryonic stem cell (ESC) research.[3] Both supporters and opponents of federal funding for ESC research want to achieve what they believe is a greater good, yet politicians, patients, scientists, religious leaders, and voting citizens are torn between the promise of advances in medical research and the ongoing ethical dilemma of when life begins.[4] For both sides, the ultimate end of this

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1. BURTON STEVENSON, THE HOME BOOK OF QUOTATIONS 891 (1952). This adage finds biblical support in *Romans* 3:7-8, which states: "But if God's truth redounds to his glory, through my falsehood, why am I still being condemned as a sinner? And why not say – as we are accused and as some claim we say – that we should do evil that good may come of it?" *Romans* 3:7-8 (The New American Bible, Saint Joseph Edition). Building on this verse from *Romans*, in his papal encyclical *Humanae Vitae*, Pope Paul VI claims that "it is not licit . . . to make into the object of a positive act of the will something which is intrinsically disorder, and hence unworthy of the human person, even when the intention is to safeguard or promote individual, family or social well-being." Paul VI, *Humanae Vitae ("Of Human Life")* ¶ 14 (1968) [hereinafter *Humanae Vitae*]. Please note that papal encyclicals are cited by paragraph rather than page number.

2. *See, e.g.*, CATECHISM OF THE CATHOLIC CHURCH ¶ 1799-1801 (United States Catholic Conference, Inc. trans., 1994) [hereinafter CATECHISM] (clarifying the Catholic belief that human beings must follow their consciences in making decisions and in judging rightly or erroneously). Like papal encyclicals, it is proper to cite the CATECHISM by paragraph rather than page number.

3. *See* Fr. Vincent Fitzpatrick, *President Makes Tragic Blunder*, COMMUNIQUÉ (Sept. 14, 2001), *available at* http://www.all.org/communique/cq010914.htm (last visited Nov. 14, 2001) (stating that the use of the adage is fitting for President Bush's decision and embryonic stem cell research in general because it is "utilitarian" and "consequentialist").

4. *See* Laurie McGinley & Anne Fawcett, *Patients and Abortion Foes Clash on Stem-Cell Research*, WALL ST. J., June 21, 1999, at A28; *see also* Bob Davis, *Put to the Test: GOP Avoids Abortion for Now, But Science Is Stirring the Debate*, WALL ST. J., Aug. 1, 2000, at A1.

debate is to improve the human condition and save lives.[5] However, the difference lies in identifying whose lives are to be saved and the best means of doing so.[6]

On one side of the ESC debate, some argue that ESC research will improve or save the lives of already born individuals who suffer from terrible diseases.[7] Others contend that because the extraction of stem cells from an embryo destroys the embryo, such research is morally tainted.[8] The response of ESC research proponents is to use only those ESCs derived from in vitro fertilization (IVF) clinic embryos, which are already destined to be discarded.[9] In essence, proponents believe that

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5. *Compare Hearing on Stem Cell Ethical Issues and Intellectual Property Rights Before the Senate Appropriations Subcomm. on Labor, Health and Human Services, Educ. and Related Agencies*, 107th Cong. (2001) [hereinafter *Aug. 2001 Hearings*] (statement of Senator Arlen Specter (R-PA)) (expressing his belief that there is no issue more important than ESC research because of its potential to cure millions of people and offering that justification for introducing Senate Bill S. 723), *and Hearing on Stem Cell Ethical Issues and Intellectual Property Rights Before the Senate Appropriations Subcomm. on Labor, Health and Human Services, Educ. and Related Agencies*, 107th Cong. (2001) [hereinafter *July 2001 Hearings*] (statement of Senator Tom Harkin (D-IA)) (describing the reason why he co-sponsored S. 723 with Senator Specter as a way "to save lives and find cures for some of the most debilitating diseases"), *with* Remarks by the President on Stem Cell Research, Televised Address (Aug. 9, 2001), *available at* http://www.whitehouse.gov/news/releases/2001/08/print/20010809-2.html (last visited Sept. 2, 2001) [hereinafter Bush Proposal] (allowing research on limited ESC lines that have been extracted prior to the President's decision because President Bush wanted to "explore the promise and potential of stem cell research without crossing a fundamental moral line"), *and* S. 1349, 107th Cong. § 2 (2001) (finding that ESC research "based on ethically responsible stem cell sources may lead to exponential improvements in the treatment of many terminal and debilitating conditions").

6. *Compare* Bush Proposal, *supra* note 5, *and* S. 723, 107th Cong. (2001) (allowing ESCs to help individuals with diseases like Parkinson's, Alzheimer's, and diabetes but at the expense of the embryo's life), *with* S. 1349, 107th Cong. (2001) (forbidding embryo destruction, thereby saving lives; promoting the use of those stem cells that are already treating numerous diseases; and establishing a nationwide donor bank to ensure proper genetic matches for patients).

7. *See* Rick Weiss, *U.S. To Issue New Rules for Research on Embryo Cells*, WASH. POST, Aug. 23, 2000, at A1. For example, Daniel Perry, Chairman of the Patients' Coalition for Urgent Research, stated: "'What the patient groups have been saying all along is, 'Get on with it. We want this for our loved ones.'" *Id.*

8. *July 2001 Hearings*, *supra* note 5 (testimony of Richard M. Doerflinger, Associate Director for Policy Development at the Secretariat for Pro-Life Activities) (stating that "obtaining and destroying embryos is an integral part of this project"); *see also* Robert P. George, *Don't Destroy Human Life*, WALL ST. J., July 30, 2001, at A18.

9. *Hearing on Embryonic Stem Cell Research Before the House Subcomm. on Criminal Justice, Drug Policy and Human Resources*, 107th Cong. (2001) [hereinafter *July 2001 Criminal Justice Hearings*] (testimony of Senator Orrin Hatch (R-Utah). In reference to his precarious situation of opposing abortion yet supporting ESC research, Senator Hatch queries, "Why shouldn't these embryos slated for destruction [in IVF clinics] be used for the good of mankind?" *Id.; see also* Rick Weiss, *Embryo Research is*

instead of discarding the embryos, scientists should use them to derive ESCs for research because they have a great deal of scientific promise.[10] Opponents of the research do not share this form of biological utilitarianism because they believe that human life deserves respect at all stages of development. They believe that justifying an embryo's destruction with the argument that another person may be saved is an affront to human dignity.[11] They look to protect unborn life, in the form of human embryos, from destruction while they support alternative measures of stem cell research to treat diseases.[12]

One of the more vocal opponents of ESC research is the Catholic Church (Church).[13] The Church deems that from the moment of

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Backed; Ethicists See Benefits Overriding Qualms, WASH. POST, May 23, 1999, at A1 (quoting a statement from the National Bioethics Advisory Commission (NBAC) that "[c]onservatives who accept that killing a fetus is permissible where it is necessary to save the life of the mother should agree with liberals that it is also permissible to destroy embryos where it is necessary to save people").

10. McGinley & Fawcett, *supra* note 4 (outlining both sides of the debate and focusing on the issue of using IVF embryos to extract ESCs for research).

11. *See July 2001 Hearings*, *supra* note 5 (testimony of Richard M. Doerflinger, Associate Director for Policy Development at the Secretariat for Pro-Life Activities) (attacking the argument that embryos "would be discarded anyway" by analogizing the situation to killing the terminally ill or death row inmates to harvest their vital organs because they are slated for death).

12. It is vital to a discussion of this issue to understand the difference between the terms "stem cell" and "embryonic stem cell." *See* THE NAT'L BIOETHICS ADVISORY COMM'N, ETHICAL ISSUES IN HUMAN STEM CELL RESEARCH: REPORT AND RECOMMENDATIONS OF THE NATIONAL BIOETHICS ADVISORY COMMISSION 7-8 (1999) [hereinafter NBAC REPORT AND RECOMMENDATIONS]. "Stem cell" is a comprehensive term that refers to numerous forms of stem cells, including embryonic stem cells, adult stem cells, umbilical cord blood stem cells, and placental stem cells. *See id.* Therefore, all embryonic stem cells are stem cells, yet not all stem cells are embryonic. *See id.* For a thorough explanation of the scientific terms involved in the ESC debate, see *infra* Part II.A. For a discussion of the widespread misconception that overwhelming support for stem cell research invariably means support for embryonic stem cell research, see United States Conference of Catholic Bishops, *Stem Cell Reality Check #2*, *available at* http://www.nccbuscc.org/prolife/issues/bioethic/stemfax2.htm (last visited Sept. 26, 2001) [hereinafter *Reality Check #2*].

13. The District of Columbia is home to the headquarters of the United States Conference of Catholic Bishops, whose office of the Secretariat for Pro-Life Activities sent Richard M. Doerflinger to testify before Congress on numerous occasions regarding the issue of federal funding for ESC research. *See, e.g.*, *Hearing on Legal Status of Embryonic Stem Cell Research Before the Senate Appropriations Subcomm. on Labor, Health and Educ.*, 106th Cong. (1999) [hereinafter *Jan. 1999 Hearings*] (testimony of Richard M. Doerflinger, Associate Director for Policy Development at the Secretariat for Pro-Life Activities); *July 2001 Hearings*, *supra* note 5 (testimony of Richard M. Doerflinger, Associate Director for Policy Development at the Secretariat for Pro-Life Activities).

conception, human life must be protected.[14] Beginning with this tenet, Catholic opponents of ESC research believe that any action that intentionally destroys a human embryo cannot be justified under any circumstance.[15] Moreover, the Church supports other promising forms of stem cell research, which not only protect the sanctity of life, but also hold the promise of advancing medical treatment for a broader segment of society.[16]

The goal of this Comment is to evaluate and understand how, through the lens of Catholic social teaching, recent legislation and the President's proposal concerning federal funding of stem cell research is indicative of American society's progression toward a "Culture of Death."[17] This Comment is not intended to create further division among the already polarized sides of the ESC research debate; rather, its purpose is to demonstrate that if one starts with the basic principle that life begins at conception, one cannot accept ESC research as a legitimate pursuit of federal law.[18] Regardless of whether it is conducted with the ultimate intent of saving lives or improving the quality of life for those suffering

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14. *See* CATECHISM, *supra* note 2, ¶ 2270. Biblical references to human life beginning at conception are found in *Jeremiah* 1:5 and *Psalms* 22:10-11, 139:14-15. *Jeremiah* 1:5 is the most popular of the biblical verses, often found on pro-life bumper stickers and tee shirts. It reads: "Before I formed you in the womb I knew you." *Jeremiah* 1:5.

15. *See July 2001 Hearings*, *supra* note 5 (testimony of Richard M. Doerflinger, Associate Director for Policy Development at the Secretariat for Pro-Life Activities) (claiming that "[t]he intrinsic wrong of destroying innocent human life cannot be 'outweighed' by any material advantage – in other words, the end does not justify an immoral means"); *see also* Rick Weiss, *A Look at Science and Religion; On Ethics and Embryo Research*, WASH. POST, June 13, 1999, at B3 (providing excerpts from the testimony of various religious leaders before the NBAC concerning federal funding for ESC research).

16. *See July 2001 Hearings*, *supra* note 5 (testimony of Richard M. Doerflinger, Associate Director for Policy Development at the Secretariat for Pro-Life Activities) (listing the numerous alternative stem cells that have been successfully used to treat patients with spinal cord injuries, juvenile diabetes, cancer, and leukemia, among others).

17. In his papal encyclical, *Evangelium Vitae*, Pope John Paul II defines the "Culture of Death" as a "*structure of sin*" that denies solidarity and is "fostered by powerful cultural, economic, and political currents that encourage an idea of society excessively concerned with efficiency;" it constitutes "a *war of the powerful against the weak*" where a "*conspiracy against life* is unleashed." John Paul II, *Evangelium Vitae ("The Gospel of Life")* ¶ 12, *in* THE ENCYCLICALS OF JOHN PAUL II 682, 690 (J. Michael Miller ed., 2001) [hereinafter *Evangelium Vitae*].

18. *See* Arthur Allen, *God and Science*, WASH. POST, Oct. 15, 2000, at W8 ("For those who think an embryo is a life, . . . stem cell research offers no justification for killing it other than research whose benefit is no more certain than the embryo's humanity."). *But see July 2001 Hearings*, *supra* note 5 (statement of Senator Tom Harkin (D-IA)) ("The government has an important role to play in supporting basic science. Basic science will always be underfunded by the private sector. . . .").

from diseases such as diabetes, Alzheimer's, or Parkinson's, ESC research requires the destruction of a human embryo – an act that is unnecessary in light of other scientific alternatives.[19]

Part I of this Comment explains the development of the use of stem cell research. Part II examines the ethical debate surrounding the medical use of stem cells, which has propelled the issue to the forefront of American political life. Part III of this Comment outlines three proposed solutions for "ethically"[20] funding ESC research with federal money, and Part IV queries whether ESC research is necessary. This Comment then explains the extent to which each proposal promotes either the Culture of Death or the Gospel of Life, as defined by Pope John Paul II in *Evangelium Vitae*.[21] The focus of this Comment then turns to each proposal's ramifications for the ESC research debate. Finally, Part V of this Comment discusses why it is important for individuals who respect life to reflect upon whether federal funding for ESC research is necessary to achieve its desired end.

I. BACKGROUND: THE PATH TO THE PRESENT

A. The Development of Embryo Research and the Accompanying Political Drama

Although researchers successfully isolated ESCs in 1998,[22] ESCs themselves – and the political issues surrounding them – find their roots in the IVF controversy of the late 1970s.[23] During the late 1970s,[24] Patrick

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19. *July 2001 Criminal Justice Hearings*, *supra* note 9 (testimony of Dr. David A. Prentice, Ph.D., Professor of Life Sciences, Indiana State University; Adjunct Professor of Medical and Molecular Genetics, Indiana University School of Medicine; Founding Member, Do No Harm: The Coalition of Americans for Research Ethics) (stating that ESC research supported with federal funding is "illegal, unethical, and unnecessary" because "[r]esearch using stem cells not derived from human embryos has confirmed . . . that adult stem cells . . . have vast biomedical potential to cure diseases . . . [that is] as great as or greater than the potential offered by human embryonic stem cell[s]").

20. *See* Rick Weiss, *Panel Drafts Ethics Plan for Embryo Cell Studies; Rules Would Guide Federally Funded Research*, WASH. POST, Apr. 9, 1999, at A2. The word "ethically" is placed in quotations because the idea of obtaining and performing research on embryo cells "ethically" has been viewed by some as oxymoronic. *Id.*

21. *See Evangelium Vitae*, *supra* note 17, ¶¶ 1.1, 12.

22. *See* Robert Langreth, *Labs Make Major Advance in Biotechnology*, WALL ST. J., Nov. 6, 1998, at A3 (announcing the successful isolation of human stem cells by James Thomson at the University of Wisconsin and John Gearhart at Johns Hopkins University).

23. *See* Ronald M. Green, *Stopping Embryo Research*, 9 HEALTH MATRIX 235, 237 (1999) (observing that "embryo research is very much a consequence of the development of the technology of in vitro fertilization. . .").

24. *Id.*

Steptoe, Robert Edwards, and others developed IVF technology, the process by which infertile couples create embryos in the laboratory for implantation.[25] Essentially, these scientists stimulated ovaries to increase egg production, removed the eggs from the ovaries, and fertilized them in vitro (in the laboratory) with sperm to create embryos.[26] Some of the embryos were implanted into the womb, while the excess embryos were cryogenically frozen.[27] The creation of embryos in the lab and the ability to store them indefinitely was revolutionary because it allowed researchers to study human embryological development from fertilization.[28] However, because scientists theoretically could create as many embryos as they needed for clinical and research purposes, bioethicists[29] and religious leaders questioned the morality of such technology.[30]

The ensuing controversy over IVF prompted Congress to establish the Ethical Advisory Board (EAB), a special committee assigned to investigate whether federal funding for embryo research should be allocated.[31] The EAB issued a report in 1979 that permitted federally funded embryo research according to the guidelines and limitations specified in the report, including the requirement that the EAB approve

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25. June Coleman, Comment, *Playing God or Playing Scientist: A Constitutional Analysis of State Laws Banning Embryological Procedures*, 27 PAC. L.J. 1331, 1336-38 (1996) (explaining in detail the process of IVF).

26. *Id.*

27. *Id.* For an in-depth look at the legal and ethical issues raised by cryopreservation, see Maria R. Durant, Note, *Cryopreservation of Human Embryos: A Scientific Advance, A Judicial Dilemma*, 24 SUFFOLK. U.L. REV. 707 (1990).

28. Green, *supra* note 23, at 237. The desire to learn more about embryological development led to the debate over embryo research. *See id.*

29. *Id.* at 237 n.7 (referring to Paul Ramsey, *Shall We Reproduce?*, 220 JAMA 1346 (1972), for an objection to IVF as "unethical medical experimentation").

30. *See* CATECHISM, *supra* note 2, ¶ 2377 (articulating the Church's position on "homologous artificial insemination and fertilization" as "morally unacceptable" because it separates the sexual act from the procreative act). Therefore, "[t]he act which brings the child into existence is no longer an act by which two persons give themselves to one another." *Id.; see also* Sacred Congregation for the Doctrine of the Faith, *Donum Vitae ("The Gift of Life")*, at pt. II, ¶ 5, *available at* http://www.nccbuscc.org/prolife/tdocs/donumvitae. htm (last visited September 25, 2001) [hereinafter *Donum Vitae*] (clarifying that the good intention of creating a child "is not sufficient for making a positive moral evaluation of in vitro fertilization," especially because the standard by "which it is regularly practiced . . . involves the destruction of human beings").

31. *See* Green, *supra* note 23, at 238. For purposes of clarification, it is essential to note that the term "embryo research" entails all research conducted with human embryos, including ESC research. *See generally* THE NAT'L BIOETHICS ADVISORY COMM'N, ETHICAL ISSUES IN HUMAN STEM CELL RESEARCH: EXECUTIVE SUMMARY 1 (1999) [hereinafter EXECUTIVE SUMMARY].

research prior to the allocation of funds.[32] Before the regulations could be implemented, however, political intervention stalled the EAB's action.[33] The Republican administrations of the 1980s achieved a de facto moratorium on embryo research by diverting funds away from the EAB and by refusing to nominate EAB members.[34] Therefore, without any money or members, the EAB could not approve any embryo research.[35] The issue of embryo research resurfaced with the commencement of the Clinton administration.[36]

In June 1993, Congress passed the National Institutes of Health Revitalization Act,[37] which eliminated the requirement of EAB approval for embryonic research.[38] The National Institutes of Health (NIH) formed the Human Embryo Research Panel (Panel) to provide ethical guidance in the area of embryo research.[39] Because of the likelihood that such research would benefit areas of fertility, genetic defects, and disease therapy, in September 1994 the Panel recommended that human embryo research proceed with federal financial backing.[40] The NIH accepted the Panel's recommendations on December 2, 1994 and agreed that federal funds were necessary to advance human embryo research.[41] On the same day that the NIH adopted the Panel's guidelines, President Clinton issued a directive rejecting the portion of the guidelines that allowed

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32. *See* Green, *supra* note 23, at 238 (referring to Protection of Human Subjects, 44 Fed. Reg. 35,033, 35,057 (1979)).

33. *See id.* (mentioning, specifically, the Reagan and Bush administrations).

34. *See id.*

35. *Id.*

36. *See id.* (noting that under the Democratic administration of President Clinton, Congress nullified the requirement that the EAB approve any embryo research, thus resurrecting the issue by destroying the moratorium); *see also* Gabriel S. Gross, Comment, *Federally Funding Human Embryonic Stem Cell Research: An Administrative Analysis*, 2000 WIS. L. REV. 855, 863 (stating that President Clinton repealed the moratorium during his second day in office).

37. National Institutes of Health Revitalization Act of 1993, Pub. L. No. 103-43, § 121, 107 Stat. 122, 133 (codified as amended in scattered sections of 42 U.S.C. (1993)).

38. *See id.*

39. Green, *supra* note 23, at 238 (revealing that Green was selected for service on the Human Embryo Research Panel, which met for the first time in January 1994, to provide ethical guidance in the area of embryo research).

40. Coleman, *supra* note 25, at 1340 (describing the Panel's attempt to determine proper guidelines for embryo research in light of the public's views on pertinent issues, such as when life begins). Genetic defects and disease therapy are two factors driving scientists' desire to conduct research on ESCs. *See* NBAC REPORT AND RECOMMENDATIONS, *supra* note 12, at 20.

41. Green, *supra* note 23, at 238 (reporting that the decision to adopt the recommendations was unanimous).

embryos to be created for research purposes.[42] Essentially, therefore, only "leftover embryos"[43] from IVF clinics qualified as subjects for federally funded embryonic research.[44] In 1994, nearly twenty years after the announcment of IVF technology, scientists were on the verge of obtaining federal funds for embryo research.[45]

Public outcry over the NIH's decision to allow funding of human embryo research caused the Republican-controlled Congress, beginning in 1995, to block research on human embryos through the use of

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42. *Id.* President Clinton's decision posed an interesting ethical dilemma as to why one would allow research on embryos that have already been created, *i.e.,* IVF embryos, but not allow embryos to be created for research purposes, *i.e.,* research embryos. By prohibiting the creation of embryos solely for research purposes, President Clinton's decision evidences that there is a point at which embryos should be respected as having the "potential" for life. There seems, however, to be no difference in the end result for the embryo, for it is destroyed in either process. Therefore, the ethical dilemma for President Clinton arose not because he opposed the destruction of embryos, but because he did not want to make human embryos a disposable commodity by funding their creation solely for research purposes. The author of this Comment questions this logic becasuse the only difference between IVF embryos and research embryos is the reason for the embryos' creation. Focusing on this characteristic reshapes the moral question into one of the researcher's intent and purpose, rather than one of life and death. *See* EXECUTIVE SUMMARY, *supra* note 31, at 2-3 (discussing this ethical consideration further); *see also* Rick Weiss, *For Senate, 'Stem Cell' Advances Revive Embryonic Controversy*, WASH. POST, Dec. 2, 1998, at A2.

43. See Green, *supra* note 23, at 239 (defining "leftover embryos" as those that are usually "destined to be discarded"). Similarly, supporters of ESC research define "leftover embryos" as those frozen IVF embryos that are "extra" or "slated for destruction." *See July 2001 Criminal Justice Hearings*, *supra* note 9 (testimony of Senator Orrin Hatch (R-Utah)). However, justifying the destruction of human embryos for research purposes by claiming they are extra is misleading and founded upon a false premise. *See July 2001 Hearings*, *supra* note 5 (testimony of Richard M. Doerflinger, Associate Director for Policy Development at the Secretariat for Pro-Life Activities). The embryos "in excess of clinical need" are those embryos *presently* not needed or wanted by the parents. However, these parents are given the option of saving the embryos, discarding them, or donating them to another couple. *Id.* Even if they are discarded, if we allow "people's value [to] depend[] entirely on the extent to which other people 'want' them, they have no inherent value at all." *Id.* If one were to value life in such a manner, then following that logic, it would be morally permissible to use death row inmates and terminally ill patients for research purposes or kill them to harvest their organs. *Id.* Note that the term "leftover embryo" has the same meaning when discussing embryo research or ESC research.

44. *See* Green, *supra* note 23, at 238. Similar arguments are made by proponents of stem cell research that researchers would limit their stem cell lines to those obtained from leftover IVF embryos. *See, e.g., July 2001 Criminal Justice Hearings*, *supra* note 9 (testimony of Senator Orrin Hatch (R-Utah)); *July 2001 Hearings*, *supra* note 5 (statement of Senator Tom Harkin (D-IA)).

45. *See* Green, *supra* note 23, at 238 (noting that the report strongly favored federal funding of embryo research and, aside from President Clinton's one objection, the Panel's recommendation had administrative support).

appropriations riders to the Department of Health and Human Services (HHS) budget.[46] The appropriations ban, referred to as the "Dickey Amendment," included any research that threatened the survival of the embryo – including leftover IVF embryos.[47] Beginning in 1995, Congress continued to renew the congressional ban on federal funding for embryo research.[48] This congressional disapproval forced scientists to hunt down private financiers or find a new platform upon which they could find a more favorable ear in Congress.[49] Their wishes were satisfied in November 1998 with the isolation of human ESCs.[50]

B. The Discovery of Stem Cells: The Proverbial Pandora's Box

On November 6, 1998, the scientific world was astounded by the announcement of the first successful isolation of human embryonic stem cells.[51] Two researchers acting independently, James Thomson of the University of Wisconsin and John Gearhart of Johns Hopkins University, were the first to cultivate ESCs outside of the human body.[52] Each of these scientists used different means to achieve the same end.[53] James Thomson extracted ESCs from leftover or "surplus" human embryos from IVF clinics and halted them from developing into various human tissue.[54] John Gearhart obtained his line of stem cells from the germ cells

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46. *See* Gross, *supra* note 36, at 865-66 & nn.66-69.

47. *See id.*; *see also Hearing on Embryonic Stem Cell Research Before the Senate Appropriations Subcomm. on Labor, Health and Educ.*, 106th Cong. (1999) [hereinafter *Nov. 1999 Hearings*] (testimony of Congressman Jay Dickey (R-AR)) (explaining his amendment, which since 1995 has prohibited funding of research on embryos where they would be discarded or destroyed).

48. *See Nov. 1999 Hearings*, *supra* note 47 (testimony of Congressman Jay Dickey (R-AR), co-author of the riders, which banned federal funding for research that destroys human embryos); *see also* Robert L. Bartley, *Stem Cells: A Wedge Issue?*, WALL ST. J., June 11, 2001, at A23.

49. *See* Green, *supra* note 23, at 239 (emphasizing that although no federal legislation prohibits private research on embryos, some state statutes forbid embryo research whether funded privately or federally).

50. *See* Langreth, *supra* note 22 (reporting on the impact of ESC isolation on the world of science).

51. *Id.* According to Dr. David Gottlieb of Washington University in St. Louis, "[t]his is a great big advance that will really open up a large number of applications. The implications for basic science and biotechnology are huge." *Id.*

52. *Id.*

53. *See* Frederic Golden, *Stem Winder*, TIME, Aug. 20, 2001, at 27 (reporting on Dr. James Thomson's ESC research).

54. *Id.* (announcing that Dr. Thomson was able to stop "their biological clocks by preventing the cells from morphing into different tissues, as they would in undisturbed embryos").

of aborted fetuses.[55] Although the announcement excited most of the scientific community,[56] numerous ethical issues needed to be addressed. Many of these issues reflected the same concerns that opponents of embryo research expressed throughout the seventies and eighties.[57] While stem cells offered huge potential in numerous realms of medicine, there were also serious questions about the morality of conducting such research.[58]

Possibly even more disturbing than the isolation of human ESCs was the November 1998 announcement by Advanced Cell Technology (ACT), a Massachusetts biotechnology company.[59] ACT fused a human cell nucleus with an enucleated cow ovum to create a hybrid line of ESCs through a process called somatic cell nuclear transfer, or cloning.[60] Although the research went no further,[61] the shock created by a research process that mixed human and animal cells to isolate ESCs, coupled with the recent announcements of Drs. Thomson and Gearhart, forced

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55. *Id.* (claiming that Dr. Gearhart admitted that Dr. Thomson "was ahead in the overall race" because Thomson had isolated cells from embryos and not a fetus); For Dr. Gearhart's explanation of his research, see *Hearing on Stem Cell Research Before the Senate Appropriations Subcomm. on Labor, Health and Human Servs., Educ., and Related Agencies*, 105th Cong. (1998) [hereinafter *Dec. 1998 Hearings*] (testimony of Dr. John D. Gearhart, Professor of Gynecology and Obstetrics, Physiology, Biochemistry and Comparative Medicine, The Johns Hopkins Medical Institutions).

56. *See* Langreth, *supra* note 22 (quoting Lana Skirboll, a director of science policy at NIH, who said it was "tremendously exciting research" because "[o]ne of the great questions remaining in science is what are the essential events that turn unspecialized cells . . . into liver cells or heart cells or brain cells"); *see also Dec. 1998 Hearings*, *supra* note 55 (statement of Tom Harkin (D-IA)) (exclaiming his excitement over the discoveries).

57. Weiss, *supra* note 42; *see also* Editorial, *Magic Cells*, WASH. POST, Nov. 9, 1998, at A22 (stating that pro-life groups and others have opposed research on human embryos, regardless of their source, as well as research on aborted fetal tissue); Michael Fielding, Letter to the Editor, *Life Itself Becomes Another Commodity*, WASH. POST, Nov. 30, 1998, at A23 (expressing concern over the moral and ethical issues raised by private ownership and Geron Corp. patents of the recently isolated stem cell lines).

58. *See* Weiss, *supra* note 42 (explaining the concerns of ethicists, theologians, scientists, and Congress about the announcement of stem cell isolation).

59. Miranda Biven, *Administrative Developments: NIH Backs Federal Funding for Stem Cell Research*, 27 J.L. MED. & ETHICS 95, 96 (1999).

60. *See Dec. 1998 Hearings*, *supra* note 55 (testimony of Michael D. West, Ph.D., President and CEO of Advanced Cell Technology, Inc.) (detailing the work performed by ACT to isolate ESCs from a hybrid embryo).

61. Biven, *supra* note 59, at 96. An article written on December 14, 1998 announced ACT's intent to "create purposefully disabled embryo-like entities . . . to get around the emotional debate over the ethics of conducting research on human embryos." Rick Weiss, *Can Scientists Bypass Stem Cells' Moral Minefield?*, WASH. POST, Dec. 14, 1998, at A3.

Congress and the President to reevaluate the changing landscape of biotechnology.[62]

President Clinton acted first by asking the National Bioethics Advisory Commission (NBAC)[63] to review all ethical and medical issues involved in stem cell research.[64] The NBAC issued its report in September 1999.[65] The Senate Labor, Health and Human Services, Education, and Related Agencies Subcommittee held its first hearing on the use of embryonic cells for biomedical research on December 2, 1998.[66] The purpose of the hearing, like the President's commission, was to investigate the issues surrounding federal funding of embryonic research, especially in light of the recent medical developments and the previous years' limitation of federal funding for embryonic research.[67] The findings of the NBAC and the Senate Appropriations Subcommittee eventually played a key role in the current debate over federal funding of ESC research.[68]

C. Avoiding a Research Road Block: The NIH's Interpretation of Federal Law

While the NBAC conducted its ethical and medical investigation into ESC research and the Senate Subcommittee reviewed the same, the NIH attempted to find loopholes in the Omnibus Consolidated and Emergency Supplemental Appropriations Act, which effectively banned federal funding of research that would destroy human embryos.[69] Dr.

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62. *See* Weiss, *supra* note 42.

63. Nat'l Bioethics Advisory Comm'n Charter (1999), *available at* http://bioethics.gov/about/nbaccharter.pdf (last visited Sept. 3, 2001) (stating that the NBAC "will provide advice and make recommendations to the National Science and Technology Council . . . on bioethical issues arising from research on human biology and behavior and the applications . . . of that research").

64. Sharon M. Parker, Comment, *Bringing the "Gospel of Life" to American Jurisprudence: A Religious, Ethical, and Philosophical Critique of Federal Funding for Embryonic Stem Cell Research*, 17 J. CONTEMP. HEALTH L. & POL'Y 771, 780 (2001).

65. *Id.*

66. *See generally Dec. 1998 Hearings*, *supra* note 55 (including a variety of medical testimony from Dr. Harold Varmus, Dr. John Gearhart, Dr. James Thomson, Dr. Michael West, Dr. Author Caplan, and Dr. Thomas Okarma concerning the successful isolation of ESCs).

67. *Id.* (statement of Tom Harkin (D-IA)) (stating, as the Ranking Member of the Appropriations Subcomm., that the purpose of the hearing was to investigate the scientific and ethical issues involved in stem cell research).

68. *See July 2001 Hearings*, *supra* note 5 (statement of Tom Harkin (D-IA)) (implying that he and Senator Specter (R-PA) introduced S. 723 because of the seven hearings of the Appropriations Subcomm. on the issue of ESC research); *see also* Biven, *supra* note 59, at 97 (describing NIH's reliance on the NBAC report to formulate guidelines for ESC research).

69. *See* Biven, *supra* note 59, at 96.

Harold Varmus, then Director of NIH, decided not to ask Congress to rescind its ban on federal funding for embryonic research and instead requested the legal opinion of HHS's General Counsel Harriet Rabb regarding whether the NIH could fund ESC research.[70] In a memorandum to Dr. Varmus in January 1999, Ms. Rabb expressed her opinion that the ban did not necessarily include human pluripotent stem cells.[71] Ms. Rabb based her legal opinion upon the scientific fact that ESCs are not embryos; if implanted in a woman's womb, they would not develop into human beings.[72] According to the Omnibus Consolidated and Emergency Supplemental Appropriations Act for fiscal year 1999, the term "human embryo" included "any organism . . . that is derived by fertilization, parthenogenesis, cloning, or any other means from one or more human gametes or human diploid cells."[73] From Rabb's legal standpoint, a stem cell was not an organism, as defined in the scientific community[74] because a stem cell could not carry out all life functions.[75] Armed with Rabb's favorable legal interpretation of the congressional ban, Dr. Varmus convened a subcommittee to draft guidelines by which ESC research could proceed. However, the subcommittee guidelines would have to comply with the NBAC's considerations of the legal, ethical, and medical issues surrounding the research.[76]

Although many scientists and patient rights advocates encouraged Congress to support the NIH's decision, its interpretation of the law was

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70. George J. Annas, *Ulysses and the Fate of Frozen Embryos – Reproduction Research or Destruction?*, 343 NEW ENG. J. MED. 373 (2001) (claiming that the NIH "decided not to ask Congress to rescind its ban on embryo research but, instead, to operate within the current rules").

71. Parker, *supra* note 64, at 777-78 (citing the actual memo from Rabb to Varmus dated Jan. 15, 1999).

72. *Id.* (quoting Rabb, who said that stem cells "are not a human embryo within the statutory definition"). *Cf. Jan. 1999 Hearings*, *supra* note 13 (testimony of Richard M. Doerflinger, Associate Director for Policy Development at the Secretariat for Pro-Life Activities) (attacking Rabb and Varmus' legal construction as a distortion of the definitions of embryo and human being because no other legal or scientific source defined the terms to match those given by Rabb and Varmus in the context of ESC research).

73. Omnibus Consolidated and Emergency Supplemental Appropriations Act, 1999, Pub. L. No. 105-277, § 511(b), 112 Stat. 2681, 2681-386 (1998).

74. Biven, *supra* note 59, at 96 (defining "organism" as "an individual constituted to carry out all life functions").

75. *Id.* (explaining Rabb's logic in arguing for stem cell exclusion from the federal funding ban on human embryo research). *Cf.* Laurie McGinley and Antonio Regalado, *New Theory Could Roil Stem-Cell Debate*, WALL ST. J., Aug. 3, 2001, at B4 (claiming that ESCs, when separated from embryos, naturally tend to heal themselves and revert to living embryos and therefore the government should not be allowed to fund such research).

76. *See* Biven, *supra* note 59, at 97.

not without opposition.[77] At the forefront of this debate was Congressman Christopher Smith (R-NJ), who strongly objected to the Rabb and Varmus decision.[78] Representative Smith argued that Rabb's interpretation narrowed the meaning of the bill, which deliberately used broad language, and pointed out that Rabb's definition of a human embryo evaded the legislative intent of the bill.[79] Representative Smith was not alone.[80] In fact, seventy members of Congress signed a letter to HHS Secretary Donna Shalala describing the legal opinion of Rabb as a "carefully worded effort to justify transgressing [the] law."[81] Secretary Shalala responded by reemphasizing the ban's loophole, which allowed the federal government to fund ESC research as long as no federal money was used for the actual destruction of the embryo.[82] In addition, Varmus believed that any moral and legal concerns were outweighed by the large public constituency that favored the research because of its possible medical promise.[83]

In September 1999, the NBAC fulfilled President Clinton's request for a report outlining the ethical and medical issues involved in embryonic research, specifically that of human stem cells.[84] The report, which later formed the basis for NIH's guidelines concerning stem cell research, recommended that funding be extended to those cells derived from leftover IVF embryos that would otherwise be discarded.[85] The NBAC justified its position in favor of federal funding for ESC research by emphasizing the substantial potential of the ESCs to benefit those suffering from serious diseases.[86]

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77. *See* Rick Weiss, *NIH To Fund Controversial Research on Human Stem Cells*, WASH. POST, Jan. 20, 1999, at A2.

78. Parker, *supra* note 64, at 778-80 (noting that Smith objected "in the strongest possible terms" to the Varmus decision).

79. *Id.* (explaining in greater detail Smith's critiques of Rabb's memo).

80. Biven, *supra* note 59, at 97.

81. *Id.* (quoting P. Recer, *Working Using Fetal Cells Draws Fire*, BOSTON GLOBE, Feb. 18, 1999, at A10); *see also* Weiss, *supra* note 20 (quoting Maggie Wynne of the House of Representatives' Pro-Life Caucus as saying that any research on human embryos would "violate the letter and spirit" of the ban).

82. Biven, *supra* note 59, at 97.

83. *See* Annas, *supra* note 70, at 297. For Dr. Varmus' statement to the Appropriations Subcommittee, see *Jan. 1999 Hearings*, *supra*, note 13 (testimony of Dr. Harold Varmus, Director, National Institutes of Health).

84. Press Release, The White House, Statement by the President (Sept. 13, 1999), *available at* http://bioethics.gov/ stemcell_pres_statement.htm (last visited Sept. 3, 2001).

85. *See* EXECUTIVE SUMMARY, *supra* note 31, at 2-3.

86. *See id.* at 3 (finding that ESCs "could be important to research and clinical application because of . . . their differing proliferation potential, differing availability and accessibility, and differing ability to be manipulated").

The NIH adopted this position and used it to draft its guidelines for human stem cell research, which it released in December 1999.[87] The NIH released the draft guidelines to ensure that any research conducted with federal funds would be carried out in a legal and ethical manner.[88] The guidelines contained strict rules for obtaining consent of embryo donors and required the NIH to establish and maintain a Human Pluripotent Stem Cell Review Group.[89] Regardless of the restrictions and oversight by the board of review, however, a proper reading of the appropriations ban and its legislative intent disallows the funding of ESC research by the government.[90]

II. UNDERSTANDING THE POLITICAL, MORAL, AND MEDICAL SIGNIFICANCE OF THE STEM CELL

A. Defining the Stem Cell

The term "stem cell" has broad application in the scientific world because it includes cells that originate from an adult, an embryo, a fetus, or a placenta.[91] Yet, too often, the general public has been led to believe that "stem cells" are what scientists refer to as "human pluripotent stem cells" or "embryonic stem cells."[92] The term "stem cell" actually applies to a number of cells that can divide indefinitely in a culture, giving rise to more specialized cells.[93] The most effective means of understanding the

87. *See* Biven, *supra* note 59, at 97; Susan Lee, *Human Stem Cell Research: NIH Releases Draft Guidelines for Comment*, 28 J.L. MED. & ETHICS 81, 82 (2000) (stating that the guidelines were open for public comment from December 2, 1999 through February 22, 2000).

88. Parker, *supra* note 64, at 783 (stating that the guidelines applied to research using ESCs derived from excess IVF embryos so long as they had not formed a mesoderm).

89. Draft National Institutes of Health Guidelines for Research Involving Human Pluripotent Stem Cells, 64 Fed. Reg. 67,576-01 (Dec. 2, 1999).

90. *See Jan. 1999 Hearings*, *supra* note 13 (testimony of Richard M. Doerflinger, Associate Director for Policy Development at the Secretariat for Pro-Life Activities) (concluding that there is "no clear support in any relevant provision of federal law and regulations" for the opinion of HHS that produced the guidelines).

91. *See Reality Check #2*, *supra* note 12 (defining "stem cells" as those cells that originate in adult tissue, placentas, umbilical cord blood, or embryos).

92. *See id. Cf.* EXECUTIVE SUMMARY, *supra* note 31, at 1 (describing the common use of "stem cell" in the scientific community as referring to specific cells within the adult organism, yet claiming the most fundamental stem cells are found in the embryo).

93. Nat'l Institutes of Health, *Stem Cells: A Primer*, *at* http://www.nih.gov/news/stemcell/primer.htm (last visited Sept. 9, 2001) [hereinafter *Primer*] (presenting background information and definitions of the various types of stem cells).

difference between these types of stem cells is to look at the extent to which they are committed or differentiated for certain roles.[94]

From a developmental point of view, the fertilized egg has the most differential potential of all cells because it eventually becomes an entire organism, including the placenta and umbilical cord.[95] The fertilized egg divides into identical cells within the first few hours of development, either of which can create an entire organism.[96] These cells – the fertilized egg and the cells into which it divides within the first few hours – are referred to as totipotent stem cells because of their individual ability to become entire organisms.[97] In other words, if an individual implanted a totipotent stem cell into a woman's womb, it "has the potential to develop into a fetus."[98] Once the totipotent stem cells begin to specialize, usually within four days of fertilization, they form a hollow sphere of cells with an inner cell mass.[99] The inner cell mass consists of

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94. *See* EXECUTIVE SUMMARY, *supra* note 31, at 1; *see also Primer*, *supra* note 93 (explaining that stem cells are "best described in the context of normal human development").

95. *Primer*, *supra* note 93 (stating that a "fertilized egg is *totipotent*, meaning that its potential [to form an entire organism] is total").

96. *Id.* (noting that when the fertilized egg divides into identical cells, if those cells separate, they become identical twins).

97. *Id.* (defining totipotent stem cells as those that have unlimited capability and therefore can give rise to "extraembryonic membranes and tissues [namely the placenta and umbilical cord], the embryo, and all postembryonic tissues and organs"). Totipotent stem cells are the precursors to every cell in the body. *Id.*

98. *Id.* Interestingly, the NIH specifies that totipotent stem cells can become a fetus if implanted into the womb, distinguishing them from pluripotent stem cells which cannot. *Id.* Such a distinction allows for the argument that a pluripotent stem cell is not an organism because it cannot grow into a fetus if implanted in the womb. Although this argument is factually correct, the logic is false because it does not recognize the fact that the pluripotent stem cells are derived from embryos, which do develop into a fetus if implanted in the womb. *See id.* (describing the distinct nature of a pluripotent stem cell not being able to develop in the womb, but disregarding the nexus between destroying an embryo to obtain the stem cells and that embryo's developmental capabilities); *see also* Rick Weiss, *Ban on "Stem Cell" Testing Reviewed; At Senate Hearing, Advocates Offer Evidence of Research's Medical Promise*, WASH. POST, Dec. 3, 1998, at A2 (quoting Dr. Harold Varmus, Director of the NIH, as saying that the ESCs deserve "special ethical consideration," but tempering the statement by announcing that ESCs "cannot be considered organisms and cannot be considered embryos").

99. *Compare Primer*, *supra* note 93 (defining the hollow sphere of cells as a blastocyst, which consists of an outer layer of cells – the hollow sphere – and the inner cell mass), *with* STEDMAN'S MEDICAL DICTIONARY 581 (2000) (defining a human embryo as "an organism in the early stages of development" and "a developing organism from time [of] conception to approximately the end of the second month"), *and* VAN NOSTRAND'S SCIENTIFIC ENCYCLOPEDIA 943 (5th ed. 1976) (defining the embryo as the individual created "[a]t the moment the sperm cell of the human male meets the ovum of the female

pluripotent stem cells, which eventually develop into all of the body's different tissues.[100] It is these cells over which the ethical, political, and social debate has arisen.[101]

Pluripotent stem cells undergo further differentiation to create multipotent stem cells,[102] which have a more specialized function.[103] Multipotent stem cells, unlike pluripotent stem cells, do not individually give rise to all tissue cells.[104] This difference does not mean that

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and the union results in a fertilized ovum" and stating that "[t]he term embryo covers the several stages of early development from conception to ninth or tenth week of life").

100. NBAC REPORT AND RECOMMENDATIONS, *supra* note 12, at 9 (supplying a visual aid that illustrates the primary stages of embryological development, including an explanation in the text).

101. *Compare id.* (assuming that if stem cells were to be used for the treatment of disease, pluripotent stem cells would be the most advantageous), *with* United States Conference of Catholic Bishops, *Stem Cell Reality Check #1*, *at* http://www.nccbuscc.org/prolife/issues/bioethic/stemfax1.htm (last visited Sept. 2, 2001) [hereinafter *Reality Check #1*] (debunking the myth that "embryonic stem cells are the most effective for treating disease" because "[e]mbryonic stem cells have not helped a single human patient or demonstrated any therapeutic benefit," while noting that adult stem cells and other ethical alternatives have helped hundreds of thousands of patients with juvenile diabetes, spinal cord injury, immune deficiency, and corneal problems).

102. These cells are popularly known as adult stem cells due to their existence in the tissues and bodies of grown adults. *See* NBAC REPORT AND RECOMMENDATIONS, *supra* note 12, at 8. The cells of the body have a limited lifespan and upon the cells' death are replaced by the stem cells from that tissue's reserves. *Id.*

103. *See Primer*, *supra* note 93. Interestingly, the NIH implies that multipotent stem cells are predestined to develop into only those cells for which they are specialized (*e.g.*, blood stem cells only having the ability to develop into different blood cells). *See id.* However, numerous private and publicly conducted studies show that adult stem cells of one tissue type show promise of converting to other tissue types (*e.g.*, blood stem cells being used to replenish nerve cells). *See* Rick Weiss, *Researchers Transform Bone Marrow From Adults*, WASH. POST, Aug. 15, 2000, at A6 (reporting that "[a]dult bone marrow cells can be coaxed into becoming what appear to be nerve cells"); *see also* United States Conference of Catholic Bishops, *Current Clinical Use of Adult Stem Cells To Help Human Patients*, *at* http://www.nccbuscc.org/prolife/issues/bioethic/.adult701.htm (last visited Sept. 2, 2001); Laurie Johannes, *Adult Stem Cells Have Advantage Battling Diseases*, WALL ST. J., Apr. 13, 1999, at B1; Rick Weiss, *Human Fat May Provide Useful Cells*, WASH. POST, Apr. 10, 2001, at A1 (reporting that scientists transformed fat cells into different tissue types).

104. For example, the body's hematopoietic stem cells are found in the bone marrow and give rise to platelets, white blood cells, and red bloods cells, replenishing the cells the body loses or uses everyday. *See* NBAC REPORT AND RECOMMENDATIONS, *supra* note 12, at 12 (explaining that skin epithelium stem cells and small intestine epithelium stem cells generate the replacement cells for the short-lived cells of those tissue types); *see also Primer*, *supra* note 93 (describing multipotent stem cells as more specialized than pluripotent stem cells). *Cf. Hearing on Stem Cell Research Guidelines Before Senate Appropriations Subcomm. on Labor, Health and Human Servs., and Educ.*, 106th Cong. (2000) [hereinafter *Sept. 2000 Hearings*] (testimony of Dr. David A. Prentice, Ph.D., Professor of Life Sciences, Indiana State University; Adjunct Professor of Medical and Molecular Genetics, Indiana University School of Medicine; Founding Member, Do No

multipotent stem cells lack the medical potential that pluripotent stem cells are professed to retain.[105] In fact, multipotent stem cells are the only form of stem cells clinically used to treat human patients,[106] and they are a viable and proven alternative to the use of controversial ESCs.[107] Yet, scientists still push for permission to conduct research on pluripotent or embryonic stem cells, whose success is speculative at best.[108]

Harm: The Coalition of Americans for Research Ethics) (debunking the myth that adult stem cells can only develop into cells of their own tissue type by reporting that bone marrow stem cells can "take up a 'new job description' and be changed into neurons" as well as "form bone, cartilage, muscle, and fat cells").

105. *See July 2001 Criminal Justice Hearings*, *supra* note 9 (testimony of Dr. David A. Prentice, Ph.D., Professor of Life Sciences, Indiana State University; Adjunct Professor of Medical and Molecular Genetics, Indiana University School of Medicine; Founding Member, Do No Harm: The Coalition of Americans for Research Ethics) (indicating that reports about the ineffectiveness of adult stem cells "are not relevant to their therapeutic potential and/or overstate the differences between adult stem cells and embryonic stem cells" and claiming that "adult stem cells can be pluripotent and have the ability to transform from one cell type into another"); *see also Sept. 2000 Hearings*, *supra* note 104 (testimony of Dr. David A. Prentice, Ph.D., Professor of Life Sciences, Indiana State University; Adjunct Professor of Medical and Molecular Genetics, Indiana University School of Medicine; Founding Member, Do No Harm: The Coalition of Americans for Research Ethics) (claiming that human ESCs have not proved themselves able to generate all tissues in the body yet are assumed by proponents of ESC research to have the ability to do so).

106. *Current Clinical Use*, *supra* note 103 (stating that embryonic (pluripotent) stem cells have never helped a human patient, yet multipotent (adult or mature) stem cells are used clinically to treat approximately twenty-five diseases, including autoimmune diseases, stroke, immunodeficiencies, anemia, Epstein-Barr, corneal damage, liver and blood diseases, and cancer); *see also July 2001 Criminal Justice Hearings*, *supra* note 9 (testimony of Dr. David A. Prentice, Ph.D., Professor of Life Sciences, Indiana State University; Adjunct Professor of Medical and Molecular Genetics, Indiana University School of Medicine; Founding Member, Do No Harm: The Coalition of Americans for Research Ethics) (reporting that "an impressive volume of scientific literature attests to the fact that human adult stem cells – unlike human embryonic stem cells – are currently being used successfully in clinical trials to combat many of the very diseases that embryonic stem cells only prospectively promise to treat"). Indeed, the ESCs that are touted as having such potential "have not even shown their efficacy in animal models." *Id.*

107. *See July 2001 Criminal Justice Hearings*, *supra* note 9 (testimony of Dr. David A. Prentice, Ph.D., Professor of Life Sciences, Indiana State University; Adjunct Professor of Medical and Molecular Genetics, Indiana University School of Medicine; Founding Member, Do No Harm: The Coalition of Americans for Research Ethics) (noting that "adult stem cell research is a preferable alternative" because of its progress in regenerative medicine and cell-based therapies and its lack of medical, legal, and ethical problems); *see also* Johannes, *supra* note 103 (reporting that it will be much easier to turn multipotent stem cells, rather than embryonic stem cells, into treatments because multipotent stem cells are "further along in their development, . . . [which creates] potential injectable therapies that would harness the body's capacity to regenerate itself").

108. *See July 2001 Hearings*, *supra* note 5 (testimony of Richard M. Doerflinger, Associate Director for Policy Development at the Secretariat for Pro-Life Activities) (testifying to the loss of enthusiasm over ESC research because, in the lab, ESCs are

B. What is the Gospel of Life?

Surprisingly, the phrase "Gospel of Life" is not found in the Bible but is understood through Sacred Tradition[109] as an essential aspect of Christ's message.[110] The idea of the Gospel of Life is based on Christ's explanation of his redemptive mission in the Gospel of John: "I came that they may have life, and have it abundantly."[111] Offering life eternal was at the heart of Jesus' message and the very reason for his becoming man.[112] The Second Vatican Council determined that "[b]y his Incarnation the Son of God has united himself in some fashion with every human being."[113]

According to the Catholic faith, through Christ people are called to communion with the Father and share in the very life of God.[114] Therefore, each person's life is a divine gift from God, as the Creator, which must be respected, protected, and preserved.[115] This basic tenet of Catholic belief – that all stages of life are significant – forms the foundation upon which the Gospel of Life is understood.[116] Essentially, the Catholic belief is that "[e]very human life, from the moment of

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harder to maintain than once thought and are more difficult to coax into tissue cells than their mouse counterparts).

109. Sacred Tradition, coupled with Sacred Scripture, makes up the Church's understanding of the Word of God. CATECHISM, *supra* note 2, ¶ 97. Sacred Tradition is the apostles' understanding of the Word of God passed through their successors to the Magisterium of the Church. *Id.* ¶ 83, 96.

110. *See Evangelium Vitae*, *supra* note 17, ¶ 1.1 n.1.

111. *Id.* ¶ 1.3 (quoting *John* 10:10 and clarifying that the "life" to which Jesus referred is the "'new' and 'eternal'" life to which everyone is called).

112. *See John* 3:14-16 ("[T]he Son of Man [must] be lifted up, so that everyone who believes in him may have eternal life. For God so loved the world that he gave his only Son, that everyone who believes in him might not perish but might have eternal life."). The famous verse of *John* 3:16 is, essentially, the whole of the Christian faith summarized into one sentence. Professor Raymond Marcin, Address at the Guild of Catholic Lawyers Weekly Bible Study (Oct. 26, 2001).

113. *Evangelium Vitae*, *supra* note 17, ¶ 2.3 (quoting *Gaudium et Spes* ¶ 22).

114. *Evangelium Vitae*, *supra* note 17, ¶ 1.3. For a prophetic annunciation of this tenet, see *Job* 12:10 (recognizing that in God's "hand is the soul of every living thing, and the life breath of all mankind").

115. *Evangelium Vitae*, *supra* note 17, ¶ 2.1 (calling life on earth a "*sacred reality* entrusted to us, to be preserved with a sense of responsibility and brought to perfection in love and in the gift of ourselves to God and to our brothers and sisters"); *see also* CATECHISM, *supra* note 2, ¶ 2258 (claiming that "*[h]uman life is sacred* because from its beginning it involves the creative action of God and it remains for ever in a special relationship with the Creator, who is its sole end").

116. *Evangelium Vitae*, *supra* note 17, ¶ 1.3. Christ's sacrifice allowed for a new eternal life to which "every person is freely called in the Son by the power of the Sanctifying Spirit. It is precisely this 'life' that all the aspects and stages of human life achieve their full significance." *Id.*

conception until death, is sacred because the human person has been willed for its own sake in the image and likeness of the living and holy God."[117] In *Evangelium Vitae*, Pope John Paul II expounds upon this aspect of the Catholic faith so that we may have a full understanding and respect for human life.[118]

Recognizing the growing international threat to life at its weakest stages, Pope John Paul II conveyed to the world the inviolability of all human life in his 1995 papal encyclical, *Evangelium Vitae*.[119] Emphasizing the universal importance of the subject matter, John Paul addressed the encyclical not only to the usual bishops, priests, deacons, men and women religious, but to "lay faithful and all people of good will."[120] The encyclical developed the meaning of the Gospel of Life and its applicability to all human beings, not just Catholics.[121] John Paul considered it applicable to all those of good will because the sanctity of life is a concern for all; indeed, he claims that "[t]he value at stake is one which every human being can grasp by the light of reason."[122] John Paul is convinced that the truths of the Gospel of Life are part of the heart and conscience of everyone, and therefore, anyone open to truth and goodness will recognize the sanctity of life at all stages and affirm it as a primary good worthy of our utmost respect.[123] Although John Paul

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117. CATECHISM, *supra* note 2, ¶ 2319; *see* WILLIAM E. MAY, CATHOLIC BIOETHICS AND THE GIFT OF HUMAN LIFE 23-24 (2000) (explaining that "[h]uman life . . . is precious, in itself and to God, at every moment of its existence . . . [and] indeed, the whole of God's law, his wise and loving plan for human existence, fully protects human life").

118. *See* J. Michael Miller, *Editor's Introduction* to John Paul II, *Evangelium Vitae, in* THE ENCYCLICALS OF JOHN PAUL II 663, 664 (J. Michael Miller ed., 2001) [hereinafter *Editor's Introduction*].

119. *See id.* at 663 (explaining the Pope's defense of human dignity against scientific threats to human life, which has repercussions for the core of the Church's teaching and faith).

120. *Evangelium Vitae*, *supra* note 17, at Title Page (stating the title of the encyclical, which includes from whom the document originates and to whom it is directed).

121. *Id.* ¶¶ 5.5-5.6 (revealing that the encyclical was "the fruit of the cooperation of the Episcopate of every country . . . [and is] addressed to each and every person in the name of God . . . [and] all people of good will who are concerned for the good of every man and woman" such that they "*respect, protect, love and serve life, every human life!*"); *see also id.* ¶ 101.2 ("The *Gospel of life* is not for believers alone: *it is for everyone.* The issue of life and its defense and promotion is not a concern of Christians alone.").

122. *Id.* ¶¶ 101.2, 83.1-83.3 ("[W]e have been sent into the world as a 'people for life,'" who must "foster in ourselves and in others a *contemplative outlook*" through which we "rediscover the ability to *revere and honor every person,*" including those in all stages of life).

123. *See Editor's Introduction*, *supra* note 118, at 664 (quoting the encyclical, Miller states that from creation the Gospel of Life is written on everyone's heart and is echoed in everyone's conscience); *see also* CATECHISM, *supra* note 2, ¶ 2323 ("Because it should be

specifically addressed the popular right to life concerns of the 1990s,[124] his teachings on the Gospel of Life transcend time and apply to any subject regarding the sanctity of human life.[125]

III. LEGISLATING THE STEM CELL: THE THREE PROPOSALS FOR FEDERAL FUNDING OF STEM CELL RESEARCH

A. Introduction

Since the breakthrough isolation of ESCs, the social, ethical, medical, and political debate has raged over the law regarding stem cell research.[126] This debate has produced a number of opinions as to what types of research should be federally funded and reflects the tension between the scientific desire for knowledge and the moral imperative not to kill.[127] From this political debate arose three proposals that span the federal funding spectrum; on one extreme is Senator Specter's Stem Cell Research Act of 2001 and on the other is Senator Ensign's Responsible Stem Cell Research Act of 2001, with President Bush's proposal falling somewhere in between the two separate proposals.[128] Each proposal identifies the type of research that should be allowed and the type of stem cells that may be used.[129]

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treated as a person from conception, the embryo must be defended in its integrity, cared for, and healed like every other human being.").

124. *Editor's Introduction*, *supra* note 118, at 664 (discussing three doctrinal pronouncements from the encyclical: the "direct and voluntary killing of innocent human life," abortion, and euthanasia).

125. *See Evangelium Vitae*, *supra* note 17, ¶ 95.2. The encyclical calls for a "*general mobilization of consciences* and a *united ethical effort* to activate a *great campaign in support of life. All together, we must build a new culture of life:* new, because it will be able to confront and solve today's unprecedented problems affecting human life." *Id. See generally* WILLIAM N. SEIFERT ET AL., PROCLAIMING THE GOSPEL OF LIFE: A SUMMARY & COMMENTARY ON *THE GOSPEL OF LIFE* (1996) (providing a guide for living the Gospel of Life in one's daily life and offering a deeper understanding of the encyclical through its summaries, background information, and commentary).

126. *See* Bartley, *supra* note 48 (labeling federal funding for ESC research as the least understood, yet "most delicate and most interesting social-policy decision facing the young Bush administration").

127. *See id.* (pointing out that ESC research causes the "imperative of science – do not impede knowledge – [to] clash[] with the imperative of morality – do not kill").

128. *Compare* Stem Cell Research Act of 2001, S. 723, 107th Cong. (2001) (allowing for leftover IVF embryos to be used as the source of ESCs), *and* Responsible Stem Cell Research Act of 2001, S. 1349, 107th Cong. (2001) (promoting the use of those stem cells deemed by the bill to be responsible as the source for ESCs and therefore obviating the need for any embryos to be destroyed), *with* Bush Proposal, *supra* note 5 (selecting for research only the sixty ESC lines in existence at the time the proposal was made).

129. *Compare* Bush Proposal, *supra* note 5, (using only prexisting isolated ESC lines to perform a wide variety of research and clinical applications) *and* Stem Cell Research Act

B. Broad Usage of Embryonic Stem Cells: The Stem Cell Research Act of 2001

Senator Arlen Specter, current Chairman of the Senate Appropriations Subcommittee on Labor, Health and Human Services, Education, and Related Agencies, introduced his stem cell research bill in the Senate on April 5, 2001.[130] The purpose of the Specter Bill is to explore the potential of ESCs by amending the Public Health Service Act to allow for the generation of and research on human embryonic stem cells.[131] Specifically, the Specter Bill allows the Secretary of HHS to "conduct, support, or fund research on human embryos for the purpose of generating embryonic stem cells and utilizing stem cells that have been derived from embryos."[132] However, the sources of the ESCs are restricted to embryos donated from IVF clinics, so long as certain requirements are met.[133] The Specter Bill places two requirements on all donated IVF embryos: (1) that the progenitors[134] be properly consulted to determine that the embryo[s] would never be implanted in a woman, and (2) that the progenitors donate the embryo[s] with written informed

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of 2001, S. 723, 107th Cong. (2001) (using ESCs derived from leftover IVF embryos to conduct research in hopes of helping individuals with debilitating diseases), *with* Responsible Stem Cell Research Act of 2001, S. 1349, 107th Cong. (2001) (preserving the lives of embryos by disallowing their use for research purposes, while promoting further research and clinical application of those stem cells that are already treating numerous diseases as well as establishing a nationwide stem cell donor bank to ensure proper genetic matches for all patients).

130. Stem Cell Research Act of 2001, S. 723, 107th Cong. (2001) (introducing the bill on behalf of Mr. Harkin, Mr. Thurmond, Mr. Chafee, Mr. Smith of Oregon, Mr. Hollings, Mr. Reid, Mrs. Murray, Mrs. Clinton, Mr. Corzine, Mrs. Feinstein, Mr. Kerry, and Mr. Inouye).

131. *See Aug. 2001 Hearings*, *supra* note 5 (statement of Senator Arlen Specter (R-Pa.)) (stating that he introduced the bill to lift the ban prohibiting federal funding for ESC research because of the "phenomenal" benefits of ESCs); *see also* Stem Cell Research Act of 2001, S. 723, 107th Cong. § 2 (2001).

132. Stem Cell Research Act of 2001, S. 723, 107th Cong. § 2 (2001).

133. *Id.* (outlining the two restrictions placed on embryos donated from IVF clinics). The donation aspect is important because the Specter Bill does not seek to promote a market for the sale of human embryos. *Id.* (making it unlawful to "knowingly acquire, receive, or otherwise transfer any human embryos for valuable consideration").

134. "Progenitor" is a neutral term that describes the sperm and egg donors to the embryo. Referring to the sperm and egg donors as "mother" and "father" undermines the idea that an embryo is not a person, but rather a "form of life" that deserves respect. *See* EXECUTIVE SUMMARY, *supra* note 31, at 2 (claiming that "most would agree that human embryos deserve respect as a form of human life"). Note that the EXECUTIVE SUMMARY does not define what a "form of human life" is, nor does it explain how such a designation affects its findings. *See id.*

consent.[135] The Specter Bill also places some restrictions and prohibitions on the acquisition of and research on the embryos to prevent scientists from having free reign over the "form of human life" that is the embryo.[136]

The restrictions placed on federally funded ESC research prohibit research that would create human embryos or that would result in reproductive cloning of a human being.[137] These restrictions follow the NBAC's recommendations, which prohibit federal funding of the creation of research embryos and somatic cell nuclear transfer (SCNT).[138] The term "research embryo" refers to those embryos created by donor gametes – an egg and a sperm — with the sole intent of deriving stem cells.[139] The technical process of SCNT is better known as a form of cloning because a human or other animal egg is enucleated, and the nucleus of an adult somatic cell[140] is inserted.[141] The Specter Bill places

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135. Stem Cell Research Act of 2001, S. 723, 107th Cong. § 2 (2001) (describing what would be §498C(b)(1-2) if the bill were enacted, which details these two restrictions on donation). *Cf.* EXECUTIVE SUMMARY, *supra* note 31, at 4 (advising the President in Recommendation 2 to allow for the use of ESCs derived from IVF embryos, but also requiring certain oversight and review measures found in Recommendations 5-9).

136. Stem Cell Research Act of 2001, S. 723, 107th Cong. § 2 (2001) (describing what would be "restrictions" and "prohibitions" on research if the bill were enacted). The Specter Bill specifically restricts the creation of human embryos for research purposes and the reproductive cloning of a human being. *Id.* It also prohibits the sale of human embryos, so as not to create a market where human embryos would be sold for valuable consideration. *See id.*

137. *See id.*

138. *See* EXECUTIVE SUMMARY, *supra* note 31, at 5-6 (recommending that federal agencies should not fund research that would create embryos simply for research purposes or use somatic cell nuclear transfer to create embryos for research purposes). The NBAC explains that "there is no compelling reason at this time to provide federal funds for the creation of embryos for research" because embryos from IVF clinics presently provide an adequate supply. *Id.* at 5. The NBAC leaves the door open for future use of research embryos. *See id.* In fact, the commission implies that the use of research embryos may be necessary if IVF technologies improve and the supply of IVF embryos diminishes. *See id.* Furthermore, the NBAC claims that research embryos may be the only means of studying the human fertilization process. *See id.* Similarly, in discussing the funding of SCNT, the NBAC recognizes that SCNT may have significant therapeutic potential and therefore recommends monitoring its scientific progress and utility. *See id.* at 6.

139. EXECUTIVE SUMMARY, *supra* note 31, at 5 (stating that there is a "morally relevant difference" between an embryo created for IVF purposes and those created solely for research grounded upon the "avoid[ance of the] instrumental use of human embryos").

140. *Primer*, *supra* note 93 (defining a somatic cell as any bodily cell other than a sperm or an egg).

141. *Id.* (defining somatic cell nuclear transfer as transferring a somatic cell nucleus into an egg that is without its nucleus); *see also* NBAC REPORT AND RECOMMENDATIONS, *supra* note 12, at 19 (detailing the process of SCNT used by

these restrictions upon the type of research and embryos from which ESCs may be extracted presumably because IVF embryos are in abundance and would otherwise go to waste; use of other embryos is simply unnecessary.[142]

The prohibition annunciated by Senator Specter's Bill targets the transfer of IVF embryos for valuable consideration.[143] It specifically states, however, that valuable consideration does not include any costs incurred by "transportation, transplantation, processing, preservation, quality control, or storage."[144] This prohibition addresses the concern that a market for embryos would be inadvertently created.[145] The Specter Bill, therefore, prohibits the exchange of money for embryos, except for the payment of costs associated with the donation process.[146] The Specter Bill amounts to an allowance of enough research so as to gain a deeper understanding of the potential of embryonic stem cell research, yet provides a minimal bar for uncertain or unnecessary forms of research.[147]

C. Narrow Stem Cell Research: The Responsible Stem Cell Research Act of 2001

Shortly after Senator Specter introduced the Stem Cell Research Act of 2001, Senator Ensign responded with a bill of his own – the Responsible Stem Cell Research Act of 2001.[148] The Ensign Bill, unlike

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Advanced Cell Technology, Inc. to create a hybrid embryo and to extract the cells resembling the human ESCs).

142. *See* EXECUTIVE SUMMARY, *supra* note 31, at 5-6.

143. Stem Cell Research Act of 2001, S. 723, 107th Cong. § 2 (2001).

144. *Id.*

145. *See Dec. 1998 Hearings*, *supra* note 55 (statement of Senator Tom Harkin (D-IA)) (acknowledging that the market interest in stem cell research is strong, but that it is important to allocate federal funds for the research to ensure that researchers meet certain ethical guidelines). *Cf.* EXECUTIVE SUMMARY, *supra* note 31, at 7 (advising that embryos should not be bought or sold and observing that once society and science agree that creating embryos for therapeutic purposes is justified, the prohibitions on donations should be reevaluated).

146. *See* Stem Cell Research Act of 2001, S. 723, 107th Cong. § 2 (2001) (allowing for the payment of reasonable expenses associated with donating an embryo for research).

147. *See July 2001 Hearings*, *supra* note 5 (statement of Senator Tom Harkin (D-IA)) (clarifying that both he and Senator Specter feel ESC research is promising and believe that the government's financial support is imperative for scientific and ethical purposes); *see also Aug. 2001 Hearings*, *supra* note 5 (statement of Senator Arlen Specter (R-PA)) (expressing his belief that ESC research is the most important issue facing Congress because it has the potential to cure millions).

148. Responsible Stem Cell Research Act of 2001, S. 1349, 107th Cong. (2001) (introducing the bill on August 3, 2001 for himself and Senator Brownback).

the Specter Bill, recites congressional findings[149] and offers a viable solution in the form of a National Stem Cell Donor Bank that would act as a depository for qualifying stem cells that could be used for research purposes.[150]

The fundamental difference between the Ensign Bill and the Specter Bill is the definition of the types of stem cells that qualify for research.[151] Qualifying stem cells under Ensign's Bill are defined by their origin, specifically naming those "obtained from human placentas, umbilical cord blood, organs or tissues of a living or deceased human being who has been born, or organs or tissues of unborn human offspring who died of natural causes (such as spontaneous abortion)."[152] The Ensign Bill establishes a National Stem Cell Donor Bank to "seek and preserve donations of qualifying human stem cells and to make such donated cells available for biomedical research and for therapeutic purposes."[153] For ease of operation, the Secretary of HHS would run the donor bank; keep a patient registry; and establish criteria for quality standards, donor selection, and transportation and collection for those participating in the research.[154]

Although Senator Ensign enunciated his reasons for proposing this bill in the section on findings, the actual characterization of the types of qualifying stem cells clearly demonstrates that Senator Ensign designed his bill to focus scientific energy and government funding on stem cell research that has proven to be effective.[155] Unlike the Specter Bill, the

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149. *Id.* § 2 (finding, among other things, that investing in biomedical research has improved the quality of life, that many Americans still suffer from a number of debilitating diseases, that recent scientific developments in ethical stem cell research could help alleviate suffering and possibly cure these diseases, and that federal funding of ethical stem cell research must be expanded).

150. *Id.* §§ 2-4 (organizing the bill such that section two includes the findings, section three defines the donor bank and qualifying cells, and section four explains permissible usages).

151. *Compare* Responsible Stem Cell Research Act of 2001, S. 1349, 107th Cong. § 3(b) (2001) (defining qualifying stem cells as those obtained from placentas, umbilical cords, organs and tissues of living or deceased human beings, or spontaneously aborted fetuses), *with* Stem Cell Research Act of 2001, S. 723, 107th Cong. § 2 (2001) (allowing for research upon stem cells extracted from donated leftover IVF embryos).

152. Responsible Stem Cell Research Act of 2001, S. 1349, 107th Cong. § 3(b) (2001).

153. *See id.* § 3(a).

154. *See id.* § 3(c)-(e).

155. *See id.* § 2; *see also* Karen D. Brown, *'Biological Insurance' for Your Baby; Experts Debate the Value and Ethics of Banking Umbilical Cord Blood To Collect Stem Cells*, WASH. POST, Sept. 12, 2000, at Z12 (reporting that new research shows that blood from the placenta and umbilical cord, like bone marrow, contain valuable stem cells that, upon transplantation, could cure numerous diseases). It is important to note that the

Ensign Bill completely excludes ESCs from federally funded research and instead appropriates $275 million to the NIH for research on qualifying stem cells.[156] Therefore, by defining and funding research on specific types of stem cells, the Ensign Bill attempts to avoid the ethical dilemmas surrounding the Specter Bill.

D. The Middle Ground: President Bush's Proposal for Stem Cell Research

On August 9, 2001 President Bush made the most anticipated speech of his young presidency regarding a hotly debated political topic – his decision on the fate of federal funding for stem cell research.[157] In deciding to "proceed with great care," the President sought a compromise between those who seek more funding for research and those who desire a complete elimination of the research.[158] With much deliberation, the President decided to allow federal funding to further research on stem cell lines[159] that were already in existence.[160] This

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Ensign Bill did not outlaw the use of ESCs derived from embryos because the appropriations rider discussed previously, which was still in effect at the time Senator Ensign introduced his bill, already banned the destruction of embryos in research. *See supra* Part I.A. Due to the nature of the stem cells proposed for use by the Ensign Bill, they were not banned from receiving funding because they did not require the destruction of human embryos. *See Nov. 1999 Hearings*, *supra* note 47 (testimony of Congressman Jay Dickey (R-AR)) (describing that the purpose of the ban was to hinder funding research methods that would cause the destruction or discarding of embryos).

156. *See* Responsible Stem Cell Research Act of 2001, S. 1349, 107th Cong., § 4(b) (increasing significantly the NIH budget as a means of promoting ethically sound stem cell research).

157. *See* Amy Goldstein & Mike Allen, *Bush Backs Partial Stem Cell Funding*, WASH. POST, Aug. 10, 2001, at A1 (describing President Bush's first presidential announcement as "politically charged"); *see also* Mike Allen, *Bush Suggests an Aug. 21 Decision on Stem Cell Research*, WASH. POST, Aug. 9, 2001, at A5 (announcing that the highly anticipated Bush decision on federal funding for stem cell research would come before Labor Day); Chris Adams, *Congress Braces for Vigorous Debate on Bush's Stem-Cell Funding*, WALL ST. J., Aug. 31, 2001, at A10 (referring to President Bush's decision to limit ESC research as a struggle).

158. *See* Bush Proposal, *supra* note 5. President Bush described the research as offering "both great promise and great peril, so [he] decided [to] proceed with great care." *Id.; see also* Adams, *supra* note 157 (labeling President Bush's decision as an attempt to walk a fine line between the supporters of ESC research and opponents of ESC research); William J. Livolsi Jr., Editorial, *A Sound Stem Cell Decision*, WASH. POST, Aug. 12, 2001, at B6 (praising President Bush for making a sound decision based on a careful weighing of benefits and ethical concerns).

159. A "stem cell line" is a group of ESCs that have been extracted from the embryo and, basically, are multiplying indefinitely in laboratories across the world. *See* Mitch Frank, *The Bush Decision*, TIME, Aug. 20, 2001, at 18 (defining an ESC line as the product of extracting ESCs from an embryo and, under the right conditions, replicating them in a Petri dish without the ESCs differentiating into specific tissue cells).

decision essentially eliminated any other ESCs derived from IVF embryos, no matter what the embryos' fate, from federally funded research.[161] The President felt that there was a moral line that he did not want to cross: destroying human embryos for research purposes.[162] Bush's proposal did not eliminate adult, umbilical cord, placenta, or animal stem cell research from federal funding; rather, he specifically included them.[163] In addition, to monitor the field of stem cell research, President Bush formed a President's council to consider the medical and ethical ramifications of such research and recommend appropriate research guidelines.[164]

Although President Bush's proposal was not fully in accord with either of the Senate bills, it represented an attempt to find a middle ground.[165] President Bush recognized the importance of stem cell research to the medical and clinical community, yet he also empathized with the moral concerns of destroying embryos for research.[166] Essentially, he attempted

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160. *See* Bush Proposal, *supra* note 5 (claiming that "we should allow federal funds to be used for research on these existing stem cell lines," meaning those in existence at the time of the decision).

161. *See* Amy Goldstein & Mike Allen, *Bush Backs Limited Funding for Research on Stem Cells*, WASH. POST, Aug. 12, 2001, at A3 (reporting that President Bush's proposal allows the use of federal grant money solely for already harvested ESCs but prohibits subsidies for research that would create or destroy additional embryos).

162. *See* Bush Proposal, *supra* note 5 (clarifying that research on the sixty or so existing stem cell lines would allow for exploration of "the promise and potential of stem cell research without crossing a fundamental moral line, by providing taxpayer funding that would sanction or encourage further destruction of human embryos").

163. *See id.* (propounding the belief that "great scientific progress can be made through aggressive federal funding of research on umbilical cord placenta, adult, and animal stem cells"); *see also* Mitch Frank, *The Research Effect*, TIME, Aug. 20, 2001, at 20 (depicting in a graphic the different forms of stem cells receiving funding under President Bush's plan).

164. Bush Proposal, *supra* note 5 (appointing Dr. Leon Kass, a biomedical ethicist at the University of Chicago, as chairman of the council); *see* Howard Fineman et al., *Stem Cell Line*, NEWSWEEK, Aug. 20, 2001, at 17-18 (characterizing Dr. Leon Kass as a key figure in advising President Bush on his stem cell research decision).

165. *See* Laurie McGinley & Jeanne Cummings, *Bush To Allow Limited Stem-Cell Funding*, WALL ST. J., Aug. 10, 2001, at A3 (explaining that President Bush's decision allowed him to give a little to each side of the debate without alienating the other); *see also* Nancy Gibbs & Michael Duffy, *"We Must Proceed With Great Care,"* TIME, Aug. 20, 2001, at 15 (recounting President Bush's demeanor as humble because looking like a "national priest" or "capitalist tool" would enrage one side and cause more division). *Cf.* Michael E. Ruane, *Stem Cell Decision Only Adds to Debate*, WASH. POST, Aug. 11, 2001, at B1 (using examples of individuals' reactions to the President's decision to show how his decision fueled the debate rather than quelled it).

166. *See* Bush Proposal, *supra* note 5 (stating that he is a "strong supporter of science and technology . . . [as] they have the potential for incredible good" and that he believes

to appease both sides by allowing some ESC research but limiting it to those ESCs "where the life and death decision has already been made."[167] Although some find this to be a satisfactory compromise, for others, President Bush's proposal fuels the political, ethical, and medical debate.[168]

IV. LEGISLATING THE GOSPEL OF LIFE?: DENYING THE DEVALUATION OF HUMAN LIFE THROUGH LEGISLATION

A. With What Should We Be Concerned?

The legislative and administrative intent behind all three proposals for stem cell research is expressly or implicitly an attempt to do what is best for society.[169] However, the question for Catholics – and those that Pope John Paul II described as individuals of "good will"[170] – is not whether the intent behind the proposal is good, but rather each proposal's effect on the basic tenets of the Catholic tradition; in other words, the real

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"human life is a sacred gift from our Creator" and worries "about a culture that devalues life").

167. Bush Proposal, *supra* note 5; *see* McGinley & Cummings, *supra* note 165 (stating that President Bush's proposal allowed the President to "argue to his antiabortion supporters that no additional embryos would be destroyed under his plan" and to "give something to those . . . who want the federal government to take some step to advance what could be promising research").

168. *See* Ruane, *supra* note 165 (quoting one politician as urging President Bush not to cut off funding for ESC research, while also noting the Archbishop of Washington's disappointment in the President's decision); *see also* Rick Weiss, *Promising More and Less; Scientists See Growth in Field, Lament Limits*, WASH. POST, Aug. 10, 2001, at A1 (raising the issue that thousands of scientists who rely on federal funding for research see the Bush decision as a "boon to research" and a restriction on the "ability to generate certain kinds of knowledge").

169. *See Today*, WASH. POST, July 6, 2001, at A24 (quoting the NBC television broadcast, July 5, 2001). Interviewing Senator Specter, Matt Lauer asked, "Why are you in favor of funding stem-cell research?" Senator Specter responded by claiming that "these embryonic stem cells hold the potential for being a veritable fountain of youth." *Id.*; *see also* Responsible Stem Cell Research Act of 2001, S. 1349, 107th Cong. § 2 (2001) (outlining congressional findings that investments in biomedical research have improved the quality of life of many Americans and that "[r]ecent scientific developments show that [ethically responsible] human stem cell research . . . may lead to exponential improvements in the treatment of many terminal and debilitating conditions"); Bush Proposal, *supra* note 5 (explaining that "research on these 60 lines has great promise that could lead to breakthrough therapies and cures").

170. *See supra* notes 119-25 (explaining the significance of the Pope addressing *Evangelium Vitae* to more than just Catholics, but all individuals of "good will," and why the encyclical is applicable to everyone).

question is whether each proposal will undermine the inviolability of all human life.[171]

Approaching the issue of stem cell research with a complete understanding of the Church's teaching on the sanctity of life makes the analysis of each proposal clearer.[172] Embryonic stem cell research cannot be conducted without embryos,[173] and in the eyes of the Church, embryos are human beings that deserve the same amount of respect as all other people.[174] Therefore, any research that destroys embryos, no matter how noble the final result or intent of the research, is denounced and unsupported by the Catholic Church.[175] The most efficacious means of evaluating these three proposals through the lens of Catholic teaching is to determine the necessity of ESC research and then evaluate the possible effects of each individual proposal.[176]

B. Is Embryonic Stem Cell Research Necessary?

"Stem cell research" is an all-encompassing term that refers to numerous types of stem cell research and, contrary to popular belief, not

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171. *See Evangelium Vitae, supra* note 17, ¶ 95.1 (stating that in the "present social context, marked by a dramatic struggle between the 'culture of life' and the 'culture of death,' there is need to *develop a deep critical sense*, capable of discerning true values and authentic needs"); *see also Ephesians* 5:8-11 ("Live as children of light for light produces every kind of goodness and righteousness and truth. Try to learn what is pleasing to the Lord. Take no part in the fruitless works of darkness; rather expose them.").

172. *See, e.g.*, MAY, *supra* note 117, at 19-46 (beginning his book on Catholic bioethics by dedicating the first chapter to a summary of the Church's teaching on bioethical issues so that the reader may better understand the foundation of the ethical issues raised in subsequent chapters).

173. *Contra* Gautam Naik & Antonio Regalado, *Scientists Seek Methods To Create Stem Cells Without Using Embryos*, WALL, ST. J., Aug. 3, 2001, at B1 (reporting on Infigen, Inc.'s attempt to obviate ethical concerns by creating ESCs without using embryos through a process known as "cellular reprogramming," where adult cells from a particular patient are "brought back to their embryo-like state"). *Cf.* Weiss, *supra* note 61 (announcing the intent of ACT to create "embryo-like entities" that are "fatally flawed" such that they could never develop into persons because of scientifically generated lethal mutations).

174. *See* CATECHISM, *supra* note 2, ¶ 2323 ("Because it should be treated as a person from conception, the embryo must be defended in its integrity, cared for, and healed like every other human being.").

175. *See Humanae Vitae, supra* note 1 (explaining that a good intent that ends in an evil act or an evil intent that ends in a good act is still evil); *see also* CATECHISM, *supra* note 2, ¶ 2274.

176. We stand at a precarious point in history where our scientific decision now could have serious ethical implications later. *See July 2001 Hearings*, *supra* note 5 (testimony of Richard M. Doerflinger, Associate Director for Policy Development at the Secretariat for Pro-Life Activities).

just ESC research.[177] To date, the use of ESCs, as opposed to stem cells obtained from adult, umbilical, placental, or natural abortions, has not proven successful in treating human disease.[178] Although many scientists, researchers, and patients boast of the promise that ESCs hold for treating disease,[179] ESCs pose a problem that has been largely ignored – histocompatibility.[180]

Histocompatibility is most commonly encountered in organ transplantation but is also a concern when treating individuals with ESCs.[181] Histocompatibility antigens (HLA) are attached to all human

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177. *See* EXECUTIVE SUMMARY, *supra* note 31, at 1 (defining stem cells as those that are "capable of continually reproducing themselves" and describing the embryonic stem cells as "the most fundamental and extraordinary of the stem cells"); *see also Reality Check #2*, *supra* note 12 (warning individuals that "'[s]tem cell research' refers to research using *various* types of stem cells" and illuminating the fact that seventy percent of Americans disagree with government funding of "stem cell research which requires destroying human embryos").

178. *See July 2001 Hearings*, *supra* note 5 (testimony of Richard M. Doerflinger, Associate Director for Policy Development at the Secretariat for Pro-Life Activities) (describing the recent advances in adult stem cell research and the disappointments in ESC research); *see also Reality Check #1*, *supra* note 101 (discrediting the belief that ESCs are better than other stem cells for treating disease and noting that adult stem cells have already helped hundreds of thousands of patients while ESCs "have not helped a single human patient").

179. *See* Rick Weiss, *Nobel Laureates Back Stem Cell Research: Group of 80 Recipients Sends Letter Asking Bush Not To Block U.S. Funding for Studies*, WASH. POST, Feb. 22, 2001, at A2 (reporting that "organizers believe [the letter to Bush backing ESC research] is the biggest collection of Nobel signatures ever sent to a president"); *see also* Laurie McGinley, *Influential GOP Sen. Frist Supports Stem-Cell Research*, WALL ST. J., July 18, 2001, at A20 (announcing that the doctor, Senator, and presidential advisor, once silent on the stem cell research issue, decided to back ESC research because of its "huge potential for improving health"); Laurie McGinley, *Nancy Reagan Urges GOP To Back Stem-Cell Studies*, WALL ST. J., July 12, 2001, at B2 (reporting that Former First Lady Nancy Reagan, whose husband suffers from Alzheimer's, favors federal funding for ESC research); Connie Mack, *I'm Pro-Life and in Favor of Stem Cell Research*, WALL ST. J., June 19, 2001, at A22 (describing her arguably hypocritical role as a former Senator, pro-life Catholic, and cancer survivor in support of ESC research). For the Pope's response to individuals like Connie Mack, see *Evangelium Vitae*, *supra* note 17, ¶ 95.3 (addressing his concern about the pluralistic society in which we live by stating that "[t]oo often it happens that believers, even those who take an active part in the life of the Church, end up by separating their Christian faith from its ethical requirements concerning life, and thus fall into moral subjectivism and certain objectionable ways of acting").

180. *See July 2001 Criminal Justice Hearings*, *supra* note 9 (testimony of Dr. David A. Prentice, Ph.D., Professor of Life Sciences, Indiana State University; Adjunct Professor of Medical and Molecular Genetics, Indiana University School of Medicine; Founding Member, Do No Harm: The Coalition of Americans for Research Ethics) (testifying to the House that "embryonic stem cells face the very real possibility of immune rejection, while use of a patient's own adult stem cells is free from this problem").

181. Histocompatibility is defined as the degree to which one's human leukocyte antigens (HLA or histocompatibility antigens) match the HLAs of a transplanted organ,

cells, including ESCs, and they recognize friendly and foreign cells in the body.[182] Hence, if a foreign cell enters the body, the HLAs recognize it and activate the immune system to destroy it.[183] Matching an individual's HLAs to a foreign cell's HLAs is a difficult task because each individual's HLA proteins located on the five separate HLA loci must match.[184] Therefore, if an individual's body is treated with embryonic stem cells that have significantly different genetic codes, the recipient's body will not recognize the cell and will reject it.[185] Thus, any treatments developed from cells significantly different from the potential patient's own will not succeed in treating disease without the possibility of lifetime use of toxic immunosuppressive drugs.[186] There are, however, two ways around the histocompatibility problem: (1) to engage in SCNT for

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bone marrow, or blood. *See* Amy B. Hahn, Ph.D., *Histocompatibility and Immunogenetics Terminology*, *at* www.ashi-hla.org/aboutfiles/about-h&i_terminology.html (last visited Mar. 5, 2003); *see also Sept. 2000 Hearings*, *supra* note 104 (testimony of Dr. David A. Prentice, Ph.D., Professor of Life Sciences, Indiana State University; Adjunct Professor of Medical and Molecular Genetics, Indiana University School of Medicine; Founding Member, Do No Harm: The Coalition of Americans for Research Ethics) (describing the possible rejection of tissues derived from ESCs, as is the case with other organ transplants).

182. *See Finding the Perfect Donor*, BLOOD & MARROW TRANSPLANT NEWSLETTER (Blood and Marrow Information Network), May 2001, *at* www.bmtinfonet.org/newsletters/issue53/perfectdonor.html (last visited Nov. 12, 2001) (analogizing HLAs to a cellular fingerprint in that they identify cells as either belonging to our body or not).

183. *See id.*

184. Each cell has five different HLA proteins on its surface that are created from a section of one's chromosome called an allele. *Id.* The five loci of the alleles are called HLA-A, HLA-B, HLA-C, HLA-DRB1, and HLA-DQB1, and each codes for a different protein that, in the case of certain organ transplants, must match significantly, or the organ will be rejected. *See id.* (admitting that finding a donor that is a "perfect match" is extremely difficult, yet important to transplant patients and stem cell patients alike).

185. *See July 2001 Criminal Justice Hearings*, *supra* note 9 (testimony of Dr. David A. Prentice, Ph.D., Professor of Life Sciences, Indiana State University; Adjunct Professor of Medical and Molecular Genetics, Indiana University School of Medicine; Founding Member, Do No Harm: The Coalition of Americans for Research Ethics) (revealing that ESCs face the possibility of immune rejection and have been proven ineffective in animal studies).

186. *Sept. 2000 Hearings*, *supra* note 104 (testimony of Dr. David A. Prentice, Ph.D., Professor of Life Sciences, Indiana State University; Adjunct Professor of Medical and Molecular Genetics, Indiana University School of Medicine; Founding Member, Do No Harm: The Coalition of Americans for Research Ethics) (distinguishing the use of adult stem cells from ESCs because ESCs "will face transplant rejection, as would any normal organ transplant, and require use of toxic immunosuppressive drugs, perhaps for the lifetime of the patient," whereas adult stem cells do not face that problem).

therapeutic cloning purposes;[187] or (2) to use cells compatible with one's own body, *i.e.,* adult, umbilical, or placental stem cells.[188]

The former solution is controversial because it is a form of cloning that requires – as a prerequisite to successful treatment – the ability to create, raise, and harvest human embryos.[189] The need for therapeutic cloning arises from the possible rejection of ESCs by the patient's body.[190] If scientists use SCNT to transfer a patient's own genetic material to an embryo, however, they can create an embryonic clone of the patient and eliminate the histocompatibility problem.[191] Although none of the proposals specifically promote SCNT and therapeutic cloning, the use of embryos for ESC research is the first step toward this process because

187. *See* Rick Weiss, *Firm Aims To Clone Embryos for Stem Cells*, WASH. POST, July 12, 2001, at A1. Advanced Cell Technologies began work on cloning embryos because "the presumption, held by many scientists, [is] that the best way to create stem cells for therapeutic purposes may be to custom-produce batches of them for individual patients through cloning. That way the cells will be genetically identical to the patient and will not be rejected as foreign." *Id.*; *see also July 2001 Criminal Justice Hearings*, *supra* note 9 (testimony of Dr. David A. Prentice, Ph.D., Professor of Life Sciences, Indiana State University; Adjunct Professor of Medical and Molecular Genetics, Indiana University School of Medicine; Founding Member, Do No Harm: The Coalition of Americans for Research Ethics) (voicing the opinion of some that "human cloning might be necessary if embryonic stem cells could ever have clinical application to human beings").

188. *See* Responsible Stem Cell Research Act of 2001, S. 1349, 107th Cong. § 2 (2001); *see also* Bush Proposal, *supra* note 5 (informing the public that "stem cells can be derived from sources other than embryos – from adult cells, from umbilical cords . . . [and] from human placenta" and stating that "research on these type of stem cells is also promising"); NBAC REPORT AND RECOMMENDATIONS, *supra* note 12, at 12-14 (describing types of adult stem cells found in the body and their potential for use in disease treatment); Rick Weiss, *Fetal Cell Research Funds Are at Risk; Scientists Fear Curbs Over Abortion*, WASH. POST, Jan. 26, 2001, at A3 (stating that "[r]ecent studies suggest that adult stem cells have great therapeutic potential").

189. *See* Antonio Regalado, *Ethicists, Bodyguards Monitor Scientists' Effort To Create Copy of Human Embryo*, WALL ST. J., July 13, 2001, at B1 (describing the technique called therapeutic cloning as "hotly debated" and something many consider "unthinkable" while reporting that one scientific advisor was concerned about "widespread societal opposition to creating embryos specifically for research").

190. *See id.* (claiming that ACT clones embryos so that "the cells will be genetically identical to the patient and will not be rejected as foreign").

191. *See id.* (describing therapeutic cloning as a means of creating an "embryonic twin" that would "be a regenerative fountain of youth"). "It contains stem cells that share the individual's genetic makeup and someday be grown into a wide variety of precisely matched tissues." *Id.*; *see also July 2001 Hearings*, *supra* note 5 (testimony of Michael D. West, Ph.D., President and CEO of ACT, Inc., Inc.) (testifying that the solution to the "problem of histocompatibility would be to create human [ESCs] genetically identical to the patient . . . obtained through the procedure of [SCNT], otherwise known as cloning technology").

therapeutic cloning is simply a personalization of stem cell therapy.[192] Scientifically, this is a perfect solution to the histocompatibility problem,[193] but it raises concerns among the public, not only because it is a form of cloning, but also because it may lead to the creation, raising, and harvesting of embryos for therapeutic purposes.[194]

The alternative to therapeutic cloning, which also obviates the histocompatibility problem, is the use of stem cells derived from adult tissue,[195] umbilical cord blood,[196] and placentas.[197] These are proven and successful forms of research without ethical fault, largely because they do not involve the destruction of embryos.[198] The only argument proffered against adult stem cell research is that it does not offer the same level of promise as ESC research.[199] Some scientists assume an adult stem cell

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192. *See July 2001 Hearings*, *supra* note 5 (testimony of Michael D. West, Ph.D., President and CEO of ACT, Inc.) (explaining the promise of SCNT to create a personalized "embryo genetically identical to the patient that could. . . 'rejuvenate' an aged cell. . . [and] improve the quality of life" for many individuals); *see also* Weiss, *supra* note 187 (claiming that "[t]he idea is to fuse a single cell from an adult (in the future, the patient) with a donated human egg that has had its own genes removed, to make what is essentially an embryo" identical to that of the patient); Regalado, *supra* note 189 (claiming that "[b]y combining an adult's cell – usually skin, but any cell will do – with an unfertilized human egg . . . they can create an embryonic twin of any person").

193. *See* Weiss, *supra* note 187 (explaining that many scientists believe the best way to create stem cells for therapeutic purposes is to have them custom made for each individual).

194. *See Hearing on Human Cloning Before the Senate Commerce Subcomm. on Science, Technology and Space*, 107th Cong. (2001) [hereinafter *May 2001 Cloning Hearings*] (testimony of Richard M. Doerflinger, Associate Director for Policy Development at the Secretariat for Pro-Life Activities). Implementing therapeutic cloning "would not be a case [where] human embryos are destroyed once to form a permanent cell line . . . . For each individual patient, countless human embryos – the patient's genetic twin brothers and sisters – would have to be created . . . then destroyed for their stem cells." *Id. Cf.* Regalado, *supra* note 189 (noting that therapeutic cloning is ethically questionable because it creates embryos for research and may "lead to the birth of cloned human[s]").

195. *See* Laura Johannes, *New Findings Point To Huge Potential of Adult Stem Cells*, WALL ST. J., Aug. 13, 2001, at B4 (proposing that if recent adult stem cell studies are true, adult stem cells could be a viable alternative to the ethically troublesome ESCs and would not be rejected by a patient's body).

196. *See* Brown, *supra* note 155 (reporting on the banking of umbilical cord blood for its stem cells, which would allow for stem cell treatment of certain diseases).

197. *See id.* (mentioning that placentas have similar therapeutic promise, if banked after birth).

198. *See* Dr. David A. Prentice, *Stem Cell Research Alternative*, WALL ST. J., June 20, 2001, at A19 (positing that adult stem cell research is a more successful and morally acceptable approach than the use of ESCs).

199. *Contra July 2001 Hearings*, *supra* note 5 (testimony of Dr. David A. Prentice, Ph.D., Professor of Life Sciences, Indiana State University; Adjunct Professor of Medical and Molecular Genetics, Indiana University School of Medicine; Founding Member, Do

will not be able to treat all of the diseases ESCs potentially could treat simply because adult stem cells are further along in their differentiation process.[200] However, recent scientific advances have proven the opposite.[201]

Researchers have recently isolated stem cells from fat cells,[202] bone marrow,[203] nerve tissue,[204] umbilical cord blood, and other sources.[205] Moreover, from this isolation process, scientists have taken the first steps in developing treatments for numerous diseases.[206] For instance, adult bone marrow stem cells have been coaxed into nerve cells in hopes of treating numerous neurological diseases, such as Parkinson's, Alzheimer's, and spinal cord injuries.[207] Likewise, researchers working with stem cells from human fat cells have created cartilage, muscle, and bone cells, which advance the promise of growing various replacement tissues without the use of embryos.[208] Unlike the use of therapeutic

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No Harm: The Coalition of Americans for Research Ethics). Dr. Prentice believes that the medical potential of adult stem cells is enormous and has stated that researchers continue to discover adult stem cell types for more forms of tissue. *Id.* In addition, according to Dr. Prentice, other research suggests that adult stem cells will be able to transform into all tissue and cell types. *Id.*

200. *See* Johannes, *supra* note 103 (reporting in 1999 that adult stem cells could not become any form of tissue other than that from which those cells came). *Cf.* Johannes, *supra* note 195 (reporting in August 2001 that adult stem cells could morph into many of the body's tissues).

201. *July 2001 Hearings*, *supra* note 5 (testimony of Richard M. Doerflinger, Associate Director for Policy Development at the Secretariat for Pro-Life Activities) (testifying that advances in "tissue engineering" using adult stem cells have allowed researchers to rebuild ears, tracheas, and hearts and also listing the numerous diseases adult stem cells were successful in treating).

202. *See* Weiss, *supra* note 103 (announcing the successful isolation of fat stem cells that were grown into a variety of tissue types).

203. *See id.* (describing the transformation of bone marrow stem cells into nerve cells as the "latest in a string of recent advances adding credence to the novel idea that human cells can change their identities late in life").

204. *See* Terence Chea, *Stalking Neural Stem Cells; Md. Firm's Work May Aid Brain Treatment*, WASH. POST, Oct. 13, 2000, at E5 (discussing the isolation of neural stem cells that could offer treatment for some devastating diseases by replacing damaged cells with healthy ones).

205. *See* Brown, *supra* note 155 (reporting on the possibilities of treatments from umbilical cord blood and placentas).

206. *July 2001 Criminal Justice Hearings*, *supra* note 9 (testimony of Dr. David A. Prentice, Ph.D., Professor of Life Sciences, Indiana State University; Adjunct Professor of Medical and Molecular Genetics, Indiana University School of Medicine; Founding Member, Do No Harm: The Coalition of Americans for Research Ethics) (testifying that adult and other postnatal stem cells have the potential to cure diabetes, Parkinson's, heart disease, Alzheimer's, and other degenerative diseases for which ESCs are sought).

207. Weiss, *supra* note 103.

208. *Id.*

cloning to negate the histocompatibility problem, these alternative stem cells have been successfully used to treat human beings.[209] These advances force the ethical question of whether using ESCs for research is even necessary.[210]

C. The Broader the Better?

According to Senator Specter and his supporters, ESC research is absolutely necessary to improve the lives of those who suffer from numerous diseases and injuries.[211] Of the three proposals, the Specter Bill allows for the greatest amount of stem cell research by supporting research on leftover embryos obtained from IVF clinics.[212] However, a bill this broad is not necessarily the best or most responsible means of researching the therapeutic possibilities of stem cells because adult and other forms of stem cells have proven just as, if not more, effective in treating disease.[213]

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209. *July 2001 Criminal Justice Hearings*, *supra* note 9 (testimony of Dr. David A. Prentice, Ph.D., Professor of Life Sciences, Indiana State University; Adjunct Professor of Medical and Molecular Genetics, Indiana University School of Medicine; Founding Member, Do No Harm: The Coalition of Americans for Research Ethics) (testifying about the "impressive volume of scientific literature" attesting to the use of adult stem cells to successfully treat patients with many of the diseases ESCs "only prospectively promise to treat" and stating that "[a]nimal research strongly suggests that more therapeutic applications of adult stem cell research will follow").

210. *See* Prentice, *supra* note 198 (claiming that "more and more researchers have said that embryonic stem cells may not be needed after all for medical progress"); *see also July 2001 Hearings*, *supra* note 5 (testimony of Richard M. Doerflinger, Associate Director for Policy Development at the Secretariat for Pro-Life Activities) (warning that the rising scientific proof of complications with ESCs and the increasing promise and success of adult stem cells has allegedly caused the withholding of information by some researchers regarding the problems with ESCs under the guise that the information is too "politically sensitive").

211. *July 2001 Hearings*, *supra* note 5 (statement of Tom Harkin (D-IA)) (stating that he and Senator Specter sponsored their bill in order to find cures for and save the lives of those who are suffering from numerous debilitating diseases). Note that these "debilitating diseases" that Senators Harkin and Specter want to treat include diseases like diabetes, heart disease, Parkinson's, and spinal cord injuries, all of which have been treated or are showing great promise of treatment with *adult and other post-natal stem cells*. *See July 2001 Criminal Justice Hearings*, *supra* note 9 (testimony of Dr. David A. Prentice, Ph.D., Professor of Life Sciences, Indiana State University; Adjunct Professor of Medical and Molecular Genetics, Indiana University School of Medicine; Founding Member, Do No Harm: The Coalition of Americans for Research Ethics).

212. *Compare* Stem Cell Research Act of 2001, S. 723, 107th Cong. § 2 (2001), *with* Responsible Stem Cell Research Act of 2001, S. 1349, 107th Cong. § 2(b) (2001), *and* Bush Proposal, *supra* note 5.

213. *See Current Clinical Use*, *supra* note 103 (providing a list of successful uses of adult stem cells to treat human patients and explaining that ESCs have no success in treating human patients). *But see* David Baltimore, *Don't Impede Medical Progress*,

The Specter Bill claims that ESCs may be derived from donated human embryos leftover from IVF treatments, provided that specific conditions are met.[214] Thus, the Specter Bill allows for an unlimited number of embryos to be destroyed in research funded by federal dollars, so long as they meet certain requirements and are not purchased with federal monies.[215] From a purely scientific standpoint, this bill allows for the optimum amount of scientific inquiry; however, when viewed from the Catholic perspective, it is abhorrent to the sanctity of life.[216]

Using human embryos to conduct research contradicts the very foundation of the Gospel of Life, as well as some basic codes of medical ethics.[217] As previously discussed, for the Church, life begins at the moment of conception, regardless of when, where, or why the life is conceived. The Church did not arbitrarily choose this moment in time; rather, it developed from Sacred Scripture and Apostolic Tradition.[218] At conception, a person is "willed for its own sake in the image and likeness of the living and holy God."[219] According to the Bible, human beings are

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WALL ST. J., July 30, 2001, at A18 (explaining that banning all research on these "miraculous cells" would severely impede science's "wholly new way" of treating disease).

214. *See* Stem Cell Research Act of 2001, S. 723, 107th Cong. § 2 (2001).

215. *See id.*; *see also July 2001 Hearings*, *supra* note 5 (testimony of Richard M. Doerflinger, Associate Director for Policy Development at the Secretariat for Pro-Life Activities) (quoting Dr. John Gearhart as admitting that "[y]ou may have to establish hundreds of lines [of ESCs] to get the few you'd want to have," which means that thousands of human embryos would be required to establish hundreds of lines, especially if the original cell lines become too unstable for further use).

216. *See Evangelium Vitae*, *supra* note 17, ¶ 57.3 (reiterating the moral illicitness of taking innocent human life, especially at its earliest stages).

217. *See Donum Vitae*, *supra* note 30, at Intro.

> Human life is sacred because from its beginning it involves 'the creative action of God' and it remains forever in a special relationship with the Creator, who is its sole end. God alone is the Lord of life from its beginning until its end: no one can, in any circumstance, claim for himself the right to destroy directly an innocent human being.

Id.; see also July 2001 Criminal Justice Hearings, supra note 9 (testimony of Dr. David A. Prentice, Ph.D., Professor of Life Sciences, Indiana State University; Adjunct Professor of Medical and Molecular Genetics, Indiana University School of Medicine; Founding Member, Do No Harm: The Coalition of Americans for Research Ethics) (testifying to the ethical impropriety of destroying one human life for the possible benefit of another because this would violate "the basic tenet of the healing arts: 'first do no harm'").

218. *See* John Paul II, *Apostolic Constitution* Fidei Depositum, *in* CATECHISM, *supra* note 2, at 5 (explaining that the Catechism is a "statement of the Church's faith and of Catholic doctrine, attested to or illuminated by Sacred Scripture, the Apostolic Tradition, and the Church's Magisterium").

219. CATECHISM, *supra* note 2, ¶ 2319.

made in the image and likeness of God.[220] Thus, humans deserve respect from the moment of their creation at conception.[221] The human embryo, then, is a human person deserving of the protection, healing, and respect attributed to all people.[222] The Specter Bill does not respect these values because it promotes the destruction of human embryos to glean ESCs for research.[223]

Moreover, one must inquire into the possible repercussions if the Specter Bill were enacted.[224] The Specter Bill only funds research using ESCs from leftover IVF embryos, yet this could be the first step down a path toward therapeutic cloning.[225] So far no ESCs have successfully treated any human beings.[226] Even though private research continues, the possibility for clinical treatment is unlikely due to the problem of histocompatibility.[227] Therefore, the next step would be personalized

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220. *See Genesis* 1:26,27 ("God said: 'Let us make man in our image, after our likeness. . . .' God created man in his image; in the divine image he created him; male and female he created them.").

221. CATECHISM, *supra* note 2, ¶ 2319.

222. *Id.* ¶ 2323.

223. *See July 2001 Hearings*, *supra* note 5 (testimony of Richard M. Doerflinger, Associate Director for Policy Development at the Secretariat for Pro-Life Activities) (stating that the use of embryos for research purposes, regardless of their origin, "violates a central tenet of all civilized codes on human experimentation beginning with the Nuremberg Code: [i]t approves doing deadly harm to a member of the human species solely for the sake of potential benefit to others").

224. Following Pope John Paul II's call to be promoters of the Gospel of Life, we must evaluate issues threatening life from all angles, including the future repercussions. *See* SEIFERT ET AL., *supra* note 125, at 107 (asking readers of *Evangelium Vitae* to question themselves as to how they, and their politicians, can promote the Gospel of Life through their roles in society, their actions, and their support for certain public policy).

225. *See July 2001 Hearings*, *supra* note 5 (testimony of Richard M. Doerflinger, Associate Director for Policy Development at the Secretariat for Pro-Life Activities) (testifying on the slippery slope of allowing some federal funding of ESC research now and what that will lead to in the future). This first step toward therapuetic cloning is foreshadowed by the NBAC's fourth recommendation in which it concludes that "*at this time*, federal funding should not be provided to derive [ESCs] from [SCNT]. Nevertheless, scientific progress and the medical utility of this line of research should be monitored closely." *See* EXECUTIVE SUMMARY, *supra* note 31, at 6 (emphasis added).

226. *See Current Clinical Use*, *supra* note 103 (reporting that there are no current uses of ESCs to aid, improve, or cure anyone with any of the diseases that ESCs may potentially treat).

227. *See July 2001 Criminal Justice Hearings*, *supra* note 9 (testimony of Dr. David A. Prentice, Ph.D., Professor of Life Sciences, Indiana State University; Adjunct Professor of Medical and Molecular Genetics, Indiana University School of Medicine; Founding Member, Do No Harm: The Coalition of Americans for Research Ethics) (stating the substantial risk of immune rejection by the body, or the transplanted cells attacking the host, or even the formation of a tumor).

stem cell treatments or the use of SCNT to clone patients to create embryonic twins from which ESCs can be harvested.[228]

Presently, many individuals cringe at the thought of scientific treatment involving cloning and do not imagine that ESC research will lead to such an abominable act.[229] However, if the public's and patients' hopes are raised by ESC research only to be let down by the realization of the histocompatibility problem, would therapeutic cloning still be viewed in the same negative context as it is today?[230]

Private sector researchers working with cloned embryos have become somewhat immune to the shock the general public experiences when cloning is discussed.[231] Will not the same desensitization occur once ESC research has been the common practice for three, five, or ten years?[232] All it would require to amend the Specter Bill to allow therapeutic cloning is the same groundswell of popular support that originally brought ESC research to the forefront of the social, political, and ethical debate.[233] Regardless of what may happen in the future, the Specter Bill

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228. *July 2001 Hearings*, *supra* note 5 (testimony of Michael D. West, Ph.D., President and CEO of ACT, Inc.) (explaining that because ESCs come from another individual they are subject to histocompatibility problems, but further explaining that the most promising solution is therapeutic cloning because it results in an exact genetic match).

229. *See* Allen, *supra* note 18 (reporting that the cloning of the sheep, Dolly, in 1997 felt instinctively wrong and referring to the uncomfortable "gut reaction," "yuck factor," or "wisdom of repugnance" it created); *see also July 2001 Hearings*, *supra* note 5 (testimony of Richard M. Doerflinger, Associate Director for Policy Development at the Secretariat for Pro-Life Activities) (claiming that although therapeutic cloning was supported by the NIH in the past, it was widely condemned nationwide, even by abortion supporters); Rick Weiss, *Scientists Declare Progress on Human Cloning*, WASH. POST, Aug. 8, 2001, at A2 (reporting that when three "maverick" scientists, who are attempting to clone a human being, testified in front of an independent panel of scientists on their progress, they were ridiculed by their colleagues); *May 2001 Cloning Hearings*, *supra* note 194 (testimony of Richard M. Doerflinger, Associate Director for Policy Development at the Secretariat for Pro-Life Activities) (stating that due to the lack of success in cloning procedures, therapeutic cloning has fallen out of favor with scientists, and emphasizing the moral and ethical complications of cloning).

230. *See July 2001 Hearings*, *supra* note 5 (testimony of Richard M. Doerflinger, Associate Director for Policy Development at the Secretariat for Pro-Life Activities) ("Once our consciences are numbed to the moral wrong of using so-called 'spare' human embryos for research, our society will move on to even more egregious abuses.").

231. *Id.* (testifying that groups like the American Society for Reproductive Medicine, which have conducted research on embryos, have been deadened to the sensitive ethical topic of using embryos in research and actually justify their research as morally superior).

232. *Id.* (proposing that "[i]f the federal government funds even a limited amount of research that relies on destroying human embryos, this deadening of consciences will occur on a wider scale and with government approval").

233. Daniel Perry, *Patients' Voices: The Powerful Sound in the Stem Cell Debate*, WASH. POST, Mar. 1, 2000, at A16 (opining that in the political dispute over the new

still offends the very sanctity of life in which Catholics believe, and if enacted, the bill would further serve as an affront to those beliefs.[234]

D. Middle Ground, Unstable Ground

President Bush's proposal for the federal funding of ESC research is somewhat narrower than that of the Specter Bill because it allows for research only on those cell lines already derived from embryos.[235] President Bush wanted to use only those ESC lines "where the life or death decision ha[d] already been made."[236] Technically, no taxpayer dollars are used to destroy embryos, but the proposal still exploits human life at its most vulnerable stage by using taxpayer money to acquire and conduct research upon ESC lines derived from the destruction of embryos.[237]

Even though the life and death decision has already been made, using those cell lines implies that the destruction of embryos is acceptable, even though it is not.[238] Although it was not necessarily President Bush's intention, the proposal also sets the stage for the continued destruction of embryos for research purposes.[239] Almost immediately after the President's announcement, proponents of broad federal funding for ESC research attacked the availability, quantity, and quality of the stem cell lines.[240] These researchers argued that – at best – the Bush proposal

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research, patients have played a critical role in courting public approval by placing a face on the promise of biomedical research).

234. *Donum Vitae*, *supra* note 30, at pt. I, ¶ 1 ("Life once conceived, must be protected with the utmost care.").

235. *Compare* Bush Proposal, *supra* note 5 (restricting research to currently existing cell lines), *with* Stem Cell Research Act of 2001, S. 723, 107th Cong. § 2 (2001) (limiting ESC research to those embryos donated in excess of IVF need).

236. Bush Proposal, *supra* note 5.

237. *See* United States Conference of Catholic Bishops, *President Bush's Stem Cell Decision*, *available at* http://www.nccbuscc.org/prolife/issues/bioethic/fact801.htm (last visited Sept. 26, 2001) [hereinafter *Bush's Stem Cell Decision*] (explaining that the pre-existence of the cell lines does not exempt their use from moral critique).

238. *See Donum Vitae*, *supra* note 30, at Pt. I, ¶ 5 (claiming that "it is immoral to produce human embryos destined to be exploited as disposable 'biological material'" and condemning the acquisition of embryos for the sole purpose of research as a usurpation of God's position as judge of life and death).

239. *Compare* Bush Proposal, *supra* note 5 (explaining the President's desire to limit ESC research to a specific number of cell lines), *with Bush's Stem Cell Decision*, *supra* note 237 (suggesting that researchers created additional stem cell lines in anticipation of President Bush's proposal and that "[s]cientists will undoubtedly continue to kill additional embryos with private funds, and if the first set of 60 proves inadequate they will recommend these new cell lines for use in federally funded research").

240. *See* Harold Varmus & Douglas Melton, *The Stem-Cell Compromise . . .*, WALL ST. J., Aug. 14, 2001, at A14 (questioning whether the sixty cell lines even exist, then

would allow for some of the necessary preliminary research but would need to be amended to treat the population adequately.[241] Conversely, if all did not go well, the President's moral and political balance would be thrown off by patients and scientists who would vigorously challenge the President's proposal.[242] Such a strong lobby would only serve to push the administration closer to allowing embryos for federally funded research and eventually to the possibility of therapeutic cloning.[243]

In the long run, the Bush proposal would only delay the movement toward the use of embryos in research, not halt it.[244] Not only will Bush's limited research continue to face objections from the world of science,[245] but it allows the problem of histocompatibility to remain.[246] As much as President Bush may be trying to protect human life, his proposal fails to exemplify the respect for life to which Pope John Paul II calls all people of good will.[247]

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questioning whether sixty cell lines will be enough, and finally questioning whether the sixty cell lines are of research quality); *see also* 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 (reporting that at least one-third of the stem cell lines allowed by the Bush proposal for research are young and fragile and possibly unable to be used in ESC research); Antonio Relegado et al., *What Access Will Researchers Have to the 60 Cell Lines? And Do They Even Exist?*, WALL ST. J., Aug 13, 2001, at B1 (quoting Doug Melton, who doubts that companies are going to simply hand over their stem cell lines to researchers).

241. Varmus & Melton, *supra* note 240 (positing that the sixty cell lines will be adequate to conduct the experimental work only if certain criteria are met and questioning whether the approved lines will be enough).

242. *Id.*

243. *See* Gibbs & Duffy, *supra* note 165, at 16 (noting that Bush opened the door to research on ESCs derived from embryos and predicting that pressure to expand the research will be intense, making it "harder to draw a bright line against cells harvested in the future").

244. *Id.* (describing the strong objections from scientists who will no doubt continue to lobby for the broadest possible research).

245. *See* Varmus & Melton, *supra* note 240 (voicing the objections of scientists and pointing out that the political balance Bush tried to find will "certainly be vigorously challenged by the legitimate demands of patient advocacy groups, federally funded scientists, and many others who want a better shot at success").

246. For a discussion of the histocompatibility problem, see Part IV.B. *See also July 2001 Hearings*, *supra* note 5 (testimony of Michael D. West, Ph.D., President and CEO of ACT, Inc.) (testifying that as promising as ESCs may be, they do not solve the remaining problem of histocompatibility).

247. *See Evangelium Vitae*, *supra* note 17, ¶ 29.3. *See generally* United States Conference of Catholic Bishops, *Living the Gospel of Life: A Challenge to American Catholics*, *at* www.nccbuscc.org/prolife/gospel.htm (last visited Sept. 2, 2001) [hereinafter *Living the Gospel of Life*] (calling Catholics to fulfill their duties as teachers and pastors in proclaiming the Gospel of Life).

E. Being Responsible About Stem Cell Research

Unlike the proposals of Senator Specter and President Bush, the Responsible Stem Cell Research Act of 2001 allows for research only on specific types of stem cells that have proven effective in treating disease, such as adult, umbilical cord, placenta, and spontaneous abortion stem cells.[248] These forms of stem cells have not only demonstrated successful laboratory usage, but in some cases, they have been used on human subjects with promising results.[249] Additionally, stem cells derived from a patient's own body completely avoid the histocompatibility problem.[250] These stem cells are morally acceptable because they do not require the destruction of any form of human life.[251]

The use of adult stem cells, derived from one's own tissue, has been attacked by proponents of ESC research as not having the ability to differentiate as successfully as ESCs and therefore unable to treat as

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248. *See* Responsible Stem Cell Research Act of 2001, S. 1349, 107th Cong. § 3(b) (2001); *see also July 2001 Hearings*, *supra* note 5 (testimony of Richard M. Doerflinger, Associate Director for Policy Development at the Secretariat for Pro-Life Activities) (positing that in the two years since his testimony before the same subcommittee, there were "startling advances" in research with adult and other non-embryonic stem cells that not only offer a viable alternative to ESC research, but an alternative that is clinically proven to be effective).

249. *See Sept. 2000 Hearings*, *supra* note 104 (testimony of Dr. David A. Prentice, Ph.D., Professor of Life Sciences, Indiana State University; Adjunct Professor of Medical and Molecular Genetics, Indiana University School of Medicine; Founding Member, Do No Harm: The Coalition of Americans for Research Ethics) (listing the clinical treatments for which adult stem cells have been used, including some cancer treatments, multiple sclerosis, systemic lupus, juvenile rheumatoid arthritis, and bone and cartilage deformities); *Reality Check #1*, *supra* note 101 (describing the effectiveness of adult stem cells in treating juvenile diabetes, spinal cord injuries, immune deficiency, and corneal repair).

250. *See July 2001 Criminal Justice Hearings*, *supra* note 9 (testimony of Dr. David A. Prentice, Ph.D., Professor of Life Sciences, Indiana State University; Adjunct Professor of Medical and Molecular Genetics, Indiana University School of Medicine; Founding Member, Do No Harm: The Coalition of Americans for Research Ethics) (testifying about the substantial risk of immune rejection that accompanies the use of ESC). For an in-depth discussion of adult stem cells and the histocompatibility problem, see Part IV.B.

251. *July 2001 Criminal Justice Hearings*, *supra* note 9 (testimony of Dr. David A. Prentice, Ph.D., Professor of Life Sciences, Indiana State University; Adjunct Professor of Medical and Molecular Genetics, Indiana University School of Medicine; Founding Member, Do No Harm: The Coalition of Americans for Research Ethics) (describing adult stem cell research as a "less morally problematic alternative" to ESC research); *July 2001 Hearings*, *supra* note 5 (testimony of Richard M. Doerflinger, Associate Director for Policy Development at the Secretariat for Pro-Life Activities) (calling the use of taxpayers' money for the deliberate destruction of embryos immoral, but offering adult stem cell research as a significantly better alternative).

many diseases.[252] Although this assertion is grounded in what many scientists thought was fact, researchers have recently found that adult stem cells from one part of the body, like bone marrow, can develop into cells of another kind of tissue, like nerve cells, with few complications.[253] Researchers also discovered stem cells for certain types of tissue they previously thought did not have stem cells.[254] The significance of such findings is that if adult stem cells exist for all types of tissue, or if certain adult stem cells can morph into other tissue, then the argument that ESCs can develop into all types of the body's cells is moot.[255] Moreover, adult stem cells' success rate in treating humans is significantly higher.[256] Within the past two years, adult stem cells have successfully treated individuals suffering from Type I juvenile diabetes, spinal cord injuries, children born without immune systems, and legally blind individuals.[257]

The Ensign Bill stimulates this type of research by increasing the budget for adult, umbilical cord, and placental stem cell research to $275 million.[258] It does more than allocate funds because it also establishes a donor bank for qualifying human stem cells, which can be used for research and therapeutic purposes.[259] Ideally, the nationwide donor bank

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252. *See NIH Fact Sheet on Human Pluripotent Stem Cell Research Guidelines*, *available at* http://www.nih.gov/news/stemcell/stemfactsheet.htm (last visited Sept. 2, 2001) (admitting that although adult stem cells have proven to be more "plastic" than once thought, in comparison to ESCs, they have limited potential); *see also* NBAC REPORT AND RECOMMENDATIONS, *supra* note 12, at 7 (highlighting the fact that adult stem cells are more differentiated than ESCs and cannot develop into any cell type like the ESCs); *July 2001 Hearings*, *supra* note 5 (statement of Senator Tom Harkin (D-IA)) (disagreeing with the proposition that using adult stem cells for research is all that is necessary). *But see* Johannes, *supra* note 195 (asserting that "stem cells found in adults have an incredible ability to morph into many types of tissues").

253. *See* Weiss, *supra* note 103 (reporting the successful transformation of bone marrow stem cells into neural tissue cells).

254. *Id.* (reporting on recent advances in science that suggest many parts of the body contain stem cells).

255. *See id.* (stating that resorting to the use of embryonic stem cells may not be necessary if replacement tissues can be grown with adult stem cells); *July 2001 Criminal Justice Hearings*, *supra* note 9 (testimony of Dr. David A. Prentice, Ph.D., Professor of Life Sciences, Indiana State University; Adjunct Professor of Medical and Molecular Genetics, Indiana University School of Medicine; Founding Member, Do No Harm: The Coalition of Americans for Research Ethics) (testifying that "human embryonic stem cell research is illegal, unethical, and unnecessary").

256. *See Reality Check #1*, *supra* note 101.

257. *Id.*

258. *See* Responsible Stem Cell Research Act of 2001, S. 1349, 107th Cong. § 4(b) (2001).

259. *Id.* § 3(a). A stem cell donor bank would allow individuals to donate ethically acceptable stem cells to a nationwide registry so that a diverse base of stem cells would be

would allow individuals to donate adult stem cells, umbilical cord blood, and placental stem cells to a public reserve like that of the national bone marrow registry.[260] With proper implementation of the patient registry,[261] the donor bank would be able to locate qualifying stem cells that are a substantial genetic match so that any patient could be treated quickly and effectively.[262]

For those who promote the Gospel of Life, the most important aspect of the Ensign Bill is its recognition of the sanctity of human life at its weakest stages because it funds stem cell research that does not involve the destruction of embryos.[263] It also advocates the proven and necessary research that shows promise in treating disease.[264] Instead of having to endure a path fraught with the possibility of political debate over the creation of embryos for research, using stem cells other than ESCs is a method of treatment that is ethically acceptable and highly successful.[265]

V. CONCLUSION

For the most part, people make decisions based upon their best intentions and what they deem best for themselves, their family, others, or society in general. Therefore, many political arguments are couched in the language of doing what is best for one's constituency or the nation as a whole.[266] Unfortunately, this can make it difficult to determine what is at the root of an issue. Drawing on Catholic doctrine and Apostolic

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available to treat numerous patients. See Brown, *supra* note 155, for an example of such a donor bank, albeit privately run, with respect to umbilical cord blood.

260. *See Finding the Perfect Donor*, *supra* note 182 (describing how to find a bone marrow donor using the registry).

261. *See* Responsible Stem Cell Research Act of 2001, S. 1349, 107th Cong. § 3(d)-(e) (2001).

262. *See* Brown, *supra* note 155; *see also Finding the Perfect Donor*, *supra* note 182.

263. *See* Responsible Stem Cell Research Act of 2001, S. 1349, 107th Cong. § 3(b) (2001); *see Living the Gospel of Life*, *supra* note 247, ¶ 28-29 (challenging all Christians involved in public life, including politicians, to promote virtues like the Gospel of Life and to "explain, persuade, correct and admonish those in leadership positions who contradict the Gospel of [L]ife through their actions and policies").

264. Responsible Stem Cell Research Act of 2001, S. 1349, 107th Cong. § 2(9) (2001).

265. *See* United States Conference of Catholic Bishops, *Scientific Experts Agree: Embryonic Stem Cells Are Unnecessary for Medical Progress*, *available at* http://nccbuscc.org/prolife/issues/bioethic/fact401.htm (last visited Sept. 2, 2001) (quoting numerous scientists involved in the field of stem cell research who believe adult stem cells – not ESCs – to be the proper means of treating the diseases).

266. For an interesting comment on political leaders making political decisions based upon their personal interests, see Sarah Lueck, *Feeling the Pain: When Lawmakers Have a Personal Stake in a Health Issue, Partisanship Can Fade Quickly*, WALL. ST. J., Feb. 21, 2001, at R6.

Tradition, Pope John Paul II's *Evangelium Vitae* reiterates the inviolability of human life at all stages from conception until natural death.[267] Applying this tenet to the proposed forms of stem cell research facing Congress, there is only one bill that is clearly in accord with the Gospel of Life: the Responsible Stem Cell Research Act of 2001.

For Catholics, the focus of the stem cell research debate is not biological utilitarianism, but the protection of life at its weakest stages. Catholics begin with an understanding of life that is unshakeable and must be upheld, for if it is not, arbitrary and utilitarian means of defining when life begins will dominate. The ultimate slippery slope argument is that the use of human embryos for ESC derivation may become the first step toward the therapeutic cloning of individuals and the creation of human embryos to harvest spare body parts. Therefore, Catholics and individuals who believe in the sanctity of human life from its conception must throw their support, votes, and prayers behind those who promote similar political and social values. It is not an option, but rather a fundamental tenet of the Catholic faith: the sanctity of human life.

267. *See Evangelium Vitae*, *supra* note 17, ¶ 2.2.