

2001

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Recommended Citation

Susan E. Wills, *Federal Funding of Human Embryonic Stem Cell Research - Illegal, Unethical and Unnecessary*, 18 J. Contemp. Health L. & Pol'y 95 (2002).

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FEDERAL FUNDING OF HUMAN EMBRYONIC STEM CELL RESEARCH - ILLEGAL, UNETHICAL AND UNNECESSARY

*“[B]ut man, proud man,
Drest in a little brief authority,
Most ignorant of what he’s most assur’d,
His glassy essence, like an angry ape,
Plays such fantastic tricks before high heaven
As make the angels weep. . . .”¹*

*Susan E. Wills**

INTRODUCTION

Supporters of research involving the destruction of human embryos sometimes characterize the debate as one pitting science against religion.²

* LL.M. International and Comparative Law 1983, Georgetown University Law Center; J.D. 1978, University of Miami School of Law; B.A. 1972, University of Miami.

1. WILLIAM SHAKESPEARE, *MEASURE FOR MEASURE*, act 2, sc. 2.

2. Brent Bozell describes media coverage of the Bush decision thus:

It wasn’t shocking that the dominant media culture packed their stem-cell coverage with the usual wallop of arrogance. Not only was “taking a deal” the obvious smart move to the “middle,” but one side represented only “science,” while the other was trapped by its primitive (read: useless) religious beliefs. For two weeks in a row, CBS’ Bob Schieffer compared his side to Galileo, the bold astronomer, oppressed by ignorant churchmen.

L. B. Bozell III, *Taking Out the Lab Garbage*, WASH. TIMES, Aug. 16, 2001, available at

<http://www.townhall.com/columnists/brentbozell/printbb20010816.shtml>.

Charles Krauthammer observed:

As the Bush administration approaches a decision on stem cell research,

For some, science embodies reality and truth. Science is thought always to be directed toward the advancement of human health, prosperity, and freedom. Religion represents the reactionary forces of ignorance and superstition that constrain man from achieving his fullest potential.³ Even

the caricatures have already been drawn. On one side are the human benefactors who wish only a chance to use the remarkable potential of stem cells. . . . On the other side stand the Catholic Church and the usual anti-abortion zealots who, because of squeamishness about the fate of a few clumps of cells, will prevent this great boon to humanity.

Charles Krauthammer, *On Stem Cell Research*, TOWNHALL.COM, (July 3, 2001), at <http://www.townhall.com/columnists/charleskrauthammer/ck20010703.shtm>.

3. Zoe Lofgren (D-CA) delivered this warning in House debate:

If your religious beliefs will not allow you to accept a cure for your child's cancer, so be it. But do not expect the rest of America to let their loved ones suffer without cure.

Our job in Congress is not to pick the most restrictive religious view of science and then impose that view upon Federal law. We live in a Democracy, not a Theocracy.

141 CONG. REC. H4919 (daily ed. July 31, 2001) (statement of Rep. Lofgren).
Jim McDermott (D-WA) said:

We are like the 16th century Spanish king who went to the Pope and asked him if it was all right for human beings to drink coffee. The coffee bean had been brought from the New World. It had a drug in it that made people get kind of excited and it was a great political controversy about whether or not it was all right to drink coffee. And so the Spanish king went to the Pope and said, Pope, is it all right. Well, we had that just the other day, and the Pope said, this is not right.

The Pope also told Galileo to quit making those marks in his notebook. The Earth is the center of the universe, he said. We all know that. The Bible says it. What is it this stuff where you say the sun is the center of our universe? That's wrong.

Now, here we are making a decision like we were the house of cardinals on a religious issue when, in fact, scientists are struggling to find out how human beings actually work.

147 CONG. REC. H4922 (daily ed. July 31, 2001) (statement of Rep. McDermott).
Jim Greenwood (R-PA):

Now, why would we kill this research? Why would we condemn for the world and for future generations not to have the benefit of this miracle? We would do it because some will say, but wait a minute, once we put the cheek cell of the gentleman from Pennsylvania (Mr. Greenwood) into this empty cell and it divides, we have a soul. That is the metaphysical question here, do we have a soul there?

among people who are tolerant of religious beliefs, many mistakenly assume that moral views rooted in religious beliefs are irrelevant to the formulation of public policy in a pluralistic society.

From this perspective, the debate over destructive embryo research has been seen as one weighing the anticipated cure of virtually every intractable disease afflicting mankind⁴ against a microscopic “clump of cells”⁵ no bigger than the period at the end of this sentence.⁶ As we are constantly reminded, an embryo is an organism that “doesn’t look like a human being,”⁷ whose continued existence is entirely dependent on the

Mr. Speaker, I would be mightily surprised if we took my cheek cell and put it in a petri dish and it divided, that God would choose that moment to put a soul on it, and say, Mr. Greenwood’s cheek cell is dividing; quick, give it a soul. Then we can hold hands and circle it and say, it must now become a human being. Mr. Greenwood’s cheek cell is dividing. It has a soul. It has to live.

That is ridiculous. It is ridiculous.

147 CONG. RECORD H4910 (daily ed. July 31, 2001) (statement of Rep. Greenwood).

4. Jerrold Nadler (D-NY) said: “We know that stem cells have the potential to cure many diseases, to save millions of lives, to enable the paralyzed to walk and feel again, potentially even to enable the maimed to grow new arms and legs [sic]” 147 CONG. REC. H4920 (daily ed. July 31, 2001) (statement of Rep. Nadler); *see World News Tonight with Peter Jennings: Enormous Scientific Breakthrough* (ABC television broadcast, Nov. 5, 1998) (transcript # 98110504-jo4); *NBC Nightly News: Scientists Find Way to Reproduce Embryonic Stem Cells Which Could Eventually Help Cure All Diseases* (NBC television broadcast, Nov. 5, 1998) (transcript on file with author).

5. Congressman Jerrold Nadler (D-NY), framed this issue thus: Why should we prohibit the research to lead to these kinds of cures? Only because of the belief that a blastocyst, a clump of cells not yet even an embryo [sic], with no nerves, no feelings, no brain, no heart, is entitled to the same rights and protections as a human being; that a blastocyst is a human being and cannot be destroyed, even if doing so would save the life of a 40-year-old woman with Alzheimer’s disease.

147 CONG. REC. H4920 (daily ed. July 31, 2001) (statement of Rep. Nadler).

6. Sen. Tom Harkin (D-IA) has made this observation. *See* Karen Ballard, *Actors Tout Stem-Cell Research*, WASH. TIMES, Sept. 15, 2000, at A3.

7. *See* John J. Miller & Ramesh Ponnuru, *Cell Games*, NAT’L REV. ONLINE (July 3, 2001), at <http://www.nationalreview.com/daily/nrprint070301.html>; *see also* Mona Charen, *Stem Cell Simplificities*, TOWNHALL.COM (July 7, 2001), at <http://www.townhall.com/columnists/monacharen/mc20010707.shtml>; *cf.* Sharon Begley et al., *Cellular Divide*, NEWSWEEK, July 9, 2001, at 22.

kindness of strangers. Furthermore, religious people subscribe to the quaint notion that the “life” (if, indeed, one can call it that) of this virtual nonentity is “sacred”⁸ and “inviolable.”⁹

Describing the issue of destructive human embryo research in terms of science versus religion is a disservice to open and informed debate. The point of classifying an opponent’s position as “religious” is, of course, to silence him in the public square. “We ‘respect’ your religious viewpoint, but we cannot allow the dogmas of your faith tradition to be imposed by law on Americans who subscribe to other faiths or none.”¹⁰ By dismissing those whose moral outlook may be informed by faith, they leave the formulation of public policy solely to those who would place neither obstacles nor guardrails along the path of science (other than, perhaps, mostly cosmetic “appropriate safeguards” to show how seriously regulators have treated moral concerns).

The science versus religion characterization also distorts what is at stake in deciding whether destructive human embryo research should be (1) banned, (2) tolerated in the private sector or (3) encouraged with tax dollars. Nigel Cameron, a bioethicist and founder of the journal *Ethics and Medicine*, frames the fundamental issue this helpful way:

[W]hether we should use members of our own kind, *Homo sapiens*, in whatever stage of biological existence, for a purpose that is other than the good of the individual concerned; whether we should sanction the use of ourselves, in however early a

8. See POPE JOHN PAUL II, *EVANGELIUM VITAE* (THE GOSPEL OF LIFE) ¶ 2 *passim* (1995), available at <http://www.usccb.org/prolife/tdocs/evangel/evangeli.htm>.

9. *Id.* ¶¶ 3, 5 *passim*.

10. See, e.g., Lofgren *supra* note 3, at H4919; Anton-Lewis Usala, M.D., a pediatric endocrinologist and research scientist in the field of juvenile diabetes, recounted his experience:

As I testified to a Senate subcommittee on this issue last September, it became very evident that while religious arguments would be politely listened to, they served as a convenient opportunity to dismiss contrary views. Many legislators take a literalist view of “separation of Church and State,” hence they dismiss religious arguments as perhaps a valid personal view, but not worthy of a substantive response in a secular arena.

Anton-Lewis Usala, U.S. Conference of Catholic Bishops, Respect Life Program, The Case Against Funding Human Embryonic Stem Cell Research, 2001, available at <http://www.usccb.org/prolife/programs/rlp/01usal.htm>.

form, as experimental subjects whose final end is destruction.¹¹

He—along with many researchers, health care professionals, bioethicists and legal professionals—have answered that question in the negative. Their reasons for opposing destructive human embryo research can be summarized as follows: such research is illegal, unethical and unnecessary. First, it is *illegal* because the proposed National Institutes of Health (NIH) guidelines¹² contradict both federal law and the specific statutes of nine states, as well as longstanding policies in American law that acknowledge and protect the dignity of even unborn human lives outside the context of abortion.

Second, it is *unethical* because it contravenes a 2,400-year-old tradition in medical ethics established by Hippocrates and enshrined in various twentieth century documents such as the Nuremberg Code,¹³ Helsinki Declaration,¹⁴ and other human rights accords. These affirm the principles that the physician must “follow . . . [what is] for the benefit of [his] patients, and abstain from whatever is deleterious,”¹⁵ that “[i]t is the duty of the physician in medical research to protect the life . . . of the human subject,”¹⁶ and that “the well-being of the human subject should take precedence over the interests of science and society.”¹⁷

While some may entertain the idea that human embryos whose stem cells are so highly prized for research are not “human subjects,” there is little doubt that the *human* embryo is a human *being*, a living member of *homo sapiens*. Modern science provides a definitive answer: “At the

11. Hearing on Embryonic Stem Cell Research Before the Senate Subcommittee on Labor, Health and Human Services, Education and Related Agencies, 107th Cong. (Aug. 1, 2001) (statement of Nigel Cameron, Ph.D.), available at <http://www.stemcellresearch.org/testimonies/cameron2.htm>.

12. NAT'L INSTITUTES OF HEALTH, GUIDELINES FOR RESEARCH USING HUMAN PLURIPOTENT STEM CELLS, 65 Fed. Reg. 51,976-82 (Aug. 25, 2000).

13. THE NUREMBERG CODE, in 2 TRIALS OF WAR CRIMINALS BEFORE THE NUREMBERG MILITARY TRIBUNALS UNDER CONTROL COUNCIL LAW No. 10 181-82 (1949), available at <http://www.ohrp.osophs.gov/references/nurcode.htm>.

14. WORLD MEDICAL ASS'N DECLARATION OF HELSINKI, ETHICAL PRINCIPLES FOR MEDICAL RESEARCH INVOLVING HUMAN SUBJECTS (current version adopted Oct. 2000) [*hereinafter* WORLD MED. ASS'N.], available at <http://www.wits.ac.za/bioethics/helsinki.htm>.

15. HIPPOCRATIC OATH (Francis Adams trans.), available at <http://classics.mit.edu/Hippocrates/hippooath.html> (last visited Dec. 18, 2001).

16. WORLD MED. ASS'N., *supra* note 14, § 10.

17. *Id.* § 5.

moment the sperm cell of the human male meets the ovum of the female and the union results in a fertilized ovum (zygote), a new life has begun.”¹⁸ The NIH Human Embryo Research Panel, the National Bioethics Advisory Commission, and federal regulations issued since 1975 have recognized the embryo or fetus in the womb as a “human subject” to be protected from research risks.¹⁹

If we believe in the principle of equal rights,

([that] no one has greater or less worth and dignity by virtue of differences in intelligence, strength, health, etc.) [i]t follows that human beings have worth, dignity, and basic rights from the point at which they come to be. People do not acquire worth, dignity, and basic rights only after coming to be; All living human beings, irrespective of age, size, physical or mental ability, condition of dependency, or stage of development are owed respect; none may legitimately be enslaved or in any other way relegated to the status of a mere means to others’ ends.²⁰

Third, destructive human embryo research is *unnecessary* because scientists using stem cells from non-embryonic sources in clinical trials in both animals and humans continue to demonstrate that the vaunted (but conjectural) benefits of embryonic stem cells can be achieved by other means. Stem cells from adult organs and tissues, from umbilical cord blood, placentas and cadavers are already proving to be astonishingly successful in improving patients’ conditions and *curing* a wide variety of diseases. Embryonic stem cell research, in contrast, has not advanced beyond the stage of basic science, has produced few medical gains even in animal trials and has never helped a human patient.²¹ Further, substantial

18. VAN NOSTRAND’S SCIENTIFIC ENCYCLOPEDIA 943 (Douglas Considine ed. 5th ed. 1976). See also KEITH L. MOORE, *ESSENTIALS OF HUMAN EMBRYOLOGY* 2 (1988); Ida G. Dox et al., *THE HARPER COLLINS ILLUSTRATED MEDICAL DICTIONARY* 146 (1993); T.W. SADLER, *LANGMAN’S MEDICAL EMBRYOLOGY* 3 (7th ed. 1995); BRUCE M. CARLSON, *BRUCE M. PATTEN’S FOUNDATIONS OF EMBRYOLOGY* 3 (6th ed. 1996).

19. See Richard Doerflinger, *The Policy and Politics of Embryonic Stem Cell Research*, 1 NAT’L CATH. BIOETHICS Q. 135, 141 (2001).

20. Partick Lee & Robert P. George, *Embryology, Philosophy, & Human Dignity*, NAT’L REV. ONLINE (Aug. 9, 2001), at <http://www.nationalreview.com/comment/comment-leeprint080901.html>.

21. See U.S. Conference of Catholic Bishops, Secretariat for Pro-Life Activities, *Stem Cell Reality Check #1* (Oct. 3, 2001) at <http://www.usccb.org/prolife/issues/bioethic/stemfax1.htm>.

hurdles stand in the way of any effort to make embryonic stem cells suitable for therapeutic use, as is recognized even by the staunchest practitioners and proponents of such research.²²

The discussion that follows will address these three propositions—that such research is illegal, unethical and unnecessary—in turn, before exploring two final points: the teaching of the Catholic Church concerning destructive human embryo research, and the decision of President George W. Bush to fund research using cell lines derived by destroying human embryos prior to 9 p.m. EDT, August 9, 2001.

I. DESTRUCTIVE HUMAN EMBRYO RESEARCH IS ILLEGAL

The equal dignity and unalienable rights of each human being to “Life, Liberty and the pursuit of Happiness”²³ are the bedrock on which stand the founding documents and institutions of our nation. These principles are reflected in the Bill of Rights, later Constitutional amendments, and in a half-century of international efforts to foster the recognition and defense of human rights in the laws of every nation. While it is true that, in some ways, our nation has fallen far short of these ideals, it still can be said that

the nobility of the American experience flows from its founding principles ‘At the center of the moral vision of [the American] founding documents is the recognition of the rights of the human person The greatness of the United States lies ‘especially [in its] respect for the dignity and sanctity of human life in all conditions and at all stages of development.’²⁴

Homicide laws in every state show concern for the protection of innocent human life, and in at least twenty-five states, homicide laws “protect prenatal human beings throughout or during some part of their gestational development”²⁵ Moreover, the laws of twenty-nine states

22. The difficulty researchers have in controlling differentiation even *in vitro*, instability of gene expression, tendency to form tumors and tissue rejection obstacles, *inter alia*, are discussed below in Section III.

23. THE DECLARATION OF INDEPENDENCE para. 2 (U.S. 1776).

24. U.S. CONFERENCE OF CATHOLIC BISHOPS, LIVING THE GOSPEL OF LIFE § 1 (1998) (quoting Pope John Paul II, Departure from Baltimore-Washington International Airport, Departure Remarks, Oct. 8, 1998), available at <http://www.usccb.org/prolife/gospel.htm>.

25. Daniel Avila, *The Present Standing of the Human Embryo in U.S. Law*, 1 NAT'L CATH. BIOETHICS Q. 203, 215 (2001).

expressly—by statute, resolution or appellate court decisions—affirm that the life of a human being begins at “conception” or “fertilization.”²⁶ Additionally, state judicial decisions “continue to expand the reach of personal injury laws to include compensation for torts against human beings at the embryonic and fetal stages.”²⁷ The prevalence of laws protecting prenatal life may come as a surprise to those who assume that the landmark 1973 abortion case, *Roe v. Wade*,²⁸ disqualifies all humans who are not fully born from federal and state protection in all circumstances. They reason that *Roe* applies directly, or by logical consistency, to destructive embryo research. *Webster v. Reproductive Health Services*²⁹ proves otherwise. In *Webster*, the Supreme Court

recognized the right of Congress and the States to protect neonates against nonabortion related destruction, and to extend to them other benefits and rights under federal and state policy. . . . [T]he Court upheld a Missouri statute declaring that ‘[t]he life of each human being begins at conception,’ and that ‘[u]nborn children have protectable interests in life, health, and well-being,’ and that other Missouri laws be interpreted to provide unborn children with ‘all the rights, privileges, and immunities available to other persons, citizens, and residents of this state,’ subject to the United States Constitution and Supreme Court precedents.³⁰

Since 1975, in fact, federal policy has attempted to protect unborn children from harmful research by prohibiting federal funding of such research in much the same way that it bans funding of harmful research on born children.

A. Protection of Unborn Human Subjects

Over the past quarter century, federal regulations on the protection of human subjects have generally banned federal funding for fetal research, except research of direct benefit to the unborn child or his or her mother.³¹ Starting in 1975, federally funded research could be conducted

26. *Id.* at 213.

27. *Id.* at 215.

28. *Roe v. Wade*, 410 U.S. 113 (1973).

29. *Webster v. Reproductive Health Services*, 492 U.S. 490 (1989).

30. Avila, *supra* note 25, at 207 (quoting *Webster*, 492 U.S. at 504-05).

31. 45 C.F.R. § 46.207 (a)(2) (2001).

only if it presented no more than a “minimal risk” to the human subject.³² A “waiver” clause, however, nullified the protections if an Ethical Advisory Board found that the risks to the unborn child were outweighed by the importance of the research for science.³³

After Congress learned that the waiver clause was being invoked to “authorize unethical experiments on children intended for abortion”³⁴ (using the rationale that any harm short of death was inconsequential because such children were going to die anyway), it responded in the 1985 National Institutes of Health (NIH) reauthorization act by “requir[ing] that federally funded research impose no greater risk (*i.e.*, no greater than “minimal”) on the child intended for abortion . . . than on the child intended for live birth.”³⁵ The legislation also banned any use of the ‘waiver’ clause for three years³⁶ This equal treatment standard applied to fetuses in the womb and to those just having been removed from the womb. “Fetus” was defined as “the product of conception from implantation onward,”³⁷ thus including embryos as young as six days—the same age at which privately funded researchers are currently destroying embryos to extract stem cells. And so by law, whether “wanted” or not, whether “to be discarded” or not, embryos as young as six days could be exposed to no greater than minimal risk in research that received federal funds.³⁸ The “minimal risk” standard is a very protective standard, essentially allowing only the degree of risk one would face in a routine physical examination or doing the activities of everyday life.³⁹

1. *Fetal tissue transplantation*

In 1988, the federal government placed a moratorium on funding research that involved the transplantation of tissue from aborted fetuses into patients, prompted by concerns about collaboration between the

32. 45 C.F.R. § 46.102(i).

33. 45 C.F.R. § 46.211.

34. Doerflinger, *supra* note 19, at 136.

35. *Id.*

36. *Id.* The propriety of the “waiver” clause was supposed to be studied by a new commission. It deadlocked and no study was made. The requirement of equal treatment in research being given to children intended for abortion as those intended for live birth remains permanent law. See 42 U.S.C. § 289g (1009).

37. 45 C.F.R. § 46.203(c)(2001).

38. 42 U.S.C. § 289g(b)(1994).

39. 45 C.F.R. § 46.102(i).

abortion industry and researchers receiving government grants.⁴⁰ President Clinton lifted the moratorium in January 1993 on his first full day in office. In the NIH Reauthorization Act for the 1994 fiscal year a Democrat-controlled Congress authorized funding for the use of fetal tissue from aborted fetuses.⁴¹ Such tissue, however, could only be used for “therapeutic purposes” and only if certain restrictions were followed: Grantees were forbidden to participate in the abortion itself and also forbidden to influence the “timing, method or procedure used to terminate the pregnancy” to suit their research goals.⁴² These restrictions apply to “tissue or cells obtained from a dead human embryo or fetus after a spontaneous or induced abortion, or after a stillbirth”⁴³ and remain permanent law. While some point to this law as precedent for funding human embryonic stem cell research, the opposite is true. Embryonic stem cells are harvested from a *live* embryo, in a manner that destroys the embryo, so that there is no separation or distinction between the harvesting procedure and the “aborting” of this developing life.

2. *Protection of embryos created by in vitro fertilization*

In 1978, an NIH Ethics Advisory Board first examined ethical issues related to experimentation on human embryos created by *in vitro* fertilization. The Board concluded in 1979 that the early human embryo deserved “profound respect” as a form of developing human life, but not necessarily “the full legal and moral rights attributed to persons.”⁴⁴ The Board’s position on the ethical propriety of such research was inconclusive, and it declined to make any funding recommendation.⁴⁵ Faced with public opposition, the Carter Administration dissolved the Board and never funded such experiments.⁴⁶

40. Doerflinger, *supra* note 19, at 137.

41. *Id.* at 136.

42. 42 U.S.C. § 289g-1, 289g-2.

43. *Id.*

44. PROTECTION OF HUMAN SUBJECTS: HEW SUPPORT OF HUMAN *IN VITRO* FERTILIZATION AND EMBRYO TRANSFER, REPORT OF THE ETHICS ADVISORY BOARD, 44 Fed. Reg. 35,033, 35,056 (June 18, 1979).

45. *Id.* at 35,057.

46. Letter from Dennis N. Schnurr, General Secretary, U.S. Conference of Catholic Bishops, to NIH Office of Science Policy 4 (Jan. 31, 2000) [hereinafter Schnurr letter], available at <http://www.usccb.org/prolife/issues/bioethic/comments.htm>.

No changes occurred in this federal policy until 1993, when Congressional supporters of destructive embryo research slipped through an amendment to the NIH Reauthorization Act,⁴⁷ by deleting the requirement for Ethics Advisory Board approval prior to funding such research. Thereafter, NIH appointed an ad hoc group, the Human Embryo Research Panel (HERP) to review proposals for funding experiments using human embryos.

HERP considered a number of truly bizarre and repulsive research proposals, and concluded that a few failed what it called the “public yuck factor” test.⁴⁸ Research judged not at that time worthy of public funds included the following: implanting live human embryos in genetic males or in nonhuman mammals; creating part-human “chimeras” (creatures part human, part animal); and implanting “clones” created by twinning in the womb of surrogate mothers.⁴⁹ HERP looked favorably on funding the following research proposals: creating human embryos for experimentation by *in vitro* fertilization; creating human embryos by doubling the genes of an egg without fertilization (parthenogenesis); studying the effects of toxic chemicals on human embryos; human cloning (somatic cell nuclear transfer); preimplantation genetic diagnosis; and extracting stem cells from live human embryos (thereby killing them) for medical research.⁵⁰

47. Nat’l Institutes of Health Revitalization Act of 1993, Pub. L. No. 103-43 § 121(c), 107 stat. 122, 133 (1993).

48. NAT’L INSTITUTES OF HEALTH, HUMAN EMBRYO RESEARCH PANEL, HEARING TRANSCRIPT (1994) (transcript on file with author).

49. NAT’L INSTITUTES OF HEALTH, REPORT OF THE HUMAN EMBRYO RESEARCH PANEL, 12-13 (1994)(transcript on file with author).

50. As further proof that panelists’ ethical framework was far outside the mainstream, at their third meeting on April 11-12, 1994, panelists showed much creativity in suggesting new sources of human eggs to create the perhaps hundreds of embryos one would need for each experiment.

Women undergoing hysterectomies or other surgery involving removal of the ovaries; infertility patients donating ‘spare’ eggs for research; research volunteers of reproductive age; brain-dead adult women; and aborted female fetuses. . . .

Some panelists thought this list presents the correct order [least to most controversial; least being used first]: Women who can give informed consent and donate eggs without any additional ‘invasive’ procedures for research purposes should be used first. But Alta Charo thought the use of aborted fetuses’ ovaries should be the least worrisome, because this is

An Advisory Committee to the Director of NIH endorsed HERP's proposals despite intense public opposition.⁵¹ Final approval occurred in December 1994. President Clinton, however, immediately said his Administration would not fund those proposals in which embryos were created solely for research purposes.

B. Congressional Ban on Human Embryonic Stem Cell Research

Before NIH could begin funding human embryo research of the remaining types envisioned by HERP, Congress acted quickly to put a halt to their plans. Through an appropriations rider (the Dickey amendment) to the NIH reauthorization act, a provision approved every year since 1995, Congress has prohibited the use of federal funds for

1. the creation of a human embryo or embryos for research purposes; or
2. *research in which* a human embryo or embryos are destroyed,

one donor that cannot possibly worry about the fate of her genetic offspring.

... She also suggested harvesting eggs from 'anencephalic infants' and 'dead children,' and panelist Fernando Guerra suggested harvesting them from "micro-preemies who only live a few days after birth."

Richard Doerflinger, *The Panel That Can't Say No*, NAT'L RIGHT TO LIFE NEWS, May 9, 1994, at 10.

51. At a meeting of the Advisory Committee to the Director of NIH on Dec. 1, 2000, committee members expressed some annoyance at the strong public reaction against HERP's research proposals. They fretted over how they might overcome the public's hostility. Dr. John Trojanowski recommended "an incremental or gradual approach," such as pursuing "the development of [stem] cell lines." He also suggested that they enlist the support of patient advocacy groups—associations that seek charitable and tax dollars to support education and research in a particular disease—to tell members and the general public that embryo research holds the promise of a cure for their disease. Dr. Richard Corlin, then of the American Medical Association, elaborated on this idea:

[Let us] do our homework to determine which people in Congress—the new leadership, the majority leadership particularly, and also on the committee to whom you will have to make presentations—have family members with which particular illnesses and make individual visits to them to background them and brief them and discuss their particular family history concerns prior to the hearing.

Richard Corlin, Remarks at the NIH 69th Meeting of the Advisory Committee to the Director 139-40 (Dec. 1, 1994) (transcript on file with author).

discarded, or knowingly subjected to risk of injury or death greater than that allowed for research on fetuses in utero under 45 C.F.R. § 46.208(a)(2) and Section 498(b) of the Public Health Service Act (42 U.S.C. § 289g(b)).⁵²

The common sense reading of the Congressional language is that it encompasses all research that requires, entails and involves destroying human embryos or subjecting them to more than the “minimal” risk specified in the cited regulations. If Congress had intended to ban only the destruction of human embryos, it could have used straightforward language parallel to that of the first subsection, rather than employing the phrase “research in which.”⁵³ Continuing efforts to authorize funding of human embryonic stem cell research rely on a contrary interpretation of this provision.

In a January 1999 letter responding to a request for clarification from NIH Director Harold Varmus, Health and Human Services General Counsel Harriet Rabb asserted that subsection 2 does not ban human embryonic stem cell research, but bans only direct funding for the act of killing.⁵⁴ Her interpretation violates two principles of statutory construction: (1) that a statute be construed to avoid making any word or phrase superfluous (“research in which” becomes superfluous),⁵⁵ and (2) that “when Congress chooses different language in proximate sections of the same statute—one narrow, the other broad—the statute must be construed to give effect to those differences.”⁵⁶

Moreover, the Rabb interpretation of the ban contradicts past statements of NIH and its prior implementation of the ban. In 1997, NIH terminated a grant and fired a researcher NIH believed to have violated

52. Since 1997, the provision has been modified to make it clear that human embryos produced through cloning are included. The current version, as of this writing, is Section 510 of H.R. 5656, enacted through Section 1(a)(1) of H.R. 4577, the Fiscal Year 2001 Consolidated Appropriations Act, Pub. L. No.106-554. (emphasis added).

53. *Id.*

54. Letter from Harriet S. Rabb, General Counsel, HHS, to Harold Varmus, M.D., Director, NIH (Jan. 15, 1999) (discussing federal funding for research involving human pluripotent stem cells) (on file with author).

55. See *Walters v. Metro. Educ. Enter.*, 519 U.S. 202, 209-10 (1997); *United States v. Menasche*, 348 U.S. 528, 538-39 (1955).

56. Schnurr letter, *supra* note 46. Msgr. Schnurr’s letter cites as authority for this principle of statutory construction, *Russello v. United States*, 464 U.S. 16, 23 (1983), and cases cited therein.

the ban. The researcher used NIH funds and equipment in testing “genetic material” from human embryos that he had procured using other funds. NIH called this a clear abuse of the law four years ago.⁵⁷ Beginning in 1999, however, it presented such an abuse as a way to implement the same law.

It is noteworthy that the September 1999 report of the National Bioethics Advisory Commission (NBAC), commissioned by President William J. Clinton, criticized Ms. Rabb’s attempt to separate the prerequisite killing of embryos for their stem cells from the subsequent stem cell research.⁵⁸ NBAC concluded that for such research to proceed, Congress should craft an explicit exception to the Dickey amendment exempting such research from the funding ban.⁵⁹ The purpose of the “Stem Cell Research Act of 2000,”⁶⁰ sponsored by Senator Arlen Specter (R-PA), was to create such an exception. The bill, however, has not been brought up for vote.

Subsequently, NIH draft guidelines published in December 1999 hewed to Ms. Rabb’s interpretation.⁶¹ Final Funding Guidelines were released August 23, 2000,⁶² but decisions on funding had not been made when President Bush took office in January 2001. Developments since the decision of President Bush to permit limited funding are discussed in Section V below.

While the NIH guidelines as a whole depart radically from current law and policy, several particularly egregious aspects are worth noting. The Guidelines instruct researchers to inform parents of embryos sought for destruction that their “early human embryos . . . will not survive” the procedure to extract their stem cells, but they “will be handled

57. *Id.*; see also *Continued Management Concerns at the NIH*, Hearing Before the Subcomm. on Oversight and Investigations of the House Comm. on Commerce, 105th Cong. 26 (1997).

58. See generally NAT’L BIOETHICS ADVISORY COMM’N, 1 ETHICAL ISSUES IN HUMAN STEM CELL RESEARCH iv-v, 70-71 (1999).

59. *Id.*

60. S. 2015, 106th Cong. (2000).

61. DRAFT NIH GUIDELINES FOR RESEARCH INVOLVING HUMAN PLURIPOTENT STEM CELLS, 64 Fed. Reg. 67,576 (Dec. 2, 1999) [hereinafter DRAFT NIH GUIDELINES].

62. NAT’L INSTITUTES OF HEALTH GUIDELINES FOR RESEARCH USING HUMAN PLURIPOTENT STEM CELLS, 65 Fed. Reg. 51, 976-82 (Aug. 25, 2000), available at <http://www.nih.gov/news/stemcell/stemcellguidelines.html>.

respectfully, as is appropriate for all human tissue used in research.”⁶³ No longer do we find even a pretense of respect for a “developing form of human life.” Now living human beings are considered as mere tissue, due only the nearly meaningless “respect” accorded to such tissue.

Moreover, NIH guidelines offer as a reason to justify taking human embryos’ lives the possibility that using their stem cells in research could reduce the need to use “laboratory animals” for drug testing.⁶⁴ Instead of treating embryonic humans under principles and policies pertaining to human subjects, the human embryos destroyed for their stem cells are now treated as inferior to laboratory animals.

To review, Congress opposed and rejected HERP’s 1994 proposal to fund human embryonic stem cell research by enacting the Dickey amendment in 1995 and every subsequent year. This amendment remains law, as of this writing. In addition, six-day-old human embryos *in utero* have been protected from research risks since 1975. It makes no sense to deny equal protection to embryos of the same age, based on their location outside the womb. Furthermore, in 1985, Congress rejected the argument that children in the womb could be the subjects of harmful research if they were “unwanted” by their parents and were “going to be discarded anyway” by means of an abortion. Congress saw fit to protect these children from greater than minimal research risks to the same extent it protected children intended for live birth. Contrary to this policy, proponents of human embryonic stem cell research justify the destruction of human embryos for their stem cells because they are “unwanted” for future fertility treatment and are “going to be discarded anyway.” Policies on funding of fetal tissue research demand non-involvement of the researcher in the abortion. Congress not only prohibited federally-funded researchers from killing the human subject to obtain his or her tissue or cells, but also prohibited researchers from influencing the “timing, method or procedure” of the destruction. While human embryonic stem cell research using embryos created by *in vitro* fertilization (IVF) does not involve “abortion,” the policy underlying the 1993 law is flouted in the case of such research. The “timing, method and procedure” for killing embryos for their stem cells is dictated precisely to suit research needs.

63. DRAFT NIH GUIDELINES, *supra* note 60, at 65, 578.

64. *Id.* at 67, 576.

C. State Laws

The following nine states have enacted statutes seen as forbidding harmful or nontherapeutic research on human embryos: Louisiana,⁶⁵ Maine,⁶⁶ Massachusetts,⁶⁷ Michigan,⁶⁸ Minnesota,⁶⁹ North Dakota,⁷⁰

65. Louisiana's law recognizes a human embryo outside the womb as a "juridical person," and prohibits the destruction of a viable fertilized ovum. La. Rev. Stat. tit. 9, §§ 123, 129 (West 2000). It further states: "The use of a human ovum fertilized in vitro is solely for the support and contribution of the complete development of human in utero implantation. No in vitro fertilized human ovum will be farmed or cultured solely for research purposes or any other purposes." § 122.

U.S. CONFERENCE OF CATHOLIC BISHOPS, SECRETARIAT FOR PRO-LIFE ACTIVITIES, *The NIH Proposal for Stem Cell Research Is a Crime*, available at <http://www.usccb.org/prolife/issues/bioethic/states701.htm> (last visited Dec. 18, 2001) [hereinafter USCCB].

66. Maine's law prohibits the "use [of] . . . any live human fetus, whether intrauterine or extrauterine . . . for scientific experimentation or for any form of experimentation." Me. Rev. Stat. tit. 22 § 1593 (West 1992). A legal analysis commissioned by the National Bioethics Advisory Commission concluded that this law "ban[s] research on in vitro embryos altogether." NBAC, *Ethical Issues in Human Stem Cell Research*, vol. II, pages A-4, A-10.

USCCB, *supra* note 65.

67. Massachusetts law prohibits "use [of] any live human etus whether before or after expulsion from its mother's womb, for scientific, laboratory, research or other kind of experimentation." Mass. Gen. Laws ch. 112 § 12 J (a) I (West 1996). The section goes on to define "fetus" as including "an embryo." Ch. 112 '12 (J)(a) IV.

USCCB, *supra* note 65.

68. Michigan's law provides that "[a] person shall not use a live human embryo . . . for nontherapeutic research if . . . the research substantially jeopardizes the life or health of the embryo . . ." Mich. Comp. Laws § 333.2685 (1) (West 1992). Performing such experimentation is a felony. § 333.2691.

USCCB, *supra* note 65.

69. Minnesota's law prohibits using or permitting the use of "a living human conceptus for any type of scientific, laboratory research or other experimentation except to protect the life or health of the conceptus. . ." Min. Stat. § 145.422 (West 1998). "Human conceptus" means "any human organism, conceived either in the human body or produced in an artificial environment other than the human body, from fertilization through the first 265 days thereafter." '145.421.

Pennsylvania,⁷¹ Rhode Island,⁷² and South Dakota.⁷³

South Dakota outlaws human embryonic stem cell research, even if the researcher has obtained such cells from a cell line created by others. It bans the “use for research purposes of cells or tissues that [a] person knows were obtained” by conducting nontherapeutic research that destroys an embryo or subjects a human embryo to substantial risk of injury or death.⁷⁴ These nine state laws appear to be outright bans because

USCCB, *supra* note 65.

70. North Dakota law provides: “A person may not use any live human fetus, whether before or after expulsion from its mother’s womb, for scientific, laboratory, research, or other kind of experimentation.” N.D. Cent. Code § 14-02.2-01(1) (Michie 1997). A legal analysis commissioned by the National Bioethics Advisory Commission concluded that this law “would ban embryo stem cell research using either IVF embryos or aborted conceptuses.” NBAC, *Ethical Issues in Human Stem Cell Research*, vol. II, page A-4.

USCCB, *supra* note 65.

71. Pennsylvania’s law prohibits “knowingly perform[ing] any type of nontherapeutic experimentation or nontherapeutic medical procedure . . . upon any unborn child. . .” Pa. Cons. Stat. tit 18. § 3216 (a) (West 2000). Performing such experimentation is a felony. *Id.* “Unborn child” means “an individual organism of the species homo sapiens from fertilization until live birth.” § 3203.

USCCB, *supra* note 65.

72. Rhode Island prohibits the use of “any live human fetus, whether before or after expulsion from its mother’s womb, for scientific, laboratory research, or other kind of experimentation.” R.I. Gen. Laws § 11-54-1(a) (Michie 2000). A legal analysis commissioned by the National Bioethics Advisory Commission concluded that this law “ban[s] research on in vitro embryos altogether.” NBAC, *Ethical Issues in Human Stem Cell Research*, vol. II, pages A-4, A-10.

USCCB, *supra* note 65.

73. Under a South Dakota law enacted in 2000, it is a crime to “conduct nontherapeutic research that destroys a human embryo,” or to “conduct nontherapeutic research that subjects a human embryo to substantial risk of injury or death.” S.D. Codified Laws §§ 34-14-16, 34-14-17 (Michie Supp. 2001).

USCCB, *supra* note 65.

74. S.D. CODIFIED LAWS §§ 34-14-18, 16, 17 (Michie Supp. 2001).

Human embryo means ‘a living organism of the species Homo sapiens at the earliest stages of development (including the single-celled stage) that is not located in a woman’s body.’ S.D. CODIFIED LAWS §§ 34-14-18, 16,

they fail to make distinctions between private or governmental sources of funding.

II. DESTRUCTIVE HUMAN EMBRYO RESEARCH IS UNETHICAL

As much as it must exasperate supporters of human embryonic stem cell research to hear this “promising” research compared to inhumane experiments performed on postnatal humans, the analogy is fair. Unnatural acts perpetrated on fellow humans that the civilized world has found impermissible should not be inflicted on a class of human beings based on their stage of development or mental competency.

A. A Nod to Hippocrates

Hippocrates set high standards for the medical profession in recognition of the power doctors hold over the life and death of fellow humans. The Hippocratic Oath served the medical profession well for more than two thousand years. Since the late 1970s, however, medical schools have updated principles of The Oath to delete references to deities and other anachronisms. The modern versions have lowered the standard concerning abortion, physician-assisted suicide and a life of purity and holiness. Consider this passage:

I will follow that system of regimen which, according to my ability and judgment, I consider for the benefit of my patients, and abstain from whatever is deleterious and mischievous. I will give no deadly medicine to any one if asked, nor suggest any such counsel; and in like manner, I will not give to a woman a pessary to produce abortion. With purity and holiness I will pass my life and practice my Art.⁷⁵

Readers may notice that the promises contained in The Oath—to always act in the best interest of the patient and always to respect life—relate to the physician’s duty to patients, and not explicitly to a scientist’s obligations to human research subjects. Yet, one must ask for what ultimate purpose scientists engage in research harmful to their human subjects, if not to discover cures for diseases or conditions that afflict

17 (Michie Supp. 2001). *Id.* § 34-14-20. Thus this law bans not only the destruction of the embryo to obtain stem cells (regardless of the source of funding), but also research using the resulting cells (regardless of whether the cells were harvested in that state or elsewhere).

USCCB, *supra* note 65.

75. HIPPOCRATIC OATH, *supra* note 15.

humanity. Is it morally acceptable to injure intentionally or kill one innocent human being to benefit others? If that were so, what would stop a government from designating classes of individuals who would be required to “donate” vital organs to benefit members of a favored class (say, wealthy celebrities or members of the inner circle in China’s ruling party) who find themselves in need of an organ transplant? Yet that, in a nutshell, is what proponents of human embryonic stem cell research have asked the United States government to do—except that the “donated” stem cells are not likely to add a year or even a day to the life of a single celebrity. A stem cell’s “therapeutic potential,” is conjectural; any medical treatment developed from such research, which will have required the past, present and future killing of human embryos, may not come for a decade or longer, if ever.⁷⁶

B. The Nuremberg Code

This Code consists of ten basic principles promulgated by the Nuremberg War Crimes Tribunal to keep human experimentation within moral, legal and ethical boundaries.⁷⁷ The Tribunal tried and convicted some twenty doctors who conducted experiments of unimaginable cruelty on prisoners confined at Auschwitz during World War II. According to a lawsuit filed in federal district court in Indiana on February 17, 1999, Bayer AG, the German pharmaceutical company, actively participated in harmful experiments. The suit alleges that Bayer paid Nazi officials for access to prisoners, monitored and supervised medical experiments at Auschwitz, and bought inmates from the Nazis for use in its own experiments.⁷⁸ The plaintiff, Eva Mozes Kor, and her twin sister Miriam were brought to Auschwitz at age nine. There, they became “one of 1,500

76. See Keay Davidson, *Medical Mania: Hype Over Stem Cells Beginning to Worry Scientific Community*, SAN FRANCISCO CHRON., Aug. 5, 2001, at A3, available at <http://www.sfgate.com>.

77. See Edmund D. Pellegrino, M.D., *The Nazi Doctors and Nuremberg: Some Moral Lessons Revisited*, 127 ANNALS OF INTERNAL MED. 307-08 (1997) (citing THE NAZI DOCTORS AND THE NUREMBERG CODE: HUMAN RIGHTS IN HUMAN EXPERIMENTATION 102-03 (George J. Annas & Michael A. Grodin eds., 1992)), available at <http://acponline.org/journals/annals/15aug97/naziedit.htm>. But see PETER SINGER, PRACTICAL ETHICS 154-56 (1979) (departing from the traditional sanctity of life ethic from the perspective of Nazi euthanasia).

78. Henry Weinstein, *Suit Alleges Bayer Role in Holocaust Experiments*, L.A. TIMES, Feb. 18, 1999, at A18.

sets of twins subjected to grotesque experiments.”⁷⁹ The complaint alleges: “Bayer provided toxic chemicals to the Nazis Some of those experiments involved injecting concentration camp inmates with toxic chemicals and germs known to cause diseases in order to test the effectiveness of various drugs manufactured by Bayer.”⁸⁰ To test the effectiveness of the drugs in combating bacteria, chemicals or viruses given to the injected twin, it was often necessary to kill both twins and perform autopsies on them, comparing the differences.⁸¹

Bayer’s alleged research in this lawsuit, testing toxic substances and pharmaceutical products on unconsenting minor children, culminating in the death of human subjects, bears some similarity to research proposals approved by HERP, but rejected by Congress. These proposals involved testing drugs and toxic substances on living human embryos, and destroying human embryos to harvest their stem cells for further research.

Among the basic principles promulgated at the Nuremberg Tribunal to prevent future egregious ethical lapses are the following:

1. The voluntary consent of the human subject is absolutely essential
2. The experiment should be such as to yield fruitful results for the good of society, unprocurable by other methods or means of study. . . .
5. No experiment should be conducted where there is an a priori reason to believe that death or disabling injury will occur; except perhaps, in those experiments where the experimental physicians also serve as subjects. . . .
7. Proper preparations should be made and adequate facilities provided to protect the experimental subject against even remote possibilities of injury, disability, or death. . . .
10. During the course of the experiment the scientist in charge must be prepared to terminate the experiment at any stage, if he has probabl[e] cause to believe in the exercise of good faith . . . that a continuation of the experiment is likely to result in injury, disability, or death to the experimental subject.⁸²

It is difficult to square human embryonic stem cell research with these five principles. The embryos certainly have not given consent, and one is at a

79. *Id.*

80. *Id.*

81. *See id.*

82. THE NUREMBERG CODE, *supra* note 13.

loss to identify a legal or moral principle under which a parent or guardian might validly consent to the intentional destruction of an incompetent child's life in research which has no therapeutic benefit to that child. Human embryos, like the victims of such Nazi atrocities, are treated as mere research material, not as human subjects deserving respect. As we shall see, research using nonembryonic sources of human stem cells is already attaining some of the "fruitful results" scientists hope to attain through human embryonic stem cell research.

C. The Helsinki Declaration

The Nuremberg Code is not the final word on "ethical principles for medical research involving human subjects." That phrase, in fact, is the subtitle of the World Medical Association (WMA)'s Declaration of Helsinki, first adopted in June 1964 at the WMA's general assembly in Helsinki, Finland. At five subsequent meetings—the latest in Edinburgh, Scotland, in October 2000—the Helsinki Declaration has been amended and affirmed.

The most recent Declaration reads in relevant part:

A. INTRODUCTION

1. The World Medical Association has developed the Declaration of Helsinki as a statement of ethical principles to provide guidance to physicians and other participants in medical research involving human subjects. Medical research involving human subjects includes research on identifiable human material or identifiable data. . . . 5. In medical research on human subjects, considerations related to the well-being of the human subject should take precedence over the interests of science and society. . . . 8. Medical research is subject to ethical standards that promote respect for all human beings and protect their health and rights. Some research populations are vulnerable and need special protection. . . . Special attention is also required for those who cannot give or refuse consent for themselves, . . . [and] for those who will not benefit personally from the research. 9. . . . No national ethical, legal or regulatory requirement should be allowed to reduce or eliminate any of the protections for human subjects set forth in this Declaration.

B. BASIC PRINCIPLES FOR ALL MEDICAL RESEARCH

10. It is the duty of the physician in medical research to protect the life, health, privacy, and dignity of the human subject. . . . 19. Medical research is only justified if there is a

reasonable likelihood that the populations in which the research is carried out stand to benefit from the results of the research.⁸³

Eminent physician and ethicist Edmund D. Pellegrino, M.D., faults the Helsinki Declaration for placing undue emphasis on the “advancement of science” at the expense of the “integrity of the subject.”⁸⁴ Even more “distressing,” he finds, “are the instances of unethical research behavior that have occurred since the revelations of the Nuremberg Trials and wide acceptance of the 10 principles they promulgated.”⁸⁵ Pellegrino cites the infamous Tuskegee Syphilis Study (in which researchers failed to treat human patients who had syphilis, long after penicillin was discovered as a cure, in order to follow the disease’s progression to dementia and death); the “Willowbrook” Hepatitis Study; U.S. radiation experiments; the Jewish Chronic Disease Hospital Study; and a lysergic acid study supported by the Central Intelligence Agency.⁸⁶

These ethical principles uphold standards reflecting the inviolability of the life of human research subjects. Destructive embryo research flies in the face of all that such documents are intended to accomplish. Instead, the principle underlying appeals for destructive embryo research is that one may seek a good end through immoral means. The utilitarian principle asks not whether an action is moral, only whether it will work. One can scarcely imagine an ethic more contrary to Judeo-Christian teaching, to the advancement of human rights and dignity, or to the common good than this. Yet we hear this argument voiced everywhere by perfectly nice people.⁸⁷

The principle that “the ends justify the means” can be seen also in the

83. WORLD MED. ASS’N., *supra* note 14.

84. Pellegrino, *supra* note 77.

85. *Id.*

86. *See id.*

87. *See* Richard Eyer, *The Terrorism-Ethics Connection*, TENTATIO (Oct. 2001), at <http://www.cuw.edu/bioethics/Oct2001.htm>; Richard Kirk, *Stem-cell Research Is Immoral*, N. COUNTY TIMES, Aug. 12, 2001, available at <http://www.nctimes.com/news/2001/20010812/70036.html>; Daniel McConchie, The Center for Bioethics and Human Dignity, Testimony Before the National Bioethics Advisory Commission (May 11, 1999), <http://www.Bioethix.org/resources/aps/nabaci.html>; The Center for Bioethics and Human Dignity, *On Human Embryos and Stem Cell Research*, at <http://www.stemcellresearch.org/statement/statement.htm>. (last visited Dec. 18, 2001).

proponents' inflated claims for the clinical potential of human embryonic stem cells. No claim, however exaggerated and unfounded, is left unspoken if it will help to procure funding. The result of this public relations campaign was predictable: people anxiously awaiting cures for loved ones were cruelly deceived. On August 26, 2001, safely after the President's funding decision was announced, *The New York Times* ran a long, cautionary feature on Geron Corporation. The author stated, "Desperate people with incurable diseases are beseeching the company for treatments, though none will be ready for years if ever."⁸⁸ The August 20 issue of *TIME* describes an incident recounted by Presidential advisor Karl Rove: "[O]n a trip he took to Georgia a young couple came up to him and pleaded for stem-cell research to continue for another six months so it might save their ailing child."⁸⁹ Apparently these parents had not been told that any treatments from this research are a decade or more in the future.

The utilitarian principle justifies intentional, harmful acts against other humans to achieve a hoped-for benefit to a greater number of people. It is the wrong approach to public policy decisions. Its most notable proponents have been responsible for much of the misery and strife of the last century. Experience has taught us time and again that public servants, even when crafting policies that appear wholly beneficent, can cause great harm (the so-called "law of unintended consequences").

Humans lack the wisdom and foresight to completely understand the future ramifications of many actions. A father, for example, may believe that it is an entirely good thing to help his daughter with homework every day because they are spending time together and he is showing sincere interest in her life and schooling. By "helping" with homework, however, his daughter may be denied the mental struggle of searching for solutions on her own. She may not develop the mental skills to solve tough math problems, for example, or to quickly find key concepts in reading selections. If even "good" actions can produce undesirable results, how much worse is the case when evil is tolerated in the name of some conjectural, future outcome?

Moreover, it is simply indefensible to redefine a group of human beings as "less than human." Writer John Mallon recently explored this point.

88. Andrew Pollack, *The Promise in Selling Stem Cells*, N.Y. TIMES, Aug. 26, 2001, at 31.

89. Richard Lacayo, *How Bush Got There*, TIME, Aug. 20, 2001, at 21.

He notes that the greatest danger lies not in the fate of human embryos we would use and destroy, but in what such a policy does to us:

These embryonic human beings are alive, now, and involved in a terrible dilemma utterly beyond their control. They are human, innocent and helpless, and therefore deserving of love and the protection of the state. They are dependent on civilization but civilization is perhaps even more dependent on them, as we consider their fate. In considering their fate, we are determining our own.

Perhaps this is the real precipice on which we stand: the notion (again) that certain human beings can be considered so insignificant as to be unworthy of love and protection solely on the basis of their size and stage of development. . . .

That we are even considering this question of human medical experimentation is already the result of the disastrous turn we took with *Roe vs. Wade*, the ruling that a developing (but fully human) child's life was less important than a woman's convenience or difficult circumstances, circumstances that could be vastly improved with simple love and acceptance, offered and received with a good outcome for all, including the child

The questions at stake . . . strike at the very foundation of civilized society. The choice is between justice and truth, where love and civility are safe to flourish, or a descent into chaos, barbarism, anarchy, tyranny and death.⁹⁰

III. DESTRUCTIVE HUMAN EMBRYO RESEARCH IS MEDICALLY UNNECESSARY

The 1999 NBAC report on stem cell research alludes to past statements made by other federal advisory bodies affirming the "respect" due human embryos "as a form of human life."⁹¹ Parenthetically, it is perplexing to imagine how one demonstrates respect in the act of destroying someone for his or her stem cells. Would a polite bow suffice? Should one offer abject apologies? NBAC actually found a way to show some respect, by articulating a weighty presumption against research in which human embryos are destroyed. The report states, "[I]n our judgment, the derivation of stem cells from embryos remaining following infertility

90. John Mallon, Editorial, *Embryos Are Human*, WASH. TIMES, Aug. 20, 2001, at A15.

91. NAT'L BIOETHICS ADVISORY COMM'N, *supra* note 58, at 49.

treatments is justifiable only if no less morally problematic alternatives are available for advancing the research.”⁹² NBAC assumed, of course, that no alternatives to embryonic stem cell research existed. Even if such an assumption was reasonable in 1999, based on research findings published to that point, the assumption is no longer valid.

When there was no assurance that this type of research would receive federal funding, we heard nothing but extravagant claims about its potential to cure every known affliction.⁹³ Now that funding is assured and more private funding can be expected to flow,⁹⁴ the considerable research difficulties inherent in embryonic stem cells and the formidable obstacles to be overcome before they could yield any therapeutic benefit to patients are being conceded.

James Thomson, the University of Wisconsin researcher credited as the first to derive a cell line (*i.e.*, a colony of genetically identical stem cells) from the stem cells of human embryos, has led the way toward this more candid assessment in an article he and two colleagues published earlier this year.⁹⁵ The Wisconsin researchers describe five distinct obstacles faced by those working with human embryonic stem cells: (1) coaxing these cells to differentiate into the desired tissue type and purifying that lineage from other cell types; (2) testing and demonstrating that differentiated cells will function in a normal physiological manner; (3) getting transplanted embryonic stem cells to integrate and function with host tissue; (4) preventing the growth of tumors when human embryonic stem cells are transplanted into a subject; and (5) avoiding immune rejection of the transplanted cells.⁹⁶ Two additional difficulties are mentioned in passing: (1) culturing of human embryonic stem cells currently relies on “feeder cells” taken, for example, from mice, which entails a risk of introducing an animal virus into the human population; and (2) cloning increasingly seems impractical as a proposed solution to immune rejection.⁹⁷

92. *Id.* at 53.

93. *See, e.g.*, Rep. Nadler’s comments *supra* note 4.

94. *See infra* notes 191-201 and accompanying text.

95. James Thomson et al., *Multilineage Differentiation from Human Embryonic Stem Cell Lines*, 19 *STEM CELLS* 193 (2001), available at <http://stemcells.alphaamedpress.org/cgi/reprint/19/3/193.pdf>.

96. *Id.* at 197-201.

97. *Id.*

A. Embryonic Stem Cells are Difficult to Control

Thomson *et al.* concede that:

Unfortunately, the heterogeneous nature of development in culture has hampered the use of ES cell derivatives in transplantation studies. Rarely have specific growth factors or culture conditions led to establishment of cultures containing a single cell type. . . . In fact, human pluripotent cell lines retain a broad pattern of multilineage gene expression despite the addition of specific growth factors. . . . Furthermore, there is significant culture-to-culture variability in the developments of a particular phenotype under identical growth factor conditions.⁹⁸

Translation: We have no clue how to control embryonic stem cells. They differentiate into specific mature cell types spontaneously, they fail to maintain identical gene expression, and what seems to work with one colony fails in another colony, despite supposedly identical conditions.

The Wisconsin team is not alone in voicing disappointment over the apparent fickleness of embryonic stem cells. The day after President Bush's announcement, *The Washington Post* reported that these embryonic stem cell lines have "a rather precarious existence" and are liable to "'crash' at any time, disappearing into a shriveled gelatinous mass beyond hope of resuscitation."⁹⁹

Former NIH Director Harold Varmus and Harvard professor Douglas Melton explain, "[T]ruly useful lines are hard to develop, even from animal models. . . . In practice, some lines lose their vigorous growth patterns for unexplained reasons, get contaminated. . . or differentiate spontaneously into one lineage or another without apparent cause."¹⁰⁰

Although Professor Melton has access to six cell lines developed in Israel, he uses only one of them for most of his work, explaining, "Only one works well. The others, they have all kinds of different problems. They either don't grow well or they differentiate spontaneously, kind of like popcorn popping before you've added heat."¹⁰¹ Citing his experience with mouse stem cell cultures increasingly losing their totipotency the

98. *Id.* at 198.

99. Rick Weiss, *Promising More—and Less*, WASH. POST, Aug. 10, 2001, at A1.

100. Harold Varmus & Douglas Melton, *The Stem-Cell Compromise*, WALL ST. J., Aug. 14, 2001, at A14.

101. David Brown, *Stem Cell Decision Examined*, WASH. POST, Aug. 12, 2001, at A8.

more times the batch is thawed and allowed to divide, Melton added, “In my view [human embryonic stem cells’] properties will degrade with time. Everyone is fearful that the more you grow them in the dish, the more they’ll lose their properties.”¹⁰²

Thomson and his colleagues conclude, “[G]iven the broad range of lineages to which ES cells commit, derivation of a relatively homogeneous cell population will ultimately depend on selection from a mixed population of cells.”¹⁰³ By this they mean that instead of growing a pure and well-behaved batch of identical stem cells in a Petri dish, scientists are reduced to watching the colonies grow willy-nilly into all manner of mixed tissues—bone, skin, hair, muscle—from which agglomeration they then try to extract cells resembling those with which they want to work.

A critical research step is to be able to produce *in vitro* “terminally differentiated” cells, meaning mature cells committed to perform a specific function, *e.g.*, “pancreatic islet cells [that] exhibit normal glucose-responsive insulin secretion.”¹⁰⁴ The fact is, a culture might contain cells that look like a specific type of mature cell and, at the same time, contain “progenitor” cells that are easily capable of turning into a different cell type.¹⁰⁵ Therefore, “[b]ecause many fetal or embryonic tissues and multipotent progenitor cells are functionally immature, one cannot assume that all ES cell progeny will subserve normal cellular physiologic functions.”¹⁰⁶

Cultured cells must also have the capacity to integrate with existing cells, for example, at the transplantation site, to contract in a coordinated and useful manner if injected into the heart.¹⁰⁷ Given the instability of embryonic stem cells *in vitro*, it is difficult to see how researchers will be able to control them better after they have been transplanted into a human brain or heart. The experience of researchers in fetal tissue transplant trials involving Parkinson’s patients may be instructive. According to the *New York Times*, the final results did not simply disappoint; they were “devastating.”¹⁰⁸ The procedures “failed to show an

102. *Id.*

103. Thomson, *supra* note 95, at 198.

104. *Id.* at 199.

105. *See id.*

106. *Id.*

107. *See id.* at 200.

108. Gina Kolata, *Parkinson’s Research Is Set Back By Failure of Fetal Cell Implants*, N.Y. TIMES, Mar. 8, 2001, at A1.

overall benefit,” and in fifteen patients produced “nightmarish” symptoms as the immature cells produced dopamine in uncontrollable amounts,¹⁰⁹ leaving patients much worse off than before treatment.¹¹⁰

B. Embryonic Stem Cells Pose Additional Risks for Patients

1. Tumor formation

Transplants of embryonic stem cells into research subjects have revealed their tendency to form tumors. The Thomson study recognized that “[t]hese tumors are not metastatic, and do not rapidly kill the host animals.”¹¹¹ If the experience with transplants of fetal brain tissue is any guide, these tumors may still cause complications which can lead to death. One unfortunate patient with Parkinson’s disease traveled to China to receive an injection of fetal brain tissue.¹¹² The brain tissue may actually have been from a late embryo, rather than a fetus of nine weeks or more gestation. Two years after the tissue injection the patient died.¹¹³ An autopsy found that masses of “non-neuronal tissue” such as skin and hair had filled the ventricles of his brain, cutting off his breathing.¹¹⁴ It was theorized that the tissue could have remained “pluripotent” and differentiated uncontrollably.¹¹⁵ As the Wisconsin researchers admit, “Ultimately, as the potential for tumor growth is a major safety consideration, a fail-safe method to prevent tumor growth may need to be developed.”¹¹⁶

2. Immune-mediated rejection

Medicine has not found a better alternative for preventing rejection of transplanted organs than administering immunosuppressant drugs for the remainder of the patient’s life. “[I]mmunosuppressants are far from ideal

109. *Id.* at A1.

110. *Id.*

111. Thomson, *supra* note 95, at 200.

112. Rebecca Folkerth & Raymon Durso, *Survival and Proliferation of Nonneuronal Tissues, with Obstruction of Cerebral Ventricles, in a Parkinsonian Patient Treated with Fetal Allografts*, 46 *NEUROLOGY* 1219 (1996).

113. *Id.*

114. *Id.*

115. *Id.*

116. Thomson, *supra* note 95, at 200.

and are associated with numerous complications including wound healing, opportunistic infections, drug-related toxicities, skin malignancies and low-grade lymphomas called post-transplant lymphoproliferative disorders.”¹¹⁷ When embryonic stem cells are introduced via cellular graft, they produce similar immune rejection.¹¹⁸

Two approaches have been suggested for overcoming the obstacle of immunal rejection of embryonic stem cells. First, researchers could establish embryo banks, which would take several thousand human embryos, to develop enough cell lines to match mankind’s diverse genetic make-up. Supporters of this research attacked President Bush’s limited federal funding of human embryonic stem cell research to the existing lines created before 9 p.m. EDT, August 9, 2001. They claim that sixty cell lines are not enough to produce therapies that will work for every ethnic group.¹¹⁹

The other alternative to avoid transplant rejection and life-long use of immunosuppressant drugs is “therapeutic cloning.” Cloned embryonic replicas of patients would be created and then killed in order to use their stem cells for therapy. This would certainly reduce tissue rejection problems. Such course is being pursued in England and is advocated by Michael West, a founder of Geron and current president of Advanced Cell Technology. Geron’s new head, Dr. Thomas Okarma, told a congressional subcommittee: “Somatic cell nuclear transfer research is essential if we are to achieve our goals in regenerative medicine.”¹²⁰

Thomson and his colleagues explain how cloning patients for a ready source of embryonic stem cells might work, but concede that:

[T]he generation of human embryos by nuclear reprogramming to create novel human ES cell lines would be exceptionally controversial. Furthermore, the poor availability of human oocytes [eggs], the low efficiency of the nuclear transplant procedure, and the long population-doubling time of human ES cells make it difficult to envision this becoming a routine clinical procedure even if ethical considerations were not a significant

117. *Id.* at 201.

118. *Id.* at 200.

119. Sheryl G. Stolberg, *Disappointed by Limits, Scientists Doubt Estimate of Available Cell Lines*, N.Y. TIMES, Aug. 10, 2001, A17.

120. *The Human Cloning Prohibition Act of 2001 and The Cloning Prohibition Act of 2001: Hearing on H.R. 1644 and H.R. 2172 Before the House Subcomm. on Health*, 107th Cong. 46 (2001) (statement of Thomas Okarma).

point of contention.¹²¹

It is not the ethical but the technical issues that concern researchers. Discussing one method to overcome the paucity of available human eggs, researchers note that, “[b]y studying how oocyte cytoplasm mediates nuclear reprogramming in these animal models, it might be likely that nuclear reprogramming could be achieved by other methods, thereby obviating the need for human oocytes.”¹²² Could these scientists actually be recommending the creation of human clones by transferring the nucleus of a somatic cell from the patient into the enucleated ovum of, say, a cow? Why not? It has been done. Steen Willadsen began transferring human cell nuclei into enucleated cow oocytes as long ago as 1986.¹²³ “He admits to qualms about implanting the resulting embryos in human wombs and allowing them to develop and be born, because the human embryo might be tainted with cow and be slightly ‘inhuman.’”¹²⁴

The April 5, 2001 issue of *Nature* reports, however, that, “the idea of therapeutic cloning . . . is falling from favour”:

[I]t may come as a surprise that many experts do not now expect therapeutic cloning to have a large clinical impact . . . many researchers have come to doubt whether therapeutic cloning will ever be efficient enough to be commercially viable. “It would be astronomically expensive,” says James Thomson of the University of Wisconsin in Madison, who led the team that first isolated E[mbryonic] S[tem] cells from human blastocysts.¹²⁵

Noting the short supply of human eggs, and the expense and inefficiency of cloning, the article concludes that the prospects for therapeutic cloning have “dimmed” and those who still favor it are taking a “minority view.”¹²⁶

A third alternative to embryo farms and cloning, discussed in the following section, is to use the patient’s own “adult” stem cells, a practice

121. Thomson, *supra* note 95, at 201.

122. *Id.*

123. See Tom Junod, *The Man Who Mistook a Woman for a Sheep*, *ESQUIRE*, May 1998, at 74.

124. *Id.* at 136; see NCCB Secretariat for Pro-Life Activities, *O Brave New World that Has Such People in It*, 9 *LIFE INSIGHT* 2 (Apr. 1998).

125. Peter Aldhous, *Can They Rebuild Us?*, *NATURE*, April 5, 2001, at 622.

126. Press Release, Do No Harm Coalition, Skepticism Grows Over Claimed Benefits of “Therapeutic” Cloning (July 31, 2001), available at <http://www.stemcellresearch.org/pr/pr010731.htm>.

currently achieving benefits far surpassing the expectations of physicians and patients.

3. *Food and Drug Administration xenotransplantation rules*

Yet another obstacle to the clinical use of human embryonic stem cells is the medium in which they are cultured: Most or all of the human embryonic stem cell colonies approved for research funding have been mixed with mouse cells.¹²⁷ After cells are extracted from a human embryo, they are grown atop embryonic mouse cells, known as “feeder” cells. The latter excrete some unknown nutritional or growth factor that helps the human cells stay healthy. The human cells pose a small but real risk of transferring potentially deadly animal viruses to people because they have been in close contact with mouse cells. Food and Drug Administration (FDA) guidelines designed to prevent the accidental creation of a new plague require transplants of these embryonic cells into people to be treated as though they were “xenotransplants,” or transplants of animal tissue.¹²⁸ “Some laboratories that work with stem cells appear to be unaware of the policy; others are operating under the assumption that it will be a large hurdle in creating treatments from any of the existing cell lines. ‘It could be a real killer,’ said George Daley, a stem cell researcher”¹²⁹

C. *Adult Stem Cells Superior to Embryonic for Clinical Use*

Nonembryonic stem cells taken from adult organs, umbilical cords, placentas and cadavers—all of which, for simplicity, will be referred to herein as “adult” stem cells—have, in the judgment of David A. Prentice, Ph.D.,

vast biomedical potential to cure diseases such as diabetes, Parkinson’s, heart disease, and other degenerative diseases. The biomedical potential is as great as or greater than the potential offered by human embryonic stem cell research. Simply stated adult stem cell research is a preferable alternative for progress in regenerative medicine and cell-based therapies for disease

127. See Justin Gillis & Ceci Connolly, *Stem Cell Research Faces FDA Hurdle*, WASH. POST, Aug. 24, 2001, at A1; Jessica Reaves, *Eek! There’s a Mouse Cell in My Stem Cells!*, TIME.COM (Aug. 24, 2001), at <http://www.time.com/time/health/article/0,8599,172482,00.html>.

128. *Id.*

129. Gillis, *supra* note 127, at A1.

because it does not pose the medical, legal, and ethical problems associated with destructive human embryonic stem cell research.¹³⁰

This statement contradicts all that “science” has taught us (via the media) about the superiority of embryonic stem cells, including their ability to become any of the approximately 220 cells in the human body, their plenitude and their ability to replicate indefinitely and rapidly. It is understandable that there may be confusion among those who believe that all of the media-driven claims made by scientists are true. Much of science is truth. We know with certainty that the Earth rotates on an axis and revolves around the sun. These motions can be calculated to a fraction of a degree and milliseconds. There is another category of science, however, sometimes referred to as “junk science,” that is not always true. Practitioners of junk science, many of whom are competing for research grants,¹³¹ prestige, television face-time or to advance a political agenda, allow their modest “successes” in the lab to be trumpeted in the press as major breakthroughs.¹³²

130. *Hearing on Embryonic Cell Research Before the House Subcomm. on Criminal Justice, Drug Policy, and Human Resources* (July 17, 2001) (statement of David A. Prentice, Ph.D., Professor of Life Sciences at Indiana State Univ. and Adjunct Professor of Medical and Molecular Genetics at the Indiana State School of Medicine), available at, <http://www.stemcellresearch.org/testimonies/prentice3.htm>.

131. Often undisclosed in media reports on human embryonic stem cell research are the financial interests of scientists and researchers who stand to gain by approval of federal funding.

Since January 1 [2001], . . . three researchers [Douglas Melton, Irving Weissman, and Ronald McKay] have been quoted 216 times in the national media, including the *National Journal*, in support of federal funding for research on embryo stem cells, but in only 17 citations have they been linked to their companies.

Neil Munro, *Mixing Business with Stem Cells*, 2001 NAT'L J. 2348.

132. Taken by themselves, the advances announced by researchers from the University of Wisconsin and Johns Hopkins University were simply technical advances in encouraging embryonic stem cells to grow and differentiate in the laboratory. These experiments did not show that such stem cells would play a significant role in progress toward repairing or regenerating tissue damaged by various illnesses. However, they did offer a new political angle long awaited by supporters of embryo research; an opportunity to persuade patients' groups to join their crusade based on the hope that such research might lead to various cures.

It has been written that “a [nation] . . . [will] more easily fall victim [] to a great lie than to a small one”¹³³ and that “[t]he masses. . . will lend their memories only to the thousandfold repetition of the most simple ideas.”¹³⁴ When junk science combines with media bias (whether born out of laziness, ideology or naivete in thinking scientists are always impartial and truthful), the result is predictable. It is now received wisdom that embryonic stem cell research “holds far more promise than adult stem cell research.”¹³⁵ It is said that adult stem cells are not found in all cell types, are limited in number, are difficult to harvest and grow for clinical use, are likely to pass on genetic defects and are not able to multiply as well as embryonic stem cells. According to Dr. Prentice and the Do No Harm Coalition, “these claims are not true, are not relevant to their therapeutic potential, and/or overstate the differences between adult stem cells and embryonic stem cells.”¹³⁶

Examples of this media bias were detailed in May 2001 by the Statistical Assessment Service (STATS), a non-partisan, non-profit research organization devoted to the accurate use of scientific and social research in public policy debate.¹³⁷ One example cited by STATS was a report that mouse embryonic stem cells had been programmed to secrete

Doerflinger, *supra* note 19, at 139.

133. ADOLF HITLER, *MEIN KAMPF* 313 (Dr. Alvin Johnson trans., Reynal & Hitchcock 1941) (1933), *available at* http://www.stormfront.org/books/mein_kampf/mkv1ch10.html (last visited Dec. 18, 2001).

134. *Id.* at 239, *available at* http://www.stormfront.org/books/mein_kampf/mkv1ch06.html (last visited Dec. 18, 2001).

135. President George W. Bush, Radio Address to the Nation (Aug. 11, 2001), *available at* <http://www.whitehouse.gov/news/releases/zoom/08/20010811-1.html>; Wesley J. Smith, *Blowing Smoke on Stem-Cell Research*, NAT'L REVIEW ONLINE (July 12, 2001), *at* <http://www.nationalreview.com/comment/comment-smith071201.shtml>; Interview by Judy Woodruff, CNN's Inside Politics, with Richard Doerflinger (July 11, 2001), *available at* <http://www.prolifeinfo.org/stemcells005.html>.

136. Prentice, *supra* note 130.

137. STATS (Statistical Assessment Service), *Stemming the News Flow?* (May 2001), *at* <http://www.stats.org/newsletters/0105/stem.htm>. (discussing N. Lumelsky et al., *Differentiation of Embryonic Stem Cells to Insulin-Secreting Structures Similar to Pancreatic Islets*, 292 SCI. 1389 (2001)). *See also*, Miller & Ponnuru, *supra* note 6, for discussion of biased reporting in NEWSWEEK.

insulin, supposedly pointing to a cure for diabetes.¹³⁸ This study received wide and enthusiastic media coverage. But little mention was made of a much more significant development more than a year earlier, in which adult mouse pancreatic stem cells successfully reversed diabetes in the mice.¹³⁹ Journalists also neglected to mention that the mice receiving the embryonic stem cells still died from diabetes (a point which diabetics might find relevant), because the cells produced only two percent of the insulin needed to survive. Nor has there been coverage of further developments here and abroad, such as using ductal tissue from an adult human pancreas to produce insulin-secreting islet buds in culture.¹⁴⁰

1. “Adult stem cells have been located in numerous cell and tissue types and can be transformed into virtually all cell and tissue types, including functional tissues.”¹⁴¹

Human adult stem cells have been found in virtually every cell and tissue type where scientists have made an effort to find them, including the following: brain (and other nervous system), muscle, retina, pancreas, bone marrow, peripheral blood, cornea, blood vessels (endothelial cells), fat, dental pulp, spermatogonia and placenta.¹⁴² In animal experiments, additional sources of adult stem cells have been found, including skin, liver and mammary gland.¹⁴³

Adult stem cells, more importantly, can regenerate healthy tissue and transform from one cell type into others.

[P]lentiful adult stem cells from fat have been transformed into cartilage, muscle, and bone [H]uman adult bone marrow stem cells have been transformed into smooth muscle, cardiac tissues, neural cells, liver, bone, cartilage, and fat . . . And stem cells from placenta are reported to have been induced to form bone, nerve, cartilage, bone marrow, muscle, tendon, and blood

138. See Vijayakumar K. Ramiya et al., *Reversal of Insulin-Dependent Diabetes Using Islets Generated In Vitro from Pancreatic Stem Cells*, 6 NATURE MED. 278 (2000).

139. See Susan Bonner-Weir et al., *In Vitro Cultivation of Human Islets from Expanded Ductal Tissue*, 97 PROC. NAT’L ACAD. SCI. 7999 (2000).

140. Prentice, *supra* note 130, § 1.

141. *Id.*

142. *See id.*

143. *Id.* at App. C. (providing graphs showing some common sources of adult stem cells and their demonstrated transformations into other tissue types).

vessels.¹⁴⁴

Animal research indicates that adult neural and bone marrow stem cells may be able to generate virtually all adult tissues, including heart, lung, intestine, kidney, liver, nervous system, muscle and the gastrointestinal tract (including esophagus, stomach, intestine and colon).¹⁴⁵

2. “Adult stem cells can be reproduced to create a ‘virtually limitless’ supply.”¹⁴⁶

The supply of adult stem cells in the human body is larger than previously anticipated. They can be expanded greatly in culture. “In March of 2000, researchers identified the conditions necessary to allow for a large-scale expansion (a billion-fold in a few weeks) of adult stem cells in culture.”¹⁴⁷ Animal studies indicate that a single stem cell “is sufficient to repopulate adult bone marrow, generate nerves, and participate in tissue repair in a variety of tissues throughout the body.”¹⁴⁸ Furthermore, “[t]reatments using adult stem cells will not be prohibited by risks of ‘duplicating genetic error.’”¹⁴⁹ Contrary to assertions made in the NIH Guidelines that a patient’s own stem cells could not be used to correct a genetic error because they also would contain the error, clinical studies have proven otherwise. “The first successful human gene therapy used ‘remedied’ adult stem cells not embryonic stem cells to cure severe combined immunodeficiency syndrome.”¹⁵⁰ Amazingly, it may not even be necessary to remedy the genetic defect in culture. Patients afflicted with systemic lupus were treated with their own adult bone marrow stem cells. Without correcting the defect present in the bone marrow stem cells, these cells repaired organ damage that doctors previously considered permanent.¹⁵¹

144. *Id.* § 1.

145. *Id.* § 2.

146. *Id.* (citing to D. Colter et al., *Rapid Expansion of Recycling Stem Cells in Cultures of Plastic-Adherent Cells from Human Bone Marrow*, 97 PROC. NAT’L ACAD. SCI. 3213 (2000)).

147. Prentice, *supra* note 130, § 2.

148. *Id.* § 4.

149. *Id.*

150. *Id.*

151. See U.S. Conference of Catholic Bishops, Secretariat for Pro-Life Activities, *The Human Embryo as Research Commodity*, 12 LIFE INSIGHT (Aug.-

3. Adult Stem Cells Have Been Used in Many Clinical Trials with Great Success

Supporters of human *embryonic* stem cell research cannot cite a single therapeutic success in humans.¹⁵² Other stem cells, however, already have been successfully used in treating, among other things, the following conditions:

various types of cancer, including but not limited to: brain tumors, retinoblastoma, ovarian cancer, various solid tumors, testicular cancer, multiple myeloma and leukemias, breast cancer, neuroblastoma, non-Hodgkin's lymphoma, and renal cell carcinoma. Adult stem cells have also been used in treatment of autoimmune diseases such as multiple sclerosis, systemic lupus, rheumatoid arthritis, and juvenile rheumatoid arthritis, immunodeficiencies and anemias, stroke, and cartilage and bone diseases.¹⁵³

Furthermore, adult stem cells have been used to regenerate corneas and thereby restore sight, as well as to fight diseases of the heart and immune system.¹⁵⁴ Recently, adult stem cells have been used successfully to treat cardiac disease.¹⁵⁵ Numerous animal studies have shown that animal models of disease can be treated successfully with adult stem cells. These include "nerve and spinal cord damage, retinal damage, Parkinson's disease, heart damage, muscular dystrophy, diabetes, stroke, and liver disease."¹⁵⁶ Lists of diseases currently being treated with human adult stem cells do not begin to convey the astounding therapeutic abilities and potential of adult stem cells. Doctors at Northwestern Memorial Hospital in Chicago successfully treated two patients afflicted with Crohn's disease, a potentially disabling bowel disease, with adult stem cells.¹⁵⁷ The first patient experienced painful, bloody, watery diarrhea about ten times a

Sept. 2001), available at <http://www.usccb.org/prolife/publicat/lifeinsight/augsept2001.htm>.

152. See Prentice, *supra* note 130, at *5 (citations omitted).

153. *Id.* (citation omitted).

154. See *infra* notes 170, 175 and accompanying text.

155. See *id.*

156. Prentice, *supra* note 130 (citations omitted).

157. Debra Sherman, *Adult Stem Cells Hold Hope for Autoimmune Patients*, REUTERS HEALTH INFO. (Aug. 13, 2001), at <http://www.reutershealth.com/archive/2001/08/13/eline/links/20010813elinurl.html>.

day from the age of thirteen until her treatment at twenty-two.¹⁵⁸ Two and a half months later, she was doing “phenomenally well,” eating normally and remains symptom-free.¹⁵⁹ The lead physician, Dr. Richard Burt, noted that patients with other auto-immune disorders, such as lupus and multiple sclerosis, also have shown progress through adult stem cell therapies. In results surprising to treating physicians the therapy for lupus not only arrested further damage, but also repaired prior damage to organs.¹⁶⁰ Dr. Burt added, “If we can get a person’s adult stem cells [to grow tissue to repair organs] from their blood, then this whole problem of embryonic stem cells in terms of the ethical problem is not an issue.”¹⁶¹

In another recent success doctors at the University of Texas treated a man with a rare and potentially fatal skin disorder, scleromyxedema.¹⁶² His skin became thickened and stiff. Eventually, the subject’s facial skin appeared “cobblestoned.”¹⁶³ He was so severely afflicted that he was unable to eat or close his eyes.¹⁶⁴ Three months after receiving a transplant of adult stem cells from his own bone marrow, he was symptom-free and again able to close his eyes and open his mouth to eat. In addition he regained more than twenty-five pounds.¹⁶⁵

The August 2001 “Early Edition” of *Proceedings of the National Academy of Sciences* reported significant findings of scientists at New York Medical College and the NIH.¹⁶⁶ Researchers found that by stimulating production of stem cells in the bone marrow of adult mice,

158. *Id.*

159. *Id.*

160. *Id.*

161. *Id.*

162. *Stem Cell Transplant Treats Rare Skin Disorder*, REUTERS HEALTH INFO. (Aug. 17, 2001), at <http://www.reutershealth.com/archive/2001/08/17/eline/links/2001/0817elinurl.html>; Adrienne M. Feasel et al., *Complete Remission of Scleromyxedema Following Autologous Stem Cell Transplantation*, 137 ARCHIVES OF DERMATOLOGY 1071 (2001).

163. *Stem Cell Transplant Treats*, *supra* note 162.

164. *Id.*

165. *Id.*

166. Donald Orlic et al., *Mobilized Bone Marrow Cells Repair the Infarcted Heart, Improving Function and Survival*, 98 PROC. NAT’L ACAD. SCI. 10344-49 (Aug. 28, 2001), available at <http://www.pnas.org/cgi/content/full/98/18/10344>.

one can repair heart damage.¹⁶⁷ Seventy-three percent of the mice receiving this treatment were alive one month after the heart attack, compared to only twenty percent of those who went untreated.¹⁶⁸ Researchers reported finding signs of heart repair in autopsies, and they witnessed “a remarkable recovery” in the heart’s pumping ability following an induced heart attack.¹⁶⁹

A recent Reuters story reported the successful treatment of seven *human* heart patients at Düsseldorf’s Heinrich Heine University using their own adult stem cells.¹⁷⁰ Ten weeks after the first patient was treated, “the strength of the 46-year-old man’s heart had significantly increased.”¹⁷¹ The heart specialist in charge added, “The results of the treatment show the huge potential of adult stem cells.”¹⁷² In fact, adult bone marrow stem cells were responsible for the first completely successful trial of human gene therapy, in which two children afflicted with severe combined immunodeficiency disease recovered an immune system and safely were able to leave their sterile environment.¹⁷³ They are now leading completely normal lives.¹⁷⁴

The Washington Times ran a Reuters report on August 18, 2001, detailing research at the Weizmann Institute of Science in Israel.¹⁷⁵ Rats with severe spinal cord injuries were treated by injecting immune cells from their own blood into the site of the injury.¹⁷⁶ The procedure “prevented the development of complete paralysis by limiting the spread

167. *Bone Marrow Cell Repairs Heart Damage in Mice*, REUTERS HEALTH INFO. (Aug. 14, 2001), at <http://www.reutershealth.com/archive/2001/08/14/eline/links/2001/0814elinurl.html>.

168. *Id.*

169. *Id.*

170. Reuters, *Success with Adult Stem Cells?*, PHIL. INQUIRER, Aug. 25, 2001, at A8.

171. *Id.* at A8.

172. *Id.*

173. See Marina Cavazzana-Calvo et al., *Gene Therapy of Human Severe Combined Immunodeficiency (SCID)-X1 Disease*, 228 SCI. 669 (2000).

174. See *id.*

175. Will Dunham, *Vaccine Promising for Spinal-Cord Injury*, WASH. TIMES, Aug. 18, 2001, at A3.

176. *Id.*

of damage from the trauma point to surrounding nerve cells and fibers.”¹⁷⁷ The rats were able to walk again.¹⁷⁸ A Colorado teenager who became a paraplegic in an automobile accident received an injection of adult cells from her own immune system at the site of her spinal cord injury.¹⁷⁹ She has been cured of incontinence, and is able to move her legs and toes, “generating hope for those with spinal-cord injuries around the world,” according to one news report.¹⁸⁰

Finally, adult pancreatic islet cells from cadavers were used to reverse juvenile diabetes in fifteen patients.¹⁸¹ Many centers around the United States are now conducting human trials of the so-called “Edmonton protocol.”¹⁸² All patients benefited from the treatment, many remaining insulin-free for up to two years at the date of the report.¹⁸³

IV. THE TEACHING OF THE CATHOLIC CHURCH

A. *Donum Vitae* and Subsequent Statements

The primary teaching document of the Catholic Church that addresses destructive human embryonic research is *Donum Vitae* (Instruction on Respect for Human Life in its Origin and on the Dignity of Procreation), issued in 1987 by the Congregation for the Doctrine of the Faith.¹⁸⁴ It states in part:

To use human embryos or fetuses as the object or instrument of

177. *Id.*

178. *Id.*

179. Krista Foss, *Paraplegic Regains Movement After Cell Procedure*, *GLOBE & MAIL* (Toronto), June 15, 2001, at A1; see Mark Moran, *Body's Own Blood Cells Used to Fight Spinal Cord Injury*, *WEBMD MED. NEWS* (July 25, 2001), at <http://mywebmd.com/content/article/1728.84785>.

180. Foss, *supra* note 179, at A1.

181. Edmond Ryan et al., *Glycemic Outcome Post Islet Transplantation*, Abstract #33-LB, Annual Meeting of the American Diabetes Association, June 24, 2001; Marie McCollough, *Islet Transplants Offer Hope That Diabetes Can Be Cured*, *PHIL. INQUIRER*, June 22, 2001, at A1.

182. McCollough, *supra* note 181, at A1.

183. *Id.*

184. Congregation for the Doctrine of the Faith, *DONUM VITAE* § 1.5, Instruction on Respect for Human Life in Its Origin and on the Dignity of Procreation (1987), available at <http://www.usccb.org/prolife/tdocs/donumvitae.htm>.

experimentation constitutes a crime against their dignity as human beings having a right to the same respect that is due to the child already born and to every human person. . . .

The corpses of human embryos or fetuses, whether they have been deliberately aborted or not, must be respected just as the remains of other human beings Furthermore, the moral requirements must be safeguarded, that there be no complicity in deliberate abortion and that the risk of scandal be avoided (I.4)

It is a duty to condemn the particular gravity of the voluntary destruction of human embryos obtained 'in vitro' for the sole purpose of research (I.5)¹⁸⁵

In August 2000, the Pontifical Academy for Life, in its *Declaration on the Production and the Scientific and Therapeutic Use of Human Embryonic Stem Cells*,¹⁸⁶ considered and answered the question below,

Is it morally licit to use ES [embryonic stem] cells, and the differentiated cells obtained from them, which are supplied by other researchers or are commercially obtainable?

. . . .

The answer is negative, since: Prescinding from the participation—formal or otherwise—in the morally illicit intention of the principal agent, the case in question entails a proximate material cooperation in the production and manipulation of human embryos on the part of those producing or supplying them.¹⁸⁷

These passages fall short of conveying the depth and beauty of Catholic doctrine on life, just as a clinical description of a person would fail to capture his spirit and personality. To understand fully why the Church calls all people to protect and cherish the gift of human life from the moment of conception to natural death, one need look no further than Pope John Paul II's 1995 encyclical, *Evangelium Vitae* (The Gospel of Life).¹⁸⁸ Of the many homilies and addresses of the Holy Father that synthesize this teaching, the following is exemplary:

185. *Id.*

186. PONTIFICAL ACADEMY FOR LIFE, DECLARATION ON THE PRODUCTION AND SCIENTIFIC AND THERAPEUTIC USE OF HUMAN EMBRYONIC STEM CELLS 17 (2000) at 17.

187. *Id.*

188. *Evangelium Vitae*, *supra* note 8.

Life has an inviolable value and an unrepeatable dignity, especially because . . . every person is called to share in God's life 'See what love the Father has given us, that we should be called children of God; and so we are!' (1 Jn 3:1).

With the eyes of faith we can see with particular clarity the infinite value of every human being. The Gospel, by proclaiming the Good News of Jesus, announces also the Good News of man, of his great dignity, and teaches sensitivity concerning man. Because every man, insofar as he has a spiritual soul, is 'capable of God.' The Church, in defending the right to life, is making a broader appeal, a universal one which obliges all men and women. The right to life is not a question of ideology, not only a religious right; it is a human right. The most fundamental human right! God says: 'You shall not kill!' (Ex 20:13). This commandment is at one and the same time a basic principle and a norm of the moral code written in the conscience of every human being.

The measure of civilization, a universal and permanent measure which includes all cultures, is its relationship with life. A civilization which rejected the defenseless would deserve to be called a barbarian civilization, even though it had great successes in the field of economics, technology, art and science. The Church, faithful to the mission received from Christ, despite the weaknesses and infidelities of many of her sons and daughters, has consistently brought into human history the great truth of love of neighbor, has reduced social divisions, overcome racial and ethnic differences, cared for the sick and the orphaned, the old, the handicapped and the homeless. She has taught with words and deeds that no one can be excluded from the great human family, that no one can be pushed to the edges of society. Defense of the life of children not yet born is the consequence of this mission of the Church

Dear Brothers and Sisters, support life. I address this appeal . . . to all people, without excluding anyone. From this place, I repeat once more what I said in October last year: 'A nation which kills its own children is a nation without a future.'¹⁸⁹

189. Pope John Paul II, Homily of the Holy Father at the Shrine of St. Joseph, Kalisz, Poland (June 4, 1997), *available at* http://www.vatican.va/holy_father/john_paul_ii/travels/documents/hf_jp-ii_hom_04061997_en.html.

B. Ensoulment

Supporters of destructive embryo research often point to the concept of “ensoulment,” as if the entire defense of embryonic life hinged on what they see as a ridiculous, archaic dogma.¹⁹⁰ The anti-Catholic bigotry underlying such a viewpoint needs little elaboration. It appears necessary, however, to clarify Catholic Church teaching on ensoulment. The Church does *not* teach formally that the spiritual soul is infused at conception.

“[F]rom the time that the ovum is fertilized, a life is begun which is neither that of the father nor the mother; it is rather the life of a new human being with his own growth. It would never be made human if it were not human already” Even if the presence of a spiritual soul cannot be ascertained by empirical data, the results themselves of scientific research on the human embryo provide “a valuable indication for discerning by the use of reason, a personal presence at the moment of the first appearance of human life”

Furthermore, what is at stake is so important that, from the standpoint of moral obligation, the mere probability that a human person is involved would suffice to justify an absolutely clear prohibition of any intervention aimed at killing a human embryo. Precisely for this reason . . . the Church has always taught and continues to teach that the result of human procreation, from the first moment of its existence, must be guaranteed that unconditional respect which is morally due to the human being in his or her totality and unity as body and spirit¹⁹¹

Because the death of a human being is a matter of great import and finality, one must exercise a high degree of caution. A hunter, for example, is not free to shoot in the direction of a movement or sound until he is certain that the movement or sound was made by an animal and not by a human being.

V. THE AUGUST 9, 2001 DECISION OF PRESIDENT BUSH

On August 9, 2001, in an evening television address to the nation, President Bush announced his Administration’s policy on federal funding

190. See, e.g., Congressman Greenwood’s comments, *supra* note 2.

191. POPE JOHN PAUL II, *supra* note 8, § 60; Norman Ford, S.D.B., *The Human Embryo as a Person in Catholic Teaching*, 1 NAT’L CATH. BIOETHICS Q. 155 (2001).

of human embryonic stem cell research.¹⁹² He would permit such funding to go forward, generally following the guidelines developed by NIH, but only using the cell lines developed from human embryonic stem cells which were extracted (thus killing the embryo) prior to 9:00 p.m. EDT that day.¹⁹³ No funding would be given for human embryonic stem cell research which relied on cell colonies taken from human embryos after that date and time.¹⁹⁴

Over the next few days President Bush, in explaining this compromise that would allow basic research in human embryonic stem cells to go forward, emphasized two key considerations that figured into his decision.¹⁹⁵ First, establishing the cut-off date and time by which human embryos had to have been killed in order to qualify for federal funding of future research using their stem cells, the President said the decision “would not sanction or encourage the further destruction of human embryos”¹⁹⁶ Second, he likened the research use of human embryonic stem cells to the use of vaccines whose origin was tainted, having been derived from tissue from aborted fetuses.¹⁹⁷ Regrettably, he was wrong on both points. Federal funding of research using the approved cell lines cannot be so totally divorced from the destruction that produced them. These human embryos did not die of natural causes, nor were they killed for an unrelated purpose. They died precisely for the sake of this research, which now will receive federal funding.

The researchers and companies that did the killing primarily will reap a financial windfall from taxpayers for having cell lines available for research. The fact that embryos were destroyed with private funds does not solve the problem. Once the Clinton Administration said it would fund research on cell lines derived from embryos killed with private funds (provided certain NIH standards were followed, i.e., informed consent of parents, limited to embryos created for reproductive purposes and previously frozen, etc.), the race was on to create as many cell lines as

192. Press Release, The White House, Remarks by the President on Stem Cell Research, White House Website (Aug. 9, 2001), available at <http://www.whitehouse.gov/news/releases/2001/08/20010809-2.html>.

193. *Id.*

194. *Id.*

195. *Id.*

196. *Id.*

197. President George W. Bush, Op-Ed, *Stem Cell Science and the Preservation of Life*, N.Y. TIMES, Aug. 12, 2001, at 13.

possible—meeting just these criteria—to qualify for federal grants.

The companies which jumped early into the field of destructive embryo research will in some cases be rewarded directly with federal grants. In other cases they will receive federal funds indirectly from researchers newly entering the field, who will use taxpayer dollars to pay them for access to their cell lines. In the unlikely event that any useful therapies develop from this research, patent holders (especially Wisconsin Alumni Research Foundation and Geron Corporation, its licensee which controls stem cell lines of six tissue types) will benefit richly.

A number of research entities in the biotechnology field are for-profit corporations. The decision to allow federal funding will likely encourage private sector investment, raising stock prices and the value of stock held by the companies' principals.

A. A Catalyst for Private Killing

Perhaps even more troubling is the fact that federal funding, even for limited embryonic stem cell research, will encourage more privately funded research that does not observe these limits. Tax dollars paid to Geron *et al.* to work with already existing cell lines will free up equivalent private funds to continue destroying embryos to create more cell lines for privately funded research. For example, the University of California, San Francisco, “decided to set up a privately funded laboratory off campus where researchers can work on new cell lines, while lab facilities on campus comply with federal guidelines limiting them to existing cell lines.”¹⁹⁸ Geron is funding this off-campus research. A University spokeswoman explained why they believe outside, privately funded research is important: “By establishing hundreds or even thousands of cell lines from spare embryos, it may be possible to match the immune system of many potential recipients.”¹⁹⁹ Recall that thirty to forty or more embryos might be destroyed in the effort to obtain a single useful cell line.

These financial rewards, the government's removing some of the stigma associated with embryonic stem cell research and its implied expectation of potential success in finding cures, attracted new researchers to this field already within the first two weeks following the announcement. According to the Bush Administration, this is exactly what the President

198. Lisa M. Krieger, *UCSF Continues Stem Cell Move*, SAN JOSE MERCURY NEWS, Aug. 22, 2001, at 1B.

199. *Id.*

intended.²⁰⁰ Health and Human Services spokesman Bill Pierce stated,

As we've said all along, the President's decision has stimulated great interest in the issue, and we expect will stimulate greater opportunities for research in the private sector. . . . *This is what federal funding of basic research is supposed to do*—provide seed money that is followed by private sector money if the research is promising.²⁰¹

HHS Secretary Tommy Thompson echoed this position in subsequent Congressional testimony,

The logic of the American free enterprise system suggests that President Bush's decision is going to provide incentive for the private sector to get more involved. And once the basic research is conducted, the private sector likely will have great incentive to step in and transform this basic research into therapies for disease.²⁰²

B. The Vaccine Analogy is Invalid

Catholic moralists have concluded that individuals, when they have no practical alternative, may use vaccines to protect their health and the health of their loved ones, even if the vaccines may have been cultured in fetal cells that came from an elective abortion. Catholic teaching, however, rejects all complicity in abortion and the Church opposes collaboration with abortionists—including government collaboration—to obtain tissue for vaccines or other research. A recipient of a vaccine from a morally unacceptable source has taken no part in decisions to base the vaccine on such source, but is coping with the results of immoral decisions made by others.

The Bush Administration has compared this to its own proposal to fund research using cell lines from embryos destroyed prior to August 9, 2001. But that proposal is quite different. Here the federal government is choosing to cooperate with, and reward, researchers who have destroyed human embryos. The link between the government's actions and the destruction of human embryos is even stronger here than in the case of

200. See Marc Kaufman, *Netscape's Clark Pulls Donation*, WASH. POST, Sept. 1, 2001, at A5.

201. *Id.* (emphasis added).

202. *Hearing on Embryonic Stem Cell Research Before the Senate Comm. on Health, Education, Labor and Pensions*, 107th Cong. (2001) (statement of Tommy G. Thompson, Secretary, U.S. Dep't of Health and Human Services), available at <http://www.hhs.gov/news/speech/2001/010905.html>.

vaccine companies using fetal tissue from abortions. In the present case, human lives were taken in order to provide cells for research and, in some cases, precisely to qualify for federal grants; in the case of vaccines, tissues were taken following abortions performed for unrelated reasons.

Perhaps a better analogy for the stem cell research funding proposal can be found in U.S. criminal law, in a doctrine known as “the fruit of the poisonous tree.” To protect people from unreasonable searches and seizures, and discourage any such abuse by law enforcement officials, evidence obtained through an unconstitutional search is inadmissible at trial. Police are not allowed to reap benefits from their violation of the defendant’s rights. The Bush decision justifies funding because the wrongful act was already done, but allows those who violated the rights of the human embryos to enjoy the fruits of their misdeeds.

VI. WHAT THE FUTURE HOLDS

A. Researchers and Dollars Drawn to Destructive Embryo Research

Former NIH director Harold Varmus has said that “hundreds of researchers would get into the field, even under limited federal funding . . . [and] predicted that the federal government would spend tens to hundreds of millions of dollars per year in this field.”²⁰³ The director of the University of Minnesota Stem Cell Institute had been dissuaded from seeking federal funding because of the “political turmoil” surrounding human embryonic stem cell research.²⁰⁴ Now that “the matter appears settled,” she said she plans to submit a grant application.²⁰⁵ The front page banner headline of the August 11, 2001 edition of the *Richmond Times-Dispatch* reads: “Researchers at the Ready: Virginia schools, firms to seek stem-cell grants.”²⁰⁶ The article begins, “Now that the controversial field of embryonic stem-cell research has won the presidential green light, some Virginia research universities and biotech

203. Laura Meckler, *Congress Takes Up Debate as Scientists Search for Treatment*, ASSOCIATED PRESS (Aug. 11, 2001), available at http://www.onlineathens.com/stories/081101/tec_0811010065.shtml.

204. *Id.*

205. *Id.*

206. A.J. Hostetler, *Researchers at the Ready: Virginia Schools, Firms Seek Stem-Cell Grants*, RICH. TIMES-DISPATCH, Aug. 11, 2001, at A1.

companies plan to enter the field and win the taxpayer greenbacks.”²⁰⁷ Researchers at both Virginia Commonwealth University and George Mason University said scientists at their schools now plan to enter the field.²⁰⁸

Boston IVF, an organization of fertility clinics based in Waltham, Massachusetts, announced on August 25, 2001 that it will give human embryos to Harvard for research, after obtaining permission from the parents of “thousands of frozen embryos” in its possession.²⁰⁹

B. Judicial Action

As of this writing, a case is pending in the United States District Court for the District of Columbia,²¹⁰ in which plaintiffs seek declaratory and injunctive relief on the ground that the NIH Guidelines for Research Using Human Pluripotent Stem Cells violate the Dickey amendment’s ban on funding “research in which a human embryo or embryos are destroyed, discarded, or knowingly subjected to risk of injury or death.”²¹¹ Plaintiffs are Nightlight Christian Adoptions—an adoption agency that successfully arranged for infertile couples to adopt human embryos stored in IVF clinics; the Christian Medical Association; several couples who wish to adopt human embryos and a researcher specializing in research using adult stem cells.

On May 4, 2001, the Court entered an order based on the parties’ stipulated motion to stay the case that provides in part:

3) During the pendency of the [HHS review of NIH Guidelines for Research Using Human Pluripotent Stem Cells (“Guidelines”)], the Defendants [HHS and NIH] will continue their present policy of not funding any research involving use of pluripotent stem cells derived from human embryos, including all independent investigator and intramural research. During the Review period Defendants will not evaluate the scientific merits of any application for funding of embryo stem cell

207. *Id.*

208. *Id.*

209. Raja Mishra, *Clinic to Give Embryos to Harvard for Stem-Cell Research*, BOSTON GLOBE, Aug. 24, 2001, A1, available at http://www.ns.purchase.edu/biology/bio1540/article_61.htm.

210. *Nightlight Christian Adoptions v. Thompson*, No. 1.01CV00502-RCL, (D.D.C. filed May 17, 2001).

211. *Id.*

research. Similarly, during the period of Review Defendants will continue their present policy of postponing review of compliance packages under the Guidelines. Even if the Review results in consideration of funding for pluripotent stem cell research, Defendants will not fund any such research for a period of thirty (30) days following conclusion of the Review.²¹²

The lawsuit is also stayed pending completion of the HHS review. As of this writing, such review apparently is not completed. Following the President's announcement permitting funding of human embryonic stem cell research, but only using the sixty-plus identified cell lines derived from human embryos destroyed prior to 9 p.m. EDT, August 9, 2001, NIH indicated that some of the Guidelines' provisions would be modified.²¹³ The policy outlined by President Bush undercuts the standing of adoptive parents of embryos because, presumably, the supply of embryos available for adoption will not be diverted for use in federally funded destructive research. The Bush policy does not undercut, however, the standing of Christian Medical Association and David Prentice (as a researcher engaged in adult stem cell research).

C. Legislative Action

The Dickey amendment, which contains the clearest prohibition on funding human embryonic stem cell research currently in federal law, is due to expire at the end of the current (2001) fiscal year. In the coming weeks, Congress will be taking up NIH appropriations measures for fiscal year 2002. The Dickey amendment may be dropped, rewritten or re-interpreted to permit funding along the lines of the President's "compromise" policy.

CONCLUSION

In the foregoing discussion the author has attempted to present arguments against funding human embryonic stem cell research drawn from U.S. law, from universally accepted medical ethics (with a bit of moral reasoning thrown in), and from the current state of scientific knowledge. Section IV touched briefly on Catholic Church teaching.

212. *Nightlight Christian Adoptions v. Thompson*, No. 1.01CV00502-RCL, at 2 (D.D.C. 2001) (order granting temporary stay).

213. See Rick Weiss, *A Stem Cell Ethics Rule Is Eased*, WASH. POST, Aug. 11, 2001, at A1.

Such an approach was never meant to suggest that secular arguments against destroying human embryos are more valid or compelling than the wisdom of Catholic teaching. The approach was chosen primarily to demonstrate that one need not subscribe to the teachings of the Church—indeed, one might reject them out of hand—and yet still reach the conclusion that destroying living human embryos is “a bad thing” for society to endorse.

Some may think that making moral judgments like “bad thing” is inappropriate when this is a matter of law and science. Law is, however, the primary medium through which members of a society declare the moral standards to which all within the society are held; and law is a primary mechanism for enforcing those moral standards, particularly since fear of social disgrace and public opprobrium disappeared with the dawning of the Era of Tolerance.

Even if the laws of the United States were to endorse destructive human embryo research through federal funding, if there were no medically superior alternatives to human embryonic stem cells, and if those stem cells gave rise to therapies proven to cure every disease known to man, what then? Supporters of destructive embryo research believe that the “good end”—curing disease—fully justifies the taking of hundreds, even thousands of human embryos’ lives.

Suppose the noble end is not to cure disease, but to defend one’s homeland from the scourge of a Communist takeover? Does such an important goal justify intentionally risking the lives of innocent children? The “most harrowing” photo from the Vietnam War period tells us “No! Emphatically not!” Recall the children fleeing a napalm attack on their village by the South Vietnamese Air Force,²¹⁴ their faces strained with horror and bewilderment. In the middle of the road, nine-year-old Phan Thi Kim staggers, naked, her clothing burned off. Her arms are outstretched, burned. Would anyone disagree that the monstrous deed which caused these children to suffer and die is beyond the bounds of acceptable behavior and must never be allowed to happen again?

Or consider another photo also seared in the public’s memory. At the mention of the Oklahoma City bombing, surely the first image that comes to mind is that of a fireman, carrying the bloodied, limp body of one-year-

214. Charles Freund, *Vietnam’s Most Harrowing Photo: From Guilt to Grace* (Nov. 21, 1996), available at <http://www.slate.msn.com/BigPicture/96-11-21/BigPicture.asp>.

old Baylee Almon-Kok from the rubble. Eventually, the bomber expressed regret over the loss of innocent lives, but also described them as unavoidable “collateral damage” in his crusade against the U.S. government—in his mind, a noble cause. Do we have a consensus that *nothing* could ever justify the taking of Baylee’s life, nor the lives of the other victims? That humans are not expendable, and must never be used as a means to another’s ends?

Now the difficulty in applying this standard to the case of human embryos is that these little humans “don’t look like us.” They don’t tug on our heart-strings. For some people that seems to settle the question. Columnist Anna Quindlen, for example, describes the natural emotional bond for ailing born humans and the lack of a bond for “unwanted” unborn humans this way:

It may be an oversimplification to say that real live loved ones trump the imagined unborn, that a cluster of undifferentiated cells due to be discarded anyway is a small price to pay for the health and welfare of millions. Or perhaps it is only simple commonsensical truth.²¹⁵

The sentiment is understandable, but truth and commonsense do not dictate that one life should be demanded as a sacrifice for the other. Such would be a dangerous yardstick for public policy, which ought to be based on substance, not appearances, and on sound reasoning, not emotional appeals.

The science of embryology tells us that these clusters of cells are not simply “potential” lives, or worse, “potential life.” They are living human beings with the potential to do anything born humans do. The vast majority of embryologists working with these clusters of cells do not regard them as human tissue. They regard them with “awe”²¹⁶ and “dread destroying embryos when [fertility] patients request it.”²¹⁷

If human rights are inherent and inalienable—as our founders believed and the world’s nations proclaimed in the 1948 Universal Declaration of Human Rights²¹⁸—how could human rights apply selectively, excluding an

215. Anna Quindlen, *A New Look, An Old Battle*, NEWSWEEK, Apr. 9, 2001, at 72.

216. See Junod, *supra* note 123, at 81.

217. Gina Kolata, *The Job Nobody at the Fertility Clinic Wants*, N.Y. TIMES, Aug. 26, 2001, at A24.

218. Universal Declaration of Human Rights, Adopted by United Nations Gen. Assem., Resolution 217 A (III), Dec. 10, 1948, *available at*

entire class of people? How could they fail to inhere at any point other than conception, when each human begins his life's journey? The human rights violations occurring under U.S. abortion law must be contained and resisted. If the *Roe* aberration were extended to claim the lives of other vulnerable children with the government's blessing, we will truly become "a barbarian civilization" and a "nation without a future."²¹⁹

