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An Ethical Defense of Federal Funding for Human Embryonic Stem Cell Research

James F. Childress, Ph.D.**

Should the Federal Government fund human embryonic stem cell research? In addressing this question and answering it affirmatively, I will draw from testimony I was asked to prepare for the Hearing on “Stem Cell Research” conducted by the U.S. Senate Committee on Health, Education, Labor and Pensions, chaired by Senator Edward M. Kennedy, on September 5, 2001. Even though I did not testify on that occasion on behalf of the National Bioethics Advisory Commission (NBAC), on which I served until its demise at the end of September 2001, I drew, then as well as now, on the NBAC’s 1999 report on *Ethical Issues in Human Stem Cell Research*, which, as a commissioner, I helped to prepare and also endorsed.¹

I. A RANGE OF ETHICALLY ACCEPTABLE POLICIES

Despite the thought and consideration that went into President Bush’s announced policy on the use of federal funds in human embryonic stem cell research, I would argue that more flexible policies are ethically acceptable and even preferable. Three options merit consideration:

- (1) Providing federal funds for research on cell lines derived (using non-federal funds) from embryos prior to August 9, 2001 within certain ethical guidelines (President Bush’s announced policy).
- (2) Providing federal funds for research on cell lines derived (using non-federal funds) from embryos, earlier or in the future, within certain ethical guidelines (the policy proposed earlier by the National Institutes of Health (NIH)).

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† I am grateful to Alta Charo and LeRoy Walters for their thoughtful and helpful comments on an earlier draft; they are absolved of any responsibility for its content. Portions of this Article will appear, in modified form, in a forthcoming commentary in the *American Journal of Bioethics*.

(3) Providing federal funds for both the derivation of, and research on, cell lines derived from embryos within certain ethical guidelines (NBAC's recommendation).

President Bush's announced policy (option 1) suggests that it is ethically acceptable to use federal funds for research on stem cell lines that were derived, using non-federal funds, prior to his announcement on August 9, if the derivation also met certain ethical requirements, including the informed consent of donors of embryos created solely for reproductive purposes and the absence of financial inducements.² If policy option 1 is ethically acceptable—as I believe it is—then it should also be ethically acceptable to do the same thing prospectively (policy option 2). That is, it should be ethically acceptable to provide federal funds for research on stem cell lines derived in the future, after August 9 as well as before, with non-federal funds and within the same ethical guidelines. This prospective policy would offer greater—and needed—flexibility for the short-term and long-term future. And it would be ethically preferable because it would increase the possibilities for important research, without violating relevant ethical standards.³

President Bush's statement noted that the first policy (option 1), which includes about sixty stem cell lines (about which there is considerable scientific uncertainty and controversy⁴), "allows us to explore the promise and potential of stem cell research without crossing a fundamental moral line by providing taxpayer funding that would sanction or encourage further destruction of human embryos that have at least the potential for life."⁵ However, I believe that ethically we can provide federal tax funds for research on stem cells derived after as well as before August 9, using non-federal funds, and that this can be accomplished without sanctioning or encouraging further destruction of human embryos. To do so, we must establish effective ethical safeguards. Those safeguards should ensure, to the greatest extent possible, the couple's voluntary and informed decision to destroy their embryos—rather than use them or donate them to another couple—and their voluntary and informed decision to donate them for research. Each decision should be free of financial inducement. In view of the couple's decision to destroy the embryos, the research would only determine *how* the destruction occurs, not *whether* it will occur; as matters stand in most jurisdictions, couples may determine how to dispose of their embryos.

It is possible to go further than either of these first two policies and recommend, as the NBAC did, a third option—the provision of federal funds for both the derivation of stem cells from embryos and research on

those cell lines, again in accord with ethical requirements. One argument for this option is that a strict separation between derivation and use would adversely affect the development of scientific knowledge. For instance, the methods for deriving embryonic stem cells may affect their properties, and scientists may increase their understanding of the nature of such cells in the process of deriving them.⁶

In short, I see no ethical reason for limiting federal funding to research with cell lines derived by some arbitrary date, as long as we can ensure that future derivation, with non-federal funds (option 2) or federal funds (option 3), also respects the same moral limits. Indeed, our collective moral duty to alleviate human suffering and reduce the number of premature deaths provides a strong ethical reason to support this research, within moral limits.

II. RESPECT FOR THE EMBRYO

There is widespread agreement, as the NBAC observed, that “human embryos deserve respect as a form of human life,” but at the same time, sharp disagreements exist “regarding both what form such respect should take and what level of protection is required at different stages of embryonic development.”⁷ At the very least this “respect” implies that:

- Early embryos should not be used unless they are necessary for research;
- embryos remaining after in vitro fertilization (IVF), as well as cadaveric fetal tissue, should not be bought or sold; and
- alternative sources of stem cells should simultaneously be explored.

Indeed, given the promise of this research, and the uncertainty about which stem cells might be adequate and which might be superior for various purposes, research on stem cells derived from different sources should be eligible for federal funding. The goal of realizing the therapeutic promise of stem cell research is ethically significant. It is also ethically important to treat the different sources of stem cells with appropriate respect.

One interpretation of appropriate respect for early embryos would rule out their deliberate creation in order to use them in research. I supported the NBAC’s recommendation that, at this time, federal agencies should not fund research involving the derivation or use of embryonic stem cells from embryos made solely for research purposes, whether they were made by IVF or by somatic cell nuclear transfer into oocytes. However, in this area, it is ethically dangerous to say “never,” and the

Senate should not accept the House ban on so-called “therapeutic cloning” (in contrast to “reproductive cloning”). For now, it appears to be possible to develop enough cell lines without creating more embryos, and there appears to be no need for nuclear transfer unless and until therapy is possible. But if therapy becomes possible, matched tissue may be needed. And it may then be necessary to revisit the question about so-called “therapeutic cloning,”⁸ which at the present is really experimental research rather than therapeutic.

III. DIVERSITY OF RELIGIOUS AND SECULAR VIEWS

Views about appropriate respect for the embryo hinge on convictions about the embryo’s moral status. As a specialist in religious ethics, I have been fascinated by the diverse religious views on human embryonic stem cell research, both across traditions and within traditions. On May 7, 1999 the NBAC convened a meeting at Georgetown University to hear presentations on religious perspectives relating to human stem cell research. Eleven scholars in Roman Catholic, Jewish, Eastern Orthodox, Islamic, and Protestant traditions presented formal testimony that day, and two others made statements in the public comment period. Their statements, as well as later statements of other traditions (e.g., the Mormon tradition), reveal significantly different perspectives on the ethical acceptability of research on unimplanted human embryos. Even when similarly opposed to abortion, different religious positions may reach divergent moral conclusions about human embryonic stem cell research. Their different conclusions follow, in part, from different premises about the moral status of the early embryo existing outside a woman’s womb.

Although Roman Catholicism officially opposes human embryonic stem cell research, some Roman Catholic moral theologians endorse it. A number of Jewish thinkers hold that the extracorporeal embryo, in the petri dish or cryopreserved, does not have standing in Jewish law and that it is justifiable to go forward with embryonic stem cell research. Protestants represent a wide range of views, as could be expected in view of the more than two hundred denominations in the United States that are identified as Protestant. Some Muslim thinkers also accept embryonic stem cell research.⁹

An interesting case in point is the Church of Jesus Christ of the Latter Day Saints (Mormons), which generally joins the Roman Catholic Church in strong opposition to abortion, but which has officially stated its neutrality on embryonic stem cell research, an area that it says “merits cautious scrutiny.”

The proclaimed potential to provide cures or treatments for many serious diseases needs careful and continuing study by conscientious, qualified investigators. As with any emerging new technology, there are concerns that must be addressed. Scientific and religious viewpoints both demand that strict moral and ethical guidelines be followed.¹⁰

The five Mormon senators support federal funding for embryonic stem cell research, without compromising their “pro-life” stance. The Mormon tradition does not rest its opposition to abortion on a declaration about when human life begins—it views abortion as similar to homicide. It holds that each person existed as a spirit child of God prior to receiving a physical body on earth. Thus, in what is a two-step process of creation—spirit and flesh—the union of spirit and body marks the beginning of life on earth. In this context, stem cells may be comparable to the “dust of the earth,” essential to human life but not human life itself.¹¹

In brief, no consensus exists among religious traditions—or secular moral traditions—about the moral status of the extracorporeal embryo. This diversity sets the context for an ethical assessment of public policy toward human embryonic stem cell research. An ethical public policy in our pluralistic society has to respect diverse fundamental beliefs. And yet it must not be held hostage to any single view of embryonic life.

IV. STEM CELL LINES DERIVED FROM ABORTED FETUSES

Another possible source of stem cells—human embryonic germ cells from aborted fetuses—has received scant attention recently.¹² However, precedent exists in U.S. policies for providing federal funds to support research on cell lines derived from aborted fetuses. This precedent appears in the framework developed for the use of cadaveric fetal tissue in transplantation research.¹³ This framework seeks to separate as much as possible a pregnant woman’s decision to abort from her decision to donate fetal tissue for research. The rationale for this separation is to avoid any possibility, however slight, that the opportunity to donate fetal tissue in federally funded research could provide an additional incentive for a woman to have an abortion.

Several “ethical safeguards” were erected in order to prevent the use of fetal tissue in federally funded transplantation research from encouraging abortions. For example, these safeguards separate the consent process for abortion from the consent process for the donation of fetal tissue for research, and prohibit the donor of fetal tissue from designating the recipient of the transplant. These ethical guidelines, which appear to have been effective in human fetal tissue transplantation research, should now

be extended to stem cell research as well, as the NBAC has recommended and the NIH has proposed.¹⁴ Even if at this juncture embryonic stem cells appear to be more promising than embryonic germ cells, derived from aborted fetuses, it would be appropriate to ensure that the current guidelines for the use of fetal tissue in federally funded research adequately cover research on embryonic germ cell lines. However, in the absence of a strongly felt need to use germ cells from aborted fetuses, the political reluctance to get embroiled in abortion wars may prevent such an action.

V. ANOTHER APPROACH TO PUBLIC POLICY—THE U.K. EXPERIENCE

The United Kingdom has responded quite differently than the United States to human embryonic stem cell research, including so-called “therapeutic cloning.” Following the 1984 Warnock Committee report, the British government implemented most of that Committee’s recommendations in the 1990 Human Fertilisation and Embryology Act, which, among other things, established the Human Fertilisation and Embryology Authority (HFEA).¹⁵ Over the last decade, the HFEA, currently chaired by Ruth Deech, has had authority over IVF, in policy and in practice. The HFEA also licenses and monitors all human embryo research in the United Kingdom, whatever the source of funding. In addition, it approves, in limited circumstances, the creation of embryos for research purposes. More than 53,000 embryos have been used in research, while 118 have been created specifically for research.¹⁶ In January 2001, following vigorous public debate, the British Parliament approved regulations to enlarge the range of acceptable goals for human embryo research and also to permit the creation of embryos for research by nuclear transfer (“therapeutic cloning”).¹⁷

In the United Kingdom, then, years prior to the recent debate about stem cell research, several substantive and procedural standards were established for embryo research, including the creation of embryos for research. Furthermore, the public appears to have considerable confidence in that framework, based on a decade’s experience. As a result, the acceptance of “therapeutic cloning” required only an extension of the existing framework, rather than the invention of a new one.

The U.K.’s strict regulation of reproductive technologies and authorization, but also tight control over, embryo research appears to have created a context for a positive response to the possibilities of human stem cell research.¹⁸ By contrast, in the United States, regulation of reproductive technologies and fertility clinics, which is under the control of the states, is, at best, limited and uneven, and the federal government has not allowed

the use of federal funds for embryo research (though, of course, privately funded research proceeds). As a result, the task of formulating public policy toward human embryonic stem cell research is much more challenging in the United States.

CONCLUSION

If President Bush's announced policy is ethically acceptable, as I believe it is, there is no cogent ethical reason for stopping where his policy stops—with the use of stem cell lines that were derived from embryos by August 9, 2001. Indeed, that temporal restriction is difficult to defend from an ethical standpoint. It is possible to use non-federal funds (or even, I would argue, federal funds) to derive stem cell lines from embryos within certain ethical requirements, and to provide federal funds for research on those lines without sanctioning or encouraging the destruction of embryos or the creation of so-called "extra" or "surplus" embryos in clinical IVF. I would support these other policy options—derivation with non-federal funds or with federal funds—on the grounds that they will probably enable important research to proceed more rapidly, and will not breach crucial ethical boundaries. In addition, it is ethically justifiable to provide federal funds for deriving and conducting research on stem cell lines developed from aborted fetuses, in accord with the guidelines and regulations already established for human fetal tissue transplantation research.

Whichever policies are adopted to enable important and promising stem cell research to go forward, within ethical limits, we will need a strong public body to review protocols for deriving stem cells from embryos (and from fetal tissue) and to monitor this research.¹⁹ Perhaps the Council on Bioethics, which President Bush has announced, could fulfill these functions, but it is not yet clear what its mandate and structure will be. If it does not fulfill these functions, some other public body will be needed, as the U.K. experience suggests. In the United Kingdom, the HFEA is statutorily established, and that might be a model for the United States, because we also need oversight of human embryo research in the private arena.

It is safe to assume that no policy currently under discussion will be the final one. We will need to revisit this research again and again as the science develops and as its ethical implications become clearer, particularly through a public body's on-going review and oversight. Thus, no policy will end the national conversation about how to balance, over time, the relevant ethical considerations. Our public dialogue needs to continue with as much rigor and imagination as possible. As we continue to reflect on the important issues raised by human embryonic stem cell research, we

need a policy with greater flexibility than the one President Bush announced, but also with close review and oversight.

In a recent editorial in *Science*, ethicist LeRoy Walters stressed that “Governments and their advisors will need to be humble and flexible, but also decisive and courageous.”²⁰ We must carefully scrutinize claims of scientific promise, being wary of unfounded optimism, but we must not neglect research that offers a significant prospect of major medical breakthroughs that may alleviate human suffering and reduce the number of premature deaths. As a society, we must provide clear and strong ethical guidelines, regulations, and safeguards for stem cell research, while avoiding unreasonably rigid rules that appear to be arbitrary and inconsistent.

References

1. 1 NAT'L BIOETHICS ADVISORY COMMISSION, *ETHICAL ISSUES IN HUMAN STEM CELL RESEARCH: REPORT AND RECOMMENDATIONS* (1999) [hereinafter *STEM CELL RESEARCH*].

2. George W. Bush, *Stem Cell Science and the Preservation of Life*, N.Y. TIMES, Aug. 12, 2001, Sec. 4, at 13.

3. This is similar to the policy the NIH initially proposed in December 1999 and further refined in 2000.

4. American Association for the Advancement of Science, *President Bush's Stem Cell Policy* (Aug. 17, 2001), at <http://www.aaas.org/spp/cstc/stemstmt.htm>.

5. George W. Bush, *Remarks by the President on Stem Cell Research* (Aug. 9, 2001), at <http://www.whitehouse.gov/news/releases/2001/08/20010809-2.html>.

6. *STEM CELL RESEARCH*, *supra* note 1, at 19-20.

7. *STEM CELL RESEARCH*, *supra* note 1.

8. The NBAC's report on human stem cell research anticipated that privately funded research would use deliberately created embryos, whether created through IVF or cloning, and that careful monitoring of this private sector research would enable the federal government to determine when, if ever, the time has come to fund the creation of embryos for research.

9. *STEM CELL RESEARCH*, *supra* note 1, at 99-104.

10. See Drew Clark, *The Mormon Stem Cell Choir*, THE NAT'L J. TECH. DAILY, Aug. 2, 2001.

11. *Id.*

12. See R. Alta Charo, *Bush's Stem Cell Decision May Have Unexpected—and*

Unintended—Consequences, CHRON. HIGHER EDUC., Aug. 14, 2001, at B14.

13. For the debate about human fetal tissue transplantation research, see the discussion in JAMES F. CHILDRESS, *PRACTICAL REASONING IN BIOETHICS* 301-28 (1997).

14. See *STEM CELL RESEARCH*, *supra* note 1, at 68-69 (citing recommendation 1).

15. Human Fertilisation and Embryology Act, c. 37 (1990) (Eng.).

16. Nicholas Wade, *Stem Cell Studies Advance in Britain*, N.Y. TIMES, Aug. 14, 2001, at A1.

17. *Id.*

18. For helpful discussions of policy in the United Kingdom, see LeRoy Walters, *Human Embryo Research: Lessons from History*, 293 SCI. 1401 (2001), and Wade, *supra* note 16.

19. See *STEM CELL RESEARCH*, *supra* note 1, at 74-77 (citing recommendation 8).

20. Walters, *supra* note 18.

