

PERSPECTIVE

THE STEM-CELL DEBATE

The editors asked two members of the President's Council on Bioethics to address the following questions:

Research on human embryonic stem cells holds great promise for the development of therapies for chronic and debilitating diseases that are currently untreatable. Should the federal government of the United States provide funding for such research? If it does not provide such funding but effective stem-cell-based therapies are developed elsewhere, should their use be allowed in the United States?

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Their responses follow.

Embryo Ethics — The Moral Logic of Stem-Cell Research

Michael J. Sandel, D.Phil.

At first glance, the case for federal funding of embryonic stem-cell research seems too obvious to need defending. Why should the government refuse to support research that holds promise for the treatment and cure of devastating conditions such as Parkinson's disease, Alzheimer's disease, diabetes, and spinal cord injury? Critics of stem-cell research offer two main objections: some hold that despite its worthy ends, stem-cell research is wrong because it involves the destruction of human embryos; others worry that even if research on embryos is not wrong in itself, it will open the way to a slippery slope of dehumanizing practices, such as embryo farms, cloned babies, the use of fetuses for spare parts, and the commodification of human life.

Neither objection is ultimately persuasive, though each raises questions that proponents of stem-cell research should take seriously. Consider the first objection. Those who make it begin by arguing, rightly, that biomedical ethics is not only about ends but also about means; even research that achieves great

good is unjustified if it comes at the price of violating fundamental human rights. For example, the ghoulish experiments of Nazi doctors would not be morally justified even if they resulted in discoveries that alleviated human suffering.

Few would dispute the idea that respect for human dignity imposes certain moral constraints on medical research. The question is whether the destruction of human embryos in stem-cell research amounts to the killing of human beings. The "embryo objection" insists that it does. For those who adhere to this view, extracting stem cells from a blastocyst is morally equivalent to yanking organs from a baby to save other people's lives.

Some base this conclusion on the religious belief that ensoulment occurs at conception. Others try to defend it without recourse to religion, by the following line of reasoning: Each of us began life as an embryo. If our lives are worthy of respect, and hence inviolable, simply by virtue of our humanity, one would be mistaken to think that at some younger age or earlier stage of development



Blastocyst.

Courtesy of Wellcome Library, London.

we were not worthy of respect. Unless we can point to a definitive moment in the passage from conception to birth that marks the emergence of the human person, this argument claims, we must regard embryos as possessing the same inviolability as fully developed human beings.

But this argument is flawed. The fact that every person began life as an embryo does not prove that embryos are persons. Consider an analogy: although every oak tree was once an acorn, it does not follow that acorns are oak trees, or that I should treat the loss of an acorn eaten by a squirrel in my front yard as the same kind of loss as the death of an oak tree felled by a storm. Despite their developmental continuity, acorns and oak trees are different kinds of things. So are human embryos and human beings. Sentient creatures make claims on us that nonsentient ones do not; beings capable of experience and consciousness make higher claims still. Human life develops by degrees.

Those who view embryos as persons often assume that the only alternative is to treat them with moral indifference. But one need not regard the embryo as a full human being in order to accord it a certain respect. To regard an embryo as a mere thing, open to any use we desire or devise, does, it seems to me, miss its significance as potential human life. Few would favor the wanton destruction of embryos or the use of embryos for the purpose of developing a new line of cosmetics. Personhood is not the only warrant for respect. For example, we consider it an act of disrespect when a hiker carves his initials in an ancient sequoia — not because we regard the sequoia as a person, but because we regard it as a natural wonder worthy of appreciation and awe. To respect the old-growth forest does not mean that no tree may ever be felled or harvested for human purposes. Respecting the forest may be consistent with using it. But the purposes should be weighty and appropriate to the wondrous nature of the thing.

The notion that an embryo in a petri dish has the same moral status as a person can be challenged on further grounds. Perhaps the best way to see its implausibility is to play out its full implications. First, if harvesting stem cells from a blastocyst were truly on a par with harvesting organs from a baby, then the morally responsible policy would be to ban it, not merely deny it federal funding. If some doctors made a practice of killing children to get organs for transplantation, no one would take the position that the infanticide should be ineligible for federal

funding but allowed to continue in the private sector. If we were persuaded that embryonic stem-cell research were tantamount to infanticide, we would not only ban it but treat it as a grisly form of murder and subject scientists who performed it to criminal punishment.

Second, viewing the embryo as a person rules out not only stem-cell research, but all fertility treatments that involve the creation and discarding of excess embryos. In order to increase pregnancy rates and spare women the ordeal of repeated attempts, most in vitro fertilization clinics create more fertilized eggs than are ultimately implanted. Excess embryos are typically frozen indefinitely or discarded. (A small number are donated for stem-cell research.) But if it is immoral to sacrifice embryos for the sake of curing or treating devastating diseases, it is also immoral to sacrifice them for the sake of treating infertility.

Third, defenders of in vitro fertilization point out that embryo loss in assisted reproduction is less frequent than in natural pregnancy, in which more than half of all fertilized eggs either fail to implant or are otherwise lost. This fact highlights a further difficulty with the view that equates embryos and persons. If natural procreation entails the loss of some embryos for every successful birth, perhaps we should worry less about the loss of embryos that occurs in in vitro fertilization and stem-cell research. Those who view embryos as persons might reply that high infant mortality would not justify infanticide. But the way we respond to the natural loss of embryos suggests that we do not regard this event as the moral or religious equivalent of the death of infants. Even those religious traditions that are the most solicitous of nascent human life do not mandate the same burial rituals and mourning rites for the loss of an embryo as for the death of a child. Moreover, if the embryo loss that accompanies natural procreation were the moral equivalent of infant death, then pregnancy would have to be regarded as a public health crisis of epidemic proportions; alleviating natural embryo loss would be a more urgent moral cause than abortion, in vitro fertilization, and stem-cell research combined.

Even critics of stem-cell research hesitate to embrace the full implications of the embryo objection. President George W. Bush has prohibited federal funding for research on embryonic stem-cell lines derived after August 9, 2001, but has not sought to ban such research, nor has he called on scientists to

desist from it. And as the stem-cell debate heats up in Congress, even outspoken opponents of embryo research have not mounted a national campaign to ban in vitro fertilization or to prohibit fertility clinics from creating and discarding excess embryos. This does not mean that their positions are unprincipled — only that their positions cannot rest on the principle that embryos are inviolable.

What else could justify restricting federal funding for stem-cell research? It might be the worry, mentioned above, that embryo research will lead down a slippery slope of exploitation and abuse. This objection raises legitimate concerns, but curtailment of stem-cell research is the wrong way to ad-

dress them. Congress can stave off the slippery slope by enacting sensible regulations, beginning with a simple ban on human reproductive cloning. Following the approach adopted by the United Kingdom, Congress might also require that research embryos not be allowed to develop beyond 14 days, restrict the commodification of embryos and gametes, and establish a stem-cell bank to prevent proprietary interests from monopolizing access to stem-cell lines. Regulations such as these could save us from slouching toward a brave new world as we seek to redeem the great biomedical promise of our time.

Zygote and “Clonote” — The Ethical Use of Embryonic Stem Cells

Paul R. McHugh, M.D.

Bioethics is a debate without rules about a future dimly apprehended — a debate that is ever in danger of slipping from judicious deliberations into secular sermons. I awoke to these facts soon after I had joined the President’s Council on Bioethics, when we began to discuss embryonic stem cells. The discovery of pluripotential, infinitely self-replicating stem cells early in the 1980s had lit up a whole domain of cellular and developmental biology and suggested therapeutic approaches to chronic, debilitating, and incurable diseases such as Parkinson’s disease and diabetes mellitus. But for some years, the U.S. government, knowing that harvesting the cells killed the embryos, would not fund research on stem cells that had been derived from human embryos.

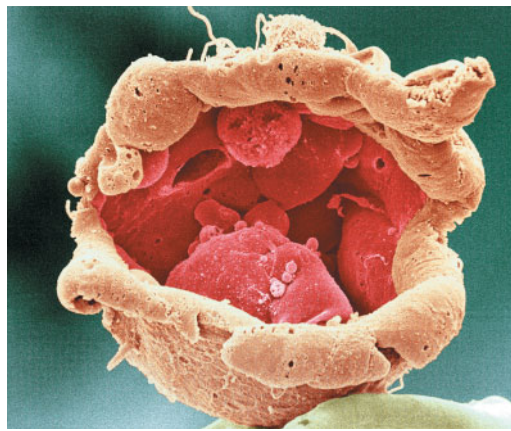
On August 9, 2001, President George W. Bush made a thoughtful speech in which he proposed regulations permitting federal funding for research using stem-cell lines from human embryos that had been killed before that date. The National Institutes of Health, proceeding under this compromise, has

since made 15 to 20 human stem-cell lines available for federally supported research.

But as might have been expected, few serious participants in the debate were satisfied by this compromise. Most stem-cell specialists reject what they see as an arbitrary limit on their resources and programs — and, among other substantive objections, note that a boundary date for production eliminates the chance of improving the quality of stem cells.¹

People who recognize a gift of individual human life in every embryo — an “end” in itself, not to be treated merely as a “means” — recoil at its destruction, no matter when or why it occurs. All the members of the President’s Council on Bioethics — whose formation President Bush announced during that same August speech — developed our views on federal funding as we gathered information and exercised (vigorously, I can attest) our human talent for disagreement.

The concern that shadows the free use of human stem cells derives from disquiet over their origins. If a source other than embryos can provide pluripo-



Blastocyst opened to reveal the inner cell mass.

Courtesy of Wellcome Library, London.