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# What's an Embryo?: The Debate About Human Embryonic Stem Cells

Janet L. Dolgin

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High-resolution 3-D rendering of a blastocyst (early development stage of the fetus).  
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In July 2006 the Senate passed the Stem Cell Research Enhancement Act.<sup>1</sup> The House of Representatives had passed the bill, referred to as H.R. 810, in May 2005. The day after the Senate vote, President Bush vetoed the legislation. It was the first time he exercised the veto power in almost six years in office. That day, the House voted to override the veto. The vote was 235 to 193, less than the two-thirds majority needed to set aside a presidential veto.

H.R. 810 did not aim to legalize human embryonic stem cell research. It

already was legal. It would, however, have expanded federal funding for human embryonic stem cell research. On its face, the proposed statute appeared to be a fairly straightforward appropriations bill. In fact, the bill sat at the center of a far-reaching and intense public debate about embryos, abortion, personhood, and the character of society.

The day before Bush vetoed the bill, his press secretary, Tony Snow, announced that the president “believes strongly that for the purpose of research it’s inappropriate for the federal government to finance something that

many people consider murder. He’s one of them.”<sup>2</sup> Within a week, Snow recanted his use of the word “murder.” He explained that he had “overstated the president’s position.”<sup>3</sup> The retraction seemed to have been grounded in concern about alienating and causing political harm to a wide group of Republicans who favor human embryonic stem cell research and who were not likely to have been pleased by the president’s referring to them as murderers.

Snow’s comment and his speedy retraction suggest the complicated parameters of a debate that

encompasses disagreements about embryos, families, gender and personhood (what it means to be a person). The social and political debate that surrounds the bill that Bush vetoed encompasses the discordant beliefs that surround discussions about abortion in the United States. It alludes more broadly still to disagreements about science, religion and politics.

Public interest in stem cell research followed the isolation of human embryonic stem cells (hES cells) in 1998 by a group of scientists at the University of Wisconsin.<sup>4</sup> hES cells are extracted from an embryo in the blastocyst stage of development (about five days after fertilization when the embryo contains approximately 200 cells). hES cells hold promise for science and for health care because of their capacity for self-renewal and their capacity to differentiate into specialized cells in the body such as muscle, heart or insulin-secreting cells.<sup>5</sup> Other types of stem cells (“adult” stem cells, for instance) are self-renewing and can differentiate into specialized cells. However, unlike hES cells, adult stem cells are not pluripotent. They are limited in the types of specialized cells into which they can differentiate.<sup>6</sup> In addition, their capacity for self-renewal is much smaller than that of hES cells.

Scientists widely believe that the unusual qualities of hES cells justify hope that remarkable new forms of medical care may develop out of hES cell research. This research allows scientists to study cell development and cell death, to test the usefulness and risks of pharmaceutical agents, and, it is hoped, will one day allow doctors to actualize a new form of regenerative medicine that will enable them to

replace dying or injured cells, tissues and organs with new ones.<sup>7</sup> In particular, hES cell research may bring insight into the mechanisms behind, and lead to treatments for, disabilities and diseases, including cancer, heart disease, Alzheimer’s disease, multiple sclerosis and spinal cord injury.<sup>8</sup> But the research is controversial because it results in the destruction of embryos.

Almost inevitably in light of the intensity of the controversy about abortion in the United States, the suggestion that embryos should be used in research that destroys them has resulted in the conflation of the debate about hES cell research with the older debate about abortion, which has, in turn, long been part of a much wider debate about gender, personhood, and the meaning of family relationships in the United States.



In the October 25, 2004, issue of *Newsweek* (on newsstands Monday, October 18), “The Battle Over Stem Cells,” *Newsweek* reports on the newest wedge issue in the presidential campaign that may swing some voters. Image courtesy of NewsCom.

## hES cells hold promise for science and for health care ...

These older debates have their roots in the late 19th century, when a set of social and economic forces began to challenge the so-called traditional family. The traditional family, forged in the early years of the Industrial Revolution, was defined in stark contrast with the marketplace. The traditional family was defined through reference to love and biology. In contrast, the marketplace was defined through reference to money and choice. While relations at home were expected to follow fixed roles and to endure, relationships at work were expected to be the product of negotiated choices and to last only as long as the bargains on which they were predicated. The traditional family, which survived the 19th century, to reach a heyday of sorts in the middle decades of the 20th century, ideally included a married couple of opposite genders and their biological children. Only in the last decades of the 20th century, did the traditional family begin to be openly replaced with another form of family, grounded in choice and autonomous individuality.

Opposition to abortion was long connected expressly with protection of traditional family life. Those who

## ... during the decades after Roe, the debate about abortion permeated American discourse about the scope of personhood and the meaning of families.

opposed abortion in the 19th and throughout much of the 20th centuries were generally also opposed to feminism and to the dismantling of set roles and statuses within family settings. Over time, especially as vast demographic changes in family life transformed the American family in fact, if not always in theory, those opposing abortion found it more difficult to rely openly on opposition to modern forms of family in pressing a pro-life platform. Thus they began to focus more and more intently on the sanctity of fetal life and less openly on opposing modernity in family settings.

By the last decades of the 20th century, that shift had become strategically valuable for the pro-life movement. Particularly after the U.S. Supreme Court granted women a limited right to

abortion in 1973 in *Roe v. Wade*,<sup>9</sup> the pro-life movement energized itself around the claim that fetuses enjoy personhood and that, accordingly, abortion is murder. As a matter of strategy, that position proved very effective. It allowed the pro-life movement to advance an agenda that continued, at bottom, to support the preservation of traditional families while largely eliding actual discussions about family patterns, and, more particularly, about gender equality. That was important for the pro-life movement insofar as the larger society had begun to concede that family relationships should be built around individual choice and freedom and was thus likely to dismiss exhortations about the value of safeguarding traditional patterns of family relationships. By the end of the 20th century, people were, in fact, choosing to marry or not, to stay married or not, and to shape family relationships on a wide set of new models.

Moreover, the pro-life movement's focus on fetuses and embryos (rather than on safeguarding traditional views of gender and of family life) posed a stumbling block for pro-choice adherents. In the last decades of the 20th century, even feminists, deeply committed to preserving the right to abortion, were reluctant to entertain public discussion of fetal status or to challenge the notion of fetal personhood.

And so, during the decades after *Roe*, the debate about abortion permeated American discourse about the scope of personhood and the meaning of families. On its face, it had largely become a debate about the status of the fetus and the embryo. Yet, it continued to provide a cultural context for considering –

although often implicitly – gender, personhood, and the scope and meaning of family relationships. In particular, Americans debated, whether self-consciously or not, the comparative value of grounding familial relationships on traditional patterns and communal ties or of grounding them on the open choices of autonomous individuals. The reluctance of pro-choice adherents to challenge pro-life claims about fetal and embryonic life gave the pro-life movement a decided advantage during these years.

Then with the advent of hES cell research and the remarkable promise that embryonic stem cell research offered to a nation convinced that health is equivalent to salvation,<sup>10</sup> the pro-life movement met a potential nemesis.

In 2001, as the issue of hES cell research and various modes of producing embryos for research, including cloning, energized public discourse, President Bush announced a compromise solution to disagreements about whether the federal government should fund hES cell research. The president precluded federal funding for hES cell lines not in existence on the date of his announcement (Aug. 9, 2001), but he provided that federal funds could be used in research on extant hES cell lines.<sup>11</sup> On that day, as on the day of his veto of H.R. 810, almost five years later, Bush appeared with a group of children presumptively “adopted” as embryos. He thus focused public attention on the personhood of embryos by highlighting their potential to develop into people.

Yet, even as Bush opted (in 2001 and again in 2006) not to countenance federal funding for hES cell research,



he openly acknowledged a commitment to science and technology. But he balanced that concern against concern for embryonic life. On the one hand, Bush explained in 2001, he had faith in the potential of hES cell research to effect “incredible good.” But, on the other hand, he noted, “human life is a sacred gift from our Creator.” “I worry,” he continued, “about a culture that devalues life.”<sup>12</sup>

Some individuals and groups that have long opposed abortion, including the Catholic church, remain steadfast in their opposition to all forms of hES cell research. Other pro-life adherents, however, have gone much farther than Bush in supporting hES cell research. In doing that, they have redefined the language through which the debate about abortion is being voiced and have, potentially, weakened the impact of pro-life claims about the sanctity of embryonic life.

In 2002, for instance, Senator Orrin Hatch, a pro-life senator from Utah, explained his decision to support a bill providing for research cloning, a procedure that would produce human embryos for research purposes. Embryonic research, Hatch explained, is “pro-life and pro-family.”<sup>13</sup> Thus Hatch – employing the very term (pro-life) that identified his position about embryos in the debate about abortion – bifurcated discourse about embryos. Embryos in the context of the abortion debate, Hatch suggested, are simply different from embryos in the context of hES cell research. The first sort of embryo enjoys personhood; the second does not. Hatch explained, referring to embryos created through research cloning:

It used to be a fertilized egg was a human being. Now, it’s an unfertilized egg, as long as you put a skin cell in that gives 46 chromosomes.

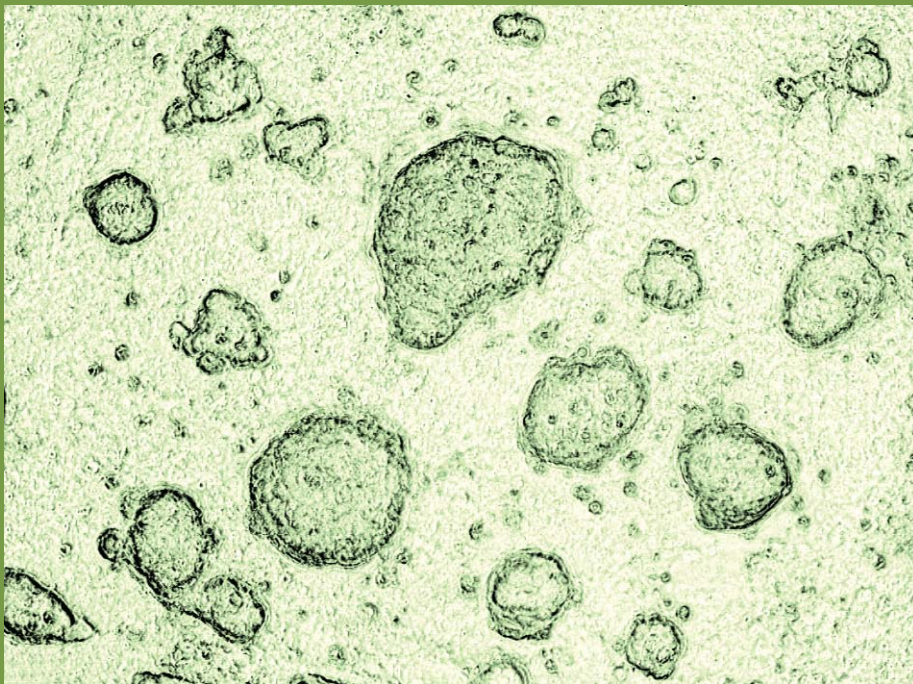
To me, it’s a big stretch. Every day you shower, you shower off millions of living human cells.<sup>14</sup>

Yet from a biological perspective, the embryo formed from the insertion of the nucleus of a skin cell (or any other somatic cell) into an unfertilized egg is as much an embryo as one formed from an egg fertilized inside a woman’s body.

Similarly, former Senator Connie Mack, an abortion opponent from Florida, justified support for hES cell research and research cloning as a mode of producing embryos for hES cell research. As Senator Hatch had done,

Senator Mack separated the debate about hES cell research and research cloning from the debate about abortion. In the debate about hES cell research, Mack explained, if you use embryos created from cloning “[y]ou’re using an egg that has never been fertilized by sperm and is never placed in a uterus. The words that we’re using were defined in a former age.”<sup>15</sup>

Both Senators Hatch and Mack set the stage for new understandings of phrases that remain at the center of the debate about abortion – phrases such as “embryonic life” and “embryonic status” – and in doing that, they participated in shaping a moral vision of embryos that they presumed did not implicate conclusions about embryos in the context of abortion.



Embryonic stem cells (ES cells) under a microscope. Copyright istockphoto.com. Photo by Andrei Tchernov.

# ... the debate about hES cells may signal the start of a genuinely new era – in medicine, in science, and in visions of what it means to be a person.

In part, this new mode of discourse seems to have softened the edges of the debate about embryos and seems, inevitably perhaps, to be shifting once-secure alliances in the debate about abortion. After Bush vetoed H.R. 810, about two-thirds of the American people voiced support for hES cell research.

Yet, the debate about abortion continues and remains embedded inside a larger debate about families, gender and personhood. Perhaps that larger debate will itself fade as more and more people opt to view family relationships through the metaphors of choice and bargain rather than those of gender status and fixed, enduring family roles. Or perhaps, instead, the larger debate about families will continue to engage society but will more and more often be voiced in terms that elide the debate about abortion. So, consideration of end-of-life issues (involving questions, for instance, about the personhood of

people in persistent vegetative states) or consideration of the right to same-gender marriage provide alternative contexts within which Americans have been able to consider the meaning of personhood and to compare the value of various patterns of family relationship. Still other contexts for continuing the debate about families and gender may emerge as new issues are framed in old terms.

Or the debate about hES cells may signal the start of a genuinely new era – in medicine, in science, and in visions of what it means to be a person. If the promise of regenerative medicine, based on the use of hES cells, is actualized, medicine will be able to provide individualized care, even individualized body parts to replace parts compromised by age, disability or illness. This sort of individualized health care provides an apt metaphor for a society that increasingly prizes choice and autonomy in family relationships as wholeheartedly as it has long prized choice and autonomy in the marketplace.

Many of the issues discussed in this essay are considered in greater detail in other places. See, e.g., Janet L. Dolgin, Embryonic Discourse: Abortion, Stem Cells, and Cloning, 31 *Flor. S. U. L. Rev.* 101 (2003); Surrounding Embryos: Biology, Ideology, and Politics, 16 *Health Matrix* 27 (2006); New Terms for An Old Debate, 6 *Hous. J. Health L. & Pol'y* 245 (2006).

## Endnotes:

1. The Stem Cell Research Enhancement Act of 2005, H.R. 810, 109th Cong. (2005).
2. Peter Baker, White House Softens Tone on Embryo Use, *Wash. Post*, July 25, 2006, p. A07, <http://www.washingtonpost.com>.

3. Baker, *supra* note 3.

4. James A. Thomson et al., Embryonic Stem Cell Lines Derived from Human Blastocysts, 282 *Sci.* 1145 (1998). Also in 1998, a group of scientists at Johns Hopkins University isolated human germ cells from fetuses. Michael J. Shamblott et al., Derivation of Pluripotent Stem Cells from Cultured Human Primordial Germ Cells, 95 *Proc. Nat'l Acad. Sci.* 13726 (1998).

In 1981, scientists isolated embryonic stem cells from mouse blastocysts. National Academy of Sciences, *Guidelines for Human Embryonic Stem Cell Research* 1, <http://www.nap.edu/catalog/11278.htm> (2005) (hereinafter *Guidelines for Human Embryonic Stem Cell Research*).

5. Guidelines for Human Embryonic Stem Cell Research, *supra* note 5, at 27.

6. National Academy of Sciences, *Guidelines for Human Embryonic Stem Cell Research* 13, 102, <http://www.nap.edu/catalog/11278.htm> (2005). Pluripotent stem cells have the capacity to differentiate into all three germ layers. These layers are referred to as endoderm, ectoderm and mesoderm. *Id.* at 102.

7. Russell Korobkin & Stephen R. Munzer, Stem Cell Research and the Law, UCLA Pub. Law & Leg. Theory Res. Paper Series, Res. Paper No. 06-05, <http://ssrn.com/abstract=878392> (Feb. 2006).

8. This promise was detailed in a letter signed by more than 200 members of Congress to President Bush in 2004. Rick Weiss, Looser Rules for Stem Cells Sought: House Members Petition President, *Wash. Post*, April 29, 2004, p. A17, [www.washingtonpost.com](http://www.washingtonpost.com).

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

10. Michel Foucault, *The Birth of the Clinic: An Archeology of Medical Perception* 198 (1975).

11. The usefulness of this decision for hES cell research was significantly undercut when it became clear that there were fewer cell lines in existence (about 20) than had been thought, that the existing lines were not genotypically diverse, and that these lines had been cultured on mouse feeder cells, which created the risk of contamination with mouse viruses. Korobin & Munzer, *supra* note 8, at 13.

12. See press release, White House Office of the Press Secretary, President's

Embryonic Stem Cell Research Policy (Aug. 9, 2001), reprinted in Lori B. Andrews et al., *Genetics: Ethics, Law and Policy* 141 (2002).

13. Ceci Connolly, Waging the Battle for Stem Cell Research: As Senate Vote Approaches, Coalition Intensifies Year-Long Lobbying Effort, *Wash. Post*, June 9, 2002, p. A6.

14. Adriell Bettelheim, Cloning by Any Other Name: A Defining Battle, *CQ Wkly.*, June 15, 2002, at 1596, 1597.

Orrin Hatch was here referring to the creation of embryos for research through the cloning process (also referred to as

somatic cell nuclear transfer). That process involves inserting a somatic cell (e.g., a skin cell) into an egg from which the original nucleus has been removed. Somatic cells have 46 chromosomes. Eggs and sperm have half that number. Embryonic stem cells can be extracted from embryos created in the usual way (through the fertilization of an egg by sperm), and they can be extracted from embryos created through the cloning process.

15. Aaron Zitner, The Nation: Cloning Receives a Makeover Politics: Nuances of Language Helped Reframe the Debate and Derail an All-Out Ban in Congress, *L.A. Times*, June 17, 2002, p. A1.



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*Defining the Family* examines the complicated, often contradictory, responses of the law to the radical changes that have altered the scope and meaning of the American family since the start of the Industrial Revolution. *Bioethics and the Law*, co-authored with Professor Lois Shepherd, is a casebook intended for use by practitioners and in law school teaching. It is structured around a life span approach to bioethical questions. In addition to topics generally covered in accounts of bioethics, the book includes analyses of public health (including bioterrorism), access to health care, and conflicts of interest faced by health care providers.

Professor Dolgin has written many articles, published in a variety of law reviews, other scholarly journals, and edited volumes. Much of this work has analyzed legal responses to shifts in the family (including those occasioned by developments in reproductive technology and by the "new genetics") and to shifts in the structure of health care in the United States and elsewhere. Professor Dolgin lectures widely in the United States and abroad about health care law, bioethics and family law.