BOUNDS AND CONDITIONS

ENSOULMENT: STEM CELLS, HUMAN CLONING, AND THE BEGINNING OF LIFE

By Rick Jepson

For behold, it is not meet that I should command in all things; for he that is compelled in all things, the same is a slothful and not a wise servant; wherefore he receiveth no reward.

—D&C 58:26

EVERY COMPLEX PROBLEM has a simple solution. But it's wrong. And few complex problems have been more encumbered with simple, wrong solutions than the ongoing debate about human cloning and stem cell research.[1] It's a debate that forces scientists, ethicists, theologians, and politicians to ask the hardest question of all: What does it mean to be a human being? And however tempting they may be, simple answers don't suffice.

If a five-day-old embryo—a ball of cells no larger than the period at the end of this sentence—is a human being, it would be immoral to destroy it. But if it's not a human being, and if destroying it could potentially cure a whole list of human maladies, it would be immoral not to.

This question is inescapably tied to abortion, so battle lines are well entrenched. On one side, the Christian Right holds that human life begins at conception and that a fertilized egg deserves the same protection as any human being. Opposite to that are the strongest of abortion proponents. Mary Anne Warren, for example, wouldn't call someone a human being until several months after birth. For her, a baby isn't a human being until it displays consciousness, reason, motives and goals, complex communication, and a concept of self.[2]

This begs an obvious question for us: What is the Mormon stand on when spirit and body combine? Though the question is obvious, there's no simple answer.

Five years ago, a handful of LDS senators led by Orrin Hatch comprised what one journalist called the "Mormon Stem Cell Choir"—a group of conservative, Christian, anti-abortion legislators who nonetheless supported stem cell research and even human cloning.[3] Today they sing with four senators and four representatives.[4] And their position has led many to ask—and a few to misrepresent—what Mormons believe about the beginning of life.

About the time this magazine comes off the press, both houses of Congress will likely attempt to override President Bush's recent veto of a bill that would federally fund research done with leftover embryos from fertility clinics.[5] As our representatives wrestle with this issue, it's a good time for us to examine our own beliefs. We should be asking what stem cells and human clones actually are and how we feel about their use.

STEM cells are the progenitors of all other cells. In its first few days of development, an embryo is nothing but a ball of stem cells. By the end of the second week, these cells begin to differentiate into three basic layers that then further specialize into general groups and eventually into unique cell types associated with just one organ and just one function. For example, a muscle cell in the heart has different qualities than a nerve cell in the brain, and neither could perform the job of the other.

Because stem cells can develop into any kind of specialized cell, their therapeutic potential is incredible. They could be used to replace cells lost or damaged by diabetes, multiple sclerosis, stroke, heart attack, Parkinson's, ALS (Lou Gehrig's disease), and other diseases.

Stem cells come from human embryos, however. And that makes them controversial. It is true that there are other sources. Stem cells can be harvested from the brain, eyes, blood, liver, marrow, muscles, skin, and umbilical cord. But these are harder to isolate, don't grow as well in culture, and appear to be less capable of differentiating into all types of cells. By all accounts, embryonic stem cells are superior. But again, they can be harvested only by destroying human embryos.

It's easy to dismiss the current uneasiness about embryo destruction by comparing it to past controversies over cadaver dissection, organ transplantation, sperm donation, and in vitro fertilization. And it may be that our grandchildren will make fun of today's trepidation. But that's no excuse for imprudence.

President Bush isn't wrong when he worries that human cloning and stem cell research take "a significant step toward a society in which human beings are grown for spare body parts."[6] Some complex organs may never be reparable with stem cells. For example, nephrons, the basic component of a kidney, can be developed from stem cells, but there's no obvious way to pack the nephrons in the right way to make them work. The suggested alternative is to harvest whole kidneys from a fetus at about halfway through the pregnancy.[7] And that's a decidedly less palatable idea.

Still, we have an ethical responsibility to consider all options—even if they make us uncomfortable. This is particularly true because, right now, the United States has the opportunity to set ethical precedents for the extent and means of stem cell research. If the U.S. delays, some other countries may not be so careful.

According to a recent report, poor women in Ukraine are paid $200 in U.S. currency to get pregnant and then have an abortion at twelve weeks. Stem cells are then harvested from the aborted fetuses, smuggled into Moscow, and injected into the sagging thighs and buttocks of wealthy Russian women for £10,000 to £15,000.[8] By contrast, proposed legislation in the United States carefully regulates stem cell harvest, demands informed donor consent, prohibits payment for embryo donation, and separates fertility clinics from research laboratories. All that the Bush-vetoed bill proposes is to fund stem cell harvesting from the tens of thousands of extra embryos that fertility clinics discard every year anyway.

Human cloning is simply another approach to stem cell harvest. One problem with any kind of transplantation is that the immune system quickly recognizes and rejects foreign cells. The only current way to combat this is to stifle the immune system

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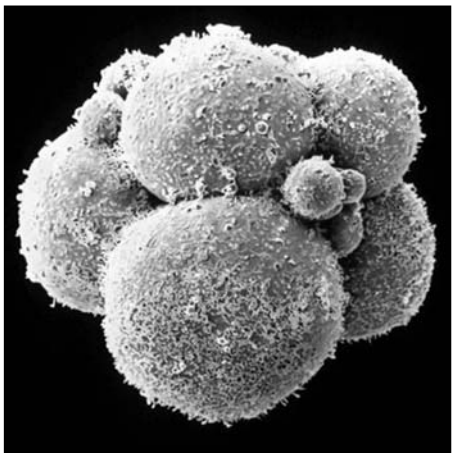

with powerful drugs, leaving people prone to any infection they encounter.

Human cloning could hypothetically solve this problem by creating an embryo that is genetically identical to the patient and then harvesting its stem cells. Although the ethical issues involved in cloning are really no different than those involved in creating embryos for research in any other way, the issues have been muddied both by science fiction and by folks who want to clone champion horses, favorite pets, or historical figures.[9]

WHAT of the Mormon position? Given nearly universal LDS opposition to abortion and lingering reservations about even birth control, why do 56 percent of Utah Mormons support stem cell research?[10] Why have LDS legislators been so prominent in the public debate?

Some have focused on the Mormon doctrine of a pre-existence to answer this. But this doctrine says nothing about the timing of when body and spirit combine and an embryo becomes a human being. Many Latter-day Saints seem to believe that the pre-existent spirit enters the body at conception, and for this reason oppose any embryo destruction. At the same time, many other Christians have no qualms with stem cell research because of their belief that God creates a novel spirit in the embryo days, weeks, or even months after conception.

The more likely root is Mormonism's general dislike for creed. Of this, Gary Bergera writes:

> One of the distinguishing features of the Church of Jesus Christ of Latter-day Saints is a near absence of formal creeds or statement of binding doctrine. For all practical intents, the authoritative systemization of doctrine and theology does not exist, and deliberately so.[11]

LATTER-DAY SAINTS SHOULD NOT FEEL EXEMPT FROM EXAMINING STEM CELL AND CLONING ISSUES FOR THEMSELVES. THE THINKING HASN'T ALREADY BEEN DONE.

That may actually be a little too rosy. Elder Boyd Packer, for example, suggested that there was no official statement on stem cell research or cloning because they are as obviously wrong as abortion, birth control, and same-gender marriage: "Without having to have the Church deliver a position on it, you should know what the Lord's position is."[12]

Nonetheless, the Church has been emphatic that it has no official stance on stem cell research nor when human life begins and that the "absence of a position should not be interpreted as support for or opposition to any other statement."[13]

The Doctrine & Covenants reminds us that only slothful and unwise servants sit around and wait for instruction (D&C 58:26), that secular learning is part of our spiritual progression (D&C 130:18–19), and that we must study problems out before we can expect any direction (D&C 9:8–9). When a matter isn't spelled out, the responsibility is ours.

THERE are a few proof texts worth mentioning, however—but not because they paint a clear picture. Rather, they are important to note precisely because they fail to. No Latter-day Saint should feel obligated by them to support one position or another. Nor can any Latter-day Saint feel exempt from searching the matter out; the thinking hasn't already been done.

The scriptures are vague about the moment of ensoulment. The two most popular proof texts come from the story of Christ, and they seem to contradict each other. Elizabeth feels her baby leap with joy in the womb when Mary approaches (Luke 1:39–44). The fetal John the Baptist seems to recognize the presence of the fetal Christ, implying that each is a living soul. But then on the night before his birth, the spirit of Christ visits Nephi (3 Nephi 1:11–14). There may be ways to work around this incongruity, but none that would decisively clarify our question about the beginning of life.

Perhaps the weakest proof texts in our tradition are quotations from General Authorities, living or dead. Although popular, these are usually collected, published, and employed without regard for context or circumstance. So when we wade through them, it must be warily.

For example, Brigham Young was echoing a common belief of his time when he claimed that the spirit and body unite around the fourth or fifth month of pregnancy: "[W]hen the mother feels life come to her infant, it is the spirit entering the body."[14] Yet David O. McKay suggested that the spirit does not enter until birth and that "life manifest in the body before that time would seem to be dependent on the mother."[15]

Here are two prophets with seemingly different views. But McKay's speculation is lifted from a private letter, and Young's statement—quoted authoritatively in *Mormon Doctrine* and elsewhere—is an offhanded remark from a funeral sermon. The real question is not what either man said in those contexts but what either would have said in an authoritative, public statement dedicated specifically to that topic.

The Church has made several official statements, but these simply announce the lack of any binding Church position on the beginning of human life. A clear statement came in 1970: "That there is life in the child before birth is an undoubted fact, but whether that life is the result of the affinity of the child in embryo with the life of its mother, or because the spirit has entered it remains an unsolved mystery."[16]

More recently, the *Lincoln Journal Star* mistakenly claimed that, "According to Mormon belief, life does not begin until a human embryo attaches to the mother's uterus after about 14 days." In response to this news account, the Church clarified that it "has no official position on the moment that human life begins" and "has not taken a position on the issue of embryonic stem-cell research."[17]

SCIENCE is not ethics. Or so we're told. But sometimes it offers insights unavailable from any other source. In determining what it means to be alive and what it means to be human, there may be no better reference.

We routinely mark the end of human life. We say that a person dies when the lungs stop breathing or the heart stops beating. We consider patients brain dead—and even eu-

thanize them—if their forebrains lack organized electrical activity.

Since these moments seem to define human life at its end, some argue that they likewise elucidate its beginning. They argue that human life begins at birth, with the first breath of air. Or in the fourth week of gestation, when the heart starts beating. Or twenty weeks later, when brain synapses are complex enough to produce recognizable neural activity.

In practice, the LDS Church seems to follow the first of these suggestions. A stillborn fetus is not publicly named, added to church records, baptized or endowed by proxy, or sealed to a family. But a child who dies shortly after birth receives all these ordinances.[18] Furthermore, the notion that the spirit enters the body with the first breath of air is supported both by Christ's pre-birth visit to Nephi and by the ensoulment of Adam as described in the Book of Abraham: "And the Gods formed man from the dust of the ground . . . and breathed into his nostrils the breath of life, and man became a living soul" (Abraham 5:7). But even this practice fails to solidify a Mormon position. Joseph Fielding Smith speculated that the spirits of stillborn children would still join their families in the afterlife and encouraged families to name the children in their own family records. [19]

Genetic individuality is another quality that many use to mark the beginning of life. The process of conception creates a unique human genome that has never before existed. Thus a one-day-old embryo is as genetically unique as any adult human and therefore, according to some, is equally human. The Catholic *Donum Vitae* asks, "How could a human individual not be a human person?"[20]

However, there remains some difficulty with this line of demarcation. Although genetically unique at conception, an embryo may not be guaranteed individuality until two weeks later. Until that time, it can still split into identical twins. Or, more bizarrely, it could also fuse with another embryo and become one individual with mixed DNA.

On about the fourteenth day, the embryo begins a process of infolding called gastrulation. A streak forms down the center of the embryo, and for the first time, it has a back and a front, a left and a right. Gastrulation also signals the first time that the embryo's cells differentiate into basic cell types; until this stage, the cells were generic and disorganized.

Significantly, the embryo now has structure where before there was none. And because of that structure, it also has a guaranteed individuality. It can no longer fuse with another or split into twins. In the opinion of many scientists and ethicists, only now is it a human being. As the biologist Lewis Wolpert reportedly has said, "It is not birth, marriage, or death, but gastrulation which is truly the most important time in your life."[21]

And from a theological vantage point, it is difficult to explain how ensoulment could work prior to that point. What, for example, would happen to a soul when the embryo splits into twins?

LATTER-DAY Saint concepts of spirit and soul may not be scientifically observable. And there is no reason to suppose that everything important in the universe can be tested in the lab. But science can help us test our spiritual assumptions and, when no revelation is given, can help us mortar between the bricks.

Stem cell research and human cloning have the potential to revolutionize medicine, demystify genetic disorders, and cure a myriad of human ailments—including big offenders such as diabetes, heart disease, and stroke. The importance of that potential is so great that I believe we're morally compelled to investigate the worth of this research and address its ethical implications.

This issue is too important to be defined by political lines, which continue to blur anyway. There is no clear ecclesiastical direction on these issues. We're therefore left to study it out in our minds, reach our best conclusions, and seek divine confirmation.

NOTES

1. The National Academy of Sciences has a very readable online publication that covers the science of stem cell harvest, research, and therapy in greater depth than space allows in this column. See http://dels.nas.edu/dels/rpt_briefs/stem-cell-high.pdf (accessed 17 September 2007).

2. Mary Anne Warren, "On the Moral and Legal Status of Abortion," in *Biomedical Ethics*, 4th ed., T.A. Mappes and D. DeGrazia, eds. (New York: McGraw-Hill, 1996), 434–40. Electronic copy available at http://instruct.westvalley.edu/lafave/warren_article.html (accessed 4 August 2007).

3. Drew Clark, "The Mormon Stem-Cell Choir," *Slate*, 3 August 2001. Electronic copy available at http://www.slate.com/?id=112974 (accessed 17 September 2007).

4. These are Senators Orrin Hatch (UT), Robert Bennett (UT), Gordon Smith (OR), and Harry Reid (NV), and Representatives Buck McKeon (CA), Dean Heller (NV), Thomas Udall (NM), and Jim Matheson (UT). Currently six LDS senators and one LDS representative oppose federal funding of stem cell research.

5. The 2007 Stem Cell Research Enhancement Act passed the House 247–176 and the Senate 63–34 but was vetoed by President Bush on 19 June 2007. The full text of the bill is available at http://thomas.loc.gov/cgi-bin/bdquery/z?d110:S.5: (accessed 17 September 2007).

6. Quoted in "A Quote-By-Quote Look at Election Year Issues . . . in the Worlds of Science and Religion," *Science & Spirit*, September/October 2004, 32–33.

7. Marc R. Hammerman, "Transplantation of Renal Primordial: Renal Organogenesis," *Pediatric Nephrology*, August 2007. Available online at http://www.springerlink.com/content/e853417n3784h4r2/ (accessed 17 September 2007).

8. Andrea Thompson, "A Barbaric Kind of Beauty," *Daily Mail*, 7 August 2006. Available online at www.dailymail.co.uk (accessed 15 August 2007).

9. Nancy Gibbs, Susan Reed, and Cathy Booth Thomas, "Baby, It's You! And You, And You…" TIME, 19 February 2001, 46–58.

10. Michael Janofsky, "Utah, in Poll, Backs Stem Cell Money," *The New York Times*, 17 August 2001. Electronic copy available through query.nytimes.com (accessed 6 August 2007).

11. Gary J. Bergera, ed., *Line Upon Line: Essays on Mormon Doctrine* (Salt Lake City: Signature, 1989), vii.

12. Boyd K. Packer, "The Instrument of Your Mind and the Foundation of Your Character," speech given at CES Fireside for Young Adults, 2 February 2003. Full text available online at www.lds.org. Confusingly, the online student newspaper at BYU reported that Elder Packer said just the opposite: "Members of The Church of Jesus Christ of Latter-day Saints should understand and take an individual stance on cloning issues, President Boyd K. Packer told young adults earlier this month." Lara Updike and Tiffany Smith, "Cloning Raises Religious Issues," *BYU Newsnet*, 20 February 2003, newsnet.byu.edu/print/story.cfm/42417 (accessed 6 August 2007).

13. This statement can be accessed in the "Public Issues" portion of the LDS Newsroom section of www.lds.org.

14. *Journal of Discourses* 17:143.

15. David O. McKay to Tiena Nate, 31 October 1934, quoted in Lester E. Bush, Jr., *Health and Medicine among the Latter-day Saints* (New York: Crossroad, 1993), 161.

16. First Presidency Letter, 12 February 1970, quoted in Bush, *Health and Medicine,* 162.

17. This statement can be accessed in the "Public Issues" portion of the LDS Newsroom section of www.lds.org. (See the statement issued in 26 May 2005.) Also, regardless of what the *Lincoln Journal Star's* source claims, a human embryo implants onto the uterus on around the eighth day, not the fourteenth.

18. Bush, *Health and Medicine,* 162.

19. Joseph Fielding Smith, *Doctrines of Salvation*, vol. 2 (Salt Lake City: Bookcraft, 1956), 280–81.

20. *Donum Vitae* is available online at www.priestsforlife.org/magisterium/donumvitae.htm.

21. Quoted at http://en.wikipedia.org/wiki/Lewis_Wolpert (accessed 25 September 2007).