

TO CLONE OR NOT TO CLONE?

A Sermon by Rev. Fritz Hudson

Presented February 16, 2003

Trevor Ross and Dr. Jose Cibelli, to my knowledge, have never met in the usual way, face-to-face. They've met only "skin to skin," if you will. You might even imagine their meeting as Michaelangelo imagined Adam's and God's - as outstretched hands passing the spark of life between them from cloudy seats in the Sistine Chapel sky. Unlike Adam's, however, Trevor's skin was no longer part of his body when Dr. Cibelli touched it. And unlike Michaelangelo's God, Dr. Cibelli's hand touched Trevor's skin only through a tiny glass rod shaped like a miniature fencing foil, with a bulbous tip which prods without piercing. Trevor's skin was present only as a few live fibroblast cells cut from its dermis layer on his backside, now floating in a drop of culture medium in a clear plastic dish. Floating alongside them were just two egg cells an unnamed young woman in Boston had allowed to be surgically removed from her ovaries and brought to that dish in Dr. Cibelli's laboratory at the Advanced Cell Technology Company in Worcester, Massachusetts. There Dr. Cibelli's technician, a kind of assisting angel, had oh so meticulously pierced the egg cells' outer membranes and drawn their 23 chromosomes from their nuclei. Then she'd just as carefully placed one of Trevor's skin cells, with its full compliment of 46 chromosomes, right next to each emptied egg. Dr. Cibelli now reached in with his "fencing foil" and nudged first one and then the other pair of conjoined cells into position between two electrodes at the bottom of the dish. He flipped a switch, sending what he hoped would be just the amount of electric current required to push the cells toward each other, confuse their membranes and make them merge into one. If all went well, by the next morning the nucleus of the reconstructed egg would enlarge dramatically, having taken on the chromosomes of Trevor's skin cell as its own. The genes that had made the skin cell a skin cell would be silenced; others that had been laid away unneeded would be unpacked; and the genes that initiate early embryonic development would be activated. Dr. Cibelli had seen that happen a few times before, but all of those eggs had stopped growing after two or three divisions. If all went even better this time, in about five days the cell would have replicated several more times, making the tiny embryo large enough to extract stem cells to be used to a cure a genetic condition which promised Trevor years of profound suffering to be relieved only by an early death. This time, sadly, the cell membranes did not fuse at all. Obtaining another batch of eggs would take weeks to arrange and cost another \$22,000. The day was January 29, 2002; Trevor was two years old. The meeting is described in an article by former biotech researcher Kyla Dunn in last June's *Atlantic Monthly*. ("Cloning Trevor." *Atlantic Monthly*. June 2002. p.33,48-50)

What Dr. Cibelli, "playing God" some would say, was trying to create was a clone of Trevor. He was trying to create an embryo from which stem cells could be drawn and genetically altered to treat a disorder called X-linked adreno-leuko-dystrophy (ALD). Trevor's family learned he had this disorder a year before his "meeting" with Dr. Cibelli, from tests conducted after his cousin Andrew was diagnosed with ALD. Trevor was one year old then. Andrew was eight.

Three years earlier, in kindergarten, Andrew had been given a diagnosis of attention deficit hyperactivity disorder, but otherwise he seemed to be thriving. He was a bright boy who loved baseball, began to compete in spelling bees, and to play the violin. A little later though he began

regularly asking the same questions over and over. By the time he was eight, his karate teacher began to notice a dramatic and progressive loss of coordination. He was having increasing difficulty following instructions or participating in his classes. He was given an MRI, and his ALD was diagnosed. With alarming swiftness, before any therapy could even be attempted, Andrew went blind and deaf, and then lost motor and bowel control. In January 2002, at age nine, Andrew was in a nearly vegetative state, unable to speak or move.

What were Trevor's chances of following Andrew's path? About one in three. One sixth of all who have the ALD genetic condition are dead by age nine. If Trevor were lucky enough to be among the two-thirds who show no symptoms until adulthood, the eventual effect could be less severe, but another 30% of them still are reduced to a vegetative state three or four years after symptoms finally manifest.

Currently the best treatment for ALD is a bone marrow or umbilical cord blood transplant from a healthy well-matched donor. Compatible transplant donors are extraordinarily hard to find, however, and even transplants from suitable donors run a high risk of rejection or even the life-threatening response called "graft vs. host disease." Perhaps a quarter of those who receive a bone marrow transplant to treat ALD die from complications related to the treatment procedure itself. (Dunn. p.36)

Trevor's parents came to Dr. Cibelli and Advanced Cell Technology because he was only one year old when his genetic condition was discovered. Until then only one child had ever yet shown any symptoms of ALD before age three. They had time, they hoped, for Dr. Cibelli's research to create a clone embryo from which a rejection-or-disease-proof stem-cell transplant could be made, should Trevor ever need one.

Perhaps you were here last October when I passed on "Superman's" announcement that he had become a Unitarian Universalist? - Superman at least as most of us have seen him, as the actor Christopher Reeve. If so you might recall what Reeve, in his book *Nothing is Impossible*, said had drawn him to find his niche among us. "What I liked about Unitarian Universalism," he wrote, "is that ... this God ... asks us just to do our best, trusting in our innate ability to discern the truth." (p.152-153) You also might recall my promise then to share what I've learned from Reeve's understanding of controversial medical research - stem cell and therapeutic cloning research - acquired as he's pursued treatment for the spinal chord injury which placed him in a wheelchair six years ago.

Nothing is Impossible first gave me a clear appreciation for the crucial distinction in "discerning the truth" about human cloning. That distinction is the one between "reproductive cloning" on the one hand and "therapeutic cloning" on the other. Reproductive cloning is what Dr. Ian Wilmut accomplished in creating "Dolly the Sheep" in Edinburgh six and a half years ago. It is the formation of an embryo in the manner Dr. Cibelli attempted and then the implantation of the developing embryo into a mother's uterus to be brought, if possible, to full life. Therapeutic cloning, on the other hand, is what Dr. Cibelli wants to do - to form the embryo, but then to nurture its development only for the few days necessary for it to provide stem cells usable for medical treatment. Taking the stem cells destroys the embryo, ends its life.

This Thursday the Nebraska Legislature's Judiciary Committee will hold public hearings on LB602, "The Human Cloning Prohibition Act." As written it would make it unlawful, and punishable as a felony, for any person in our state to knowingly perform or attempt to perform either type of human cloning, reproductive or therapeutic. A similar bill is now before the U.S. Senate, having already been adopted by the House. As UNL Biology Professor Ted Parfy told those who attended his very helpful forum discussion of stem cell and cloning technology three weeks ago, there are already well formed theological voices supporting these bills. Ought we join those voices? Or, are we called to raise our voice now in a different key?

The well-formed voices supporting a total ban on cloning, as you probably know, are led by the Roman Catholic Church. The national chair of the American Bishops' Committee for Pro-Life Activities, Cardinal Anthony Bevilacqua, has written the U.S. Senate: "When cloning is done to attempt a live birth, the child is produced and wanted not for his or her own sake, but because he or she will carry traits that someone else values and wants to replicate." If this were the only argument against reproductive cloning, I would respond that there are less drastic ways to protect cloned children from being exploited by those who bring them into being. In principle, so far, I can see nothing repulsive about healthily cloned human beings. Like natural twins - like Margaret and Marjorie, the childhood friends Kim (our Education Director) described a few moments ago- they would still form distinctive personalities. What makes reproductive cloning unacceptable to me is the high number of unhealthy children that would have to be produced on our way to perfecting this technique, if that were even possible. Thirty percent of all cloned domestic animals now born have gross abnormalities of at least one organ, a rate fifteen times as high as for sexually conceived births. Perhaps you saw in yesterday's (Lincoln) *Journal Star* that "Dolly, the world's first cloned animal, has just been euthanized because she was suffering from a progressive lung disease common in much older sheep." (February 15, 2003) So far I can't imagine any benefit to another human being which would warrant bringing even one cloned child to full life to experience such ill-health. The pain and suffering already ravaging some of our sexually conceived children, like Andrew, is plenty for us to struggle to relieve. Thus I will gladly join the my voice with the Roman Catholic church, as I have to support poor children and to end the death penalty, now to outlaw reproductive cloning in our state and nation.

On therapeutic cloning, however, we see things differently. Cardinal Bevilacqua wrote the Senate that "When cloning of human beings is done to pursue medical research, the utilitarian reduction of human life to a mere instrument is even more complete, for a new human being is produced for his or her cells and tissues." (Letter to U.S. Senators) What underlies this concern for utilitarianism, of course, is the Catholic contention that a human being takes on full moral value at conception. Their opposition to therapeutic cloning is that it kills a human being. But I see more than that. I see at least two human lives at stake in therapeutic cloning - the cloned zygote's and Trevor's, or that of other children like him. The first is human life only its most rudimentary form. The second is full human life, imminently threatened with pain, diminution and premature death.

Dr. Michael West, President of Advanced Cell Technology, helps me see the real character of the cloned zygote in its brief expected life. If it lives even up to two weeks, much longer than is needed to produce usable stem cells, the human embryo's cells remain entirely undifferentiated. Individuation,

indeed the determination of whether it's one individual or more, first takes place only after its first two weeks. That's when the "primitive streak" arises within it. The streak is like an arrow drawn on the embryo that delineates head and tail, front and back. Even when the streak appears, West says, "There is no brain, no sensation, no pain, no memory, nothing of that. But it is an individualized human in a very early stage ... I advocate we don't touch that." (Dunn. p.49) Before individuation occurs, however, can we make a moral choice between Trevor's life and that zygote's?

Senator Orrin Hatch, Chair of the U.S. Senate Judiciary Committee and the Roman Church's champion in protecting human fetuses from abortion, last year went through much prayer and Bible reading to make his choice. "I analyzed this issue from a pro-life, pro-family perspective, with the conviction that being pro-life demands helping the living," he wrote his Utah constituents in the *Salt Lake City Tribune* last April. "I support regenerative medicine research (Hatch's preferred term for therapeutic cloning) because I believe that human life requires and begins in a mother's nurturing womb, not in a petri dish." (April 30, 2002)

I don't go that far. I affirm that the embryo in the petri dish, biologically, is a human being. It is worthy of moral respect, but it has not yet acquired even the individuation, let alone the independence, that morally underpins the inviolability of legally recognized persons. I also don't buy our Bishop Fabian Bruskewitz's claim in last month's *Southern Nebraska Register*, that "Once you permit any kind of cloning, it would be nearly impossible to monitor or police the 'type' used and thus restrict the goal of anyone using the procedure." (January 10, 2003. p.3) Senator Hatch has already proposed the alternative to "The Human Cloning Prohibition Act," on the national level, which easily provides that restriction. Our LB602 could be amended to follow his bill's model, to ban reproductive cloning by outlawing implantation of a cloned embryo in a woman's uterus, or even continuation of its life past 14 days. That would not be, as President Bush has argued more than once, "growing human beings for spare body parts, or creating life for our convenience." (Statement August 2001. Quoted in Dunn. p.32-33). It would be limiting a non-sentient, non-individuated cloned human life to 14 days' duration in order to allow an already existing, fully individuated, fully sentient life, like Trevor's, to extend healthily and happily perhaps for 100 years.

January 29, 2002 - the night Dr. Jose Cibelli failed at the only two chances he then had to implant Trevor Ross' chromosomes in an egg nucleus in Worcester Massachusetts - coincidentally was also the night that year of our President's State of the Union address in Washington D.C. One year later, in this year's address, our President said (among many other things) that "our fourth goal is to apply the compassion of America to the deepest problems of America." He proposed a \$450 million initiative to bring mentors to disadvantaged junior high school students and children of prisoners. I applaud that proposal. He asked Congress to commit \$15 billion over the next five years "to turn the tide against AIDS in the most afflicted nations", noting that in Africa 3 million children under the age of 15 have the AIDS virus. I applaud that proposal too. He repeated the words of a doctor in rural South Africa who said, "Many hospitals tell people, you've got AIDS, we can't help you. Go home and die." And then our President said, "In an age of miraculous medicines, no person should have to hear those words." Yet in between those two funding proposals to aid children, our President also said, "because no human life should be started or ended as the object of an experiment, I ask you to set a high standard for

humanity, and pass a law against all human cloning." At three years old now, Trevor Ross probably couldn't quite take in that our President was saying to him those same words he claimed "no person should have to hear." "Go home and die, Trevor," is what he was saying. "Not only will we not give even one dollar to help Dr. Cibelli save your life. We will arrest him and imprison him for even trying."

The day after this State of the Union Address, Christopher Reeve was telephoned by Reuters News Service for his reaction. He said that, while he expects the President's administration to remain opposed to this research, eventually Washington's strict limits on cell research will be overtaken by support from individual states. He said that individual states would, one by one, follow the lead of California, which passed a bill in September allowing therapeutic cloning. "Once that happens in about half a dozen states with a vital research community and a vital pharmaceutical industry, a momentum will have been created that the federal government probably won't be able to stop."

Some of you, perhaps many of you, will say that there is no way that we, Nebraska, will ever be one of those states. Perhaps we don't even meet Christopher Reeve's criteria for significance. Is the UN Medical College in Omaha and UNL's Biology Department here a "vital research community?" Is the Novartis Company on our northwest border part of a "vital pharmaceutical industry"? Several of you work in these institutions. Tell us what you know. What I know is that 34 of our state senators have already signed on as cosponsors of the "Human Cloning Prohibition Act." That's one more than enough to cut off the filibusters Senator Ernie Chambers has used or threatened in the past to save stem cell research in our state. I know that unless at least two of these cosponsors can be persuaded to change their minds on this bill, our state will never even have the chance to join in creating Reeve's momentum.

Ten days ago, February 6, marked the 92nd birthday of the former U.S. President which our President Bush most often takes as his model, Ronald Reagan. President Reagan, as you know, suffers silently now in his home in California from Alzheimer's disease, one of the diseases medical researchers believe might be treated by stem cell therapy. On his birthday this year, his First Lady, Nancy, sent a public letter to Senator Orrin G. Hatch to endorse his bill prohibiting reproductive cloning but protecting therapeutic cloning. "Orrin," she wrote, there are so many diseases that can be cured, or at least helped. I am determined to do what I can to save other families from this pain." (Press Release from Senator Orrin Hatch, February 7, 2003)

Me too, Mrs. Reagan. This Thursday, in the midst of Nebraska Right to Life's annual Legislative Day, I'll be in the Judiciary Committee hearing to raise my voice alongside Senator Chambers'. I trust you will think about where you will be and what you might do.

For Trevor, we'll already be too late. Six months ago, though Trevor was still just two and a half years old, doctors detected the first signs of ALD symptoms in him. His parents have already scheduled a cord-blood transplant, fully aware of all the risks, the odds of failure and death. (Dunn.p.31) But future children's lives are still ours to save. May the past's voices spur our efforts:

Let us hear Unitarian Minister Edward Everett Hale's voice,
I am only one,

*But still I am one.
I cannot do everything,
But still I can do something.
And because I cannot do everything,
I will not refuse to do the something that I can do.*

And let Sociologist Margaret Mead's voice move us to action.
*Never doubt that a small group of thoughtful, committed citizens
can change the world; indeed it is the only thing that ever has.*