
Cloning Promises, Profits, and Privilege

BY LISA SOWLE CAHILL

Who is funding cloning research, and who will reap the benefits? Christians should make sure that the common good, solidarity among rich and poor, and the justice of health care and health research economics become central in debates about reproductive cloning, research cloning, and stem cells.

In the popular imagination, “cloning” conjures up the creation of look-alike human beings who can be mass-produced. A common ethical reaction is that this would be a violation of nature, of human dignity, and of God’s authority over creation. In reality, there is no evidence cloning has ever produced a living human baby. Another type of cloning is quite well established, however. This is the cloning of embryos to serve as sources of stem cells. Cloning for medical research is hotly debated in the churches and in society because it destroys embryos. An ethical issue that is still below the surface of public consciousness is the economics of cloning, especially cloning for stem cells. Who is funding cloning research, and who will reap the benefits? Cloning and social justice is the subject of this essay.

TYPES OF CLONING

Human cloning is divided into two medically and morally different categories: reproductive cloning and therapeutic cloning. Reproductive cloning is the creation of a new individual from the DNA of only one parent. This is accomplished by removing the nucleus of a human egg and replacing it with the nucleus of a cell taken from the person or animal who

becomes the genetic parent of the resulting embryo. The embryo is then placed in the uterus of a female animal or woman, and gestated until birth. The offspring will be the genetic “identical twin” of the parent donating the DNA. This has been done successfully only in animals—and in mammals, one living cloned individual is achieved only at the price of many failed attempts.

The second type of cloning is called therapeutic cloning or research cloning. It begins in the same way as reproductive cloning, but its purpose is not the reproduction of a fully formed new individual. Instead a cloned embryo is produced to become a source of stem cells. Stem cells are very early cells—human or animal—that have not yet differentiated into the different types of tissue that make up a developed and functioning new organism. These can be found in the inner cell mass of an embryo at the blastocyst stage, that is, for up to about a week after fertilization. Stem cells are of immense scientific interest because researchers hope to use them to replace damaged parts of the human body. Scientists claim that they could be used to heal illnesses like Alzheimer’s disease, Parkinson’s disease, diabetes, spinal cord injuries, heart disease and cancer, by giving patients replacement cells that would develop into new tissue and organs. However, these therapies are for the most part still in the early stages of development, with real payoffs probably decades away.

Creating an embryo by cloning is not the only way to obtain embryonic stem cells, however. Alternatively, a frozen embryo that is “left over” from in vitro fertilization can be donated by a couple that does not plan to use it to create a child. These “spare” embryos, originally created as part of infertility treatment, can also be used to obtain stem cells. In addition to embryonic stem cells from these two sources, there are also stem cells in over a dozen parts of the human body, including the bone marrow, umbilical cord, and placenta. However, scientists argue that these might not be as pliable as embryonic stem cells. They also point out that if an embryo were cloned from a patient’s DNA, and stem cells were derived from that embryo, then those cells would be a perfect match, avoiding rejection by the recipient’s immune system. At this point research on both embryonic and adult stem cells continues. Which will turn out to be the most promising for the purpose of therapeutic cloning is a puzzle to be solved in the future.

MORAL ISSUES IN REPRODUCTIVE CLONING

What are some of the key moral issues posed by cloning? Obviously these will differ for reproductive and nonreproductive cloning. In reproductive cloning, the aim is to create a child of a specified genetic code, a code that is the same as an existing adult or child. Although some have raised fears about using human cloning to create whole classes of elite or subservient humans with identical genetic profiles, this is highly unlikely. Such a prospect ignores the differences that exist even between identical

twins, as well as the effects of environment on the expression of genetic traits. It is more likely that reproductive cloning would be used in cases in which a couple, where one spouse is infertile, wants to have a genetically related child without using a donor. (A donor could provide either sperm or eggs, to compensate for male or female infertility. This obviously brings a third party into the reproductive plans of the couple. Multi-party reproduction is morally objectionable to many, and creates an imbalance in the relation of the rearing parents to the child.)

If cloning were used to address infertility, a child would be created who has only one genetic parent, the one who supplied the DNA. The genetic characteristics of the child would resemble his or her one genetic parent.¹ This might give the parent or parents of a clone too much control over the child, say some ethicists. Another ethical worry comes from the fact that creating children with only one genetic parent—his or her “identical twin”—would seriously challenge the meaning of intergenerational relationship and parenthood as we know it. Although it is hard to prove that there is something intrinsically wrong with cloning, it is certainly prudent to be very cautious in pursuing such radical innovations in family structure. Moreover, responsible researchers and ethics committees have excluded reproductive cloning as too unpredictable and dangerous to be used in humans. To try to improve human reproductive cloning through experimentation on human embryos and infants would be unethical.

I want to highlight another ethical problem that would arise with reproductive cloning, even if risks were removed. Cloning as a new reproductive option would be aggressively marketed to childless couples with the economic resources to pay for it. This already occurs with existing types of assisted reproduction, such as in vitro fertilization, despite a failure rate of about 66%. Fertility pills and artificial insemination can run from \$1000 to \$2000, with treatments involving injected drugs costing up to \$5000. In vitro fertilization with a woman’s own eggs runs from \$12,500 to \$25,000, while donor eggs can take the expenses up to \$35,000. Will cloning eventually become another weapon in the infertility arsenal? “Desperate” patient demand is something that not all physicians resist, and some may even solicit and exploit it.

If cloning as a reproductive technology should become available for sale, not all will be able to afford it, of course. Infertility therapy is not generally covered by medical insurance. It is not uncommon for couples to spend in the hundreds of thousands of dollars in their quest to bear a child. Not surprisingly, most couples who utilize it are white, well-educated professionals, even though the typical infertile woman is black and has less than a high school education. Socioeconomic status conditions access to reproductive technologies. The commercialization of family and parenthood is a social trend that should worry all those who are concerned

about the special nature of intimate human relationships, especially parent-child bonds. It should alarm all who react negatively to the idea that the ability to create a family is a market commodity.

A 2004 report of the President's Council on Bioethics, *Reproduction and Responsibility*, addresses many ethical concerns that would apply to reproductive cloning.² The PCB report affirms "the fundamental value of human life and the respect owed to it in its various stages." It also mentions "human dignity" including the dignity of the body, parental and intergenerational relationships, and justice in access.³ Ultimately the report acknowledges the need for greater public discussion, and perhaps a national regulatory agency. It identifies an immediate need to prohibit "boundary-crossing" innovations such as reproductive cloning, the sale of embryos, and research on embryos after fourteen days of development.

MORAL ISSUES IN THERAPEUTIC CLONING

In therapeutic cloning we encounter still another major moral problem. This is the destruction of embryos to obtain stem cells, or even the creation of embryos with the purpose of so destroying them. Because it is convenient and advantageous for researchers to create their own cloned embryos for research, rather than using frozen "left over" in vitro fertilization embryos, there is a pragmatic and financial incentive to do so. Creating embryos for research has become a fairly common practice. Concern about the moral justifiability of destroying embryos has influenced national policy on cloning. However inadvertently, the limits placed on the use of federal funds for cloning research has had the effect of pushing this research into the province of unregulated "for profit" investment.

How did this happen? From 1996 until 2000, the U.S. banned the use of federal money for embryo experimentation, including stem cell research. This restriction did not apply to research privately funded by researchers or corporations. In 1997, the National Bioethics Advisory Commission, under the Clinton administration, recommended that cloning to produce children be banned, but that nonreproductive or therapeutic cloning be permitted. In 2000, Great Britain published guidelines that explicitly permitted nonreproductive cloning of embryos to furnish stem cells for new therapies. This created pressure on U.S. authorities to do likewise. In August 2001, President George W. Bush issued an executive order mandating that public funds could not be used to do research that involves destroying embryos. Yet he decided to permit research to be done on stem cell lines that had been derived from embryos before the time of his announcement. At first it was estimated that there were about sixty such lines in existence, but the number was later revised downward to about a dozen usable lines. The moral point of this restriction was to allow researchers to take advantage of stem cells if "the damage had already been done," so to speak, while not encouraging them to destroy any more embryos.

In 2002, The President's Commission in Bioethics studied stem cell research ethics and failed to come up with a unanimous report.⁴ The majority favored a ban on reproductive cloning and a four-year moratorium on research for therapeutic cloning. They did not rule out research cloning entirely. Yet the report did acknowledge the argument (against destroying embryos) that relief of suffering must be balanced against the negative moral factor of saving some by sacrificing others. A minority favored allowing federal money to be used for research cloning. The rationale was that this would bring research cloning under federal regulation, rather than leaving creation of embryos and sale of stem cell lines to the discretion of scientists and businesses working in the private sector. Those endorsing this position justified it by saying that cloned research embryos should be viewed as being created to serve others, rather than as created "to be destroyed." The President's Council did not, however, raise the issue of fairness in accessing future therapies, or the pressure of profit motives on research directions, as significant moral issues in the area of research cloning.

In April 2005, the National Academies of Science released a report claiming that the federal government has not provided adequate guidelines for stem cell research, leading to unregulated activity in a controversial field. In the past few years, universities and state governments, as well as corporations, have sought to promote and to invest in stem cell research, usually involving the cloning of research embryos. For example, Harvard University launched a stem cell institute with private money in 2004. In the same year, voters went to the polls in California to approve a ballot measure that set up a stem cell project that would receive three billion dollars in state money over ten years. The campaign was organized by a real estate figure, later to be named head of the newly created institute. The promotion made to voters included promises of fabulous medical discoveries, along with an increase in business opportunity and competitiveness at the state level. Legislation favoring stem cell research has been proposed in other states, including New Jersey and Massachusetts. While states may establish regulations governing such ventures, there is still no federal policy that applies across the board. The National Academies proposed that research cloning be permitted, that

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no research be allowed on embryos beyond fourteen days of age, and that women who donate eggs should not be paid. The last restriction is intended to discourage the exploitation of poor women who might submit to the invasive procedure of egg extraction for a fee. However, the ultimate destiny of the research results, in terms of development, marketing, availability of therapies, and justice, was not addressed.

While Pope John Paul II reminded President Bush that the creation of research embryos was, in his view, “an assault on innocent life,” he also called for the U.S. to exercise leadership in helping economically marginalized people obtain the essential goods of life.

CLONING AND THE COMMON GOOD

The prioritizing of the destruction of embryos as the major—or only—ethical concern has characterized the positions of a variety of churches on stem cell research.⁵ Rarely is the social justice question made a prominent part of the ethical analysis. In a joint statement, a number of Anglican, Catholic, Orthodox, and Reformed theologians

allude to Jesus’ care for those excluded by society. They mention the parable of the good Samaritan (Luke 10:25-37) and the parable of the sheep and the goats (Matthew 25:31-46), ending with the observation, “Just as you did it to one of the least of these little ones you did it to me.”⁶ However, this is turned into a warning against destroying embryos. It is not used, as I believe it should be, to generate a protest against letting profitable therapeutic innovations distract attention and resources from meeting the basic need for health and life suffered by the poorest of the poor.

In July 2001, President George W. Bush paid a visit to Pope John Paul II. In relation to Bush’s impending decision about stem cell funding and policy, the pope reminded the president that the creation of research embryos was, in his view, “an assault on innocent life.” This warning was widely reported in the secular press. Much less frequently noted was the pope’s opening call for the U.S. to exercise leadership in helping economically marginalized people obtain the essential goods of life. “Respect for human dignity and belief in the equal dignity of all the members of the human family demand policies aimed at enabling all peoples to have access to the means required to improve their lives....” A serious moral issue is whether proposals to clone for stem cell research are aimed at access for all people, or at prestige, profits, and products for the privileged.

In a scathing attack on drug industry practices, former *New England Journal of Medicine* editor Marcia Angell accuses companies of abandoning

unprofitable products despite medical need, resulting in shortages of drugs and vaccines for conditions like prematurity, hemophilia, cardiac resuscitation, flu, pneumonia, diphtheria, tetanus, whooping cough, measles, mumps, and chickenpox.⁷ Even in the faltering economy of 2002, the ten drug companies in the Fortune 500 made bigger profits than the other 490 businesses together. According to Angell, “big pharma” spends more on marketing than on research, bribes doctors with bonuses and gifts, and spends huge sums lobbying Congress and supporting the political campaigns of supporters.

The drug industry’s sphere of influence extends to academic medical centers and universities, eroding their objectivity, independence, and commitment to the common good. Drug companies are major benefactors to medical schools. Universities and their faculty conduct paid trials for industry, receive a portion of profits, and may even hold stock in the company. Rather than pursuing solutions to social problems and honestly evaluating the effects of new technologies, research scientists can sometimes be persuaded to let their priorities be dictated by commercial interests and their personal or institutional stakes in the financial outcomes.

Scientists who can promise health benefits are often perceived as saviors from human suffering. Profits and fame may encourage some scientists to welcome this role, but the public is also responsible for entrusting to medicine the alleviation of problems that deserve a more holistic response. Religious traditions encourage us to see ourselves in solidarity with others who suffer, and to be most concerned about those with the least access to goods and benefits. While North Americans and Europeans seek answers to Alzheimer’s and Parkinson’s, millions die around the world, and at a young age, from treatable causes like malaria, anemia, and tuberculosis.

I would certainly not rule out market investment and entrepreneurial biomedical research as ethical means of making a living, enhancing one’s scientific reputation, or exploiting the opportunities of globalization. All of the above, however, are subject to moral constraints. They should come under legal and regulatory limits that help societies, international bodies and alliances, and transnational institutions (including markets and corporations) maintain legal and ethical standards of behavior. The common good of all, including the poor and those currently with inadequate or no health care, should be salient among such standards.

A COMPROMISE PROPOSAL

Can we design a national policy on stem cell research that focuses not only on the moral value of the embryo, but also on the common good—one that promotes justice in health care for the economically disadvantaged more than prestige, profits, and products for the privileged?

A compromise proposal on stem cell research might include the following elements: one law, applying to both federally and privately or state-

funded research; a ban on the creation of embryos for research; permission to use donated, spare IVF embryos; a ban on patents deriving from work on embryo research; and advocacy for more aggressive and better financed research on adult stem cells. These are suggestions meant to provoke thoughtful reflection and democratic engagement on the issues. The ethical analysis of cloning and of social policies on cloning should continue to be a matter of vigorous debate in faith communities and in the public sphere.

The churches and faith traditions should raise the quality of ethical discussion and discernment by expanding beyond a single-issue focus on the embryo. It is our obligation to make sure that the common good, solidarity among rich and poor, and the justice of health care and health research economics become central in debates in this country about reproductive cloning, research cloning, and stem cells.

NOTES

1 It is possible that the egg donor would also have some genetic influence on the new individual. There is mitochondrial DNA in eggs, and its function and effects, in addition to the primary DNA in the cell nucleus, are not fully understood.

2 President's Council on Bioethics, *Reproduction and Responsibility: The Regulation of New Birth Technologies* (Washington, DC: President's Council on Bioethics, 2004), also available online at www.bioethics.gov.

3 *Reproduction and Responsibility*, 5.

4 The President's Council on Bioethics, "Human Cloning and Human Dignity: An Ethical Inquiry," in Brent Waters and Ronald Cole-Turner, eds., *God and the Embryo: Religious Voices on Stem Cells and Cloning* (Washington, DC: Georgetown University Press, 2003), 206-221.

5 Positions of Roman Catholic, Orthodox, Methodist, Southern Baptist, United Church of Christ, Presbyterian, and Jewish denominations are included as appendices in *God and the Embryo*. None of these take up the ethical question of access to the goods of health care, nor set embryo research in the context of justice in relation to the common good of health.

6 See David Jones, et al., *A Theologian's Brief: On the Place of the Human Embryo Within the Christian Tradition and the Theological Principles for Evaluating Its Moral Status*, paragraph 31. The document is reprinted in this volume on pp. 37-48.

7 Marcia Angell, *The Truth About Drug Companies: How They Deceive Us and What to Do About It* (New York: Random House, 2004), 91-92.



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