

Chapter Eight—Reproductive Cloning

“Cloning in its various forms (cells, tissues, whole organisms) should be considered in tandem with (1) the mapping of the human genome, (2) the entire range of genetic interventions and “engineering,” (3) all that goes under the rubric of “genetic medicine,” (4) the agricultural sector, in which we alter genetically both plants and animals. In these activities, we seem to be engaged in processes refashioning or re-making the human person and the species we are most dependent upon. This refashioning of the human is the fundamental issue posed in cloning. Up to now we have sought to refashion the non-human portion of the ecosystem, but we have turned our efforts to ourselves. The exciting promise of this refashioning is that the conditions of life may be rendered new and liberating; the moral dubiousness lies in the unworthy motives, the outright mistakes that may attend our cloning efforts, and the possibility of reducing human life to an object of manipulation.” Philip Hefner, theologian

“This is what we have come to expect from religious authorities: dogmatic pronouncements without any support external to a particular religious tradition, self-justifying appeals to a sect’s teachings, and metaphor masquerading as reasoned argument. And, of course, the interpreters of God’s will invariably fail to agree among themselves as to precisely what actions God would approve.”

“Given that these authorities have so little to offer by way of impartial, rational counsel, it would seem remarkable if anyone paid any attention to them. However, not only do these authorities have an audience, but their advice is sought out by the media and government representatives. Indeed, President Clinton’s National Bioethics Advisory Commission devoted an entire day to hearing testimony from various theologians.” Ronald Lindsay, ethicist

Introduction

The name “Dolly” has become a household word since the announcement in February of 1997 of her birth (on July 5, 1996) made her “the sheep heard round the world.” Her life as the first cloned mammal created a new public awareness almost overnight about the unprecedented powers being advanced in biological manipulation. These growing powers reach far beyond cloning, but “Dolly” became the watchword for this revolution. The term “revolution” is appropriate because the challenges are as broad as the full-scale transformation of medicine and agriculture, and as deep as fundamental questions about human identity and God’s intention for nature. “Dolly” became a symbol of the awareness that we live in an age when we have the power to refashion the character of our human identity and the reach of our responsibility.

Events that alter our very notion of what it means to be human are few and scattered over the centuries. The birth of Dolly is one of them . . . The world is a different place now that she is born.

Gina Kolata, writer for the New York Times³

A revolution of this kind includes matters that are necessarily religious and implies that it deserves attention by people of faith. This has been acknowledged at certain points in the public debate. The national hearings on cloning in 1997—under the Clinton administration—specifically solicited religious voices for testimony. Much of the discussion around cloning,

moreover, is tinged with religious language. Even the bald dismissal of religious perspective by Ronald Lindsay (see above) suggests the importance of religious thought in this issue. It reminds us how important it is for people of faith to speak well, relevantly, and clearly in our highly secularized society.

Yet, as we give attention to these matters, we must remind ourselves why Christians and the Church should speak to them. It is not because we have an abundance of moral wisdom, high morality, or virtue. When

GENETICS!

Where Do We Stand as Christians?



people of faith are compared to the general public that may or may not be the case! The stimulus to speak, however, follows from God's call to his people to be the church.⁴ Christians are to speak because this is God's world and the Church is Christ's body in it.

This awesome identity only increases Christian responsibility to think carefully as Christians and to speak to issues in the "public square" in language that can be appreciated there. This is true even when that requires us to translate our Christian ideas, as appropriate, into everyday language. This identity as the body of Christ, moreover, challenges Christians to think, speak, and question "outside the box" of the public conversation, as well. Christians are called to raise issues and questions that are being overlooked by others. Our identity in Christ also highlights why Christian congregations are called to be places of moral deliberation. It suggests why congregations are intended by God to be places where different, even conflicting, perspectives and ideas about knotty moral issues should be offered in the Spirit of Christ for consideration and discussion.

Dolly, then, represents a kind of "wake up call" for Christ's body living in an age of biological manipulation. This chapter in *Genetics! Where Do We Stand as Christians?* is designed to help Christians find a thoughtful stance and a more articulate voice on these matters.

Human cloning is a vast topic; we will approach it in two chapters for the sake of clarity and manageability. This chapter will focus attention on what is often called "reproductive" cloning while the subsequent chapter considers what is often called "research cloning." (See sidebar.) This distinction is a common one because the birth of a baby is involved in one but not the other and this means different moral and theological issues are involved. In both chapters we concern ourselves with theological themes and moral resources to help think faithfully about the matters involved.

The questions specific to this chapter are five in number:

- 1) What is cloning, scientifically speaking?
- 2) What are the reasons some people advance for reproductive cloning?
- 3) What is the public status of the question?
- 4) What shall we say about several questionable judgments—from a Lutheran perspective—against cloning?
- 5) What are several key ideas in our Lutheran tradition that can help give voice to a carefully thought-out position on reproductive cloning?

Personal Experience and Values

Major public events are often "burned" into our memories. Obvious examples include the assassination of President Kennedy, or the explosions of the Challenger and Columbia space shuttles. The birth of Dolly was certainly less horrific, but many people can recall the shock when they first learned about it. Take a few moments to recall for yourself or to share with your group what you were doing, where you were, and what your initial thoughts were.

Although a majority of people find the idea of human reproductive cloning deeply troubling, many have a difficult time explaining exactly why. (This is often called the "yuk factor.") Moral judgments are dangerous

The term "**cloning**" designates various processes employed to copy or reproduce biological material. (Two important examples are SCNT and "twinning.") "Cloning," thus involves making multiple copies of molecules or cells as well as the (re)production of individual organisms. When human procreation is involved, it is commonly designated as "reproductive" or "procreative" cloning and would mean cloning for the express purpose of replicating a particular, already-existing human genome.

"Research" or "therapeutic" cloning commonly indicates the use of cloning technology for experimentation on human tissue including stem-cells, skin or organ cells, and so forth.

In this chapter "cloning" will be a shorthand to specify, unless otherwise noted, the replication of a particular, already-expressed human genome, that is, procreative cloning.



when based on emotional reactions alone, but paying attention to one's feelings on such a matter is instructive. Consider your feelings about the idea of cloning. Go a step further, and attempt to imagine what it would be like to be a cloned child. Try to imagine how you would think or feel if you were that child—would you feel uneasy, proud, afraid, etc...

Attention to these two questions provides clues to the important “pre-understandings” that each of us brings to this issue. (See *Personal Experience and Values* in Chapters 2 and 3 for more explanation.)

Gathering Input

Scientific and technical

“Cloning” has become a household word, but it remains often misunderstood, and its use is often confused by different meanings. At the most general “cloning” describes any process that allows the duplication of biological material, whether of DNA, of cells, of tissues or of whole organisms. Animals as complex as frogs have been cloned through the technique of embryo splitting since the 1960s. Dolly, however, was scientifically significant because she demonstrated that the growth process of mammals could be artificially “jump started” in a fertilized egg after the removal of the original set of genes and the substitution of a set from an adult cell.

This stunning scientific breakthrough is called “somatic cell nuclear transfer” (SCNT). It carries this name because the nucleus (containing most of the cell's genetic material) of a body cell, such as hair, skin, or organ (called somatic cells) is transferred into an egg from which the egg's own nucleus has been removed. (See Figure 1 on the next page.) This means that the organism born from this process will have virtually identical genes to that of the adult creature.⁵ In order to understand why this is so electrifying, we must think a moment about the natural development of a mammal.⁶

During the first several cell divisions after the normal fertilization of an egg by a sperm, the cells are capable of being separated from each other and of becoming any kind of cell. Around the 16-cell stage, though, the egg's set of genes—called a genome—becomes fully functional and begins to direct the blastocyst's (term for an early stage embryo) development. At this point each cell begins to take on different characteristics and functions. This process is called cell differentiation and is the source of the different cells and tissues in mammals such as lung, skin, and brain. During differentiation the genome (each cell's set of genes) selectively turns off the individual genes it will no longer need in order to perform that cell's specific function. For example, heart cells need the brain genes turned off and vice versa.

The early cell divisions (from 2 to 4 to 8 to 16) are unique because the cells can literally become any type of cell and because the new genome has not taken over the direction of the process of development. Genetically identical twins and triplets (natural clones of one another) are possible for this reason whenever these earliest stage cells divide and form two, three, or more eggs that come to term.

Two major obstacles had to be overcome for SCNT to succeed. The first was to trigger a differentiated genome into acting like it is in a newly activated egg in order to restart the process of growth and development. The second was to get all the required genes to turn on again—called cell dedifferentiation.

The first obstacle had been overcome before the advent of Dolly via the practices of harvesting, culturing, and micro-manipulating eggs and donor body cells. In short, if the genes to be cloned needed to act like they were in a newly activated egg, put them in a newly activated egg! This “nuclear transfer” aspect of SCNT (Again, see Figure 1 on the next page.) is used widely in a variety of research.

After frequent failure to overcome the second obstacle, however, many scientists began to think that the process of differentiation in mammals moved only in one direc-

tion—from the more generalized cells (earliest stages) to the more specific (later stages). It was this entrenched conclusion that Dolly shattered when she arrived. The scientific breakthrough was the ability to “trick” the differentiated cells into turning on again. This was accomplished by fusing starved adult sheep mammary cells (starved to stop normal cell division which may inhibit dedifferentiation) with multiple, mild electric shocks. Since 1997 a wide variety of mammals have also been cloned from differentiated somatic

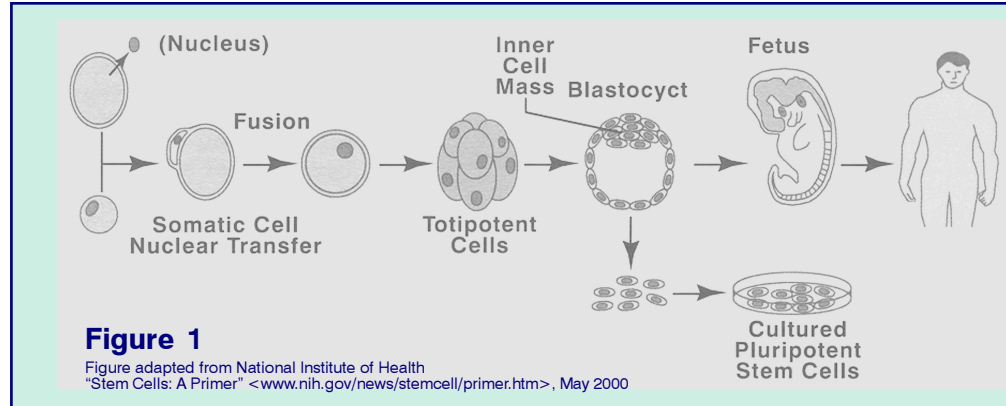
GENETICS!

Where Do We Stand as Christians?



cells and the idea of producing dedifferentiation in cells from adult mammals is widely accepted.

While the process of SCNT has been used successfully, several significant problems with the procedure remain. We should review these in order to understand the status of reproductive cloning at this time.



The first problem is the inefficiency of the process. Dolly was the single successful birth from 277 fresh eggs from which the nucleus had been removed. In the attempt to increase efficiency other scientists have tried varying the procedures—such as applying non-electrical kinds of stimuli to activate the growth process. Though these variations have produced significant increases in the efficiency of the SCNT procedure (i.e., more animals born per number of eggs used), problems persist. Cloned animals continue to die at a much higher rate in utero than is normal. The second problem is that mammals born through cloning have more health problems than normal. It is unclear whether such problems may someday be overcome, or whether it may be that SCNT does not perfectly mimic sexual reproduction in resetting the genes for full and proper activation. In either case, the use of this technology for human reproductive cloning at this time would violate accepted standards of safety, efficacy, and effectiveness for research on human subjects.

The political debate

As this chapter is being produced (early 2003) the legal status of reproductive cloning remains under the moratorium put in place by President Clinton in 1997. This moratorium forbids the use of federal funds for any research or practice dedicated to reproductive cloning of human beings. It is based upon the 1997 recommendations of the National Bioethics Advisory Committee (NBAC) that cited exactly the safety and effectiveness issues just noted. SCNT technology, at this time, simply carries unacceptably high risks of bodily harm or long-term health problems for a cloned child. In July of 2002 the President's Council on Bioethics (appointed by President Bush) recommenced an outright legal ban on reproductive cloning. Their reasoning included safety, efficacy, and effectiveness; but it went further to include additional moral objections that would hold even if cloning became safe. Several different bills to ban reproductive cloning are before the U.S. Congress and national polls generally indicate that most U.S. citizens want to outlaw it. While the political will to do so is in place, the legislation against reproductive cloning has been held up because it has been connected to the much more divisive issue of limits to research cloning. (The subsequent chapter will consider this issue.) The reader is advised to visit the online sources found below in *For Further Investigation* to determine the latest political situation.

Judgments in favor of procreative cloning

The largely foregone conclusion that human reproductive cloning will be banned may lead to the mistaken opinion that opposition to it is universal. There are, however, several arguments offered in favor of reproductive cloning. Some individuals reject a legal ban because they believe science, if allowed, will develop procedures safe enough for use in humans. They further believe that science must never be prevented from exploring new areas of knowledge. The most widespread argument in favor of reproductive cloning, however, is grounded in the idea of reproductive rights. (See sidebar on the next page.) Some even argue that every American has a right to reproduce; a right guaranteed in the Constitution that translates into a right to the availability of any technology that permits them to do so. Proponents argue, for instance, that grieving parents should have the option of conceiving another child with an identical DNA to that of a child lost to a tragic misfortune. It appears, also, that a few fertility problems could be overcome only by SCNT procedures. Those who would argue in favor of a legal right to clone include a group like the Raelians who see cloning as



“American society adheres to the principle that personal liberty and personal fortune are the primary determinants of what individuals are allowed and able to do. Anyone who accepts the right of affluent parents to provide their children with an expensive private school education cannot use “unfairness” as a reason for rejecting the use of reprogenetic technologies. [Cloning is included in this category.]

“Indeed, in a society that values individual freedom above all else, it is hard to find any legitimate basis for restricting the use of reprogenetics.”¹⁴

Lee Silver, Princeton University philosopher and scientist

a means to eternal life and announced the birth of a human clone in late December of 2002. They have never offered public or verifiable evidence for their claim, but would certainly contend that their right to pursue cloning should be protected, perhaps on religious grounds.

Resources in Scripture and theology

Religious arguments for procreative cloning

As we ask the question regarding what religious resources exist for dealing with this question, it is important to recognize that theological reasons both pro and con have been offered. The religious reasons put forth in favor of procreative cloning maintain that the God of the Bible favors life and commands humans to “be fruitful and multiply.” (Genesis 1:28) Other human inventions have improved the ability of parents “to multiply,” why not use cloning as well? From a slightly different stand point there are some religious thinkers who contend that the “sanctity of life would encourage

us to use cloning if only for one individual . . . to prevent the loss of genetic line.”⁷ In other words, some believe that one’s religious beliefs about the necessity of extending family lineage would justify the use of cloning, provided it could be made safe and effective.

Some individuals suggest that Scripture cannot help us much on questions like reproductive cloning because the topic is not discussed in the Bible and the immensity of contemporary human power was not envisioned. These facts are true, but it does not follow that Scripture cannot aid our thinking. Scripture as a source provides many important theological themes and insights to aid us, even if they are not specific to the idea of cloning. Contemporary issues that grow out of new human experiences, like cloning, require careful and thoughtful connection between the specific question and the deep and broad religious knowledge about what is good, right, and fitting.

A source for insights

What then are some of these themes? In October 2000 the Evangelical Lutheran Church in America held a consultation on human cloning that assembled specialists from genetics, medicine, counseling, business, ethics, theology, and the parish. Their time was spent thinking together about the challenges of cloning and the church’s resources for dealing with it. We will call upon some of the ideas raised there to aid reflection and deliberation in this chapter.⁸

Countering inappropriate ideas

It is perhaps an odd but important place to begin by countering notions that seem to be inappropriate even though seen as religious in nature. There are two in particular: a) the claim that cloning is “playing God,” and b) the idea that a cloned human genome would violate the uniqueness of God-given human life or the fear that a clone will not have a soul for that reason. The reminder of human sinfulness and of the human tendency to repeatedly usurp God’s authority—aspects implied by the phrase “playing God”—is a fundamental religious theme. It is one that should promote caution and humility in any human activity. But the problem of “playing God” is not an inherent problem with cloning as cloning. Rather, that problem has been around as long as there have been humans, as indicated by many biblical reminders beginning with the story of Adam and Eve. Charges like “playing God” have been leveled against other new technology such as airplanes and against other medical interventions. Interventions such as cancer treatment or organ transplants deny the natural course of death and assisted reproductive technologies (ART) make life possible where it would not be otherwise. Human cloning, likewise, should not be labeled in and of itself as “playing God.” The question to ask of cloning, or of any technology, is whether and how it should be used for the good.

The counter theme to cloning as “playing God” is to recognize that humans are made in the image of God.

GENETICS!

Where Do We Stand as Christians?



The gift of being made in God's image includes, fundamentally, the gifts of creativity and technology that are possible because of human knowledge and power, human freedom and responsibility. This biblical theme understands humans as having a destiny to bring healing, alleviation and even correction to the problems presented in nature. In one sense human technology always represents the possibility to aid and correct or to alleviate the sufferings and limitations of the human situation. Yet, this requires a formidable balancing act because Scripture also reminds us that sin pervades all human action. The gift of technology that is inherent in being made in the image of God does not justify the technological imperative—that humans may do whatever human ingenuity makes possible. Because of its potential, cloning bristles with extra dangers. Like all technology, it must be used with humility and restraint, with careful moral decision and foresight of possible outcomes, and with respect for the gifts of non-human nature. Despite the balancing act required, the recognition of cloning as yet another gift of God follows from recognizing humans as naturally creative and technological and sets the proper context for considering its use.

A second inappropriate judgment to counter is the idea that the human soul (the dynamic self-identical center of the human being) is somehow dependent on having a unique human genome. It is important to clarify this for two reasons. The first is that every identical twin shares an identical genome; and the second follows from the reality that human clones will quite possibly be born someday, somewhere. The idea that a duplicated genome violates human dignity (that is, inherent value as a human being) seems to suggest a biological essentialism or DNA determinism. (See Chapter two, page 20.) This implicitly denies God's role in creating the uniqueness and inherent value of human life. The Christian tradition, instead, holds that human dignity belongs to the understanding that humans are, as above, made in the image of God. Human dignity arises from the self-giving of God who creates a relationship with each human being. Human individuality, further, is a gift of God's work carried out through a combination of environmental, biological, and cultural factors, all of which are ultimately given final shape by God. Identical twins or any child brought into the world via cloning technology is as precious, valued, and "full of soul" as any other child. Procreative cloning poses no threat to religious convictions about the dignity or soul of the human being.

Aids for decision

What then are some aids for making careful moral decisions about reproductive cloning? The primary argument among those who have supported the idea of reproductive cloning has been that of rights. Christians understand the importance and value of rights in the political and legal tradition expressed in the U.S. constitution or, more broadly, in the charter of the United Nations. Christians, however, do not believe rights-thinking alone is sufficient for making moral decisions. As moral criteria, human rights form a kind of fundamental safety net, but alone they do not trump all other considerations. In short, the search for what is in the best interest of human flourishing or of the common good is much more complex. This insistence on involving considerations in addition to "my rights" is a key theme found in much Lutheran thinking. For instance, the emphasis on the command to "Love your neighbor as yourself" (Mark 12:31) includes, but goes well beyond one's rights.

With this in mind, ethicist Hans Tiefel suggests that cloning cannot, in the end, be seen as the loving thing to do. Prospective parents might, indeed, see it initially as a loving means to procreate or to extend the family lineage, but he believes the question must be settled from the standpoint of the child to be conceived. He suggests that we apply a "negative" version of the widely recognized golden rule: *Do not do to others what you wouldn't want done to you.*⁹ (Matthew 7:12)

The logic here is simply that, if cloning is a good thing for future children, then I would certainly want to choose it for myself if I could. If it is not something I would choose for myself, then it is not something I should permit done to others. Such thinking involves the use of moral imagination, of course, but Tiefel suggests that we think about the following questions as a means to determine an appropriate answer to the question of whether cloning would be good for children.

If I were such a child, would I find pleasure in being the spitting image of another person? Would I not notice several things? Would I not be recognized first for who that person was before I was recognized for myself?



Would not there be a built-in burden to live up to that person's reputation? Or again: Would I choose to be cloned? I would, of course, be told that cloning gave me a chance for life and a better chance in life than most. In contrast to other couples, my parents were sure of what they were getting. And yet would I, even as a grateful child, not wonder whether I was really loved unconditionally? Would not my parent's acceptance of me seem to depend in some measure upon how I live up to my physical predecessor in whose image they charted my life? Would I not vaguely sense, if not articulate, that the act of cloning bestowed too much power over my self-determination? Would I not sense, or articulate, how overwhelmingly normative my parent's choices are for me because they chose my physical identity. Yes, of course, Tiefel notes, parents have always had hopes, plans, and dreams for their offspring, but they have also had "to take potluck." In cloning, however, those dreams become built-in because parents can assure at least a virtually exact physical form in making their dreams possible. Does this not build in the likelihood that such dreams will become like a nightmare for the child?

Cloning, in conclusion, Tiefel suggests, would not be the full loving gift that the gift of birth is meant to be. Taken together from the standpoint of the child, the answers to these questions seem to weigh the scale against cloning. If so, then the widely accepted principle seems to apply: *Do not do to others what you wouldn't want done to you.*

An additional contribution that Christians can make to the "public square" is to voice concern about how the practice of cloning is related to questions of social justice. The ELCA's social statement *Living the Faith: A Lutheran Perspective on Ethics* reminds us that the Lutheran ethical theme of seeking the welfare of the neighbor (loving one's neighbor as one's self out of the freedom of grace) includes the challenge to practice not simply compassion but also justice-seeking. The statement insists that "In a world that emphasizes power and the ability to gain both wealth and control, justice becomes a primary goal."¹⁰ (Micah 6:8). Here again, Christian thinking shifts the emphasis from the sole issue of the rights to reproduce to an additional set of considerations.

Along this line, ethicist Margaret McLean reminds us that the cloning question must be placed within the context of contemporary society. Can efforts to develop cloning be justified in a world in which 800 million people suffer from hunger and malnutrition or 11 million children die each year from preventable diseases? Is it proper to devote resources, such as government funding, to the development of cloning services that would benefit a selective few when in U.S. society alone more than 30 million Americans live in poverty and more than 40 million Americans lack or have inadequate health insurance?

In this social context, she believes Christians must raise the question whether the presumed benefits of reproductive cloning will not further privilege the powerful and well-off and dis-value those on the socio-economic margin.¹¹ In the context of this world's "web of poverty and injustice," Christians must insist that responsible decisions about reproductive cloning require the development of public policy consistent with the principles of social justice and responsibility for the future.

An addendum

In our use of the themes and issues raised at the ELCA consultation on human cloning, several points need to be clarified. First, it is important to restate that the consultation did not in any way speak on behalf of the ELCA. An official position in the ELCA for an issue like cloning would require the adoption of a social statement and such a social statement has not been initiated in the ELCA on any specific questions of bioethics or biotechnology. The emphasis within the ELCA, instead, has been to foster dialog and moral deliberation among its members and to encourage them to make their voices heard as citizens. The concluding sections of this chapter are consistent with this emphasis.

Yet it seems appropriate to report that during this consultation the weight of the deliberations went against reproductive cloning. No common statement on behalf of the consultation was even attempted, but as one participant observed: "A general conviction seemed to be coalescing around the need for a stronger moratorium on procreative cloning."¹² This was inferred from the combined weight of theological, moral, legal, and scientific questions and objections voiced during the consultation. These included the concerns mentioned above as well as the potential for the distortion of parenting and denigration of the family, the violation of the meaning of conception, uncertainties about the potential harm on future generations, and the difficulty of legal regulation. In short, there was no single reason given for banning reproductive cloning, but taken together the questions and moral objections were so great as to suggest that a stronger position seemed needed than the one put forth by the National Bioethics Advisory Commission (NBAC) of 1997.



GENETICS!

Where Do We Stand as Christians?

Deliberation and Discernment

Make use of the ideas and information above to reflect privately on or to discuss with others where you stand on the question of reproductive cloning. What are the reasons for your judgments? If your judgment favors reproductive cloning, how do you think it should be regulated? If your judgment opposes reproductive cloning, on what basis? If you have made a personal moral decision against it, would you also argue for making it illegal? On what grounds? How would you respond to the argument that a legal ban denies some individuals their right to use every available technology in the desire to have genetically related offspring?

Taking the Conversation With You

The political will to make reproductive cloning illegal in the United States may well have produced a law regarding reproductive cloning by the time you read this—again, it is pending as this is written. Take a moment to find out what the status of the legal question is and how your congress person has voted on this. If the matter remains pending, draft a personal statement of your view and then make a phone call, send a letter, or write an email to your representatives in Washington, D.C. Let them know where you stand on the issue and what factors you think they need to consider. Information on how to do this is below.

For Further Investigation

This list is hardly comprehensive, but provides several good starting points for further investigation.

The three Web sites for elected officials in Washington D.C. are: www.house.gov; www.senate.gov and www.whitehouse.gov/contact.

One of the best places to find updates on current legislative events is <http://thomas.loc.gov>. This is a service run by the Library of Congress to help individuals find legislative information on the internet. Simply type in “cloning” under the word/phrase box of the “Search Bill” feature on the home page.

The Web site of the President’s Council on Bioethics can be found at www.bioethics.gov/topics/cloning_index.html. It includes a wealth of material including reports and updates of the commission’s work.

The Web site of the largest organization of biological research scientists is found at www.faseb.org.

Information and affirmative ideas about reproductive cloning can be found at www.reproductivecloning.net.

Information about the Raelians can be found at their Web site www.rael.org/int/english/index.html; secondary source information with commentary can be found at www.religiousmovements.lib.virginia.edu/nrms/rael.html.

Cole-Turner, Ronald. Beyond Cloning: Religion and the Remaking of Humanity. Harrisburg, Penn.: Trinity Press International, 2001.

Evangelical Lutheran Church in America. Living the Faith: A Lutheran Perspective on Ethics. Chicago: Division for Church in Society, 1999.

McGee, Glenn. The Human Cloning Debate. Berkeley: Berkeley Hills Books, 1998.

Silver, Lee M. Remaking Eden: How Genetic Engineering and Cloning Will Transform the American Family. New York: Avon Books, Inc, 1997.

Willer, Roger A. Human Cloning: Papers From a Church Consultation. Chicago: Division for Church in Society, ELCA, 2001. This document in its entirety is available for reading online or for download at www.elca.org/dcs/humancloning.html. Single, complimentary printed copies are available by calling the ELCA’s resource line at 800.638.3522 ext. 2996, while multiple copies can be ordered from Augsburg Fortress (800.328.4648) at a minimal cost. Ask for order code 6-0001-3165-8.



Citations

1. Philip Hefner, "Cloning: The Destiny and Dangers of Being Human," [Human Cloning: Papers From a Church Consultation](#) (2001), p.27.
2. Ronald Lindsay, "Taboos Without a Clue: Sizing Up Religious Objections to Cloning," [The Human Cloning Debate](#) (1998), p.246.
3. Cited in Margaret R. McLean, "Table Talk and Public Policy Formation in the Clone Age," [Human Cloning: Papers From a Church Consultation](#) (2001), p.19.
4. Tom Kennedy, "Let the Church First Be the Church: Thinking Theologically and Speaking Clearly About Reproductive Cloning," [Human Cloning: Papers From a Church Consultation](#) (2001), p.52.
5. One must say "virtually" or "nearly" because a small, if important, percentage of DNA is not in the nucleus.
6. The following material is adapted from "Cloning: Can It Be Good for Us?" [Human Cloning: Papers From a Church Consultation](#) (2001), p.8f. See that chapter for a fuller discussion.
7. A citation subscribed to Moshe Tendler, professor of medical ethics at Yeshiva U.; quoted in Ronald Lindsay, "Taboos Without a Clue: Sizing Up Religious Objections to Cloning," [The Human Cloning Debate](#) (1998), p.246.
8. The entire proceedings are available in published form as Roger A. Willer, [Human Cloning: Papers From a Church Consultation](#) (2001)
9. Hans O. Tiefel, "In Our Image: Procreative Cloning and Faith," [Human Cloning: Papers From a Church Consultation](#) (2001), p.50.
10. Evangelical Lutheran Church in America, [Living the Faith: A Lutheran Perspective on Ethics](#) (1999), p.20.
11. Margaret R. McLean, "Table Talk and Public Policy Formation in the Clone Age," [Human Cloning: Papers From a Church Consultation](#) (2001), p.19.
12. Roger A Willer, "Threads From the Conversation," [Human Cloning: Papers From a Church Consultation](#) (2001), p.85.
13. Margaret R. McLean, "Table Talk and Public Policy Formation in the Clone Age," [Human Cloning: Papers From a Church Consultation](#) (2001), p.14.
14. Lee M. Silver, [Remaking Eden: How Genetic Engineering and Cloning Will Transform the American Family](#) (1997), p.11.

