

**THE CLONING OF HUMAN BEINGS:
FROM SLIPPERY SLOPE TO LOOMING PRECIPICE**

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All I have seen teaches me to trust the Creator for all I have not seen.

Ralph W. Emerson

If human embryonic stem-cell research does not make you at least a little bit uncomfortable, you have not thought about it enough.

James A. Thomson
the scientist first to isolate human embryonic stem cells

Abstract

This article looks at the moral imperative for people everywhere, and especially Christian believers around the world, to work toward the reduction and eventual elimination of cloning of human embryos for any reason. Popular media has highlighted horrors of reproductive cloning, but has not done well in providing clarity related to the dangers related to cloning – and the subsequent destruction – of human embryos in the pursuit of stem cells for scientific and medical research. This is especially tragic given that in recent years the *reprogramming* technique now allows for non-embryonic adult somatic cells to be converted to a state that emulates embryonic stem cell features. A call to action is being made to people of conscience everywhere, and especially to Christians who understand their duty to protect the weak and vulnerable, to promote public policy changes to eliminate any sort of human cloning both in the United States and abroad.

Introduction

This article deals with issues that are as old as humanity, and yet as current and crucial as the scientific breakthroughs tumbling forth from biologic laboratories across the planet. Should human beings continue to be guaranteed the right to dignity and respect? If human beings are entitled to dignity and respect, by whose authority should their rights be safeguarded? Are human beings entitled to and worthy of dignity and respect, or are human rights subject to an evolution of policy understanding, government power and scientific development? At what point are human rights to be safeguarded – when the individual is identified as possessing a genome of its own, or when powerful policy makers deem the individual to have “human being-ness?”

Various religious faiths believe that human beings are more than simply transitory biological products, without duration separate from their earthly existence. The Christian, particularly the Christian who believes in the Word of God as represented in Holy Scripture, the Bible, believes that human beings are not simply earthly creatures with the ability to reason. Rather, the Christian believes – every one of us – are souls placed in human vessels for a short time and then continue with our consciousness and permanent spiritual form for all eternity. The Christian believes that human beings are more than biological products or the property of others. We are more than reproducible commodities. The Christian believes that people are made in the image of God, and all possess dignity and personhood from the very earliest stage of human life to the final moments preceding physical death. The Christian believes that at the point when society allows its powerful policy makers to define human life in terms of reproducible commodity rather than God’s intentional creation, we begin to unleash the most monstrous of cloning results foreshadowed by written media, movies and especially in His Word, the Bible.

This paper explores *nuclear transfer*, the basic method used to produce animal and human clones, and explains the import of Dolly, the original and infamous cloned sheep in Scotland. It discusses the use of stem cells in medical research as shown to be moral and good and how the use of human embryos (whether cloned or produced via in vitro fertilization) used in the process of producing stem cells is immoral. Finally, the paper addresses more optimistic news in recent years related to a promising new technique known as *reprogramming* which takes adult human skin cells and converts them into the equivalent of embryonic stem cells – without the actual production of new life in the form of human embryos.

There is a “slippery slope” of good intentions and the thrill of scientific development in the cloning debate. There is also a propensity in the media and by powerful policy makers to reframe the argument so that little real regulation develops to protect society from the “commoditization” of human beings and from desensitized societal attitudes.

Cloning: stirring the imagination

Shortly after the announcement of the successful cloning of Dolly the sheep on February 23, 1997 (when Dolly was six months old), a “first-wave” of printed

commentary raised deep concerns and calls for caution related to the negative potential of human cloning and experimentation (Silver 2001). That is:

Of course, it wasn't the cloning of sheep that stirred the imaginations of hundreds of millions of people. It was the idea that humans could now be cloned as well, and many people were terrified by the prospect. Ninety percent of Americans polled within the first week after the story broke felt that human cloning should be outlawed. And while not unanimous, the opinions of many media pundits, ethicists, and policymakers seemed the same as that of the public at large. The idea that humans might be cloned was called "morally despicable," "repugnant," "totally inappropriate," as well as "ethically wrong, socially misguided and biologically mistaken."

Popular media for decades has provided numerous products exhibiting the dark side of science and the manipulation of genetic material, particularly as it relates to the subject of human cloning. In the 1930s, Huxley in his prescient novel *Brave New World* wrote of a time in the future where human reproduction by natural means has been eliminated. Fetuses in this future era are manipulated by laboratory processes to develop either "naturally" in "decanting bottles" and become members of the highest caste (the privileged minority of the population), or to become one of the vast majority who are destined to be members of the lower castes through chemical treatment and to be allowed only minimal mental and physical development. This is the process by which the one world, global government would maintain the desired size of the world population and control of societal deviance.

In the 1970s, author Ira Levin penned the best-seller *The Boys from Brazil*, which was followed up with a successful movie of the same name starring Gregory Peck as Josef Mengele, the evil physician/genetic scientist. The real Josef Mengele conducted many human experiments on hapless prisoners of the infamous Auschwitz-Birkenau concentration camp during World War II, including experiments on identical twins in which few individuals survived. He earned the dubious title among concentration inmates as the *Todesengel*, or "angel of death" for his cruel human experiments. In his real life and in the book/movie, Dr. Mengele escaped war crimes prosecution and managed to escape to South America. In the book/movie, Dr. Mengele orchestrates the placement of dozens of identical clones of Adolf Hitler placed in homes around the world to recreate the approximate environment in which the original Adolf Hitler grew up, and to help usher in a new *Fuehrer* and Fourth Reich movement. The dramatic thriller ends up with a mixed ending – the Mengele plot is foiled, and the unaware young clones are allowed to grow up without the knowledge of who they really are – but with at least one of the boys demonstrating an unsettling level of fascination with death and violence.

In recent years, many proponents of human cloning and advocates of stem cell research from human embryo clones have ridiculed the "worst-case" precautions raised by those who disagree with the promotion of human cloning. It has been stated that the debate is too often laced with "futuristic fantasies and Frankenstein fears" (Nelkin, Lindee 1998) and that references to *Jurassic Park* and

Brave New World are just products of hyper-active imaginations and Hollywood sensationalism – and not in line with the scientific and medical need to advance levels of knowledge in these areas. After all, *The Boys from Brazil* is just a story concocted by someone’s fertile imagination, correct?

Well, yes, except that physicians and scientists like Dr. Mengele really did exist. Except that Dr. Mengele and his colleagues really worked for, and were rewarded by, a government intent on exploiting biology, genetics and human value. Except that these “futuristic fantasies” are becoming uncomfortably current as developing issues today. Imagine that.

“Moral” and “immoral” ways of obtaining stem cells

Until 2007, there were but four main ways to obtain human stem cells: 1) umbilical-cord blood from the after birth of a newborn – considered moral as no human life is sacrificed, but stem cells are not available in large quantities; 2) adult bone marrow and/or brain tissue – considered moral but stem cells are not available in large quantities; 3) aborted fetuses – considered highly immoral, especially when human fetuses are produced for the purpose of producing stem cells (such as in the nuclear transfer approach) and then terminated; and 4) “discarded” embryos after they are “no longer needed” and are to be destroyed, such as in clinics providing in vitro fertilization – considered highly immoral. (Thompson, Harrub III 2001)

In 2007 a remarkable advance was made by Dr. Shinya Yamanaka of Japan that allowed for the production of human stem cells without the use of embryos. This new approach is called the “reprogramming” technique, and it converts adult skin cells into the equivalent of human embryonic stem cells. It is remarkable to note what it was that spurred Dr. Yamanaka on in his quest to find a way to secure human pluripotent stem cells without the use of human embryos. While visiting a friend’s fertility clinic a few years prior, he looked into the microscope at one of the human embryos stored at the clinic. “When I saw the embryo, I suddenly realized there was such a small difference between it and my daughters,” said Dr. Yamanaka, 45, a father of two and now a professor at the Institute for Integrated Cell-Material Sciences at Kyoto University. “I thought, we can’t keep destroying embryos for our research. There must be another way.” (Fackler 2007) Great successes in this area have been realized by Dr. Yamanka and another scientific team at the University of Wisconsin (led by the eminent James A. Thomson). However, there still are technical problems that are being addressed to speed up the process, to avoid the production of cancerous cells, and to make the overall procedure more efficacious. (Fackler 2007)

In the meantime, popular media continues to promote the “amazing potential” of human cloning to cure disease, injury and genetic problems for the human race. (Tranter 2010) Given this, the moral imperative remains, then, to reign in and eliminate the advancement of human cloning.

Professor Ian Wilmut’s method of therapeutic cloning, called nuclear transfer, was used successfully to clone the sheep named Dolly in Scotland in 1996. This startling development was revealed to the world the following year. This success ultimately led to gaining license in 2005 to clone human embryos. “In

this method, the DNA contents of an adult cell are put into an emptied egg and stimulated with a shock of electricity to develop into a cloned embryo, which must be then dismantled [destroyed, void of life] to yield the flexible stem cells.” (Highfield 2007, p. 1) As time passed, social, scientific and efficiency issues thwarted the nuclear transfer method. “The scientist who created Dolly the sheep, a breakthrough that provoked headlines around the world a decade ago, is to abandon the cloning technique he pioneered to create her,” read the newspaper account in 2007. (Highfield 2007, p. 1) Dr. Wilmut, it appears, had chosen to pursue the approach with less moral controversy in favor of the Yamanaka reprogramming technique.

Why is the production of stem cells so important? The potential benefits to improve the human condition are numerous. (Thompson III 2001) A bioethicist indicates that stem cells “could help regrow heart muscle after a heart attack. They could regrow brain tissues that could be the answer to Alzheimer’s, Parkinson’s and Lou Gherig’s disease. They could be used for therapy for burns or to regenerate skin and would help in developing new drugs.” (Charo 2001) In some adult tissues, such as bone marrow, muscle, and brain, cells sometimes can be replaced for those that have worn out, or have suffered injury or disease. (NIH, 2011) The so-called “pluripotent” stem cells are capable of giving rise to most tissue found within the human organism (Thompson, Harrub III 2001), and therefore providing extraordinary medical science breakthrough opportunities.

Defining the beginning of human life

The authors Thompson and Harrub (III 2001) take a strong stand on the beginning of human life:

Life – contradictory claims by eminent scientists notwithstanding – begins at conception. When the gametes join to form the zygote that will grow in the fetus, and when the full complement of chromosomes necessary to produce and support life combines, it is at that moment the formation of a new body begins. It is the result of a viable male gamete joined sexually with a viable female gamete, which has resulted in the formation of a zygote containing the standard human chromosome number – 46. The embryo is growing, and is alive. It is not just “potentially” human; it is human!

As it develops, the embryo will move through a variety of important stages. The first step in the embryonic growth process-which eventually results in the highly differentiated tissues and organs that compose the body of the neonatal child-is the initial mitotic cleavage of that primal cell, the zygote (the cell resulting from the union of the sperm and egg). At this point, the genetic material doubles, matching copies of the chromosomes move to opposite poles, and the cell cleaves into two daughter cells. Shortly afterwards, each of these cells divides again, forming the embryo...

Is it alive? Of course it is alive. In fact, herein lies one of the most illogical absurdities of arguments set forth by those who defend abortion. They opine

that the “thing” in the human womb is not “alive.” If it is not alive, why the need to abort it? Simply leave it alone! Obviously, of course, from their perspective that is not an option because, as everyone is well aware, in nine months that developing fetus will result in a living human baby. The truth of the matter is that human life begins at conception and is continuous, whether intrauterine or extrauterine, until a person’s death.

Christian view of value of human life

The Christian who believes in the inerrancy of Biblical scripture as the whole and complete Word of God has direction and understanding that transcends the centuries. This Christian has faith in the Bible as the one source of truth and inspiration, along with direct community with God through prayer and meditation. The Christian’s understandings of the value and worth of all human beings is transmitted directly from sacred scripture.

Genesis 1:26–27 explains that human beings have a very special place in all of nature, in that they are made “in the image and likeness of God.” This also is referred to as the doctrine of *imago Dei*, which refers to the fact that all human beings are imbued with the spirit of God and therefore all persons have inherent value independent of their utility or function. Likewise, the doctrine of the sanctity of human life is found in this same first book of the Bible, in Genesis 9:6 which instructs: “He who sheds man’s blood shall have his blood shed by man, for in the image of God man was made.”

An argument is made that cloning animals and cloning humans are quite different in effect under this doctrine:

It is one thing to attempt – and fail – 277 times using sheep cells in an attempt at cloning. Sheep are animals and do not possess souls, and that are not made in the “image and likeness of God.” But it is quite another thing to try – even once – and fail in an attempt to clone a human. Embryos are living human beings!... A laboratory littered with dead and dying sheep embryos is one thing; a laboratory littered with dead and dying human embryos is quite another! (Thompson 1997)

Pope Pius XI in 1933 in his pronouncement *Casti Conubii* spoke to the sanctity of innocent human life, while individuals such as the medical theologian Dr. Albert Schweitzer spoke of the need for reverence for all living beings, and not just human beings. Pius asserted that it was not unjust to kill some human beings who were not innocent, but that the deliberate destruction of human beings otherwise innocent of an action to merit death was *always* and *everywhere* immoral. (Barry 2002, p. 4)

The fourth century church leader Gregory of Nyssa reminded the faithful that God was the source of immortality, shared only with men and angels. The great church thinker St. Augustine distanced himself from the idea that outward appearance of humans related to the image of God, but that the *mens* (Latin term) was that true reflection of God, that inner soul related to intelligence, reason and spirituality. Various other Protestant and Catholic thinkers have shared their

thoughts on the imago Dei doctrine over the decades, including ideas on what is meant by “innocent,” and so forth. Perhaps the strongest grounds for the classical prohibition on killing is the immortality of the person, and that all human beings were created so as *not* to be killed deliberately by others. (Barry 2002, p. 22)

The concern should not be so much about scientists, policy makers and clinicians “playing God,” but the fact that ignoring God’s will comes with severe consequences. In arrogance, modern society has learned to ignore God’s will for His creation, and then arrogantly to ignore the promise that all ultimately shall stand before Him in judgment. One might say that “playing God” is not the larger issue, but that by ignoring God’s instructions one is “playing with fire.”

Human rights dilemma – intersecting with the secular view

The ethics of cloning and associated debate continues at an active pace. Within the scientific arena, legislative and funding bodies at the state and federal level, and among ethical and religious communities, the continuum of opinion is wide. Divergent viewpoints surround technological approaches with key stakeholders demanding complete abandonment of certain technologies (Lo 2009), while others demand full scientific exploration of those very same technologies. Financial opportunities for modern research corporations also play into the debate. Others explore the impact to society, human rights, the foundational structures of the human family, and the moral value of human cells.

The basic idea of human rights is a critical consideration to the cloning debate. In cultures and societies that value human rights, basic rights and freedoms for *all* humans should be guaranteed. The right to life, liberty, the freedom of thought and expression, and equality before the law are all common themes promoted by cultures that place high value on life. These cultures which ascribe to a belief system that life is created by a Supreme Being generate significant conflicts when there are those in that society attempting to re-create or redefine how life begins.

As newer and more advanced technologies deliver advanced ability to replicate the complexity of human cells, organs, and beyond, a critical question develops. Can we reach agreement as to when life as a human being begins? Can agreement be reached that the human embryo from conception onward has an absolute moral value equal to a newborn or adult? If so, then approaches to cloning research and experimentation must be aligned with the concepts of human rights and human dignity.

Judeo-Christian literature clearly validates both the genesis of humanness and the human dignity of individuals being made in the image and likeness of God. These important concepts insert variables into the cloning debate that dismantle the secular viewpoint that cloning and embryonic stem research is purely a scientific process. Viewing the debate from a purely secular perspective opens the door to exploration and evolution that will have disastrous effects on the value of life within society. Viewing the debate from the perspective that we are not charged to re-create life, or to design how human beings will look, behave, or act, will bring clarity and insight into the benefits to society that may be derived from cloning technologies.

Social commentator Charles Krauthammer decried a decade ago the deplorable situation in a society which seems to be “pushing the envelope” in these matters, in the June 23, 2001 issue of *Time* magazine:

Have we not all agreed that it is unethical, a violation of the elementary notion that we don't make of the human embryo a thing – to be made, unmade and used as a mere instrument for others?...

A day after the news from Norfolk, we learned that a laboratory in Worcester, Mass. (the very same lab that three years ago produced a hybrid human-cow embryo) is trying to grow cloned human embryos to produce stem cells – but could be used to produce a full or (even more ghastly) partial human clone. What other monstrosities are going on that we don't know about?...

People are horrified when a virgin hill is strip-mined for coal; how can they be unmoved when a human embryo is created solely to be strip-mined for parts?

What next? Today a blastocyst is created for harvesting. Tomorrow, researchers may find that a five-month-old fetus with a discernible human appearance, suspended in an artificial placenta, may be the source of even more promising body parts. At what point do we draw the line? ...[We] owe posterity a moral universe not trampled and corrupted by arrogant, brilliant science. (Krauthammer 2001)

Years later, Krauthammer (2007) wrote about the vindication of a courageous President George W. Bush, who in the face of enormous popular and scientific opposition, passed a stem cell policy during 2001 that actually attempted to balance scientific imperative with moral considerations. Bush's policy prohibited the use of federal funding for research on stem cell lines produced by newly destroyed embryos. Krauthammer credits Bush with framing the moral issue of embryonic research in a thoughtful speech to the American people and forcing the American people to confront the moral issue of embryonic research as well as its promise. Even though President Obama eventually overturned this policy, unlike Bush, he did it despite research that allows for the creation of stem cells using reprogramming and de-differentiation techniques, which eliminates the need to produce and destroy human embryos in order to create stem cells for research.

Framing the moral issues

This paper has attempted to address the absolute moral implications of cloning. Building upon this analysis, one can ask about the more dynamic and debated ethical considerations of cloning. What are the moral and ethical considerations inherent in policy related to issues such as nuclear transplantation, reproductive cloning, research cloning and stem cell research? What is the promise of direct reprogramming or de-differentiation techniques? (Highfield 2007).

This leads one to ask if there are practical strategies that can be identified for promoting an enhanced examination of the ethical issues underlying the science of

cloning at the policy making level. Javitt, Suthers and Hudson (2010) recognized that human cloning technology is still in its infancy, but the science of cloning is clearly outpacing the public's understanding and the formulation of coherent public policy. The time is now to engage the public in discussions about the legal, ethical, and societal issues cloning raises.

Paul Tillich, a renowned twentieth century theologian and philosopher, firmly believed in the absolute character of the moral imperative (Brock, Brock 2010). In other words, if something such as the sanctity of human life is a moral demand, it is an unconditional one.

However, Tillich also recognized the other side of the moral imperative or the relativity of moral context. The emerging science and technology discussed in this paper may change the context of a perceived moral imperative such as safeguarding human life, but it does not change the absoluteness of this moral imperative (Brock, Brock 2010). This notion of absoluteness was described by the nineteenth century philosopher Immanuel Kant as a categorical imperative and derived from a sense of duty (Paton 1971). Kant and Tillich lived in different times, but both stressed that a moral imperative was absolute and should transcend the content and context of the times.

Therefore, if one accepts that the sanctity and safeguarding of human life is an absolute or categorical moral imperative, what are the implications when some present day *powerful policy makers* attempt to reframe the debate over human cloning to emphasize the relativity of the moral and ethical context of human cloning? Certainly, these arguments are beginning to create confusion in the minds of the people in America, Europe and elsewhere. During 2004, the Genetics and Public Policy Center conducted a survey in which 4,834 Americans were questioned about their attitudes concerning reproductive genetic technologies including cloning. The survey revealed that many Americans have an incomplete or incorrect understanding of cloning technology (Javitt, Suthers, Hudson 2010).

The Genetics and Public Policy Center reported that the majority of Americans disapprove of cloning for reproduction or the use of cloning to create embryos for research. They add that Americans' opinions about cloning are not fixed and could be influenced by shifting public opinion regarding abortion or the reported potential (and occasionally dubious) value of cloning research to develop new treatments (Javitt, Suthers, Hudson 2010).

In the United States, lawmakers and policymakers have not been able to reach consensus on laws to regulate cloning or on how cloning could or should be utilized to advance treatment. There is little consensus internationally on the issue of cloning. In fact, the United Nations abandoned efforts in recent years to create a worldwide treaty on human cloning. Instead, in 2005, the United Nations Ad Hoc International Committee against the Reproductive Cloning of Human Beings fell short of this objective and decided instead to adopt a resolution that provides guidance to countries attempting to arrive at a position on cloning and stem cell research. However, some nations have explicitly prohibited reproductive cloning while allowing research cloning. The United Nations General Assembly in 2005 urged the world to "prohibit all forms of human cloning inasmuch as they are

incompatible with human dignity and the protection of human life.” Unfortunately, the “United Nations Declaration on Human Cloning is not legally binding and is considered merely persuasive to countries considering the issue. (Smith 2005) Over thirty countries, including Germany, France and the Russian Federation, have a complete ban on human cloning. Other countries, such as Japan and the United Kingdom, have banned human therapeutic cloning, but allow so-called therapeutic cloning. Poland and Hungary as of 2007 have not explicitly banned embryonic stem cell research or therapeutic cloning. (Matthews 2007)

It has been suggested that the science of genetics is well organized and well-funded but ethical considerations are unfocused, episodic and scattered (Mendelsohn 2000). In an article in *Harvard Review*, Mendelsohn stated that he believed technological advances and related ethical issues must be addressed simultaneously and with equal vigor and reminded his readers that attempting to address ethical issues after the application of a technological advance has proven in the past to be costly.

Timothy Caulfield (2003) published an article in which he asserted that human cloning at that time continued to be a significant national and international issue. He further asserted that despite years of academic and public debate, the philosophical foundations of the many policy choices and decisions remained obscure.

It was Caulfield’s position that there is a lack of meaningful and thoughtful debate regarding the role of normative principles such as human dignity and the sanctity of life in relation to reproductive and research cloning. This not only diminishes the broader public debate about reproductive cloning and trivializes the moral imperative of the sanctity of life, but this also makes it difficult for the general public and decision-makers to evaluate the justifications that may be made to support a particular cloning policy. Resources need to be devoted to this enterprise, scholarly papers need to be written and delivered and forums need to be convened and reported upon to clarify the public, legislative and policy debates. Implementing these strategies to examine thoughtfully cloning technology in relation to the sanctity of life would be an affirmation of what is arguably the moral imperative of our time.

Conclusion

The public must be educated and encouraged to adopt a position of higher morality, and reverse the sad sliding toward an immoral abyss. Christian believers must be doubly energized to push for change in this area. It was once wisely put by a pair of scholars (Thompson, Harrub III 2001):

Faithful Christians must oppose such atrocities in a forthright (yet, of course, non-violent) manner. It is not an option for Christians to choose whether or not to care for those who cannot care for themselves; God’s Word contains specific commands regarding such actions on our part (Leviticus 19:32; James 1:27; Isaiah 1:23; Romans 15:1). Ignoring those commands, and remaining apathetic to the horrors around us – potential or real – invariably

produces evil fruits. It is sad indeed to think that we have come to such a point in America's history. Yet here we are – at a time when scientists have stated publicly that they are willing to destroy human embryos in ever-increasing numbers in order to achieve their stated goals. Sad times!

It is the conclusion of the authors of this paper that the time has come to call more vigorously for the end of cloning of embryos for whatever reason, including the use of embryos to harvest stem cells for research or therapy, or for any reproductive purposes. The rapid advancement of Yamanaka's reprogramming technique allows for adult cells to convert to embryo-like status for purposes of stem cell generation, so fertilized eggs do not need to be produced and then destroyed for medical therapies. Public policy and funding of all types must be directed to advancing the reprogramming approach for stem cell production as opposed to the cloning of embryos.

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