



University of Tennessee, Knoxville
**TRACE: Tennessee Research and Creative
Exchange**

Chancellor's Honors Program Projects

Supervised Undergraduate Student Research
and Creative Work

Spring 5-1998

Human Cloning: Technology or Hubris?

Sabrina Burns Hutchins
University of Tennessee - Knoxville

Follow this and additional works at: https://trace.tennessee.edu/utk_chanhonoproj

Recommended Citation

Hutchins, Sabrina Burns, "Human Cloning: Technology or Hubris?" (1998). *Chancellor's Honors Program Projects*.

https://trace.tennessee.edu/utk_chanhonoproj/258

This is brought to you for free and open access by the Supervised Undergraduate Student Research and Creative Work at TRACE: Tennessee Research and Creative Exchange. It has been accepted for inclusion in Chancellor's Honors Program Projects by an authorized administrator of TRACE: Tennessee Research and Creative Exchange. For more information, please contact trace@utk.edu.

UNIVERSITY HONORS PROGRAM

SENIOR PROJECT - APPROVAL

Name: Sabrina Burns Hutchins

College: Arts & Sciences Department: Chemistry / Biochemistry

Faculty Mentor: Charles Reynolds (Religious Studies)

PROJECT TITLE: Human Cloning: Technology or Hubris?

I have reviewed this completed senior honors thesis with this student and certify that it is a project commensurate with honors level undergraduate research in this field.

Signed: Charles H. Reynolds, Faculty Mentor

Date: 13 May 1998

Comments (Optional):

HUMAN CLONING: TECHNOLOGY OR HUBRIS?

SABRINA BURNS HUTCHINS

UNIVERSITY OF TENNESSEE-KNOXVILLE

SENIOR HONORS PROJECT

Abstract

The purpose of this project was to study the ethical considerations involved in one of today's most controversial topics – the cloning of humans. With Dr. Richard Seed's announcement in January 1998 that he planned to open a clinic for cloning humans, an issue long thought to be improbable – if not impossible- has come to the attention of all Americans. It is now up to the leaders of this country to decide what methods of control should be used. Even more importantly, it is up to each and every person to search his/her own belief system and make an informed decision about the future of science's new "Frankenstein."

Introduction

When one begins discussing the cloning of humans, one runs into a veritable labyrinth of ethical, moral, and legal considerations that must be made. Humans are, after all, the most advanced life form on Earth, for they are sentient. This fact alone would seem to make it clear to scientists that they are not allowed to simply enter the laboratory and create, modify, or destroy a human life without some form of regulation. However, this is not the case. Everyone that lives in today's society knows that whoever has the money also has the power, and this means they can get away with just about anything they want. Additionally, present society is so afraid of upsetting the balance that it has not even come to an agreement on the point at which life begins. Therefore, it has become the norm rather than the exception for those who do wrong to slip through the loopholes.

With this new advancement, many questions arise. Are children commodities? What should society do about the products of failures of this technique? Will cloning psychologically affect the children produced? Who "owns" the child? Do children not have the right to autonomy? Who decides the future of cloning? Can altering the evolutionary process really be an improvement of mankind? Will this phenomenon lead to ideas like those put forth by Hitler during World War II? Is cloning a question that the government should answer, or is it simply an extension of reproductive freedom and thus a private matter? The problem is that these questions are only the tip of the proverbial iceberg. This project is an attempt to analyze the actual process of cloning and some of

the questions that arise from it. Finally, it will present predictions for the future of both cloning and mankind.

The Technique

Cloning is asexual reproduction, which means that the resulting individual is derived from a single parent and is genetically identical to that parent. The combination of egg and sperm cells is not necessary. The basis for this phenomenon lies in the fact that all body cells, except sex cells, contain the complete information needed to recreate the entire life form. This is referred to as totipotency. Under normal biological circumstances, however, the cells undergo differentiation, during which a large part of the genetic machinery is turned off and a specific function is determined. Therefore, in order to clone an organism, scientists must be able to overcome this obstacle and recover this inherent knowledge (Jones, 1985).

A technique has been perfected that accomplishes these objectives. It involves nuclear transplantation. Since the nucleus contains all of the genetic information for the cell, the first step is enucleation of the egg cell. The egg cytoplasm is then fused with a body cell, whose nucleus provides the new control center and the genetic information for development. Finally, the egg is placed in the female's womb to mature through a normal pregnancy (Jones, 1985).

This is the point at which the question of who "owns" the clone arises. In a strictly biological sense, a mother is defined as such only by virtue of the fact that she contributes her hereditary material via the egg's chromosomes. Since the egg is

enucleated in the cloning procedure, there is no female parent. Likewise, a father is defined as such only by virtue of the fact that he contributes his hereditary material via the sperm's chromosomes. No sperm is used for the development of the clone, so there is no male parent (McKinnell, 1979). Another point to consider involves the use of this technique to provide a child for infertile couples. A clone could possibly be born to five people: the egg donor, the DNA donor, the woman who carried the egg, and the infertile couple who paid for the process. Who claims possession then (Krieger, 1998)?

The Kindling

Cloning is not new; it has been performed on amphibians for quite some time. However, obstacles were encountered when the attempt to apply this technique to mammals was made. Unlike amphibians, mammals do not deposit their egg cells outside the body, and the eggs are much smaller. Recently, however, these hurdles were overcome. In July of 1996, a sheep named Dolly was born in Scotland. She had been successfully cloned from the udder cell of a six-year-old ewe by scientists at the Roslin Institute (Ritter, 1997). Immediately, the idea that this process could be used on humans was born. Along with it came the realization that there are many issues that must be discussed before mankind begins to make copies of itself. Hence, the fire of debate was begun. Should human cloning be allowed? Is it moral? On one side are the scientists who do not want their research to be banned when it could be beneficial, as well as the people who believe that this new process would be an extension of their reproductive

freedom. On the other side are those who believe that cloning is unnatural and immoral; therefore, it should be prohibited.

These questions become even more important when one realizes that the cloning of human embryos has already been accomplished. In 1993, Jerry Hall, director of the In Vitro Fertilization and Andrology Laboratory at George Washington University School of Medicine in Washington, D.C., reported that he and his team had accomplished this feat. None of the embryos were implanted, but some of them did develop to the stage at which they could have been. This means not only that human cloning is possible, but also that scientists already know how to do it (Kolberg, 1993). Perhaps now those who believe that it is too soon to worry about human cloning and what controls are needed will get up and do something.

If anyone needs extra incentive to become involved, here is a fountain of it. Dr. Richard Seed announced in January 1998 that he is planning on opening a clinic for the purpose of cloning humans. Many scoffed at this assertion, thinking that the process was not far enough along and that the man was probably was simple searching for publicity. However, Seed made some remarks that imply that he may have illusions of grandeur, which can be great motivations. He said that he has debated the subject with his Methodist minister. What he has decided may shock even the most liberal people. "God made man in His own image. Therefore, He intended that man should become one with God. Man should have an indefinite life and have indefinite knowledge. And we're going to do it in this one step (White, 1998)."

The Response

In response to this new technology, a fractionation of society has occurred. There are those who adamantly oppose the use of this procedure on humans, and there are those who want its use to be readily available. Ian Wilmut, one of the scientists who cloned Dolly, said that he is upset that people would want to apply this technology to human beings. He said that the technique is not appropriate, for it was highly inefficient and involved the births of defective animals. He also said that he is glad that he lives in a country where human embryo experimentation is illegal (Recer, 1997). The United States government responded by quickly placing a moratorium on the use of federal funds for human cloning experimentation. Considerations are now being made by the National Bioethics Advisory Commission, as well as by government officials, about the fate of cloning (Marshall, 1997). The European community has responded in kind. They, too, want to prevent the use of this technique until informed decisions can be made and regulations can be set.

Anyone that lives in today's society knows that religion plays a big part in people's lives. Religious groups around the world are considering the implications of this phenomenon. President Bill Clinton put it best in a quote from one of his radio addresses. "Personally, I believe that human cloning raises deep concerns, given our cherished concepts of faith and humanity. Scientific advancement does not occur in a moral vacuum... We must move with caution, care and deep concern about the impact of our actions."

The main argument for those who believe that cloning should be allowed is based on the benefits it could bring to mankind. These include: the cloning of extraordinary

people in society, the determination of the sex of a child in advance, the avoidance of genetic defects, the ability of infertile couples to have children, the possibility of creating “groups” of people to specialize in certain tasks, etc (LaBar, 1984). Supporters also argue that it is not up to the government to decide whether or not they can have themselves cloned. They believe that the decision is part of their freedom to reproduce. Here again, though, questions arise. Can these people be trusted to clone themselves in an acceptable manner? Can human life belong to someone else to do with as he/she pleases?

The Answers

Are children commodities? Can their lives just be made and destroyed on the whim of the “parent?” Can they be bought and sold? If so, who owns the child? All of these questions arise when one considers the possibility that cloning will actually become reality. First, one must realize that a clone, even though it is a genetic copy of someone rather than a new combination of genes from two parents, is still a child. The same debate arises here as in the abortion issue. When does life begin? Life begins at conception. The cell that is growing in a culture dish is alive, and so is a zygote. Life is dependent on growth and development, and this is occurring in both cases. Some people argue that fetuses are not alive until they are born, when they become sentient. However, can anyone really say that a baby has no knowledge of itself and the things around it?

Second, in religious terms, a baby is a gift from God. It is not something that one goes into a clinic and designs, as if he/she was a car that was being customized. Should

people be allowed to just go into a clinic and make a baby if they want one? What if they have unstable personalities? What if they want to put a tail on their child? What if they will be on welfare? Can society justify letting only rich infertile couples have children? Who will make these decisions? Can the government be relied on to do so? If some people get their way, cloning will be part of their reproductive prerogative. Does this mean they make the choices? Can society exist when everyone makes choices only for themselves? Today, society operates on utilitarian theory, where all actions are done in an attempt to do the greatest good for the greatest number of people. This would end if everyone were allowed to clone. One must also ask, is the cloning of a child really the greatest good for that child?

Third, legal issues arise. Not only is there a question of who will own the child produced, but there are also questions about the clone's rights. If it is genetically the same as the "parent," is it entitled to half of what the "parent" owns? If the DNA donor goes to prison for being a mass murderer and was found to have a chemical imbalance that contributed to his actions, should the clone also be jailed? It does, after all, have the same genetic makeup. If the clone is made for the purpose of donating spare parts to a sibling, does the clone not have the right to informed consent? If cloning is made a reproductive freedom, there will be no basis from which to judge these questions.

Fourth, one must consider the failures of this technique. It took 277 tries to make Dolly, 29 of which resulted in live births. Some of these were malformed. Can this process really be applied to humans, then? What would be done with the deformed babies? How could this result be justified? These questions clearly show that the process would be inhumane.

Fifth, one must take into account the effects that cloning will have on the clone itself. Will it psychologically affect him/her? Will that child be able to live with the fact that he/she is different from other children, or that they were made for spare parts, or that they are the exact same as “mommy” or “daddy” or Michael Jordan? It is true that a person is made up of both nature and nurture effects, but would a “parent” who had cloned a child from Michael Jordan not influence him to play basketball? Of course the “parent” would. Why else was Michael Jordan used instead of some one else? Probably the most important concept to consider is identity. How will the clone form its own identity? Who will it be? What choices will it make? Is personality not formed from the experiences in one’s life and the manner with which they are dealt?

Finally, there is the very real possibility that cloning will reduce the gene pool. Even if cloning were not done on a very wide scale, diversity would still be decreased. Vision problems, obesity, etc. would be genetically cloned as part of the donor’s DNA. Does society really want a multitude of blond-haired, blue-eyed children running around? What happened to individuality?

The Future

This project was not an attempt to answer all the questions regarding cloning. It was simply an attempt to present the issue, discuss some views on it, and try to make some predictions. History has shown that if man can do it, he will. It has also been repeatedly shown that “money talks.” Though this researcher personally feels that cloning is inhumane and should never be allowed, it will happen. One can not deny this.

It will begin as a procedure only available for certain cases, but it will slowly become an accepted occurrence in society. Once people are comfortable with it, it will become widely used. Those with money will have the luxury of doing it; if they do not, they will push to make it so. If that avenue is too difficult, they will just “make babies” on the black market. Science advances so quickly today, and it is pointless to resist. People love the things that science has made for them; it is doubtful that anyone would give up these luxuries just because he/she does not agree with the present phenomenon.

Cloning will happen, so now is the time to make decisions about it. What will its future be? Who will regulate it? The questions are many. The government, ethics groups, and the population must decide what will happen. This researcher’s only hope is that cloning does not turn out to be a Frankenstein science. Society must be responsible in its manipulation, or the consequences may be severe. What will the world come to?

References

Edwards, Rem B. and Glenn C. Graber. BioEthics. Harcourt Brace Jovanovich, Publishers. New York. 1988.

Jones, D. Gareth. Brave New People. William E. Eerdmans Publishing Co. Grand Rapids, Michigan. 1985.

Kolberg, Rebecca. “Human Embryo Cloning Reported.” Science, v. 262, October 29, 1993.

Krieger, Lisa. “Ethicists Differ on Regulations to Prevent Human Clones.” San Francisco Examiner, January 8, 1998.

LaBar, Martin. "The Pros and Cons of Human Cloning." Thought, v. 59, no. 234, p. 319-333, September 1984.

Marshall, Eliot. "Panel Weighs a Law Against Cloning." Science, v.276, May 23, 1997.

McKinnell, Robert G. Cloning: A Biologist Reports. University of Minnesota Press. Minneapolis. 1979.

Recer, Paul. "Scientist: Clone Method Inhumane." Associated Press News Service, March 22, 1997.

University of Tennessee-Knoxville, Department of Philosophy Medical Ethics Publication.

White, Gayle. "Is Cloning Mastermind Playing God?" Atlanta Journal and the Atlanta Constitution, January 11, 1998.