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ETHICAL ISSUES OF CLONING
ЭТИЧЕСКИЕ ВОПРОСЫ КЛАНИРОВАНИЯ

The ethics of human cloning has become a great issue in the past few years. The aim of our research is to explore ethical issues that arise in the process of cloning. We consider this topic actual, because cloning of animals and potentially humans has been under investigation nowadays. The advocates for both sides of the issue have many reasons to clone or not to clone. This is an attempt to explore the pros and cons of human cloning and to provide enough information of both sides of the arguments in order for the reader to make their own informed decision on whether human cloning is ethical or not.

Let us start with the definition of cloning. Cloning in biology is the process of producing similar populations of genetically identical individuals that occurs in nature when organisms such as bacteria, insects or plants reproduce asexually. Cloning in biotechnology refers to processes used to create copies of DNA fragments (molecular cloning), cells (cell cloning), or organisms.

As for the cloning of animals, Dolly was the first mammal to have been successfully cloned from an adult cell. Dolly was formed by taking a cell from the udder of her biological mother. Her embryo was created by taking the cell and inserting it into a sheep ovum. The embryo was then placed inside a female sheep that went through a normal pregnancy. She was cloned at the Roslin Institute in

Scotland and lived there from her birth in 1996 until her death in 2003 when she was six. With the fact of cloning animals, the question of cloning humans had been appeared for the first time.

In regards to human beings, cloning can be distinguished between therapeutic cloning and reproductive cloning. The latter is essentially identical to reproduce cloning in animals, and is used to create an individual that is genetically identical to the DNA donor. Therapeutic cloning, on the other hand, differs in that it involves the cloning of certain cells for medical uses. The two are, however, related by the potential uses of human stem cells (which can be produced by cloning human embryos) in therapeutic cloning. Attempts at human cloning are currently done with the same somatic cell nucleus transfer method that was used to make Dolly the sheep. As such, there are as of yet no clone medical bays from where clones can be made and stored for later use. Despite fierce opposition, several successes in human reproductive cloning have been made over the years.

In November 1998, Advanced Cell Technology succeeded in creating the first hybrid human clone embryo. This was done by taking cells from a man's leg, and inserting them into the evacuated ovum of a cow. The embryo marked the first time that "human clone" was created, and could develop into a normal human being if allowed to come to term. The embryo, however, was destroyed after 12 days, with scientists and doctors at ACT commenting that their goal in creating the embryo was always for therapeutic cloning and not reproductive. Another attempt, in 2008, resulted in the creation of five mature human embryos created using adult skin cells. The embryos were created with the goal of providing a viable source for embryonic stem cells, and were later destroyed. Another attempt in 2013 resulted in human embryos that were allowed to develop to the blastocyst stage, though no further experiments were done to see how far it would continue to develop.

There are a great number of possible medical benefits and disadvantages to cloning and its technology. They include the following:

Potential Medical Benefits

- The possibility that through cloning technology we will learn to renew activity of damaged cells by growing new cells and replacing them.
- The capability to create humans with identical genetic makeup to act as organ donors for each other, i.e., kidney and bone marrow transplants.
- The benefit of studying cell differentiation at the same time that cloning is studied and developed.
- Sterile couples will be able to have offspring will have either the mother's or father's genetic pattern.

Potential Harms and Disadvantages

- The possibility of compromising individualities.
- Loss of genetic variation.
- A "black market" of fetuses may arise from desirable donors that will want to be able to clone themselves, i.e., movie stars, athletes, and others.
- Technology is not well developed. It has a low fertility rate. In cloning Dolly, 277 eggs were used, 30 started to divide, nine induced pregnancy, and only one survived to term (Nash).
- Clones may be treated as second-class citizens.
- Unknown psychosocial harms with impacts on the family and society.

From the standpoint of the ethical approach, there are those who are strongly opposed to the idea of human cloning, perceiving it as an essentially evil and morally unjustified intrusion into human existence. They are particularly concerned about the eugenic element of the technique and exploitation of human beings by treating some of them as a means rather than as ends in themselves. On the other hand, there are others who weigh the ethical aspect against the results that this technology will bring to the individual and to society. If some positive results can be proven, then there is room for a favorable view of this process based on its positive objectives.

The Catholic Church and many religious organizations oppose all forms of cloning, on the grounds that life begins at conception. Judaism does not equate life with conception and, though some question the wisdom of cloning, Orthodox Judaism rabbis generally find no firm reason in Jewish law and ethics to object to

cloning. From the standpoint of classical liberalism, concerns also exist regarding the protection of the identity of the individual and the right to protect one's genetic identity.

Gregory Stock is a scientist and outspoken critic against restrictions on cloning research. Bioethicist Gregory Pence also attacks the idea of criminalizing attempts to clone humans.

Everything has its advantages and disadvantages, and human cloning is no exception.

When it comes to animal cloning, the strongest argument that you are likely to hear is the fact that we can use this process to save several animal species from extinction. Similarly, the advocates of human cloning put forth the argument that it will help to solve the infertility problems in humans. They also state that the process of organ transplantation will become much easier if human cloning is developed to its full potential. By resorting to therapeutic cloning the doctors will be able to replace damaged tissues and organs in the human body, and treat various diseases and disorders with ease. Similarly, genetic modification will have an all new meaning as parents will be able to choose the traits that they would like to see in their child.

While the advocates of human cloning are armed with several reasons to support their stand, the critics do not seem to be impressed at all. The critics are of the opinion that creating a human clone would mean interfering with the natural process of procreation. At the same time, one needs to also ponder upon the fact that if genes are modified to create smarter human beings by means of cloning, what would happen to the average humans who are not the products of this process. Critics also cite the fact that cloning will result in a huge divide among people, and clones will not be subjected to equal treatment. In a world full of divides on the basis of race and caste, we can't afford to have one more reason to add to the differences. The religious heads of different religious sects are of the opinion that human cloning will put forth man as the creator - which would be like challenging the authority of the supreme entity. At the same time, the critics also cite that more than 90 percent of the attempts to clone mammals have met with failure in the past.

Finally, we come to the following conclusion:

1. We must proceed from the assumption that, sooner or later, the technology for human cloning will develop.

2. We must proceed from the assumption that this technology has the potential to endanger the human social order on the same scale as uncontrolled nuclear energy or ecological destruction in the absence of proper supervision.

3. In light of the above assumptions it would seem better policy to allow this area of technology to progress in a very controlled and careful manner and to adopt strict regulations and limitations from the start than to issue a comprehensive and complete ban on any and all development.

Summarizing all the above-mentioned information, we consider human nature to be unique and sacred. Using the method of cloning people would violate principles such as respect for human dignity and security of human genetic potential. Children can be harmed by the cloning procedure, because such children are likely to suffer from the restrained sense of individuality and personal autonomy. In the process of cloning a person can be the subject to manipulation, which can lead to the destruction of important social values.

So, the issue of cloning human beings is still contradictory and open, but we should be aware of any consequences we would face in future.

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