

What Is Human Cloning?

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Introduction

The term cloning was introduced to science when a group of scientists in Scotland created a sheep from a genetically engineered embryo in 1996. Since the process did not involve the natural method of male and female fusion, it received criticism after the concept gained popularity. Most of the people who were against it gave reasons that this process is against nature and that future research in this field should be stopped. While many people are against this concept and call it immoral, some people are more interested in its research and are willing to find the use of this amazing technology for the benefit of humankind. They think that advanced research in this field may prove worthwhile as cloning can be the cure for many congenital disabilities and organ failures. The visionaries consider cloning as the answer to most of our problems. Although there are many potential scientific and medical benefits, human cloning is considered immoral. The people who were against it called this act unnatural and against the “Will Of God” and therefore declared it immoral, unethical, and against the teachings of religion. After the involvement of religious parties, human cloning was banned by the Human Cloning Prohibition Act of 2009. This act prohibited human cloning programs to further progress and declared the process unlawful and illegal. While the process of cloning is beneficial and answers most medical problems, it is also considered unethical and immoral in many countries. (Kuhse, 2015; Lavi, 2014; Nami et al., 2014)

Discussion

Cloning is the process in which a living organism’s DNA is used to make a replica of the organism from which the DNA is taken. DNA holds information about all the characteristics of an organism and defines its true physical and behavioural aspects; therefore, when DNA is used to replicate an organism, the cloned organism has the same biological characteristics as the original organism. The technology of gene cloning deals with the editing of DNA structure in which the helix is fully or partially edited in a specific order to create a customized characteristic organism. The organism produced by this technology holds the characters that are defined by edited DNA. (Cyranoski, 2014)

Both animal and plant cloning have been successful in the past, and future advancements are in the process of cloning methods for both kinds of organisms. However, the process of cloning in both animal and plant cloning is the same.

There are three methods of cloning in research: reproductive cloning, therapeutic cloning, and recombinant DNA cloning. (Cyranoski, 2014)

Reproductive Cloning

Reproductive cloning is the most popular type of cloning and the most researched of all the three types. This type of cloning is aimed at the creation of an identical organism from the DNA of that organism. The DNA is composed of a long chain of chromosomes that are coiled in the form of a staircase. The reproductive cloning is different from the natural method of reproduction in that the embryo cell is formed by cells of a single parent, rather than the natural method of male and female egg fertilization. (Cyranoski, 2014)

In this process, the nucleus is removed from an egg. A cell from the parent organism is taken, which needs to be cloned. The DNA is extracted from the parent cell and inserted into the nucleus removed egg for fertilization. The fused cell is then activated by a chemical process or electric shock that activates the cell, resulting in an embryo's formation. The embryo is then kept under favourable conditions for its development, and after completion of its life cycle, a fully developed clone is formed that is identical in shape and character to its parent. This technique has been performed on horses, mice, sheep, and cats. (Cyranoski, 2014)

Therapeutic Cloning

Therapeutic cloning is the process in which the nucleus is removed from a parent cell and inserted into an unfertilized egg whose nucleus is also removed. The edited cell starts dividing after four to five days and becomes ready to be used to create new embryo cells. The newly made cells are identical to the parent cells and can be used to make multiple copies of the parent cell. This type of cloning is also called somatic cell nuclear transfer (SCNT). (Cyranoski, 2014; Sheoran, 2015)

Therapeutic cloning is special for its ability to reprogram the cell nuclei. In a cell that originally holds DNA of a special type and characteristics, after the addition of an activated nucleus, the genes present in the active nucleus start behaving like a fertilized egg that was initially inactive. This cell then starts the life cycle of a newly fertilized egg. This cell can be called "reborn" as the new cell was exactly like the parent cell when it was in its initial stages after fertilization. This type of cloning is helping in research for tissue transplants and can be used in the future for the treatment of diseases like Parkinson's and Leukemia. (Cyranoski, 2014; Sheoran, 2015)

Recombinant DNA Cloning

This type of cloning is used to create pharmaceutical products and medicines, which serve as medicines in humans and as growth promoters in plants. In this cloning, a gene structure is taken from a parent cell and added into a cell of another organism, the organisms used mostly for this type of cloning are bacteria as they have a faster growth rate. The edited cell of bacteria, when divided by the cell division process, also contains the properties of the edited parent cell. As bacteria multiply,

more and more replicas of the edited cell are formed, which are then used for other purposes.

This type of cloning has many applications. Scientists have developed ways to create artificial insulin using this method for patients who are unable to produce insulin in their bodies. In agriculture, this type of cloning helps to create crops that are genetically strong and can survive harsh conditions. These crops are more resistant to diseases, have better taste, and also have a faster growth rate.

Ethical Concerns

The ethical concerns about the process of cloning are based on its difference from the natural process. The people who claim against it base their argument on the fact that God holds the only power to give and take life and that human beings should not mess with the natural order of birth. In a society, there should be a barrier to what should be allowed and what should be prohibited in to happen. In twenty-three countries of the world, human cloning is banned, and it is prohibited to research in this field. The claim religious groups provide about the process of cloning is that human beings have a spiritual self that is linked to God. Making human clones and giving them life means taking power to give life in their own hands. (Kuhse, 2015; Lavi, 2014; Nami et al., 2014)

The second argument about the immorality of cloning is its challenge to the natural method of marriage. Human beings are meant to marry to continue their race and give birth to children. If the process of cloning is allowed, there is no meaning left to marry, and people would create replicas of themselves of their own will. These arguments, however, belong to those religions that believe in a higher power or divine entity and consider Him to have the power of giving life and death. Therefore, atheists have no stand in this debate as they do not believe in God. (Kuhse, 2015; Nami et al., 2014)

The concept of cloning is against the norms of society. The structure of society is based on the idea of families living together. Strong bonds which originate from marriage interrelate these families. The natural process makes a family consist of a mother, father, brother, sister, daughter, and son. All these relations exist because their parents have married and they gave birth to children. The process of cloning destroys the concept of family, as there would be no siblings but replicas of people themselves. This disturbance in the family system may create psychological issues in people. (Kuhse, 2015; Nami et al., 2014)

The process of cloning is not developed, and it will cause the loss of lives. Although the science has developed enough, and the process was experimented on animals years before testing on humans was thought, the process has a very lower success rate. The first experiment of making a sheep clone took 250 tries till scientists managed to save the clone. This will be a point of concern if the process is intended for humans. This low success rate means that all humans that do not survive in the experiment will die. No process can be allowed to happen if it involves the killing of humans. (Cyranoski, 2014; Kuhse, 2015)

Conclusion

In short, the process of cloning though has endless applications and may benefit humankind in many ways, but the process, because of its direct conflict with the natural order of God, is unethical, immoral, and against religious teachings. Both arguments about human cloning should be considered before we take steps to ban the process officially. The process can bring apparent benefits to humans, but it can also destroy the natural order of life and the system of family and society. Therefore, human cloning should be prohibited, and research in this field should be restricted. (Kuhse, 2015; Lavi, 2014; Nami et al., 2014)

Works Cited

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