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HUMAN CLONING: ETHICAL AND LEGAL ISSUES AND ITS POSITION AT GLOBALLY

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INTRODUCTION

India is a country with rich heritage and has heard stories from centuries that led back to the ancient ages. One of the oldest is Hindu mythology in one of its holy scripts talk about cloning. No woman can give birth to 100 children in her lifetime, that too all males and of the same age," In Mahabharata, the process of cloning was performed on kauravas who were created from single embryo of Gandhari. According to the story of Mahabharata, a woman named Gandhari produced mass of flesh after two years of pregnancy. The flesh was splitting into hundred parts, treated with the ghee, herbs, etc., and growing each parts in separate pots. This process was performed by Rishi vyasa. Later on hundred living beings came into existence. Ancient Indians not only knew about cloning and embryo splitting but also had the technology to grow human fetus outside the body of a woman, something that is not known to modern science. Such stories on cloning are written in Mahabharata.

WHAT IS HUMAN CLONING?

Human cloning is the creation of a genetically identical copy of a human. It is also generally called artificial human cloning, which is the reproduction of human cells and tissue.

Cloning is a biological mechanism of parthenogenetic reproduction by which one or more genetically identical cells, organism, or plants are derived from single parent. The word clone is derived from the Greek word klon, meaning a twing or slip from plant. By taking many cutting from one parent plant genetic replicas with identical features and functions can be developed. In medical sense cloning means asexual generation, that means copying of the same individuals, reproduction of the same cells, same molecules and thus of the same living beings. The concept of cloning applies to uni-cellular organisms, plants, animals and to human beings as well.[2]

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[2] https://study.com/learn/lesson/human-cloning-pros-cons.html

if you really wanted to and if you have enough money, you could clone your beloved whether it would be your cat, dog or any other pet animal or it might be your love one human being?

HOW CLONE IS TO BE WORK?

Take an egg from woman's ovary; remove the eggs DNA and discard it. Obtain a cell from the person to be cloned, and remove the DNA from this donor cell but don't discard it. insert the DNA from the donor cell into the egg, replacing the eggs DNA. Use an electrical pulse to cause cell division to begin and a cloned embryo, a new human life, has been created.

There are two types of cloning in organisms:

- Reproductive cloning
- Therapeutic cloning

Reproductive cloning- its aim is to create an identical copy of an existing organism. Reproductive cloning uses the somatic cell nuclear transfer (SCNT) method to grow the embryo. This process involves donating the nucleus of the female donor to the egg cell. The egg cell nucleus is separated, producing an enucleated cell. The person who is being cloned act as a somatic cell donor. The somatic cell is mixed with the enucleated egg in an artificial medium using electricity. High voltage makes pores in the somatic cell membrane and facilitates the infusion of this result in embryo formation. The embryo is then implanted into a surrogate mother, resulting in the birth of an organism genetically identical to the donor. But the success rate for this operation is usually very low, and only one or two of the 1000 embryos would have reached the world.

Therapeutic cloning – It is a procedure specifically employed for medical purpose. It involves the creation of embryonic stem cells that can be used to regenerate tissues and potentially treat a range of diseases.it also helps with organ replacement therapy. The process involved is identical to that of SCNT, but instead of injecting the embryo into the pregnant mother, the cells of the embryo are used to expand the stem cell. These stem cell are used for the corresponding therapies.[3]

HISTORY OF CLONING

Cloning is the outcome of the hard works on use of genetic engineering in animal breeding, treatment of hereditary diseases in human and replicating organisms. In 1901, transfer of nucleus of a salamander embryonic cell to an enucleated cell was successfully undertaken. During 1940-

[3] https://blog.ipleaders.in/human-cloning-legal-aspects/

1950, scientists could clone embryos in mammals. In 1956, Spemann's hypothesis was proved and in 1962, mature frog was produced by transferring nucleus of intestinal cells of tadpoles into the eggs while their nucleus was removed.

Sheep cloning from embryonic cells was performed in 1984. In 1994, bovine cloning was conducted from embryonic cells of another cow. In 1996, first cloned animal called Dolly was produced in Scotland using mature cells of mammary glands of a mature sheep. The importance of Dolly was for its production from differentiated cells of mammary glands while the previous cloned animals were produced from embryonic cells. The birth of Dolly led to undermining the impossibility of simulation by differentiated and specific cells. In the late 2000, scientists cloned 8 species of mammals. In 2003, the first cloned mule was produced by the American scientist. In 2005, the first cloning of a dog called Snoopy was carried out. In 2006, the Iranian scientists succeeded to clone a few sheep among the Middle East countries.

Bonyana was the first cloned calf in Iran. The birth of this calf was the outcome of a series of researches from 2003 to produce various livestock by IVF. Cloning and genetic engineering lead to the birth of Royana, the cloned sheep and Hanna, the cloned goat. Tamina was the second cloned calf in Iran and it was cloned from the cell origin similar to Bonyana, the first cloned calf. This calf was born with the weight of 70 kg by Caesarian operation in Foka Animal Breeding Complex affiliated to Social Security Organization after the 280-day pregnancy period but after a few hours died due to an acute brucellosis, while Tamina also showed the signs and symptoms of some anatomic disorders at birth.[4]Due to the government push for increasing milk production, the National Dairy Research Institute (NDRI), Karnal has produced India's first cloned female calf named "Ganga" was born on 16 March 2023 of desi breed cow Gir which can produced more than 15 litres of milk per day.

[4] https://learn.genetics.utah.edu/content/cloning/clonezone/

ETHICAL ISSUES

Now a day's human cloning is very much debatable issues at globally that involves scientists, legislators, religious leaders, philosophers and international organizations. As the high failure rates (more than 90 percent) and high morbidity of animal cloning strongly suggest that its inapplicability to humans. Furthermore, cloned animals seems to suffer high deformity and disability rates. Human "reproductive" cloning, for the purpose of producing a human genetic copy of baby is unethical. Most theistic religion, strongly reject reproductive cloning because they consider life to be a gift from the God. Produced being a new human by cloning as opposed to normal sexual reproduction is consider to be an act against God's creation of power. because of that reason human cloning should be stopped.[5]

ADVANTAGES AND DISADVANTAGES OF CLONING

Human reproductive cloning remains universally condemned, primarily for the psychological, social and physiological risks associated with cloning. A cloned embryo intended for implantation into a womb requires thorough molecular testing to fully determine whether an embryo is healthy and whether the cloning process is complete. In addition, as there have been 100 failed attempts to generate a cloned, and a viable pregnancy is not guaranteed. Because the risks associated with reproductive cloning in humans introduce very high likelihood of loss of life, and that process is considered unethical interruption with the natural process of creation of god.

ADVANTAGES OF HUMAN CLONING

Since the first successful execution of the process in 1996, cloning has become a useful technique in the field of biotechnology. Through cloning, transgenic plants and animals are used to make clones from adults.

1. PREVENTS EXTINCTION OF CERTAIN SPECIES

Cloning appears to be a promising approach to restoring populations, as many organisms in the world are near endangerment and extinction. Cloning can even help to increase the diversity of genetic traits by utilizing the genetic information of already deceased species.

[5] https://pmc.ncbi.nlm.nih.gov/articles/PMC1299083/

2. IT CAN HELP INCREASE FOOD PRODUCTION

It can also serve as a means to increase agricultural production, particularly livestock and fresh produce. By manipulating their biological process, existing traits of interest are ensured with the absence of the genetic "lottery" and random arrangement in the genes during meiosis.

3. HELPFUL TO INFERTILE COUPLES

One major advantages of cloning are that it allows infertile couple to reproduce provided the reproduction can be modified inculcating the values and traits of both parents. During this process the somatic cells are extracted from the male sperm and injected into the female egg for fertilization. Once the embryo is developed it is then implanted in a surrogate mother who will carry it for the 9 months until the birth. That the children created would have the DNA and the values of both parents instead of only one of them.

4. AIDS IN THE REPLACEMENT OF ORGANS

Due to any reason, if there is a need for an organ transplant, Cloning can be counted as a saviour process, especially in cases where an organ is not available. Through the process of genetic cloning, researchers can create and harvest new, fully functional organs using only a small number of cells from a particular organ. This is really helpful, especially with a large number of individuals on waiting lists for organ donations.

Consider the scenario of an organ failure, it would be a simple solution to the existing problem of organ scarcity. In order to treat diseases and genetic problems, the cloning technique might potentially be utilized to fix existing cells or create new ones to replace lost or damaged ones.

5. AID FOR DISEASES

Therapeutic cloning, which takes place with the same steps as adult Genetic cloning, allows the resulting embryo to develop for days before the stem cells are removed and encouraged to develop into body tissue or whole human body parts that will be utilized for a transplant or treatments of

specific ailments. The final product would be an amount of skin, a portion of nerve tissue, or an artificial organ rather than a human being.

6. EVOLVING EMINENT INDIVIDUALS

Historical and very powerful numbers may probably be re-created. Anyone like Martin Luther king Jr. or Albert Einstein may be brought back to existence through cloning.so in today's world we have such knowledgeable individual's person who educate and help people.

DISADVANTAGES OF CLONING

Look around you. If you are outside or in the library, you probably see the other people. You will notice there is no exact copy of you. Everyone looks different. This genetic diversity, or differences in our genes are important to survival of our species.

1. NOT RELIABLE

According to many scientists, cloning has not yet reached a point where it can be effectively applied to help preserve species. In fact, some scientists do not even accept cloning because it ignores the primary causes of extinction in the initial place, which are habitat degradation and hunting.

Additionally, critics claim that although cloning could be useful in emergency situations, the methods now in use to accomplish these objectives are regarded as insufficient to have any meaningful impact. Cloning vulnerable species is thought to be much more difficult than doing it with domesticated organisms (like cattle), and it would likely take years (or perhaps decades) to complete. Numerous attempts to bring back extinct and endangered animals have failed for a variety of reasons. Still, they have always shared one significant flaw that they were not exact clones of their claimed relatives.

2. ELIMINATES GENETIC DIVERSITY

Human life heavily depends on the variety of genes that result from having parents with various genetic traits. The fact that identical genes would limit our ability to adapt and battle against disease is a significant drawback of them. Moreover, we must never forget that cloning destroys the uniqueness that makes people beautiful. In addition, it would anticipate expectations and eliminate surprises.

3. HIGH LEVEL OF UNCERTAINTY

Every scientific progress has some positive aspects as well as equally negative ones. Cloning has many unexplored consequences and impacts. There is no reliable way to predict the potential psychological, social, and medical effects because it is a new field of study that is still being explored. The more successful something is, the more difficult it will be to control the problem. Human gene manipulation will have unexpected and uncontrollable effects that may affect our lives.

Moreover, there is still research and analysis needed before starting anything as absurd as human cloning. It might put the entire human race at risk. Cloned individuals may, at very minimum, experience serious health issues at some phase of their life. We may safely assume that the process will be a very big barrier to start with, given the issues that presently exist with animal cloning.

4. NOT AT ALL A SAFE PROCESS

Clones will not have the same behavioural traits despite both having the same genetic structure. Apart from that, there is no guarantee of their physical similarity. It is significant to remember that these traits are not solely determined by genetic structure. Naturally, there is a very strong probability that a pair of clones would experience different habitats and nutritional burdens, establishing unique modifications and contributions to each.

Cell mutation is one of the genuine risks associated with cloning, and it has been linked to the emergence of new, more severe genetic illnesses in people. In fact, a lot of people think that this kind of thing will bring civilization to an end. Even if the process utilizes the recipient's organ's cells, cloning can still result in cell mutation, as already mentioned. This may cause the cell structure of the original and reproduced organs to differ significantly.

5. CLONING IS UNETHICAL AS IT UNDERMINES THE DIGNITY OF HUMAN

Instead of cooperating with God’s will to procreate through the conjugal act of marriage, cloning involves the creation of human life according to scientists will and predetermined specifications. The creation of human life is reduced to a manufacturing process. Human embryos manufactured by cloning are created exclusively so they can be killed in experments. Clones are created so their

body parts may be used by others. Cloning treat the human life as a commodity, because of that reason it is immoral.

Consider the case; before a successful clone of Dolly the sheep could be developed, more than 277 efforts had been made. This only implies that multiple "failed" attempts would be required if people were to be cloned. As a result, critics strongly believe that human cloning would be unethical until these issues are fully understood and settled.

6. IT CAN EASILY BE MISUSED

Since there is always a chance that cloning technology will be misused, researchers should make every effort to keep it under constant observation. The truth is that there is always someone looking to take advantage of such technology, anyone can create same human with help of clone can do misused whatever they want. Because of these to avoid such kind of situation clone must be banned.

7. IT MAY PROMOTE DISCRIMINATION

Discrimination and prejudice are definitely present in today's world, whether it is because of racial, linguistic, or social differences. Ultimately, cloned persons would feel less "human" than some other humans who are not the products of cloning.[6]

POSITION OF CLONING IN DIFFERENT COUNTRIES

HUMAN CLONING AND HUMAN RIGHTS

In December 2001, the General Assembly of the United Nations adopted a resolution to establish an ad-hoc committee to consider elaborating on an international convention to oppose reproductive cloning of human beings. The committee convened for its first meeting in February 2002. During the exchange of views between government representatives, there was general agreement that the reproductive cloning of human beings should be prohibited by an international ban. However, cloning for the purpose of medical research and experimentation that is, therapeutic cloning-also raised concerns. Several delegations suggested that the convention should be comprehensive and include a ban on all human embryonic cloning.

[6] https://www.javatpoint.com/advantages

The Universal Declaration on the Human Genome and Human Rights, 1997 (UDHGHR) recognizes that genetics research could have vast potential for improving the health of humankind, but it also emphasizes the need to fully respect human dignity, freedom, and human rights. Article 11 states: "Practices which are contrary to human dignity, such as reproductive cloning of human beings, shall not be permitted."

On 8 march 2005, the united nation general assembly adopted the declaration on human cloning on the basis of a recommendation of the sixth committee of 24 February 2005. It contains an appeal to all UN member states to take all appropriates steps to prohibit all types of human cloning, even for medical reasons.

As reproductive human cloning necessarily infringes notion of human dignity and some ethical issues are also raises. Because of these government "does not approves, does not allow, does not support, does not accept "any reproductive human cloning experiments but does not oppose therapeutic cloning.

UNITED NATION

On December 13, 2001, the debate regarding human cloning started in the UN general assembly. The main purpose of the discussion was to ban all forms of cloning, in particular, therapeutic human cloning as it violates human dignity. The assembly was unable to reach a two-way binding agreement. A non-binding United Nations Declaration on Human Cloning calling to ban all the forms of human cloning with the reasoning that it would be contrary to human dignity was adopted in March 2005.

UNITED KINGDOM

The British government passed the Human Fertilisation and Embryology Act 1990 which banned all forms of human cloning. Later in 2001, a Regulation under the same act was passed which allowed embryo research around stem cells and cell nucleus replacement, and therefore it allowed therapeutic cloning. This amendment was a challenge in the High court of the United Kingdom, after which the parliament struck down the amendment that allowed cloning.

Later in the year 2008, the Human Fertilization and Embryology Act was amended such that it allowed experiments on the hybrid human-animal embryo.

Though Therapeutic cloning and embryonic stem cell cloning are legal in Belgium, Sweden and Spain, Australia, Colombia, Finland, japan, Israel, New Zealand and also legal in Pakistan within the limit of Islam.

It is illegal in many countries but the only country that basically pioneers in cloning is south Korea.

INDIA

Currently, India has no law governing cloning of any sort.in 2006, The Indian Council of medical Research formulated some far reaching guideline on some research on some human clone. Later in the year 2007, another set of guidelines were issued wherein stem cell research specifically banned human cloning and reproductive cloning. Therapeutic cloning is allowed in India in the use of embryonic stem cells for research purposes only.[7]

CONCLUSION

Data on the reproductive cloning of animals through the use of nuclear transplantation technology demonstrate that only a small percentage of attempts are successful; that many of the clones die during gestation, even in late stages; that new-born clones are often abnormal or die; and that the procedures may carry serious risks for the mother. In addition, because of the large number of eggs needed for such experiments, many more women would be exposed to the risks inherent in egg donation for a single cloning attempt than for the reproduction of a child by the presently used *in vitro* fertilization (IVF) techniques. These medical and scientific findings lead us to conclude that the procedures are now unsafe for humans.

Cloning hold great potential for medicine, conservation and research but also faces technical, ethical and regulatory challenges. advances in therapeutic cloning may lead to breakthroughs in disease treatment, while reproductive cloning could aid biodiversity efforts. However, innovation with the help of responsible governance, public engagement and ethical frameworks are essential to balance societal concerns, ensuring safe and beneficial outcomes.

According to my views though human clone has some pros and cons. We are living in technology era where it plays a vital role in our day to day life. Looking into the cons of human cloning some way it is unethical against the rule of god. We trying to become god. As the god is the only who

[7] https://www.nature.com/articles/palcomms201719

create human beings. If these clone legalize then the human will be in danger and they can do anything for money and it is highly misuse.