

Ethical issues in human cloning

Leonard Nwoye

Department of Philosophy, University of Calabar, Cross River State, Nigeria
e-mail: leonard4lifeus@yahoo.com

Abstract

Cloning, which for years has remained a fiction, has finally become a reality today. Genetic engineers can now clone animals to achieve a desired type of product with unique or specific genetic make-ups. Presently, actors in this field have produced cloned sheep, mice, monkeys, pigs and cows. This paper may not exhaust the list if it continues to outline the achievements of genetic engineers today. What is discussed in this research are not only the achievements of genetic engineers, rather the ethical problems surrounding them. How moral is it to clone a cow that will grow up abnormally and die in the shortest time? Also, human beings developed through cloning will experience identity problems, authenticity, freedom, autonomy, and the problem of uniqueness. These problems and more are what this research seeks to address using the methods of analysis, evaluation, and deduction.

Keywords:

Genetic engineering; cloning; biomedical ethics.

1 INTRODUCTION

Over the years, cloning, which has remained a fiction, has become a reality today. It is classified as one of those areas of significant intellectual advancements in biotechnology (Asira & Ogar, 2010). These advancements have to do with the use of living systems and organisms to develop or make living products. It includes other technological application that uses biological modes or living organisms to make or modify living products and processes to perform a specific purpose (Ogar et al., 2019). Examples of such products are cloning of sheep, cow, frog, and mouse.

Experiencing the results of the achievements in cloning shows how creative humanity is and explains while we are addressed as super beings. As far as this paper is concerned with the integrity of men's genus acts to make life easy is not in question. The question is on the overall implication of man's act and decision in the process of making life easy. Therefore, the paper has outlined to achieve the following:

- examine biological technology (biotech), especially cloning and raise ethical questions about its moral justification;
- ask a moral question about human cloning;
- outline what should be man's ultimate goal in scientific advancement.

2 WHAT IS CLONING?

Whenever the word cloning is mentioned, what comes to our minds is the production of two identical organisms. Cloning is the procedure for obtaining organisms with the same genetic information (Mirsky & Rennie 1997). In biology, a clone is defined as an organism having identical genetic or nearly identical material. Cloning is not only particular to the organism obtained in the laboratory as a result of genetic procedures, but also organisms created in the process of vegetative reproduction, such as bacteria, unicellular organisms, offshoots, and plantlets.

Cloning technology was invented during the twentieth century and now is poised to help define the twenty-first. According to the Copernicus Science Centre article on *A brief history of cloning*, the first idea of cloning is traceable to 1938. In this year of history, Hans Spemann proposes a "fantastic experiment" – to replace the nucleus of an egg cell with the nucleus of another cell and to grow an embryo from such an egg. This inventive attempt by Hans was not announced to be successful (Miller, 2013). In 1952 an attempt to clone a Rana Pipiens frog was attempted by Robert Briggs and Thomas King. These scientists collected the nucleus from a frog egg cell with a pipette and replaced it with a nucleus taken from a cell of a frog embryo. The experiment was not successful. A follow-up of the above attempt was the 1970 Xenopus Laevis frog by John B. Gurdon which was successful. In 1980 Karl Illmenese and Peter Hope cloned a (Miller, 2013).

In 1995 two sheep were cloned (Moran & Megan). Ian Wilmut and Keith Campbell achieved the above. Almost everyone heard of Dolly, the cloned sheep born in 1996. It was achieved by Ian Wilmut and Keith Campbell (Silver, 2000). Other cloned products over the years from 1998 can be summarized as follows:

- 1998 – the first cloned mouse (it was called Cumulina)
- 2000 – the first cloned rhesus monkey;
- 2000 – the first cloned pig;
- 2001 – a buffalo and a cow cloned;
- 2001 – a cat cloned (it was called copycat);
- 2002 – Tlymphocyte clone mice from Konrad Hochedlinger and Rudolf Jaenisch;
- March – April 2003 – a rabbit was cloned in France and Southern Korea;
- 2003 – a mule was cloned. The firms Idaho Gem and Utah Pioneer did this;
- 2003 – a deer (Dewey), a horse (Promethea) and a rat (Ralph) cloned;
- 2004 – fruit flies cloned;
- 2005 – an Afghan hound (Snuppy) cloned;

- 2007 – a wolf cloned; South Korean Scientists obtained two female wolves (Snuwolf & Snuwolffy);
- 2008 – a Labrador dog cloned;
- 2009 – the first animal from cloned (Injaz); Injaz was created from ovarian cells of a female killed for meat in 2005. The camel cloning program in Saudi Arabia enjoys special care of the government (Gahlot, 2009).

In the procedure for obtaining organisms with the same genetic information, we need to collect an egg cell from a donor (female sheep, mouse, or cat). We need to carefully remove the nucleus from the cell and collect another cell from another male or female donor of the same species (i.e., from another sheep, mouse or cat). This is the animal that will be cloned. From this cell, we also need to remove the cell nucleus and plant it in the empty egg. It is necessary to treat the egg obtained in such a way with a gentle electrical shock. The egg must begin to differentiate and develop into an embryo with multicell. The embryo must be implanted into a surrogate mother's uterus at this stage. If the gestation naturally progresses and the animal is conceived, we have a clone.

It is germane to explain the importance of deoxyribonucleic acid (DNA) in the process of gene modification. DNA is a genetic code in all organisms. With our DNA, a genetic engineer can find out everything about our genetic make-up. It is a "universal language" likening to an instance where all cookbooks around the world were written in a single language that everyone knows and understands. Cloning operates by physically removing and transferring a gene from one species into another, allowing it to express the encoded feature of that gene. It is like taking a single recipe out of a cookbook to form a new cookbook. When such a thing happens, the new cookbook will carry both the single recipe and other content just in one cookbook (the new one). Look carefully below and see a summary of how cloning works

- Find an organism that contains the desired trait naturally
- Extract the DNA from that organism. This is like taking out the entire cookbook or a recipe.
- The desired gene (recipe) must be located and copied from thousands of genes that were extracted. This is called gene cloning.
- The gene may be slightly modified to function in the receiver organism once in a more suitable fashion.
- The new gene(s), called a transgene is delivered into cells of the recipient organism: This is called transformation. This can be done through methods that include the insertion method, and gun method. By insertion methods, the foreign gene encoding the trait must be inserted into the cell (for instance), along with a "cassette" of additional genetic material. The cassette contains a DNA sequence called a "promoter," which specifies where and when the gene is expressed in the host and a "marker gene" which allows breeders to decide by testing or selection whether plants carry the inserted gene. (Rosmarin et al., 1992). On the other hand, a gene gun is a technique of genetic engineering which is mostly used in biotechnology. This method, like other methods, is used to move the genetic material from different species from one cell to another to produce the genetically modified organism.
- Upon the production of a transgenic species, traditional breeding is used to improve the final consumer characteristics. The need for traditional breeding is, therefore, not reduced by genetic engineering. It is an easy way to introduce to the pool new features.

3 AUGMENT FOR CLONING

Over the years, the act of cloning has given rise to debates on whether cloning should be encouraged or banned altogether. Consequent to that, two major parties have been formed: those for and against.

- Reproductive cloning can provide patients who cannot be supported by other fertility treatments (i.e., who do not produce eggs or sperm) with genetically related babies.
- Reproductive cloning would require lesbians to have a baby without using donor sperm, and gay men would have a child without egg donor genes (although, of course, a surrogate would have to bear the pregnancy).
- Human cloning will allow parents to seek redress for their mistakes from an infant who has died.
- Cloning is a reproductive right and should be legalized as soon as it is considered safe as natural reproduction.

Morality has to do with issues that demand us to choose between right and wrong actions. If it is ethically evil and wrong to kill, it becomes morally wrong for anyone to do that (Ogar, Idagu & Bassey, 2018). If a nuclear arm kills innocent people, how moral is it to use such weapons. If cloning enables the growth of a cell or tissues knowing very well such achievements lead to complications in the future, why attempt? Moses in the Holy Bible advised God against an action that is tantamount to the religious contradiction. He questioned the morality in attempting to wipe out the people of Israel after saving them from their enemy. It is funny how God accepted such constructive criticism and correction, knowing it was coming from a human. Thus, exponents questioning the morality of cloning have built up more and more questions, against gene modification. In society today, many moral charges have been raised against cloning, but we shall in this paper, consider a few. This is what this paper call six-count charges against cloning.

4 ETHICAL COUNTS CHARGES AGAINST CLONING

4.1 The Problem of Uniqueness

This charge against cloning posits that cloning is a violation of the uniqueness of the cloned person (Murphy, 2018). Through bioethics, this type of genetic modification will necessarily conflict with the personality of the cloned person and thus hinder the formation of its self, according to prosecutors. Cloning to produce children can cause severe identity and personality issues. Our genetic uniqueness is an essential source of our sense of personality. It truly speaks of who we are. Children developed through this process can be said to have no identity from two perspectives (Murphy, 2018). First, the child has no biological parents, whose child will he or she be called for real? In African society, such a product

will suffer much humiliation from neighbors. Some people may call him or her a bastard (Cogito). It may look very simple to Europeans but a very complicated matter in African society. Therefore, cloned products have the problem of uniqueness and identity. The cloned product is only a "second" void of its uniqueness. It only looks like someone else, not itself. It is a big crime against the God of uniqueness who takes pleasure in making people according to their uniqueness. Imagine two persons with the same thumbprint, how do we identify whose property it is? Even twins are unique. They have elements that differentiate them from each other. It is a severe issue.

4.2 The Problem of Freedom

Cloning to produce a child interferes with the right and freedom of the child. The process restricts the options of the modified person, limiting their life plans and range of behaviors; by increasing parental demands and expectations (Havstad, 2010). In cloning, the product develops into form and shape only to act according to the plan (by parental demands and expectations); it is therefore, means that all that product turns out to be by action of deed is already predetermined. This is another form of determinism that cannot be tolerated by exponents of freewill. What freedom or freewill does a cloned child has? This question and more are what exponents of freewill are asking about cloning technology. To engineer a free moral agent as a man to live a life of such disposition is not morally justifiable. Have we imagined what it is for a free wildlife bird to be placed in a cage for a lifetime? It does not matter what we feed that bird with; it shall not for one day fulfill its purposes. This is what cloned product disposition looks like. It has no purpose of its own. It fulfills only what the parents have predestined it to do.

4.3 The Problem of Authenticity and Autonomy

Cloning weakens the authenticity and autonomy of the product concerning his/her accomplishments and dispositions. The engineered person's abilities, talents, and outputs are no longer his or her own (White, 2018). All that he/she accomplish are as a result of the genetic modification. He/she lives to fulfill the parent's dreams and desires.

4.4 The Problem of the Giftedness:

When ethicists applied their skills in Medical fields as well as science, they direct their attention to ensuring the substance of value and sanctity of human life (Ogar, Ogar & Nwoye, 2018). Cloning treats humans as products that must be designed, perfected, and controlled. They (humans) are viewed as commodities, no longer gifts. In his work, *The Case Against Perfection*, Harvard Professor Michael J. Sandel He claims that this pursuit of perfection is a misguided purpose that goes beyond security and wealth. This effort to improve human nature by genetic engineering is (he suggests) unacceptable because it reflects a bid for dominance and supremacy that fails to appreciate the skilled character of human powers and achievements. By implication, Sandel's opinion questions the integrity of cloning because it reduces man to an ordinary piece of the object.

4.5 The Problem of Unpredictability:

This charge attributes the act of cloning of been flooded with uncertainty. Cloning has been proven to fail many times or develop a complication in the long run. Thus, how moral is it to hope on something that can fail at any time. Cloning can make foods that were once safe to eat a threat to people allergies. This process is unpredictable and new substances can develop in engineered foods (Kelsey et al, 1988). Though there are tests upon test to clarify the integrity of cloned products, yet there are no guarantees. The injection of genes into plants and animals, apart from the current reactions, may cause existing genes to respond in unexpected ways. Four years after researchers in Scotland told the world that they had cloned a sheep called Dolly, scientists say that the evidence is mounting that it is more challenging to create healthy animals through cloning than they had anticipated. The clones that have been produced, they say, often have problems severe enough (Wilmut, 2016). These problems include; development delays, heart defects, lung problems, and malfunction immune system. In one example that seems like science fiction come true, some cloned mince that appeared normal suddenly, as young adults, grew grotesquely fat. "With cloning, we are asking an egg to reprogram in minutes or, at most, in hours," said Dr. Rudolph Jaenish, a professor of biology at the Whitehead Institute, Massachusetts Institution of Technology (Wilmut, 2016). That is the problem.

It is germane to note that all the evidence so far, according to scientists indicates that the breathtakingly rapid reprogramming in cloning can introduce random errors into the clone's DNA, subtly altering individual genes with consequences that can hurt embryo or fetal developments even killing the clone. Sometimes gene alteration may be fatal, soon after lead to significant medical problems later in life. Acknowledging the above, this research agrees with Dr. Birgid Hogan, a professor of Cell Biology at Vanderbilt University Medical Centre in Nashville, that such cloning is morally indefensible (Wilmut, 2016).

Scientists say they see what appears to be genetic problems almost every time they try to clone. A typical example of such a case has been witnessed in mouse cloning. Some mouse clones grow fat sometimes enormously obese, even though they are given the same amount of food as otherwise identical mice that are not the products of cloning. According to Dr. Ryuzo Yanagimachi, a University of Hawaii researcher who first cloned these animals, the fat mice seem fine until an age that would be equivalent of 30 for a person, when their weight starts to soar. Yanagimachi also opines that cloned mice tend to have developmental abnormalities, taking the longest to reach a milestone like eye-opening and ear twitching (White, 2018).

4.6 The Phenomenon of Concealment

According to Asouzu (2011) that "All human existential situations, as ambivalent situations are characterized by the phenomenon of concealment (*The mpuchi anya*) which can conceal from actors the fact of this potential incessant threat towards mutual annihilation". The phenomenon of concealment is the mind-set that sets a human being on an action,

which in the beginning seems non-harmful but is loaded with destruction. This phenomenon is what Asouzu calls unintended ethnocentric commitment, which makes a person act in such a way to protect one ethnocentric background over others (Bassey, 2016). How does such a thing happen? It comes to play unknowing to the actor because of indoctrination which has taken place at the time of development. Children grow-up with a lot of teaches which protect an interest against another. So, at the adult stage, they still attend to such a lifestyle because their mind has been preconditioned by education to be so. Therefore, Asouzu (2011) advocated for neotic propaedeutic (re-training of the mind) as a way out the cage of the phenomenon of concealment. The argument against Genetic Engineering from this direction opines that the phenomenon of concealment beclouds actors involved in cloning. Exponents of cloning think in their minds that cloning will service our need of higher, functional genetic products, without knowing that, that which they meant for good shall turn out to be evil.

5 CONCLUSION

Cloning, genetic modification, gene therapy, and all that is done in cloning are a novel achievement that must be properly, with all clarification controlled. This work argues that any gene modification that must take place for any reason must be verified down-side-up. Moreover, if such modification sustains in it at least a 0.1% failure threat, it should be abandoned. In such a way this human paradoxical irrational situation sooner than we think will stop. As a human, we tend to act out of apparent ignorance and often stupidly to believing that we are wise in being unduly crafty and smart like in cloning; these are those paradoxical situations.

This paper is not calling for total abandonment of cloning, rather it argues for complete and ethical verification of cloning activities. Moreover, any such would be an achievement that sustains in it at least 0.1% future failure to ethical standards or threat to life and existence, should be abandoned. Why we do not advise total rejection of cloning in our societies as of the conclusion of our judgment in this matter is that some genetic achievements in agriculture have served us better than harm. In-plant cloning man cannot be accused to be playing God, which is ethically justifiable. But, for animals and humans, this paper does not encourage any form of genetic cloning. It is a known fact that our language, culture, and conceptions seem hopelessly procrustean when applied to our multifarious moral experiences and dilemmas (Leonard, 2018). Yet we do not need to give up in our pursuit of moral bliss. All that humanity needs are to live by the principles of ethics based on justice and truth and not just desires, for ethical principles transcend all political, sociological and scientific principles (Leonard, Mfonobong & Bassey, 2019).

REFERENCES

- Asira, E. A., and Ogar, J., (2010). "Issues related to genetic engineering" in Asira, Ogar, and Okeke. *Readings in History and Philosophy of Science, Technology and Ethics*. Ed. Calabar: Jochrisam Publishers.
- Asouzu, I. I. (2011). "Ibuayidanda and the Philosophy of Essence". *Filosofia Theoretica: An African Journal of Invention and Ideas*.
- Bassey, S. A. (2016). Historical Perspective on Social Justice. *OmniScience: A Multi-disciplinary Journal*, 6(3), 39-46.
- Gahlot, T. K. (2009). Editorial: Injaz-the first cloned camel born in Dubai. *Journal of Camel Practice and Research*, 16(1)
- Havstad, J. C. (2010). Human reproductive cloning: A conflict of liberties. *Bioethics*, 24(2), 71–77
- Holy Bible*: King James Translations Used.
- Kelsey, G. D., Abeliovich, D., McMahon, C. J., Whitehouse, D., Corney, G., Povey, S., Mowat, A. P. (1988). Cloning of the human α 1antichymotrypsin gene and genetic analysis of the gene in relation to α 1antitrypsin deficiency. *Journal of Medical Genetics*, 25(6), 361–368. <http://doi.org/10.1136/jmg.25.6.361>.
- Leonard, N. (2018). Ethical Issues in Arms Technology. *An International Journal of Human Theory and Praxis*. Vol 1 No. 1, 2018.
- Leonard, N., Udoudom, M. D., & Bassey, S. A. (2019). Strategic Arms Limitation Talks (SALT): an ethical or political problem. *International Journal of Humanities and Innovation (IJHI)*, 2(1), 52-56.
- Miller, W. L. (2013). A brief history of adrenal research. *Molecular and Cellular Endocrinology*, 371(1–2), 5–14. <http://doi.org/10.1016/j.mce.2012.10.023>
- Mirsky, S., & Rennie, J. (1997). What cloning means for gene therapy. *Scientific American*, 276(6), 122–123. <http://doi.org/10.1038/scientificamerican0697-121>
- Murphy, J. S. (2018). Human cloning and the problem of scarcity: A Sartrean perspective. In *Globalizing Feminist Bioethics: Crosscultural Perspectives* (pp. 198–211). <http://doi.org/10.4324/9780429500176>
- Ogar, J. N., Idagu, U. A., & Bassey, S. A. (2018). Ethics in a technological society. *Journal of Sustainable Society*, 7(1), 1-4.
- Ogar, J. N., Leonard, N., & Bassey, S. A. (2019). Issues Related to Infertility in Africa: An Ethical Scan. *Research & Reviews: A Journal of Biotechnology*, 8(3), 26-32.
- Ogar, J. N., Ogar, T. E., & Nwoye, L. (2018). "Ethics, Medical Ethics and Bioethics: Towards Conceptual Analysis" *European Journal of Biotechnology and Bioscience*. Vol. 6. No. 3. 2018. <www.biosciencejournals.com> 23rd August 2019
- Rosmarin, A. G., Levy, R., & Tenen, D. G. (1992). Cloning and analysis of the CD18 promoter. *Blood*, 79(10), 2598–2604
- Sandel, M. J. (2004). A Case Against Perfection. *The Atlantic Monthly*, 293(3), 51–62.
- Silver, L. M. "The Second Creation - The Age of Biological Control by the Scientists Who Cloned Dolly." *Science* 287.5457 (2000): 1404–1405. Print.
- White, L. (2018). The Need for Authenticity-Based Autonomy in Medical Ethics. *HEC Forum*, 30(3), 191–209. <http://doi.org/10.1007/s10730-017-9335-2>
- Wilmot, I. (2016). Dolly & me. *New Scientist*, 230(3071), 40–41. [http://doi.org/10.1016/S0262-4079\(16\)30771-0](http://doi.org/10.1016/S0262-4079(16)30771-0)