Ethical Viewpoint Paper

Hiromitsu Nakauchi's Organ Farming is playing God

Osebor Ikechukwu Monday

Department of Arts and Humanities, Delta State Polytechnic Ogwashi-Uku PMB 1030, Nigeria

Corresponding Author: Osebor Ikechukwu Monday

E-mail: osebordarry@yahoo.com

Introduction

Organ transplantation is challenged with non-availability of organs for candidates on the waiting list. In 1994, over 30,000 Nigerians were on the organ waiting list. By 2010, the organ waiting list had grown to nearly 93,000 patients, with only a few received an organ from altruistic donors and tourism [1]. Despite the effort of the Nigerian government to increase organ donation, yet organ shortage persists. The question is, how can we proffer a solution to the current organ shortage? Nakauchi demonstrated the possibilities of growing human organs in animals. This could close the gap between the demand and supply of organs.

This review evaluates Hiromitsu Nakauchi's organ farming as playing God. We contend that the rejection of organ farming would further worsen the organ crisis because it could close the gap between demand and supply. However, organ farming could lead to the spread of zoonotic disease such as the corona virus (COVID-19), if the genetic cultivated organs are transplanted into a human being

Xenon is a Greek word, which means "remote." Shima et al argue that Xeno means stranger or alien [2]. Xenotransplantation is the process of transplanting animal cells, tissue, into a human being. Additionally, Xenotransplantation or xenografting refers to the transplantation of organs of animals from different species [3].

Hindu religion presents its mythology of xenotransplantation. xenotransplantation was made with no learning of the species hindrance. According to Hindu mythology, Icarus the son of Daedalus had to fly across the ocean, from Crete to Terrain in Greece, with the assistance of a fowl feather appended to his wings. Icarus effectively made the adventure, with the aid of the attached chimaeras but with no conceivable instance of hyperacute or dismissal [4]

The Nuffic Council on bioethics reports, "There is a prospect in xenotransplantation. xenotransplantation could supplement the supply of human organs for clinical transplantation [5]. With the approval of immunosuppression drug, organ recipients from chimaeras would live much longer [6]. There are different methods of organ donation; incentive for organ donation, presumed consent, mandated choice, and post humus organ sale. First, let us discuss Hiromitsu Nakauchi Organ farming

Hiromitsu Nakauchi Organ farming

Hiromitsu Nakauchi is a physician and geneticist. At Stanford University, Hiromitsu Nakauchi proposed a solution to the problem of organ shortages. Nakauchi demonstrated the possibilities of growing human organs in animals. He grew a mouse with a rat pancreas, the rat-grown mouse pancreases were transplanted into a diabetic mouse, and they made enough insulin to cure the condition without being rejected [7]. "We found that the diabetic mice were able to normalize their blood glucose levels for over a year after the transplantation of as few as 100 of these islets. Furthermore, the recipient animals only needed treatment with immunosuppressive drugs for five

days after transplantation, rather than the ongoing immunosuppression that would be needed for unmatched organs" [8].

Nakauchi says he plans to proceed slowly, and will not attempt to bring any hybrid embryos to the term for some time. Initially, Nakauchi plans to grow hybrid mouse embryos until 14.5 days, when the animal's organs are mostly formed. Nakauchi will do the same experiments in rats, growing the hybrids to a near term, about 15.5 days [9]. The implication is that mouse pluripotent stem cell has the capacity of becoming any type of cell in the body. The rats are genetically engineered to develop their pancreas, relying on the mouse cells for its development. The "ultimate goal is to produce animals with organs made of human cells that can, eventually, be transplanted into people" [9]. We argue that organ farming could lead to the abuse of animals if not regulated.

An Evaluation of Hiromitsu Nakauchi Organ Farming

Hiromitsu Nakauchi should be applauded for the exploration of chimaeras, to providing organs for candidates on the waiting list. The deontological school of thought argued that organ farming amount to 'playing God'. It interferes with the natural process of creation and the introduction of zoonotic disease such as the (Covid 19) into the human population. We maintain that what is 'natural' ought to be respected as part of divine creation without violation [10]. Humankind has become so revolutionary, rebellious and trying to play God. The biblical view, support the above assertion that species integrity is necessarily defined by God, rather than an arbitrary or evolutionary forces [11].

Organ farming is the artificial creation of organs. The artificial organ is good, but it is unnecessary interference in the developmental stages of the natural organs. We contend that artificial organs could affect the body physiology when transplanted into human beings.

Bioethics Advisory Committee Singapore reports that the "interference with the process of creating life, is the interference with divine prerogative. This implies that human being may suffer from scientific or ethical hubris, a pride in the power that blinds us to limitations or unforeseen risks, and leads us as a society or as individuals to undertake things that wiser and more modest counsel might not have led us to" [11]

The most critical part of playing God argument, is that organ farming breaks 'natural boundaries' among biological species [12]. "Crossing species boundaries is about human beings playing God and in so doing challenging the very existence of God as infallible, all-powerful, and all-knowing. There are, for instance, those who believe that God is perfect and so too are all His creations" [13].

For the atheist, there are possible creatures that are not currently found in the world, the world cannot be perfect; therefore God, who made the world, cannot be perfect; but God, by definition is perfect; therefore, God could not exist" [13]. We argue that man knows the truth and cannot deny his Maker, but fights with it and strives to subjugate it, replacing it with his personal opinion (which becomes his private gospel from then on) [12].

Concluding reflections

The 'playing God' philosophy is an acceptable medical practice in the 21st century, due to technological advancements. However, organ farming seems to violate the divine law, is a religious claim [11]. Bioethics Advisory Committee Singapore reports that whatever we do will affect the future. The future generations will be affected by what we do now [13]. We argue that organ farming could be 'playing God,' if we prohibit research that might help patients suffering from organ failure.

However, it is morally wrong the unnecessary experimentation of animals. Animals have the right to exist without genetically crossed [10]. Crossing species boundaries would lead us to moral question about species identity. The belief that species have particular identities or boundaries

between species, seems an illusion. Fixed species identities and fixed boundaries between species are illusory because there is no ontological divide among species. We suggest that organ farming be encouraged for the common good of the society.

REFERENCES

1. Osebor, I. Pragmatic Organ Donation: Reinterpreting Vroom's Expectancy theory. *J Asian Int Bioethics* 2019;29(11):208-11.
2. Shima B, Maneshreza O, Shayan B. Ethical Issues of Transplanting Organs from Transgenic Animals into Human Beings. *Cell J* 2014;16(3):353–60.
3. Canada health. Revised Fact Sheet on Xenotransplantation.. Available from https://www.canada.ca/content/dam/hc-sc/migration/hc-sc/dhp-mps/alt_formats/hpfbdgpsa/pdf/brgtherap/xeno_fact-fait-eng.pdf
4. Osebor I. Is Organ Farming a Panacea to Organ Crisis? Ethical Implications. *J Asian Int Bioethics* 2018;28(5):104-8.
5. Nuffield Council on Bioethics. Animal To Human Transplants The Ethics Of Xenotransplantation. London 1996
6. Rehm J. Organs Grown to Order. *Knowledge magazine*. internet 2018 [cited Dec 6 2019]. P.-6. Available from <https://www.knowablemagazine.org/article/health-disease/2018/organs-grown-order>
7. Cyranoski D. Japan Approves First Human-Animal Embryo Experiments. *Nature* 2019;p.2-9. Available from <https://www.nature.com/articles/d41586-019-02275-3>
8. Krista Conge. Rat-Grown Mouse Pancreases Help Reverse Diabetes In Mice. Stanford University School of Medicine, Stanford Health Care (formerly Stanford Hospital & Clinics), and Communication & Public Affairs. 2017; p.1-8 Available from <http://mednews.stanford.edu>
9. Kalfoglou AL, Kammersellb M, Philpottc S, Dahld E. Ethical Arguments For And Against Sperm Sorting For Non-Medical Sex Selection: A Review. *Reprod Biomed Online*. 2013;26(5):231-9.
10. Zandman HJG. Chimeras: An Ethical Consideration. *Skriflig* 2011;45(4):899-918.
11. A Report By the Bioethics Advisory Committee Singapore Human-Animal Combinations In Stem Cell Research. 2010; p.18. Available <https://www.bioethics.singapore.org>
12. Copeman J, Quack J. Godless people and dead bodies: materiality and the morality of atheist materialism. *Social Analysis* 2015;59(2):40-61.
13. Robert JS. Crossing Species Boundaries. *Am J Bioethics* 2003;8(3):3-19.

Acknowledgements: Nil

Funding: Nil

Conflict of interest: Nil