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Mankind's future in the providence of bio-science: A nostalgia for the eugenic teleology of genetics and genomics

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Abstract: This study is an attempt towards extolling the transhumanist eugenic significance of genetics and genomics, applying the critical tool of philosophy. One of the most remarkable areas contemporary science and technology has made an unprecedented, awesome and stunning progress is the area of bioscience and specifically bio-medical sciences (Genetics and Genomics). Modern scientists are strongly convinced that the human genes (in philosophical terms) are the basic substratum of the human nature, hence, research in human genome holds the master key towards uncloaking the incredible secret of human life, health and disease. The marvelous prospect of this emerging ontological approach in medicine that makes it relishing and fascinating is such that apart from being curative, it is also both preventive and regenerative. Through the aid of expository analytical method, this study reveals that there has been a renewed and increasing interest in bio-medicine, especially in stem cells research and embryology. Consequently, deducing from the findings of this study, this paper argues that, given the credible antecedences of scientific research and predictions, if the recesses of the human genes are penetrated and concealed data retrieved, the future of mankind promises to be relishing in the bosom of biomedicine; because diseases, aging, and most probably death would be overcome by mankind.

Keywords: Bio-science, Biotechnology, Eugenics Genes, Genetics, Genomics, Transhumanism

1. Introduction

The focal thrust of this study is the attempt to extol the transhumanist and eugenic significance of gene technologies. The paper digs into the nature and essence of gene technology (Olebara, 2022). It is germane to begin this philosophical treatise by observing that any philosophically significant attempt towards envisaging the prospects of science and technology to the future of humanity must plausibly proceed from and leveraged on the antecedences and track record of science. So, judging from the monumental and trail-blazing posture or characteristic of science and technology, the nickname, if at all, that may suitably code name science and technology is 'ultra-radical progress'. Science and technology epitomises dramatic and drastic progress in all levels of human existence and experience in the society. Science has made good amounts of claim that it is out to better man's existence and experience on planet earth. Science and technology has not only bettered human existence, but also it has incredibly advanced and enhanced human essence via gene technologies. Hence, the

power of science and technology is incredibly fascinating and even dreadful to such a degree that they are aptly classified as second to only the gods. For some scholars, science and technology is not even second to the gods, but they are visible gods per se.

Since humans started living in the society, science and technology has been the cornerstone of human and societal evolution and development. Science has an overbearing influence on the society to such an extent that over time it is imperceptibly and surreptitiously assuming the posture of a moral legislator. The principle or motive behind scientific interventions is the promotion of human life and health. The present moment in history seeks in biomedical research and clinical practice to provide specific medical therapies and enhancements that aligns with the nature of humans as revealed by human genome. Knowledge of human genome has made scientists and geneticists realize that humans are essentially related genetically and that the genes exclusively holds the Great Secret and Sustainable Solution to human life, health and wellbeing. Consequently, motivated by this unalloyed conviction, modern scientists consider research in genetics and genomics as the future of medicine.

Genetics and genomics deal with genes- the inherited traits and transmitted characteristics (chromosomes and DNA) from parents. It should be noted that these bio-medical technologies are essentially tailored towards tinkering genes. Meanwhile, there are two ways by which geneticists modify human genes; these include (i) gene modification for enhancement (otherwise known as eugenics) and (ii) gene modification for therapy (also known as clinical modification). This implies that researches in genetics and genomics are prosecuted either for enhancement or for therapeutic purposes; or even for both. Genetic modification for therapeutic purposes aims at tackling identified deficiency or illnesses from their genetic root; whereas, genetics for the purpose of eugenics is tailored towards upgrading the patient's health to above average. In 1997, Eric Juengstopined that genetic therapies tackle ailments that diminished health; whereas genetic enhancement may not primarily be concerned about ailment (Allhoff, 2005, 44-45). These two levels of genetic modifications are considered as human genetic interventions. Genetic interventions are ontological interventions because they tackle human health conditions or problems from their genetic root (relying fundamentally on the intrinsic causal powers of the human body).

Moreover, Allhoff (2005), gave a further elaboration on what he considered as pertinent distinctions as far as discourses on human genetic tinkering is concerned. He established what he considered two instrumental senses of distinctions, these are:

i. Distinction between genetic therapy (negative tinkering) and genetic enhancement (positive tinkering). The motive for this is the prevention or treatment of identified health problem.
ii. Distinction between somatic cells and germ-line cells. The basic characteristics of somatic (muscle or skin) cells is that it embodies 23 pairs of chromosomes. Also somatic cells cannot transmit genetic data from parents to offspring. However, germline cells embody 23 unpaired chromosomes and they transmit genetic data from parents to succeeding generations (44-45).

In view of the second distinction above between somatic and germ-line cells; Beauchamp and Walters deduced four classes of genetic engineering to include (i) somatic cell gene therapy, (ii) somatic cell genetic enhancement, (iii) germ-line gene therapy, and (iv) germ-line genetic enhancement" (Uzomah, 2016, 105). It should be noted that genetic intervention at the level of enhancement of human capacities and traits are mostly and essentially done on human germ-line.

The germ-lines cells are the seminal germ of every species and it is the causal power that enables them to reproduce their kinds. For instance, the various species in nature never produced new species. Horses produce horses, and flowers produced flowers; at the human level, parents reproduced more children. In other words, man cannot procreate a being that is not human being (except in exceptional instances where white and black witchcraft metaphysically intervenes), likewise animals and plants must reproduce only their kinds, and nothing outside that. Human reproduction is possible because ovum and sperm collectively referred to as germ-line cells embody 23 unpaired chromosomes that transmit parental genetic templates to children and their future generations. Hence, any alteration made on germ-line cells affects not just the immediate generation but extends to all succeeding generations of that particular progeny. Owing to this crucial fact, human germ-line intervention has attracted the critical attention of scholars and analysts more than other forms of biotechnological interventions.

Discourses on genetic intervention frequently commence and often times even end with evaluation. As recent studies have shown, (with specific reference to polemics regarding the ontological moral nature of cloning), possibly science progresses indifferent to a healthy moral debate. In this regard, four important objections often are raised to impugn human genetic intervention. They include, theological concern, scientific limitations, or risk involved (Allhoff, 2005). The concept of genetic engineering attracts lots of eyebrows impugning the moral permissibility of genetic intervention in humans. And among all the forms of human genetic engineering, genetic improvement receives the most moral altercation (Allhoff, 44.). The germ-line genetic enhancement attracts the most skepticism and disapprobation because, as already established above germline cells transmit inheritable materials from parents to their progenies in perpetuity. The concern raised here is for the future generations of this progeny who inexorably may benefit or suffer the dire consequences of this enhancement whose consent are never given. However, without prejudice to the imperative for appraisal of the moral significance of gene technologies, this paper is basically an expository analysis aimed at extoling the transhumanist eugenic significance of genetics and genomics. As it were, transhumanist eugenic exponents may find in this article striking and formidable polemics useful for the defense of transhumanism and eugenics.

Consequently, this paper considers the possible prospect and impact of HGP on medical science and the renewed attention on molecular genetic medicine. Hence, the paper has to do with human genes because any meaningful discourses on red biotechnological meddling with humans either for therapeutic or enhancement motive must begin with the genes. The genes are so critical because they are the linchpin that determine, influence and control the structures and cell activities in the body. The human genes are the most fundamental elementary composition of the human physical, anatomical and physiological makeups of the individual human person. As such, from the biological point of view, they are definitional of what constitutes the personality and dignity of a person. Therefore, this study examines the research on human genome by paying critical attention on its thesis and objectives. The aim of this study is to expose salient facts that underlie this biomedical or bio-tech research and its meddling with human gene. In this regard, this treatise consists of an expository analysis on gene technology for the purpose of eugenics. Although, in doing this, germane ethical questions may be raised; however, the paper is not generically concerned with evaluating the moral worth of scientists' meddling with human genes.

The most fundamental findings of this research is that modern scientists and geneticist hold research in human gene as the only obvious way towards sustainably revolutionizing human life, health and wellbeing. This predictive conclusion is leveraged on the strong assumption that the secret of human life and health is concealed in human genes. This is why scientists see human genomeas the "Holy Gray or Incredible Black Box of Medicine". In other words, the human genes are the basic substance of the human body and they inexorably control or influence or determine the dynamic activities responsible for the functioning of the complex human body. Consequently, the idea of molecular medicine, leveraged on human genome which is preventive, regenerative and curative in nature is targeted towards obliterating identifiable human health conditions from their genetic recesses.

2. Literature review

2.1. Biotechnology, eugenics and transhumanism

Unarguably, there is a functional relationship between biotechnology, eugenics and transhumanism-their teleology is to optimally recreate the entire human being. Against this backdrop, "Biotechnology and its correlate eugenic have made human genetic engineering and the possibility of effecting substantial changes in the human embryo a reality" according to Uzomah and Attor (2020). It is useful to observe that the unprecedented in-roads in studies in geneticsciences and other biosciences have generated incredibly amazing data that serve as instrumental tools for health practitioners for diagnosis and test.

Genetic engineering and embryology although not entirely novel, they are emerging technologies. Modern and contemporary biotechnologies deplored for genetic modifications either for the purpose of enhancement or for therapeutic reason are made possible through gene mapping and sequencing. Gene mapping is achieved via Human Genome Project (HGP). HGP is the international research undertaking which aims at producing a map of the human genome. Human Genome is considered to be the complete set of information for the human body. It is believed that this information is the master key to unlocking the great secret of human life, health and disease.

Eugenics is a biomedical research and practice for the purposes of upholding the integrity or improving the genetic templates and capabilities of human beings. It is a biomedical technology poised for the upward enhancement of human conditions beyond natural human limitations. It is the science and art of creating better, healthier, super-brilliant, etc. human species. Ultimately, human germ-line genetic intervention targets the possibility of totally eliminating fragilities in human existence and experience by improving the capacities and qualities of humans.

The concept and philosophy of transhumanism was informed by the unfortunate and obvious despicable and pernicious nature of the present human condition. Moreover, the idea of transhumanism is rooted and reinforced by the well-grounded assumption that the human nature is a work in progress. On the basis of these, "transhumanism is an eschatological vision of a material transcendence of human experience; it is a material paradise here on earth" (Campbell & Walker, 2005; cited in Uzomah & Attoh, 2020). The philosophy, prophecies and predictions of transhumanists regarding the future of human life, health and wellbeing are based on the iconic in-roads made by scientists, geneticists and information technology. Transhumanists hold the belief that if the iconic progress made by biomedical technologies and the marveling revolution of information technology are harness human condition could be transfigured.

In order to foster a proper discourse on the concept and conceptualization of genomics and genetics, it is essential that we first and foremost attempt a succinct overview of the human gene which constitutes the material focus of genomics and genetics.

2.2. The concept of the human gene: An overview

Genes are not the exclusive preserve of human biological compositions rather genes are also the components of other living organisms. Biologically, genes are seen as unique codes that enable various living organisms to produce proteins. These proteins constitute the structures that perform the functions or activities of living things. In every living organism, whether plants or animals, genes are biologically conceived as integral part of the particular cell that determines the activities (growth, appearance, and others) of a given living thing. As a unit of a DNA, a gene is an inheritable template that transmits parental ontological causal substance to their offspring. The sequence of amino acid for protein is one of the essential elements of a gene.

Biologically, conception consists of the mating and fusion of two special cells called gamete. There is no other human cell that is like what they are. Every human cell has 46 chromosomes. This comes in a pair of 23. A sperm only have 23 single strings, and so does the ovum. When the sperm and egg fuse, they form a zygote. A zygote combines the nucleus of the two sexes. Then it will unite the two single strings of 23 to become two pair of 23 to form the total of a new chromosome. The zygote will unite the genetic hereditary trait of both the male and female through an exchange of the pair of a chromosome such that there is a new fresh originality. The chromosomes (hereditary genetic template) become the program or the code of the person that originate from the fusion.

Specifically, the human gene is the DNA segment which contains the code (or sequence) for an entire molecule of the human body. Put in ordinary language, a gene is the unit of an element that produces the requirements of the human body at its lowest units. It determines how the person acts, reacts and takes situations. Gene makes us what we are and directs the intimate functioning of the human body (Iroegbu & Echekwube, 2005: 590). In metaphysical language, gene is the material stuff that constitutes the material self of the individual. It is believed in scientific circle that biologically, human genes together make up what may be designated as the substantive black box of the human body. Philosophically, the genes of the human body may be conceived as the fundamental material of the human body. In human, genes is reposed as the master instruction book for humans. This justifies the belief within scientists' rank and file that the human genes hold the master key to the great secret of human life, health and disease. Unlocking this incredible reservoir and creative substances holds the unimaginable prospect for the human person into a transcendental being.

In what follows, Lammers and Verley give a rough estimation and a description of the dynamism of genes of the human body:

> Every cell in human body has several genes that are busy in producing the requirements of the body in various proportions and ramifications. Every human cell has numerous genes working for it and the body. The scientific estimate is that there are between 50,000 to 100,000 genes in every human cell. On the whole, these genes would contain about 6 billion nucleotides. When there are aberrations in genetic structure, i.e. in the contribution of the

> genetic code, there are diseases in the body. The effort of gene tech is to identify these areas in view of cure or correction (Iroegbu, 2005: 590).

Positive eugenics makes use of the genes in gene therapy and this has terrified many and at the same time it has enhanced many (Iroegbu, 590). Every endeavor of scientists aimed at genetic engineering, gene mapping and sequencing for the enhancement of human conditions is made possible via gene technology. Contemporary researches on molecular medicine as embodied in gene technologies are principally focused on the genes of the human body. For instance, cloning either for reproductive purposes or for therapeutic purposes for the generation of embryonic stem cells is made possible by penetrating and persistent studies on the ontology and functions of the genes. Consequently, one can plausibly argue that genes of the human body are the fulcrum and archetypes of the human material self. This conclusion is leveraged on the sideline that molecular medicine subsisting in stem cells therapy which is cosmetic, preventive and curative in nature is an aftermath of human gene mapping and sequencing.

2.3. Gene technology

The human race is not perfect. It is ravaged by disease and limited by nature. Hence, in recent times, researchers have begun to undertake the technological assisted task to ascertain an advanced understanding of the underlying genetic code of humanity (Ogbuishi & Ogbo, 2018, 28).

The aspiration towards employing technology (the work of human hand) to alleviate, if not to totally obliterate human biological-natural imperfections, is based on the assumption that the human being (been dynamic) is a work in progress. As such an understanding of the sublime workings of the nature of the seminal germ of human biology holds the master key to perfecting human nature. The term 'Gene technology' as a subsidiary of Red Biotechnology is domiciled in both Basic and Clinical Medicine. It covers numerous techniques and procedures including maker-assisted breeding, RNAi and genetic modification. It is the concept that designates different bio-medical studies and practices targeted towards understanding the nature of genes in terms of their activities, actions or inactions and changes. The teleological import of this enormous sustained research on genes is the yearning to take positive advantages of incredible knowledge of genome for artificial tinkering of genes for therapeutic and enhancement purposes. In gene technology, scientists and geneticists employ the most dependable techniques to achieve the lofty goal of their intense research. According to Enemuo (2018: 24):

> Genetic engineering is the possibility and actual biotechnological breakthrough from In Vitro Fertilization to genetic manipulation and recombination of DNA (Deoxyribonucleic Acid) which carries the genetic instructions or blueprints used in the growth and development, functioning and reproduction of all known living organisms. It has to do with the artificial manipulation in the body of human beings, plants and animals so as to give a desired result different from that which the nature of the specie provided.

Azuafor (2018) sees genetic engineering as consisting of the direct tinkering of the genes of an organism or a living thing with the aid of biomedical tools. The technology employed is usually hyper-technology and the intervention could be for curative, eugenic or even for preventive purposes (Azuafor, 2018: 48). Dickey and Bram defined genetic engineering as the manipulation of inheritable particulars of an organism in a predetermined manner, through the introduction of certain genetic templates extracted from another organism (1986, 237). This gene augmentation or alteration in the scientific world is done with a lot of motives ranging from the production of more resilient organisms that would correct any genetic defects in the organism and even select genetic traits for the continuity and future of the progeny of the organism.

The point of departure for gene technology is gene mapping and sequencing. Gene mapping and sequencing was achieved via research on Human Genome otherwise known as the Human Genome Project (HGP). The purpose of this incredible and fascinating project was to achieve the sequencing, mapping and decoding human genomes. Positive progress made so far in human genomic research has leveraged gene therapy and gene enhancement otherwise known as eugenics. In an attempt to conceptualize the current status of this herculean project and to extol the centrality of eugenics, Iroegbu (2005) asserted:

> According to recent report, human genome has been totally sequenced in the past decade and about 25,000 genes were discovered in the pool of human genes. The implication of this discovery is that in the future it would help in the revolutionalization of medical testing, diagnosis and therapies. The hyper knowledge that accrued from this laudable project has overwhelmingly impacted biological and social sciences. The motif of gene technology; that

> is eugenics, the science that says improve human life continually upwards. The specific areas where gene technology (having eugenics as its ultimate end) is concerned with include: gene mapping, therapy and development" (Iroegbu, 2005: 584).

It is pertinent to observe that for geneticists and scores of transhumanist optimists, the understanding of the nature and functions of genes is a crucial component of gene technology that holds relishing prospects for humanity. This is the philosophy behind gene mapping and sequencing. It should be asserted that genetic engineering encompasses three basic types or classes. These are:

i. Human cloning,
ii. Genetic trait selection, and,
iii. Genetic modification.

Needless to assert that in the last couple of decade medicine has benefited a whole lot from researches in biotechnology, not just in terms of diagnosis and treatment of disease, but especially in terms of preventive and regenerative medicine. Moreover, another area of extant medicine that has been richly blessed by this emerging biomedical technology known as gene technology is reproduction and infertility treatment. In the past decades couples with infertility issues have found great solace and remedy in the Assisted Reproductive Technology known as In Vitro Fertilization (IVF). This has given birth to the concept of designer babies via reproductive cloning.

Consequently, genetic engineering, been eugenic in nature is also invariably transhumanistic. According to Bill Mckibben, Biotechnology aspires to genetically:

> Enhance humanity to its posthuman future. Through this technology, geneticists seek to manipulate the human genetic makeup not for therapeutic reasons but for reasons of calculated, purposeful and deliberate engineering of the human cells and DNA. While there are advocacies that the human gene could be manipulated in order to deal with health challenges that are gene based, there is now the drive to manipulate the human genetic make-up just for the purpose of enhancement. No other therapeutic benefit or motif is in view. The aim is purely to inject cells that produce more protein in the system and they are tasked to carry out specific responsibilities in the system. At another level, the genetic make-up of even unborn children can also be affected. The egg and semen from the parents are taken and sifted through, defective genes are removed and more efficient ones that could boost the IQ, height, complexion and even emotions of the new foetus are sourced for and implanted in the foetus. This changes substantially how the business of childbearing has been conventionally conducted in that, "instead of making babies by making love, we will have to move conception to the laboratory" (cited in Idachaba & Omale, 8).

2.4. Eugenics as the teleology of genetic engineering

It should be established in the onset that genetics and eugenics is possible because of gene mapping and sequencing. As noted earlier, the fundamental teleology of genetic engineering is for eugenics understood as enhancement. Genetic engineering is achieved through the manipulation or altering of the genetic makeup of DNA either to replace a deficient gene or to effect corrections where applicable. The procedure is a very technical and sophisticated and only well understood by scientists whose expertize it is. However, what we should note is that genetic engineering involves the manipulation or modification of the genetic constitution of DNA for gene therapy and enhancement via a very complicated and complex laboratory procedure.

Genetic engineering in human beings is essentially tailored towards gene tinkering or alteration. Gene alteration in human beings is done in two instances or levels-therapy and enhancement levels or reasons. This implies that researches in genetics and genomics are prosecuted either for enhancement or for therapeutic purposes; or even for both. Genetic modification for therapeutic purpose aims at curing identified ailments or deficient condition in a human patient; whereas genetic engineering for the purpose of enhancement or eugenics is tailored towards upgrading human health. And this technological attempt towards upward engineering of human health may be done on somatic or germline cells. At the level of enhancement, the teleology of genetic modification is eugenics. Going by the configuration of Charles E. Curren, "Eugenics, simply described, means good breading (1970: 192). For Iroegbu, "Eugenics is an art and science of better life and healthier human species" (Iroegbu, 2005: 591).

Etymologically, the concept 'eugenics' was coined from the Greek term, **eugenesia,** this implies "to engender well", "well born". It means to breed better or improve upon what has been bred. Eugenics generally has to do with the good breading and improvement of the species of human beings, using modern

knowledge to advance the development of the human species. It has come to assume enormous importance in health science and research" (Iroegbu, 2005: 585). In relation to genomics, eugenics involves the genetic modification or manipulating of the genetic constituents of DNA to for the enhancement of the human species.

According to Allen, eugenics can be described as an applied science that aims at maintaining or improving the genetic capabilities of human beings, for the purpose of promoting an above average health and wellness (1968, 193). Eugenics has therefore to do with the study to improve the life of man on earth through scientific and medical procedure (Iroegbu, 2005: 585). There is a modern concept associated to eugenics, this concept is transhumanism. The goal of eugenics is to produce trans-humans. By trans-humans we mean human beings beyond the natural limitations of man. Humans with superb human qualities, physically and intellectually enhanced qualities, super-brilliant and improved health condition. Trans-humans are smart and intelligent breeds or species that can do a lot with less effort and in less time. Transhumanists who are eugenic enthusiasts envision a world where human capacities and capabilities would be enhanced. Precisely they, dream of a world where such physical qualities like skin color, eye color, and even sex would be enhanced. Based on this tokenism, transhumanism may be aptly designated as the final destination of eugenics.

A cursory glance at the historical evolution of Basic and Clinical medicine reveals that eugenic researches have their origin in the 19th Century. Iroegbu connected the origin of eugenics to the Darwinian theory of the *Origin of Species and Natural Sellection*as its precursor. According to him:

> It was the 19th Century scholar Francis Galton who happened to also be the cousin of the great scientists, Charles Darwin, who coined and first used the term eugenics in the medical and research fields. Galton practically applied the Darwinian theory of the Origin of the Species and Natural Selection, to human beings. The survival of the fittest is also a human reality. The human species he argued, can be bettered when one works on hereditary traits, transforming some for the betterment of those who are more gifted, superior and stronger. Such will produce a better human race (Iroegbu, 585).

This implies that the philosophy behind eugenics goes beyond the general enhancement of the Human species, but more essentially it focuses on discriminatory manipulation of human genetic makeup of DNA to ensure that only human species with outstanding qualities are reproduced. The intent of eugenics is to manipulate or modify or genetically engineer human hereditary traits in order to foster the reproduction of geniuses in all ramifications. These utopic (genetically engineered) classes of human species are considered the superior race fitted and dully empowered to withstand the vicissitudes of life.

Galton is of the view that the purpose of eugenics is to provide the more suitable people or races the better opportunity to rapidly dominate the less suitable people or races, than they ordinarily would have hard (cited in Iroegbu, 2005: 585). This seems to suggest that exponents of eugenic philosophy have great evasion and disdain for inferiority and weakness in human condition. These biological or natural limitations imposed on man are considered to be ontological evil. This form of evil is otherwise called metaphysical evil. This is associated with the finality of created things; the human person inclusive. Metaphysical evil expresses the finitude or the imperfection of creatures which makes evil possible. Hence, the finitude or the imperfection of created things is in itself evil. The limitedness of man is such that he is imperfect in all ramifications. Because man is not perfectly rational, he wallows in imperfections. Hence, ontologically he exhibits evil tendencies. According to the religious perspective, as aptly encapsulated by Iroegbu, "only the Ultimately Ultimate Being, God Himself, is ontologically perfect with no limitation or lack. He is Pure Being, **ActusPurus** and in him is the fullness of Being and having and existing" (Iroegbu, 2004: 33). Ontological evil (genetic limitations) limits man and other created beings to their essences. There are many things which ordinarily man would like to do to alleviate his predicament, but cannot because of his limited state. An evil that men would have prevented, but could not begets another, and this in turn begets another and this continues in vicious circle.

Consequently, it is the considered view of proponents of eugenic philosophy that if humanity neglect the wholesome task of exterminating genetic defects (here referred to as ontological evil), that in the future the inadvertent duty of serving handicaps would consume the whole energy humans would have channeled towards cultural and other developmental imperatives(Muller, 1959.590). A corollary to this is found in the mantra, "destroy corruption or corruption will destroy you" that captures the APC (the political party in power in Nigeria) led administration's purported anti-corruption disposition. Defects in human nature are tantamount to genetic corruption. Therefore, human genes must be enhanced in other to perpetually eliminate them from human existence and experience. In this light, eugenic philosophy is the philosophy that says,' eliminate infirmities in human race and human species and promote a superior and stronger human species'.

However, Iroegbu (2005: 586) seems to have some reservations with Muller's eugenic counseling when he pointed out that:

> Muller did not tell us however, on what criterion some should be hindered for example, from marriage and others encouraged except his favoured eugenic motivation. For this failure of morally justifying foundation, many have come to regard eugenics as racists, unjust and oppressive. It is direct attack on the dignity of the human person which dignity belongs to all persons as persons, irrespective of genetic variations. Eugenic manipulation is an arbitrary favour of some to the disadvantage of others (Iroegbu, 2005: 586).

The origin of this philosophy of transformation and good breeding of the strong and fittest of human species has been traced to an ancient philosopher as its pioneer precursor. This distinguished philosopher is non-other than Plato. Plato, the philosopher of the utopia, in his *The Republic,* Dialogue 5 asserted:

> It is necessary that select men have relations only with select women; the defective only with the defective. But with the difference: nurture the children of the first type of union, disregard the children of the other type, if you want to have an excellent people (Cited in Iroegbu, 2005: 586).

Plato propounded this naturalistic eugenic philosophy when modern scientific interventions were unknown and not even imagined. So, being ignorant of human genome, he advocated for the propagation of excellent people's marriage and education. Gifted men are to choose from the group of highly endowed women to ensure procreation of excellent people. By nurture, he meant that the Republic or the Polis should pay priority attention to the training of the children of the gifted. Invariably, nurturing defective children would give rise to the breeding of infirmities and this portends bad omen to the health, survival, sustenance and development of the polis.

Beyond this naturalistic eugenic philosophy advanced by Plato that is handicapped by paucity of knowledge, contemporary science and technology empowered by advancement of human knowledge, is doing the incredible armed with the power of human genome. Moreover, Allhoff, rightly observed that in the superseding millennia, scientists and geneticists have accumulated hyper knowledge regarding sport medicine, nutrition and other related aspects of human fitness. This body of accumulated knowledge empowers contemporary scientists and geneticists to genetically modify human germ-line to achieve even a better result (50). Germ-line genetic intervention aims at improving human capabilities beyond the level of normal human condition. This relishing human technology could be used in the future to slow or accelerate aging, alleviate the cramps of old age and to evade the disturbances of adolescence (Allhoff, 2005w: 56).

The most fundamental teleology envisioned by eugenic optimists is that it has the potentials for enhancing human life, experience and wellbeing on planet earth. Genetically, engineering germ-line to make a progeny develop greater resistance to disease, more healthy populations; boost certain extoled potentials or talents. The possible list of enviable human capacities that could be enhanced via genetic engineering is outlined by Allhoff to include strength, eyesight and speed. Allhoff (2005) further noted that albeit, the physical as well as the social environments greatly influence the development and manifestation of talents, physical traits and capabilities, yet genetics presents a rare and relishing opportunity for people to enhance these human qualities in a morally and prudentially worthwhile manner (56). In another vein, Walters and Palmer, argued that the enhancement of mental features that influence human talents and overall intelligence is the prime target of transhumanists. Walters and Palmer specifically highlighted the following inviolable human attributes and capabilities-musical abilities, mental acuity, spatial reasoning, creativity and prowess, language faculties and mathematical thinking, as those genetic particulars they would readily advice people to enhance if technology in the future grant humans the rare opportunity to do so (Allhoff, 2005: 55). Of course, it is arguable that no sane and right thinking person may refuse the improvement of these germane faculties just on the pretext of protecting human dignity. If the contrary becomes the case, one may be forced to ask, does human dignity subsists in the frail condition of human nature? If the answer to this question is nah, then, what pursuit or endeavor could be more lofty and expedient? If genetic engineering is done with due diligence, mindful of the integrity and dignity of the human person for the common good of humanity, then it is a great good and service to humanity.

The fact that genetic engineering could be unfortunately applied towards achieving a reprehensible end is not lost on scholars and eugenic optimists. Be that as it may, Allhoff maintained that genetic engineering is not ontologically evil; rather the notion of evil may only arise at the level of misappropriation or misapplication of this incredible emerging technology. In lieu of this, Allhoff (2005) cautions that vigilance

against avoidable abuses is imperative (50). Of course, this is why there is the need for a proactive bioethics which anticipates the likelihood of misappropriation and misapplication of genetic interventions.

Science drives in imaginative speculation. What is yesterday science fiction is today real science creation. Science employs imaginative and creative thinking in trying to create an ideal man in an ideal world. As a result, every scientific invention today was yesterday's figments of creative imagination, or creative fanaticizes. On the strength of this factual statement, it may be asserted that the whole concept of eugenics and gene therapy were once in the past imaginative fanaticizes or creative ideals of genius scholars and scientists. This philosophical fact is collaborated by Iroegbu (2005) who maintained that "One logical outreach of eugenics is the now classical work of Adous Huxley, *Brave New World.* This was a novel that painted the picture of the ideal society of perfect human beings with homogeneity, stability and full luxury life" (Uzomah, 2021: 85). Obviously, this implies that virtually all scientific invention began with wishful thinking and day-dreaming match with strong actions (researches) in laboratories which is the theatre of their inventions.

The ideology behind eugenic researches and practices is to realize this laudable dream of creating superior humans who are perfect, stable and well fitted to enjoy the fullness of life. It is envisaged that improved humans would enjoy improved life devoid of ontological and genetic defects that have made human life audacious, odious and unbearable. In general, eugenic project is a project towards achieving better health and disease-free living for all. Eugenic researchers may be aiming towards creating hybrid species of humans with homogeneity, stability and fullness of life. For instance, as pointed out by Allhoff in the area of sports, parents and guardians may decide to enhance the height of their children and worlds for stardom in basketball even when some parents may not consider height a primary good and as such would rather maintain their natural heights(55). Whatever be the case, the fact is, eugenic philosophy allows parents to edit their germ-line cells so as to reproduce desirable offspring with improved physical and mental capacities and qualities, instead of leaving the outcome of their intercourse to natural selection.

2.5. Latest eugenic therapy

The intervention of science and technology in biotechnologies in our health economy has increasingly achieved positive and sustainable results (Uzomah, 2021: 64). Talking about the latest eugenic therapy, it should be placed on record that *MIT Technology Review* (an online news media) reported on November 25th, 2018 the birth of genetically modified human baby twin girls. This feat was achieved by a Chinese geneticist named Jiankui from the Chinese Southern University of Science and Technology in Shenzhen, China. Jiankui employed a gene-editing tool called Clustered Regularly Interspaced Short Palindromic Repeats (CRISPER) associated protein 9 (CRISPER-Cas9) to modify two embryos by eliminating a gene called (C-C chemokine receptor type 5) CCRS in view of making the offspring resistant to the human immunodeficiency virus (HIV), cholera and smallpox (Chin, 2019: 38). According to this online news report, the fundamental goal of this geneticist, was the prevention of the ability to contact HIV, the virus that causes AIDS (Chin, 2019: 38). "With the CRISPR-Cas9 device, he has edited the genetic structure of twins in the embryonic state, so they are, it is claimed unable to contract HIV, thereby protecting the twins' health, creating an opportunity for the twins to pass on their edited genes to their offspring, and potentially making more humans immune to the virus". (Chin, 2019: 53). This sort of genetic tinkering is known as germ line cell modifications; because it is a tinkering done on germ line cells, all generations from that loin would be perpetually inoculated from AIDS. "Germ-line cells are the egg and the sperm cells and they contain 23 unpaired chromosomes and provide genetic information to offspring, as well as to the future generations descended from those offspring" (Uzomah, 2021: 97). Consequently, as far as the subsequent generations of this genetically enhanced twin are concerned, the possibility of contacting or contracting AIDS is non existent forever.

Relishing the magnificence of this ontological therapeutic, Uzomah (2021) aptly remarked that "it is an enhancement of the natural order and an express manifestation of the hyper-quality and transcendence of the human mind" (Uzomah, 2021: 111). The philosophical significance of this millstone is that, it is the most sustainable method of not just preventing mother-child transmission of AIDS, rather, it is also the most sustainable means of totally eradicating the scourge of AIDS with time. Instead of wasting billions of dollars on retroviral drugs, humans should invest more on this ontological approach which targets prevention of AIDS offered by this emerging technology.

3. Methodology

The research, being a philosophical investigation, adopts the expository analytical method. The researcher employs the expository analytical method to critically analyse and expound gene technology known as eugenics and genomics to lay bare facts involved in the concept, nature and procedures of gene technology. Generally, the work is analytic in nature. The researcher blends the analytic tradition with the traditionalist approach. The analysis is done in the tradition of positivism and analytic philosophy as espoused in the Vienna circle (1925). According to this movement, the task of philosophy is the logical clarification and analysis of concepts, assumptions, theories of (scientific nature), etc. to make them meaningfully assertive. This explains why the researcher goes a little deep into analysing biomedical concepts. This observation becomes expedient to preempt (envisage) the critique of scholars and readers who are inclined to the traditionalist perspective of philosophy and philosophising and may judge the work as apparently more scientific than philosophical. The task of the philosopher in his objective pursuit of truth is the constructive questioning of all and every object of his studies for the integral advancement of the course of humanity. This, the researcher has understood from his years of intensive studies and research in philosophy. Every human intellectual endeavours and discipline is and related to philosophy. Hence, philosophy has the competence and prerogative to critically engage the truth of their knowledge claim.

This research, being a philosophical investigation is a qualitative research; as such ideas data for this study were retrieved from primary and secondary sources. The primary sources include published works on ethics, bioethics and medical ethics; *Kpim of Morality, Ethics: General, Specialized and Professional,* by Pantaleon Iroegbu and Anthony Echekwube (eds), *A Series in Faith and Ethics*, by Kruschwitz and Robert (ed); and *The Naturalness In/Of The Artificiality of Cloning*", by Maduawuchi M. Uzomah. The secondary sources include published works on Biotechnology, various international conventions and treaties on bioethics, journals, papers or articles, etc. From these works, critical analysis and extensive interpretations of the thoughts and ideas from relevant scholars will be provided in order to validate the thesis in this research.

3.1. Result and discussion

The foregoing philosophical expository analysis reveals that in the last couple of decade there has been a renewed, increasing and sustained interest in bio-medicine, especially in stem cells and embryology. One of the most remarkable areas contemporary science and technology has made an unprecedented, awesome and stunning progress is the area of bioscience and specifically bio-medical sciences (Genetics and Genomics). Modern scientists are strongly convinced that the human genes (in philosophical terms) are the basic substratum of the human nature, hence, research in human genome holds the master key towards unclocking the incredible secret of human life, health and disease. The marvelous prospect of this ontological approach in medicine that makes it relishing and fascinating is such that apart from been curative, it is equally preventive and regenerative.

It is obvious that given the credible antecedence of scientific research and predictions, if the recesses of the human genes are penetrated and concealed data retrieved, the future of mankind promises to be relishing. Diseases, aging, and most probably death would be overcome by mankind. Needless to state the self-evident fact that aging, disease, congenital infirmities and death frustrate every attempt man makes to attain the supreme good of life. Consequently, gene technology (though not yet perfected) is a specific, strategic and ontological approach towards alleviating untold human pains and sufferings caused by disease, aging and death. In this instance, one cannot but relish the prestigious prediction of Chinese scientists that by 2045 death would become optional. This of course is the future of humanity in the bosom of gene technology. It should be reiterated (as demonstrated by this study)that central to gene technology is eugenics which has cloning as its principal object; although at present, no human cloning has been officially carried out, however, the latest cloning of primates (monkeys) in early 2018 makes it absolutely and technically certain that humans also can be cloned.

In gene technologies, medical professionals are targeting Huxley's *Brave New World* in the medical field. They hope to achieve the production of the perfect human person imbued by three qualities: perfect health, superb intelligence and paragon beauty. They practically dreamof creating extraordinarily developed human beings. They want to do better what God has started. Some say, they want to help God perfect creation. Did the Christian Scriptures not admonished, "be ye perfect as your heavenly Father is perfect? (Iroegbu, 2005:

591). Implicit in Iroegbu's allusion is the fact that God or nature has created imperfect human beings, therefore, the project of gene technologies in eugenics is to perfect this creatures of God possibly after the acclaimed perfect qualities of the same God. After all, religion indoctrinates its adherents that God the object of their reverence and total submission is infinitely perfect in all qualities and ramification. If this is the case then, can any reasonable man with sound mind and good conscience fault or discourage this project towards genetically correcting the correctable imperfections of the human person? Moreover, proponents of genetic engineering (eugenics) like Enemuo (2018), view it as a "new turn in scientific approach towards correcting and righting the wrong of privation of good embedded in the nature of that particular human being, or an evil caused by other non-organic factors" (24). Of what good may the human creative prowess be if it cannot do anything humanly (technologically) possible to obliterate privations that denigrate human dignity and integrity? If man cannot critically and innovatively engage his distinctive characteristic (reason/rationality) towards transforming the frail condition of human nature for a meaningful living, then, he is not better than other species in the animal kingdom. As far as contemporary man is concerned, the best way to eradicate human frailty is to appeal to eugenics in genetic engineering. The transhumanists who has taken eugenic philosophy to a logical extension adore technology as the only pragmatic apparatus to transfigure human nature to an improved condition.

4. Conclusion

This research has been a philosophico-scientific attempt towards foreshadowing the future of mankind in view of the astonishing and relishing mega-revolution of biomedicine. The specific focus of the study has been unveiling the eugenic import of genetics and genomics. The analysis reveals that genetics and eugenics are motivated by the grand assumption that human nature is a work in progress, therefore, understating the nature and workings of human genes considered as the Black Box of human life, health and diseases holds the key to the future of medicine. Based on this grand assumption it is ambitiously adduced that if the recesses of the human genes are penetrated and the concealed data retrieved, the future of mankind promises to be relishing. Hence, genetic enhancement whose teleology is to reproduce improved and enhanced human species that would be beyond the known human imperfect condition is only possible when humans attain sufficient knowledge of the human genes.

In conclusion, based on the findings of this study and on the strength of the antecedences of science and technology, it is apt to submit that the future of mankind in the providence of biomedicine may just be the kingdom of transhumans; the kingdom of exceptional humans and the ideal world of superior humans who are perfect, stable and well fitted to enjoy the fullness of life. Humans in the foreshadowed world of biomedicine may just be ideal humans in an ideal world. The future of mankind in the bosom of biomedicine may indeed be an epoch where improved humans would enjoy perfect health, superb intelligence and paragon beauty. We envisage an era of improved life devoid of ontological and genetic defects that have made human life audacious, odious and unbearable. The future of mankind in the hands of bioscience is the paradise of excellent and transcendent people.

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