INTERNATIONAL HUMAN RIGHTS AND THE BOURGEONING INTERFACE BETWEEN TRANS-HUMANISM AND ALLIED SCIENCES: QUANDARIES, PARALLELS AND PROSPECTS*

Abstract
This article is premised on the ideological underpinnings of trans- humanism, biotechnology, artificial intelligence, and their burgeoning intersection with international human rights norms. It adopts the doctrinal research methodology. The article finds that the shared commonalities between trans-humanism and human rights is predicated on the imperative of preserving human life. It indicates that there are nuances and marked discrepancies between trans-humanism alongside allied sciences and human rights. Although artificial intelligence has enhanced human capabilities, it has posed a serious threat to human employment. Trans-humanism is based on the notion that scientific innovations would eventually enable humans live indefinitely. Conversely, some religious tenets hold the unflinching view that the prospects of human immortality is wholly subject to divine providence rather than human ingenuity. The article recommends the establishment of legal mechanisms vested with the responsibility of exploring ways humans can continue to earn a living amidst the deployment of robotics in the contemporary work environment. It espouses the idea of freedom of choice over how individuals enable their lives taking cognizance of human rights jurisprudence circumscribed by groundbreaking developments in science and its impact on humanity in the 21st century.

Keywords: Trans-humanism, Artificial intelligence, Biotechnology, Post humanism, International human rights

1. Introduction

Over the years, mankind has sought relentlessly for the meaning and purpose of life often through the epistemology of science, religion and philosophy. Humanity is frequently confronted with life threatening situations such as earthquakes, storms, epidemics, diseases, accidents, armed conflicts, riots, aging, homicide, suicide, and other challenges. These constraints evidently portray the reality of human limitations. The transient nature of human life is poignantly depicted by William Shakespeare as follows: 'Life's but a walking shadow, a poor player that struts frets his hour upon the stage and then is heard no more. It is a tale told by an idiot full of sound and fury, signifying nothing.[1] The quest for a prolonged and extended human life cycle as postulated by the pivotal theme of trans-humanism is analogous to the genre entitled 'She,' who must be obeyed, written by H. Rider Haggard.[2] In that book, she, also called Ayesha, a queen, possessed the power of immortality. She had other supernatural abilities such as power to cure diseases, read human thoughts, and possessed in depth knowledge of science. Ayesha, however, lacked the ability to foresee future events. Ayesha disclosed that she had lived for over two million years whilst expecting the reincarnation of her deceased lover called Kallicrates. She later came across a handsome man called Leo and immediately fell in love with him. In the climax of the epic, Ayesha invited Leo to the 'Pillar of fire' (a furnace of flames) and instructed Leo to bathe with her in the fire so that he could also become immortal and reigns with her forever. To encourage Leo, she stepped into fire but to Leo's astonishment, she reverted to her actual age, her body shrank, and she got burned completely in the fire. Before her death she entreated her lover, Leo, 'forget me not. I shall come again!'[3] In reality, the desire for the protection and promotion of the sanctity of human life has gravitated for ages across various disciplines such as science, humanities, and religion. Against this backdrop, mankind has tenaciously explored and continues to seek for ways of improving or augmenting human limitations particularly with the aid of science and technology. This has given impetus to the emergence of cutting-edge fields such as transhumanism, biotechnology, eugenics, artificial intelligence, genetic engineering, robotics, nanotechnology, post humanism, and the like. This article seeks to examine the dynamics of these unique fields of knowledge, the attendant quandaries, and their interface as well as resonance with relevant international human rights norms and values.

2. An Overview of Trans-humanism, Cryogenics, and Post-humanism

Transhumanism is a school of thought that holds the view that mankind can transform beyond its current mental and physical limitations especially with the assistance of science and technology.[4] Max More defines

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[1] William Shakespeare, Macbeth (Act 5, Scene 5) cited in Endnotes, 'How do I Analyze this quote from Macbeth' <www.enotes.com/homework-help/macbeth-life-but-walking-shadow-poor-player-that-460754> accessed on 7 January 2018.

[2] H. Rider Haggard, She (1886) <www.gutenberg.org/files/3155/3155-h.htm> accessed on 7 January 2018.

[3] H. Rider Haggard (n.2).

[4] English Oxford Living Dictionary, 'Transhumanism' <http://en.oxforddictionaries.com/definition/transhumanism > accessed on 8 January 2018. See also Ikenga K.E.Oraegbunam, 'Humanism and the Law: Towards African Renaissance', *Ogirisi: A New Journal of African Studies*, Vol. 9, 2012, pp.245-268. Also available at http://dx.doi.org/10.4314/og.v9i1.13. Available also at www.ajol.info/index.php/og/article/download/84688/74677.

transhumanism as 'a class of philosophies of life that seek the continuation and acceleration of the evolution of intelligent life beyond its currently human form and human limitations by means of science and technology.'[5] Trans-humanists opine that just as humans use knowledge to improve the human condition and promote development in the society, a similar approach can be adopted to further advance the capabilities of the human body.[6] Thus transhumanism essentially seeks the improvement of the human mind and body through the use of cutting edge technologies and scientific know how such as genetic engineering, nanotechnology, cryogenics, cryonics, artificial intelligence, robotics, diet, exercise, and nutrition, among others. Non-governmental organizations (NGOs) and associations have been formed to promote and propagate the principles of transhumanism. A notable NGO involved in the promotion of transhumanism is Humanityplus. It is basically committed to the advancement of humanity. Their activities include the utilization of unique insights in the establishment of emerging and speculative technologies and science that focuses on the wellbeing and physiological transformation of mankind at the moment and in the foreseeable future. The NGO has unanimously adopted a body of principles regarded as Transhumanist Declaration.[7] The Declaration is enunciated as follows:[8]

1. Humanity stands to be profoundly affected by science and technology in the future. We envision the possibility of broadening human potential by overcoming aging, cognitive shortcomings, involuntary suffering, and our confinement to planet earth.
2. We believe that humanity's potential is still mostly unrealized. There are possible scenarios that lead to wonderful and exceedingly worthwhile enhanced human conditions.
3. We recognize that humanity faces serious risks, especially from the misuse of new technologies. There are possible realistic scenarios that lead to the loss of most, or even all, of what we hold valuable. Some of these scenarios are drastic, others are subtle. Although all progress is change, not all change is progress.
4. Research effort needs to be invested into understanding these prospects. We need to carefully deliberate how best to reduce risks and expedite beneficial applications. We also need forums where people can constructively discuss what should be done and a social order where possible decisions can be implemented.
5. Reduction of existential risks and development of means of preservation of life and health, the alleviation of grave suffering, and the improvement of human foresight and wisdom should be pursued as urgent priorities, and heavily funded.
6. Policy making ought to be guided by responsible and inclusive moral vision, taking seriously both opportunities and risks, respecting autonomy and individual rights, and showing solidarity with and concern for the interests and dignity of all people around the globe. We also consider our moral responsibilities towards generations that will exist in the future.
7. We advocate the wellbeing of all sentience, including humans, non-human animals, and any future artificial intellects, modified life forms, or other intelligences to which technological and scientific advance may give rise.
8. We favour allowing individuals wide personal choice over how they enable their lives. This includes use of techniques that may be developed to assist memory, concentration, and mental energy, life extension therapies; reproductive choice technologies, cryonic procedures, and many other possible human modification and enhancement technologies.

Trahumanism also focuses on broadening the environment for creating and developing state of art technologies so as to galvanize the physical, psychological, and cognitive capabilities of mankind. Transhumanism draws inspiration from many concepts of humanism such as the relentless dedication to human achievement and progress. Transhumanists have postulated that future human beings, through the application of scientific innovations, would be able to exercise effective control over their physical and mental well-being and overcome

[5] Max Moore, 'Transhumanism: Toward a Futurist Philosophy' (1990) cited in Christopher Barnatt, 'A Guide to the Future' <www.explainingthefuture.com/transhumanism.htm> accessed on 8 January 2018.

[6] 'What is Transhumanism?<'http://whatistranshumanism.org> accessed on 8 January 2018.

[7] Humanityplus, 'About Humanityplus' <http://www.humanityplus.org > accessed on 8 January 2018.

[8] The Transhumanist Declaration was originally conceived in 1998 by a group of persons from different countries around the world. Over the years it has been modified by several authors and organizations. The current declaration was adopted by the Board members of Humanityplus in March 2009 as cited in Humanityplus 'Transhumanist Declaration'<http://humanityplus.org/philosophy/transhumanist-declaration/> accessed on 8 January 2018. Although the declaration does not have the force of law its rising awareness amongst scientists, academics, and politicians has far reaching implications in shaping future policies and legislations and executive actions around the world.

daunting biological as well as medical challenges such as aging, disease,[9] and possibly the phenomenon of death. Trashumanism also connotes:[10]

> [S]pace colonization and the possibility of creating super intelligent machines, along with other potential developments that could profoundly alter the human condition. The ambit is not limited to gadgets and medicine, but encompasses also economic, social, institutional designs, cultural development, and psychological skills and techniques.

Furthermore, the Transhumanist Bill,[11]which was propounded by Zoltan Istvan, a United States Presidential aspirant, in 2015, exemplifies some transhumanist ideologies. The Bill that was publicly presented during a campaign outside the United States Capitol aims to lobby into law cyborg (a human with electronic or bionic body part) and anti-ageing civil rights. In a momentous espousal of institutional support for transhumanism, Zoltan Istvan enthused: 'I believe if the US government would dedicate one trillion dollars to life extension, longevity and anti-ageing industries, we would likely soon conquer death as a species.'[12] The Bill of Rights is restated as follows:[13]

1. Human beings, sentient artificial intelligences, cyborgs and other advanced sapient life forms are entitled to universal rights of ending involuntary suffering, making personhood improvements, and achieving an indefinite lifespan via science and technology.[14]
2. Under penalty law, no cultural, ethnic or religious perspectives influencing government policy can impede life extension science, the health of the public, or the possible maximum amount of life hours citizens possess.[15]
3. Human beings, sentient artificial intelligences, cyborgs and other advanced sapient life forms agree to uphold morphological freedom-the right to do with one's physical attributes or intelligence (dead, alive conscious, or unconscious) whatever one wants so long as it does not hurt anyone else.[16]
4. Human beings, sentient artificial intelligences, cyborgs and other advanced life forms will take every reasonable precaution to prevent existential risk, including those of rogue artificial intelligence, asteroids, and plagues, weapons of mass destruction, bioterrorism, war, and global warming, among others.[17]
5. All nations and their governments will take all reasonable measures to embrace and fund space travel, not only for the spirit of adventure and to gain knowledge by exploring the universe, but as an ultimate safeguard to its citizens and transhumanity should planet earth become uninhabitable or be destroyed.[18]
6. Involuntary ageing shall be classified as a disease. All nations and their governments will actively seek to dramatically extend the lives and improve the health of its citizens by offering them scientific and medical technologies to overcome involuntary ageing.[19]

Transhuman technology, such as cognitive enhancers, aides the effective functioning of the human mind and assists persons with neurological diseases and cognitive or mental disabilities. Transhuman technology can also facilitate the development of safer medication and methods for treating diseases like Alzheimer's (a disease which leads to loss of mental function), promote better memories, emotional well- being, smarter humans with stamina, elimination of the degenerative process of aging, and longer life.[20] Transhumanism has, however, been criticized.

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[9]Rajat Chakraborty, 'How Transhumanism Works' 4 August, 2017 <http://thetranshumanist.news/2017/04/08/how.transhumanism-works/?gclid=EA/a/Qobchm1h43Qwsuk2Aiv5pxtch1512Q32EAAYASAAEgjmcpD_BWE> accessed on 9 January 2018.

[10] Nick Bostrom, 'Human Genetic Enhancements: A Transhumanist Perspective' (2003) (37)(4) *Journal of Value Inquiry*. 493-5o6< http://nickbostrom.com/ethics/genetic.html >accessed on 11 January 2018.

[11] The Transhumanist Bill 2015, being a bill proposed by Zoltan Istvan, a United States Presidential aspirant, who campaigned under the auspices of the Transhumanist Party. The transhumanist Bill is, for all practical purposes a legislative proposal and therefore does not have the force of law. However, in the event it is passed by the US legislature and assented to by the executive arm of government, it would have the force of law. It would also have far reaching implications going by the axiomatic influence of the United States in the international community.

[12] Zoltan Istavan, 'Zoltan Istvan: Immortality Bus Delivers Transhumanist Bill of Rights to US Capitol' 21 December 2015 < www.ibtimes.co.uk> accessed on 10 February 2018.

[13] The Transhumans Bill 2015.

[14] ibid art 1.

[15] ibid art 2.

[16] ibid art 3.

[17] ibid art 4.

[18] ibid art 5

[19] ibid art 6.

[20]Alan Jiang, 'Ethical Implications of Transhumanism: The Next Step in Human Evolution' 7 August 2015 <http://www.scholarblogs.emory.edu/psych323mcgee/2015/08/07/ethical-implications-of-transhumanism-the-next-step-in-human-evolution/> accessed 10 February 2018.

According to Alan Jiang, one of the main contentions against neurological enhancements and other methodologies of transhumanism is the stance that human augmentation is not natural and therefore contrary to nature. He, however, contends that, the arbitrary connotation of 'human nature' is inherently flawed in that it does not address the most essential human want, which is the desire for self- progress or self-improvement. He also avers that the notion that the quest to 'improve oneself is not naturally occurring in humans is flawed in its logic as humans have been striving to improve themselves since their inception through the process of language and technology.'[21] He further maintains that the 'age of information with the advent of internet is a prime example of human augmentation.'[22] The flip side of transhumanism may be gleaned from the assertion that 'the original purpose of medicine is to heal the sick, not turn healthy people into gods.'[23]Critics of transhumanism have also argued that the use of human augmentation would breed inequality between those who utilize transhuman technologies and those who refrain from it.[24] This would further spur class tension as the affluent who can afford the high cost of human augmentation would be more competitive and thus rendering the poor, who cannot afford the expenses of augmentation, vulnerable in a society where competition, efficiency,[25] and excellence is the norm. Thus, some of the intellectuals on the basis of ethical, moral, religious, and other grounds, have averred that the physiological conditions of humans and their life cycle are naturally created and should not be tempered with. Others have a nuanced stand point that may be placed in between the two extremes[26]. In other words, this implies the middle ground between transhumanism in all its ramifications and possibilities, on the one hand, and ethical, moral or religious views vehemently opposed to any form of augmentation of the human intellect or physiology, on the other hand. The aspirations and goals of transhumanists can be enhanced by cryogenics, cryonics, and post humanism. Cryogenics is a scientific procedure that is concerned with the generation and effects of very low temperatures including temperatures below freezing point of water. The process utilizes the compression, expansion, and cooling of air. Cryogenics can be applied in the preservation of the human blood, tissue, organs, and embryos. Portions of the human body may be free zed to eliminate damaged or dysfunctional body tissue through a medical procedure referred as cryosurgery. It is used to treat diseases in human organs such as cancers. Scientists are also studying the possibility of freezing the entire human body after death with the aim of restoring life later on, when the know how has been developed, through a process known as cryonics.[27] The proponents of cryonics anticipate that if deceased patients can be preserved in a state sufficiently intact, future technological and medical innovations may be applied to 'repair the freezing damage and reverse the original cause of de-animation,'[28] thereby resulting in the revival and reanimation of the erstwhile deceased humans.

Post humanism is a school of thought that seeks to explore the possibility of developing human capabilities and existence beyond the present state through the utility of technology and science.[29] This involves prospecting ways of transforming present humans to future beings whose potentialities and capacities transcend those of the former. Post humanists hope to augment the biological human with higher intellectual and physiological capacity including the ability to overcome deteriorating factors such as disease and aging as well as realizing the objective of enabling humans live continuously. In some instances, post humanism may include the process of 'uploading' (or downloading) the memory of a biological being to a computer or artificial device.[30] Such post humans may reside in robots endowed with sentient capabilities. This would certainly have far reaching implications.

3. Perspectives on Artificial Intelligence and Robotics

Artificial intelligence is an aspect of computer science that deals with the creation of intelligent machines that function like human beings. Such machines can carry out complex tasks such as planning, learning, problem solving, speech recognition, perception, ability to move and maneuver objects, and reasoning.[31] Artificial intelligence encompasses a plethora of cognitive activities carried out by automated machines. The activities

[21] Alan Jiang (n.20).
[22] Alan Jiang (n. 20).
[23] Francis Fukuyama, Our Post Human Future: Consequences of the Biotechnology Revolution (Farrar, Straus and Giroux 2002) cited in A Jiang (n11).
[24] A Jiang (n11).
[25] A Jiang (n11).
[26] C Barnatt (n5).
[27] Ray Radebaugh, 'About Cryogenics' The Macmillan Encyclopedia of Chemistry, New york, 2002, cited in National Institute of Standards and Technology 'About Cryogenics'<http://cryogenics.nist.gov/Aboutcryogenics/aboutcryogenics.htm> accessed on 10 January 2018.
[28] 'What is Transhumanism?'< http://whatistranshumanism.org> accessed on 10 January 2018.
[29] 'Post Humanism'< www.posthumanism.com > accessed on 10 January 2018.
[30] 'What is Transhumanism?'(n6).
[31] Technopedia, 'Artificial Intelligence'<www.technopedia.com/definition/190/artificia-l intelligence-ai> accessed 11 January 2018.

include, playing games, providing labour and social services, driving vehicles, diagnosing diseases, among other tasks requiring intelligence.[32] In the same vein, robots are endowed with artificial intelligence and sentient capabilities. Robots refer to 'physical agents that perform tasks by manipulating the physical world. To do so, they are equipped with effectors such as legs, wheels, joints, and grippers. Effectors have a single purpose: to assert physical forces on the environment.'[33] Essentially, robotics is 'a branch of engineering that deals with design, construction, manufacture, and operation of robots.'[34] The significance of artificial intelligence is succinctly stated thus: 'Everything we love about civilization is a product of intelligence, so amplifying our human intelligence with artificial intelligence has the potential of helping civilization flourish like never before as long as we manage to keep technology beneficial.'[35] Artificial intelligence enables humans to reduce or eliminate errors and enhance the ability of attaining accuracy with a higher level of precision. It can be utilized in geological and space exploration beyond human limitations. Artificial intelligence assists people to carry out complex activities such as mathematics and statistical analysis, detect criminal activity, and multiple tasks. Robots, unlike humans, do not require frequent breaks or vacations. They are programmed to function for long periods without getting fatigued or burned out.[36] Robots, in principle, do not go on sick leave or have personal misunderstanding or arguments with employers or employees as tendentious amongst humans. They are wont to being controlled or manipulated in accordance with the whims and caprices of its users.

Conversely, artificial intelligence has its drawbacks. For instance, artificial intelligence may be designed to engage in acts capable of causing mass casualties such as automatic weapons operated by artificial intelligence mechanisms in situations of armed conflict. This can result in untold destruction if abused or used negligently.[37] The procurement of robots or devices with artificial intelligence is often expensive and requires enormous amount of funds to maintain or repair. Another pitfall of artificial intelligence is that, unlike human beings, it cannot perform better with experience as it is designed to carry out specific tasks. They often lack the capacity and forte for original creativity or imagination. Furthermore, the deployment of artificial intelligence in commerce, administration and industries, has the proclivity to result in compounding the challenge of unemployment of humans in a competitive labour market.[38] It is therefore necessary for governments, non-governmental organizations, and private enterprises, to explore ways of ensuring that humans continue to earn a living by establishing alternative jobs in the event that robots and other machines with sentient capabilities take over existing jobs. It is contended that where they is conflict between making provision for jobs for humans and for robots, priority should be given to the former so as not to undermine the right of humans to employment. This is premised on the ground that technology is made for the benefit of man not man for technology. This assertion is without prejudice to the attendant advantages of utilizing artificial intelligence in contemporary society.[39]

4. Biotechnology: Synthetic Biology, Nanotechnology, Eugenics and Genetic Enhancement in Context

Biotechnology involves the utilization of biological procedures, systems, or organisms to manufacture products aimed at improving the quality of human life.[40] It is a versatile field of science. The scope of biotechnology is expatiated as follows:[41]

> Biotechnology is a highly interdisciplinary field that combines biological sciences with engineering technology to manipulate living organisms and biological systems to produce products that advances healthcare, medicine, agriculture, food, pharmaceuticals and environmental control. Biotechnology can be classified into broad categories: research and development in biological sciences and industrial processes. The biological science aspect deals with research and development in areas such as microbiology, cell biology, genetics, molecular biology etc., for understanding the occurrence and treatment of diseases, development of

[32] SJ Russell and Peter Nurvig, *Artificial Intelligence: A Modern Approach (3rd edn , Pearson 2010)1.*

[33] S J Russell and Peter Nurvig (n.32) 971

[34] Margaret Rouse, 'Robotics' <http://whatis.techtarget.com/definition/robotics > accessed on 11 January 2018.

[35] Max Tegmark cited in Future of Life Institute, 'Benefits and Risks of Artificial Intelligence' <http://futureoflife.org/background/benefits-risks-of-artificial-intelligence/ > accessed on 11 January 2018.

[36]Krishna Reddy, 'Advantages and Disadvantages of Artificial Intelligence'<http://content.wisestep.com/advantages.disadvantages-artificial-intelligence/> accessed on 11 January 2018.

[37] Future of Life Institute, 'Benefits and Risks of Artificial Intelligence' <https://futureoflife.org/background/benefits-risks-of-artificial-intelligence/cn-reloaded=1> accessed on 29 January 2019.

[38] Krishna Reddy (n. 36).

[39] See Ikenga K. E. Oraegbunam & Uguru Eme Uguru, 'Artificial Intelligence Entities and Criminal Liability: A Nigerian Jurisprudential Diagnosis', *African Journal of Criminal Law and Jurisprudence* 3(2018), 1-14.

[40] Margaret Rouse, 'Biotechnology' <http://www.whatis.techtarget.com/definition/biotechnology> accessed on 8 February 2018.

[41] Peshaa, 'Scope of Biotechnology in India and Abroad' <www.peshaa.com/upcoming-fields/scope-of-biotechnology-in-india.html > accessed on 8 February 2018.

> agriculture, food production, protection of the environment and many more. Most of the research and development work in biological sciences is carried out in the laboratory. The industrial processes aspect deals with the production of drugs, vaccines, biofuels and pharmaceuticals on an industrial scale using biochemical processes and techniques.

The product of biotechnology includes medicines, medical equipment, biomaterials, and diagnostics, among others.[42]Some of the notable innovations that have emanated from biotechnology and allied sciences are: genomic sequencing technology (which involves ascertaining the order of deoxyribonucleic acid (DNA-the carrier of genetic information) bases that make up an organism's genome or the complete set of genes in an organism); natural alternatives to pesticides, production of biofuels and the developments in stem cell technology.[43] Biotechnology includes genetic engineering, but it is broader in scope. The field of biotechnology encompasses any process that utilizes biochemistry, molecular biology or cell biology for creating a product.[44] Synthetic biology is the design and construction of artificial biological parts, organisms and devices as well as the redesign of existing natural biological organisms.[45] Whilst nanotechnology is a science and engineering at minute scale (often referred to as Nano scale), which ranges from about one to hundred nanometers. It involves a study and application of extremely small things or infinitesimal objects which can only be applied across various scientific fields.[46] Eugenics is a philosophy and practice. Its primary goal is to improve the genetic composition of humans. In retrospect, proponents of eugenics postulated selective breeding to realize these objectives. In recent times, owing to technological advancement, eugenics involves the alteration of the genetic composition of an individual.[47] Eugenics essentially supports the reproduction of persons with desirable physiological and intellectual traits whilst de-emphasizing the reproduction of persons less endowed with physiological and intellectual characteristics.[48] Eugenics is for practical purposes carried out through genetic engineering. Genetic engineering is a system of technologies that directly alters the genes of organisms by manipulating the genetic make- up of the cells through the addition of new traits to modify them.[49]

Proponents of eugenics or genetic engineering have pointed out potential benefits associated with eugenics. For instance, through eugenics, parents have the vantage point of knowing the genetic make-up (DNA) of their unborn child. This would enable them make necessary preparation for their up-bringing and medical needs. Genetic engineering can be used to prevent or eliminate hereditary conditions such as deformities and mental problems. Parents desirous of giving birth to either male or female children have the opportunity to do so with precision. It also enables parents to alter negative behavioral traits in children for more acceptable behavioral characteristics.[50] The flip side of genetic engineering is that it is expensive. It also eliminates human diversity as it tends to foster a unified human race with the same or similar human traits that scientist consider as being endowed with superior traits. Such modified human attributes would engender discrimination against natural born children based on the fact that such children would be considered inferior to genetic enhanced ones with better physical appearance and more intelligent minds.[51] Moreover, it has been observed that Adolf Hitler, influenced by the ideals of eugenics, presided over the extermination of thousands of persons with disabilities and sterilized several individuals deemed

[42] Amgen, 'What is Biotechnology?' <www.biotechnology.amgen.com/biotechnology-explained.html > accessed on 8 February 2018.
[43] Peshaa (n 41).
[44] Eric Vene, 'What is the Difference between a Degree in Biotechnology, Biomedical, and Biomedical Engineering?' <www.quora.com/what-is-the-difference-between-a-degree-in-biotechnology-biomedical-biomedical-engineering-molecular-biology-cellular-biology-and-genetic-engineering> accessed on 7 February 2018.
[45] Synthetic Biology Project, 'What is Synthetic Biology'< www.synbioproject.org/01/definition/> accessed on 12 January 2018.
[46] United States National Nanotechnology Initiative, 'What is Nanotechnology?' <www.nano.gov/nanotecg-101/what/definition > accessed on 12 January 2018.
[47] Genetic Generation, 'Introduction to Eugenics'< http://knowgenetics.org/history-of-eugenics/> accessed on 11 January 2018.
[48] Personal Genetics Education Project, 'What is Eugenics?'< http://pged.org/history-eugenics-and-genetics/> accessed on 11 January 2018.
[49] Conservative Energy Future, 'What is Genetic Engineering?' <www.conserve-energy-future.com/what-is-genetic-engineering.php> accessed on 12 January 2018.
[50] Connect US, '10 Fundamental Pros and Cons of Eugenics'< http://connectusfund.rg/10-fundamental-pros-and-cons-of-eugenics >accessed on 12 January 2018. See also Oluwatomi A. Ajayi & Ikenga K.E. Oraegbunam, 'Justifying Genetics as a Possible Legal Defence to Criminal Responsibility in Nigeria', *Nnamdi Azikiwe University Journal of International Law and Jurisprudence,* Vol. 6, 2015, pp. 1-16. Available at http://www.ajol.info/index.php/naujilj/article/view/136254.
[51] Connect US (n.50).

to be medically unfit or inferior.[52] Eugenics therefore has the tendency of accentuating discrimination against persons based on social status, circumstances of birth, physical or mental traits, if practiced without regulations preventing discrimination which is a fundamental aspect of human rights law.[53]

In the light of the foregoing, it is expedient to meticulously evaluate the resonance of scientific innovations and procedures such as transhumanism, artificial intelligence, biotechnology, eugenics, and the orthodoxy of human rights norms. Are these scientific philosophies and innovation congruent with international human rights norms and values? Or are they at cross purposes with each other? It is contended that the interface of science and technology with human existence has legal and ethical implications.

5. Contextualizing Human Rights Norms, Transhumanism, and Allied Matters

This subhead examines the burgeoning intersection between international human rights norms and cutting-edge developments in science such as transhumanism, artificial intelligence, post humanism, biotechnology and eugenics. It discusses the emerging issues regarding the interface between transhumanism and allied matters and fundamental human rights principles. It specifically highlights the parallels and discrepancies between these critical fields of knowledge and their prescriptive implication in the context of human rights.

Human rights basically refer to 'power, privilege or immunity guaranteed under the constitution, statute or judicial decisions or claimed as a result of long usage.'[54] Human rights connote those rights which are held by groups or individuals within specific groups.[55]International human rights law is defined as 'the law that deals with the protection of individual and groups against violation by governments of their internationally guaranteed rights, and with the promotion of these rights.'[56] For every human right, there is a right holder, the party who has a right and is therefore entitled to claim it. Every human right has an object. For instance, the object of freedom of movement is free movement or absence of state restraint on movement. Human right is also characterized by the party or parties responsible for taking action regarding making the object of the right available to the right holder. States are generally responsible for most human rights protection. Where a state fails to act in protecting a particular human right, other states or international institutions or individuals may be required to take action[57] often by filing suits in court or quasi-judicial bodies. Most human rights have exceptions. For example, the right to personal liberty does not prevent the state from derogating it in the execution of a sentence of a court or other circumstances permitted by law.[58] There are different perspectives in respect of the application of human rights. Notwithstanding the different approaches regarding the extent of application of human rights norms, virtually all societies and cultures acknowledge that most human rights should be protected within the ambit of the law.[59]It is, however, imperative to appraise the extent of application of human rights norms taking cognizance of the unprecedented developments in science and its impact on humanity.

The right to life is recognized and protected under international human rights law. Accordingly, article 6 of the International Covenant on Civil and Political Rights (ICCPR)[60]provides that 'every human being has the inherent right to life. This right shall be protected by law. No one shall be arbitrarily deprived of his life'.[61] Thus in the case of *Guerrero v Colombia*,[62] the Human Rights Committee declared that the right to life is the supreme right of a human being. Therefore, the deprivation of life by the authorities of a state is a matter of utmost gravity. The requirement that the right to life shall be protected by law and that no one shall be arbitrarily deprived of his life implies that the law must strictly control and limit the circumstances in which a person may be deprived of his

[52] Personal Genetics Education Project, 'What is Eugenics? <' https://pged.org/history-eugenics-and-genetics/> accessed on 12 January 2018.

[53] See Ikenga K.E. Oraegbunam 'Jurisprudence of Genetic Engineering in Nigeria: Prospects and Challenges for Human Dignity in the Light of the National Health Act 2014', *International Journal of Business and Law Research* 3(4): 9-25, Oct.-Dec., 2015. http://seahipaj.org/journals-ci/oct-dec 2015/IJBLR/abstract/IJBLR%206.html.

[54] HC Black, Black's Law Dictionary (6th edn West Publishing Company, 1990)1362.

[55] Malcolm N. Shaw, *International Law* (5th edn The Press Syndicate of the University of Cambridge, 2003) 262

[56]MT Ladan, 'International Human Rights Law: Development, scope and enforcement monitoring' in a Text for Human Rights teaching in Schools (A constitutional Rights project Publications, n.d) 61

[57] JW. Nickel and DA. Reidy 'Philosophy' in Daniel Moeckli and Sangeeta Shah and Sandesh Sivakumaran (eds) *International Human Rights Law* (Oxford University Press, 2010) 41.

[58] JW Nickel and DA Reidy (n.57) 42

[59]MT Ladan (n 56) 71.

[60] (adopted at New york 16 December 1966, entered into force on 23 March 1976) 999 UNTS 171.

[61] ICCPR 1966, art 6(1).

[62] Human Rights Committee (1972) 1 Selected Decisions HRC 112.

life by state authorities. This view is congruent with the transhumanist perspective about the need to preserve human life as unequivocally articulated in the Transhumanist Declaration.[63]

There are, however, marked discrepancies between the principles of transhumanism and human rights norms. Although human right seeks to promote and protect life, there are circumstances in which the right to life may be derogated. For instance, the right to life may be derogated in the execution of the sentence of a court in which death penalty has been imposed.[64]This contrasts with the principles of transhumanism which canvasses for the absolute sanctity and protection of life. Nonetheless, international human rights law gives individuals sentenced to death the latitude to request for pardon, amnesty, or commutation of capital punishment.[65]States have been given the discretion to abolish capital punishment.[66]Relatively recently, states have also been mandated to take all necessary measures to abolish death penalty and they have equally been obligated to avoid execution of convicts within their jurisdiction.[67] It would appear that the trajectory of abolishment of death penalty under international human rights is in sync with the philosophical underpinnings of transhumanism. This is predicated on the fact that both tranhumanism and contemporary international human rights law glaringly uphold the exigency of promoting and protecting human life.

By contrast, one potent threat to the right to life is the challenge posed by artificial intelligence. The flipside of contemporary advances in artificial intelligence may be gleaned from its capacity to implode and cause massive destruction to human life if it malfunctions or if used inappropriately and negligently. This stand point is vividly epitomized hereunder:

> Current tech levels already pose frightening ethical dilemmas, such as whether military drones or other robotic systems should be designed to use lethal force against targets without direct human involvement. Presently programmed machines can react with greater speed and accuracy than a human operator, but are still capable of gross error without human biases and intuition to guide decision making. These issues will be intensified if AI (Artificial intelligence) is built into such systems introducing independent motives that may be completely unpredictable or in direct conflict with human intentions[68].

Advanced versions of artificial intelligence is capable of operating far beyond humans in much the same manner as humans do beyond other animals on earth. It has been opined that artificial intelligence has the propensity to transcend the ability of human beings to understand it. In this projected view often referred to as singularity, it may be difficult to ascertain if artificial intelligence would coexist or be hostile to humanity.[69] This development manifestly has the proclivity to undermine the hitherto inalienable human right to life recognized under trite principles of international law. Taking cognizance of the potential harm that may be inflicted on humanity by sentient artificial intelligence and other advanced sapient life forms, laws and regulations should be established via international treaties and domestic laws so as to ameliorate or prevent existential risks that may result from the misuse of transhuman technologies, artificial intelligence and allied sciences.

Euthanasia (the practice of killing a human being or voluntary assisted suicide to end suffering) is illegal in Australia,[70]Nigeria,[71]Italy, and most states in the United States of America (USA),[72] among others. In contradistinction, the countries that have legalized euthanasia include, Netherlands, Belgium, Luxembourg, Switzerland, Colombia, Canada, Germany, United Kingdom, and some states in the USA; such as California, Oregon, Washington, Vermont, and Montana.[73] For instance, in the United Kingdom, the parents of a terminally

[63] The Trans Humanist Declaration (n 8).
[64] ICCPR, art 6(2).
[65] ibid art 6 (4).
[66] ibid art 6(6).
[67] The Second Optional Protocol to the International Covenant on Civil and Political Rights 1990.UNGA A/RES/44/128 entered into force on 11 July 1991.
[68] DaVaun Sanders, 'Negative Effects of Artificial Intelligence' <www.techwalla.com/articles.com/articles/negative-effects-of-artificial-intelligence> accessed on 8 February 2018.
[69] ibid.
[70] Australia Human Rights Commission, 'Human Rights and Euthanasia' December, 1996 <www.humanrights.gov.au> accessed on 13 January 2018.
[71] Mike Chekwube Obi, 'A Critical Appraisal of Euthanasia under Nigerian Law' < https://www.ajol.info> accessed on 28 January 2018.
[72] Christian Action Care Research Education, 'Country Comparison' <www.care.org.uk/our-causes/sanctitycountry-comparison >accessed on 28 January 2018.
[73]Penny Lewis, 'Assisted Dying: What does the Law in Different Countries Say?' BBC News <www.google.com/amps/s/www.bbc.com/news/amp/world-34445715 > accessed on 28 January 2018.

ill child, known as Charlie Gard, who had been suffering from a degenerative brain damage and could not breath without a ventilator or move without assistance was to be removed from life support machine at Great Ormond Hospital in London, after a team of medical practitioners came to a conclusion that it would be in the child's best interest to remove the ventilator and allow him to die. On the contrary, the parents wanted to take their child to USA in order to enable him undergo an experimental treatment which could slow the progression of his illness. The parents lost their legal suit to transfer Charlie to USA from the High Court up to the Supreme Court. This, in principle, implies that courts in the United Kingdom are pro euthanasia.[74] It is contended, to all intents and purposes, that euthanasia conflicts with the ideological underpinnings of transhumanism.

Another significant human right is the right to employment. The International Covenant on Economic, Social and Cultural Right (ICESCR) 1966[75]recognizes the right to employment, which includes the right of everyone to the opportunity to gain his living by work which he freely chooses or accepts. State Parties are mandated to take appropriate steps to safeguard and achieve the full realization of the right to work including the provision of technical and vocational guidance and training programmes, policies and strategies to achieve steady economic, social and cultural development as well as full and productive employment.[76] It is, however, contended that the unbridled development of artificial intelligence and robotics has posed a serious threat to the right of humans to employment. It has been estimated that 47% of all job opportunities will be taken over by machines endowed with artificial intelligence in the next two decades. Moreover, there currently exists artificial intelligence that can detect cancer cells faster than human beings and health care robots that have already taken up erstwhile duties of nurses.[77]In another breath, it has been argued that although the advent of artificial intelligence will strip many individuals of their jobs, in the long run, it advances the society as a whole and raises the nation's standard of living.[78] In contradistinction, the burgeoning engagement of artificial intelligence and robots in the work place will undermine the opportunity of humans to work. It is therefore at cross purposes with the right to employment explicitly recognized under article 6 of the ICESCR 1966. Besides that, unless society figures out a way for humans to work or earn a living after artificial intelligence has taken over the job market, without jobs and sustainable income, the standard of living of humans would patently depreciate.

Biotechnology has played a positive role in improving the quality of human life for decades. Some members of the society are, however, skeptical about new trends in biotechnology due to the fact that they are novel and people are generally concerned about their side effects and impact in the future. Some individuals hold strong ethical or moral reservations in respect of particular practices such as organ transplants, manipulating human embryos and the deployment of animals in scientific research based on cultural and religious persuasions. Where the right to hold divergent views founded on religious or cultural believes are ignored or disregarded, it would be antithetical to the spirit and tenor of extant provisions of the International Covenant on Civil and Political Rights (ICCPR), 1966[79] and the International Covenant on Economic, Social and Cultural Rights (ICESCR), 1966.[80]

Furthermore, the principle of equality and non-discrimination is a pivotal aspect of human rights law. Article 26 of the ICCPR, 1966, is to the effect that all persons are equal before the law and are entitled without discrimination to equal protection of the law. Discrimination on any ground such as race, colour, sex, language, religion, political or other opinion, national or social origin, property, birth, or other status is prohibited. By contrast, it has been argued that genetic modification and enhancement in humans has the proclivity to engender social inequality. This stance is succinctly articulated thus:

> The genetically privileged might become ageless, healthy, super-geniuses of flawless physical beauty, who are graced with sparkling wit and disarmingly self-deprecating sense of humor, radiating warmth, empathetic charm, and relaxed confidence. The non-privileged would remain as people are today but perhaps deprived of some of their self-respect and suffering occasional bouts of envy. The mobility between the lower and upper classes might disappear and a child born to poor parents, lacking genetic enhancements might find it impossible to successfully compete against the super –children of the rich.Even if no discrimination or exploitation of the

[74] Tara Isabella Burton, 'Why Terminally Ill Infant Charlie Gard's Case has Created Global Controversy' in Vox 6 July 2017 <www.google.com/amps/s/www.vox.com/platform/amp/identities/2017/7/6/15923758/charlie-gard-controversy-trump-francis> accessed on 13 January 2018.
[75] 993 UNTS 3 entered into force on January 3 1976
[76] ICESCR, Art 6.
[77] Harold Stark, 'As Robots Rise, How Artificial Intelligence Will Impact Jobs' in Forbes Magazine 28 April 201<7http://forbes.com> accessed on 14 January 2018.
[78] Harold Stark (n.76).
[79] ICCPR 1966, art 18.
[80] ICESC 1966, art 15.

> lower class occurred, there is still something disturbing about the prospect of a society with such extreme inequalities.[81]

Proponents of human genetic enhancement have, however, contended that the increase in unjust inequalities as a result of eugenics or genetic engineering is not sufficient excuse for discouraging its utilization. This view point is based on the potential benefits of genetic enhancement such as the enjoyment of a sound health, the possibility of a highly developed intellect, psychological prowess, and longevity. Moreover, it has been posited that the huge cost of genetic enhancement could be subsidized or completely borne by government to enable poor families access the procedure thereby ameliorating the inequality created by the technology.[82] Despite the advantages of genetic modification in humans expounded above, it is averred that the attendant social inequalities inherent in the practice would, if not redressed, manifestly undermine the iron-clad provisions of equality and non-discrimination expressly espoused by international human rights norms.

As science and technology continues to develop at an astronomical pace with the prospects of humanity advancing to transhumans, the potent question that would arise for consideration is if post humans emerge via uploading the human memory in machines and artificial objects after the biological body parts deteriorate to prolong their existence, would such beings be entitled to human rights? The ICCPR 1966 mandates State Parties to respect and guarantee to all individuals within their territories the rights recognized in the covenant.[83]It is contended that the rights recognized in the treaty are strictly for humans not for artificial beings endowed with artificial intelligence such as robots or post humans (especially those whose memories are proposed to be uploaded in computers and artificial objects after their biological bodies are no more). If humanity chooses to attribute rights to these artificial entities, there is need for states to establish a legal framework for them or recalibrate the existing legal regimes to accommodate the anticipated artificial revolution. It is also expedient for states and the international community to take into cognizance the extent of rights to be accorded them. Potent questions to be examined include: would artificial entities having sentient capabilities be entitled to equal rights with their human counterparts? Would human beings at all material times be granted a higher status and priority where there is a conflict between the rights of humans and those of artificial entities? It is most humbly submitted that in considering these intricate questions it must be borne in mind the telling aphorism or laconic phrase, technology is made for man not man for technology.

The right to development is specifically recognized and articulated under the Declaration on the Right to Development, 1986. Article 1 of the Declaration on the Right to Development unequivocally states that, ' The right to development is an inalienable human right by virtue of which every human person and all peoples are entitled to participate in, contribute to and enjoy economic, social, cultural and political development, in which all human rights and fundamental freedoms can be fully realized.'[84]The right to development is corollary of the right of people to self-determination, which includes the exercise of their right to full sovereignty over their natural wealth and resources.[85] The Declaration on the Right to Development provides that the human person is the focal subject of development and should be an active player and beneficiary of the right to development. [86] It is contended that the right to development encompasses the right to explore other planets in space, being the common heritage of mankind as construed under international law. The treaty on the Principles Governing the Activities of States in Exploration and Use of Outer Space, including the Moon and other Celestial Bodies, 1967 (OST),[87] is one of the major international instruments governing the outer space. The treaty provides that the exploration and use of outer space, including the moon and other celestial bodies, shall be carried out for the benefit and in the interests of all countries, irrespective of the extent of their economic development.[88] It may be inferred on the grounds of the right to development and the sovereign right of nations to exploration of the outer air space and other celestial bodies as recognized under international law, that mankind in all nations can explore the possibility of another habitat in space in pursuit of scientific exploration, self –improvement and progress. This stance blandly conforms to the provisions of Article 5 of the Transhumanist Bill of Rights which enjoins all nations and their governments to embrace and fund space travel so as to safeguard its citizens and transhumans in the event that the earth is destroyed or becomes uninhabitable.

[81] Bostrom (n10).
[82] Bostrom (n10).
[83] ICCPR, art 2 (1).
[84] GA resolution 41/128, GAOR 41 Sess, supp 53, 186 (1986).
[85] ibid article 1 (2).
[86] ibid article 2(1).
[87] Adopted 17 October 1963, entered into force 10 October 1967) 610 UNTS 205.
[88] OST 1976, art 1.

Furthermore, the ICCPR, 1966, recognizes and protects the right to freedom of thought, conscience and religion. The right includes freedom to have or adopt a religion or belief of his or her choice, and freedom, either individually or in community with others in public or private to manifest his or her religion or belief in worship, observance, practice and teachings.[89] In contradistinction, it is worthy to note that Article 2 of the Transhumanist Bill, which is to the effect that 'no cultural, ethnic or religious perspectives influencing government policy can impede life extension science, the health of the public, or the possible maximum amount of life hours citizens possess' manifestly differs from the human right to culture or religious belief ordinarily guaranteed under extant international human rights law. Nevertheless, some religious views appear similar to the philosophy of transhumanism but their approaches are not in sync with the core principles and methodologies of the later in most cases. For instance, Christianity recognizes the promise of resurrection from death and eternal life for humans who are obedient and faithful to the commandments of God.[90] Thus it is written:

> Behold I tell you a mystery: we shall not all sleep but we shall all be changed. In a moment, in the twinkling of an eye, at the last trumpet. For the trumpet will sound, and the dead will be raised in corruptible, and we shall be changed. For this corruption must put on incorruption, and this mortal must put on immortality. So when this corruptible has put on incorruption, and this mortal has put on immortality, then shall be brought to pass the saying that is written: 'Death is swallowed up in victory. O Death, where is your sting? O Hades, where is your victory?[91]

The focal point of Christianity is therefore premised on the prospects of resurrection of mankind from the dead and post human existence. It, however, differs from the principles of transhumanism in the sense that its core belief in the possibility of immortality is completely dependent on divine intervention and God's unparalleled providence. Hence from a conservative Christian stand point, it is not within man's prerogative or scientific know how to achieve immortality as otherwise espoused and anticipated by typical transhumanists. The right and temerity to hold a dissenting view in this context particularly on the grounds of religious belief is unequivocally guaranteed and in consonance with trite international human rights norms and values. To hold otherwise would be malapropos and manifestly antithetical to the jurisprudence of human rights.

6. Conclusion

The unprecedented developments in science and technology especially in the field of biotechnology, genetic engineering, nanotechnology, cryogenics, artificial intelligence, robotics, among others, has unraveled a new vista of possibilities as far as humanity is concerned. This article has examined the basic epistemological underpinnings of transhumanism, artificial intelligence, post humanism, biotechnology and their burgeoning correlation and intersection with international human rights norms and values. The shared commonalities between transhumanism and human rights include the imperative of promoting and preserving human life, the need to ameliorate human suffering, and enhance the quality as well as condition of human existence. The article has pointed out nuances and marked differences between trahumanism, post humanism and allied matters, and the orthodoxy of international human rights jurisprudence. The article has shown that although the advent of artificial intelligence has tremendously enhanced human capabilities, it has posed a serious threat to the right to employment enshrined under article 6 of the ICESCR, 1966. It is therefore expedient to establish legal and regulatory mechanisms that should be vested with the responsibility of exploring multifarious ways in which humans can continue to earn a living amidst the deployment of robotics and artificial intelligence in the work environment. Furthermore, there is also need for states to guarantee the provision of reasonable accommodation and affirmative action to enable those who refrain from augmenting their physical bodies or intellect to co-exist on equal basis with transhumans if the society chooses to follow that path. Finally, transhumanism is premised on the idea that scientific and technological innovations would eventually engender the prospect of bringing the dead back to life and recalibrating humans as well as post humans with unbridled ability to live indefinitely. Conversely, some fundamental religious believes, such as Christianity; hold the unflinching view that the prospect of immortality in humans is wholly predicated on divine providence. This stance is in tandem with the human right to freedom of thought, conscience and religion as enshrined under article 18 of the ICCPR, 1966. It is also in sync with the main thrust of paragraph 8 of the Transhumanist Declaration which unequivocally states, inter alia, that, 'we favour allowing individuals a wide personal choice over how they enable their lives.' To all intents and purposes, this is glaringly an inclusive and conscionable desideration. The latitude given for freedom of personal choice would patently foster the harmonious co-existence of nuances and divergent views especially those grounded on human rights norms amidst the epoch of groundbreaking developments in science and technology and its palpable impact on humanity in the 21st century.

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[89] ibid art 18 (1).

[90] 1 Thessalonians 4 verses 13-18; Revelation 21 verse 4; John 3 verses 16-18 (NKJV) *The New Spirit Life Bible (*Thomas Nelson Inc, 1982).

[91] *The New Spirit Life Bible (n. 90)* 1 Corinthians 15 verses 51-55. 1604.