

MODERN SCIENCE AND TECHNOLOGY: A SERIOUS CHALLENGE TO HUMAN LIFE AND HUMAN DIGNITY

AKPA, EJIKE
Department of Philosophy
Madonna University, Nigeria
Okija Campus
+2348036273155
akpaejike@gmail.com

Abstract

The place of man in the cosmic arrangement is incontrovertibly special. The cosmos seems to be ordered primarily for the well being of man; no wonder some philosophers contend that man is the measure of all things. He alone is claimed to resemble God, rational, and capable of distinguishing between good and evil. Man shares kinetic, appetitive, and reproductive powers with other animals but the powers of cognition and to will are exclusively human. With all the special accompaniments of man it makes sense to respect human life and promote human dignity. Be that as it may, human life and human dignity has faced some serious challenges from the perspective of modern science and technology as a result of the predominance of secular philosophy. Ironically, science and technology is the brainchild of man and has actually played significant roles in improving human well-being. To restore human life and dignity it is necessary to deemphasize secularism and recognize the centrality of God in human existence. Hence, religion and science/technology should be complementary for man's sake. Further, man should be seen as "the good that is" since he is created by an all good Creator. He thus deserves to be dignified.

Keywords: Science, Technology, Human Life, Human Dignity, Secularism

Introduction

Does the human person deserve to be dignified? By virtue of man's position in the universe and his being created by an all good God he deserves to be dignified. He ought to be accorded respect and dignity. Human life ought to be regarded as sacred and as such should not be treated with profanity. Human life should not be terminated without qualms. Rather than terminate human life, efforts should be intensified towards enhancing and improving it. Human life should be made more meaningful and more respect accorded it.

The need to restore human life and dignity, making life more meaningful and worthwhile, calls to question the activities of modern science and technology. Has modern science actually undermined human life and dignity? Has technology endangered human life? Why has science and technology become a curse rather than a blessing to man? Even if questions 1 and 2 are answered affirmatively it still does not contradict the fact that science and technology has contributed immensely to human development, improvement of human life,

and meaningfulness/wholesomeness of human life. Nevertheless, in the course of its operations, modern science and technology has equally challenged human dignity sometimes using the human person as a means to ends.

Incidentally, science and technology is an invention of human ingenuity and quest for a better living. In his desire to understand and explain nature and to add more value to his existence, the human person developed science and technology. Today man can boast of an adequate comprehension of nature so much that he can describe, predict, control, and even change it. Unfortunately though, while conquering the world, man has also conquered himself, reducing the human person to an article for experimentation. It has become common for human persons to change their sex through transgender technology and efforts are intensive towards manufacturing children outside the woman's womb. Scientists are working hard to reduce life to a laboratory affair hence, rendering other accounts of creation redundant and useless. In all these instances and more, there is an erosion of human worth and dignity. No wonder the world is fraught with violence and large scale destruction of life. The questions one would need to ask are: Why has science and technology turned to hunting man rather than helping him? What can be done to salvage the situation? Our quest for answers to these questions led to our discovery that the adoption of secularism by most societies is the major reason for this human predicament. Solutions therefore, could be found in reacceptance of religion and embrace of the philosophy of "*mmadi*", the philosophy that man is the "good that is" deserving of respect and dignity.

Understanding Science and Technology

Science may be defined as knowledge about the structure and behavior of the natural and physical world, based on facts that you can prove, for example by experiment (OALD 9th edition). The stress here is on knowing the world based on provable facts. This definition stresses that science is about knowing the world based on provable facts.

Science is basically based on facts which are known to be true, empirical, reliable, testable, explicit, ontologically valid, with minimal error, systematic and comprehensible. Science further tries to understand the relationship of facts to each other so that we can describe, predict, control and explain the physical world. Science may also be defined as an organized and systematic body of knowledge which attempts to understand, describe and predict the natural world. It is motivated by human curiosity and inquisitiveness. As a matter of fact "the human person naturally desires knowledge rather than remaining in ignorance" (Akpa, 7).

Science is a knowledge generating activity which is based on systematically organized bodies of accumulated knowledge obtained through objective observations. It may not be very particular about the precision and specificity of data (although it is necessary), as much as it seeks to discover through observation, uniformities with which to formulate statements or laws describing consistent relationships between natural phenomena. Science therefore aims to understand, explain and predict by specifying the systematic relationships among empirical variables.

Science involves doubting, criticizing, and rechecking what is passed on as knowledge to ensure that the knowledge is true, profitable and safe. Hence, Richard Feynman posits that "science is the result of the discovery that it is worthwhile rechecking by new direct experience, and not necessarily trusting the human experience from the past" (Feynman,11). The attitude of doubt led Nicolas Copernicus to the heliocentric theory as the correct replacement for the geocentric theory of the universe. The same attitude

accounts for the discovery that the atom can further be split into smaller particles, the basis for the recent advancement in nuclear technology.

What is technology? The close association of science and technology informs the definition of technology as “applied science”. There is no denying the fact a close relationship between science and technology; yet it is not enough to simply define technology as “applied science.” For one, technology is much older than modern science. According to David Git Perez *et al.*, “we must have to briefly reflect on its historical development to understand that technical activity has preceded the mere existence of science by thousands of years. This obliges us to disregard the notion of technology as a by-product of science” (David Git Perez *et al.* 310). Science as an organized body of thought is usually identified with the Ionian school of Greek Philosophers (about 600BCE) and modern science with the Scientific Revolution of the 17th century whereas technology as the art of modifying nature for man’s purpose had been even with the primitive man. “Advances in knowledge, skills, and technology, had been part of human history long before our ancestors were truly human” (Bryan Burnch and Alexander Hellems, 1).

Technology is better defined as “the modification of the natural world to meet human wants and needs” (ITEA/ITEEA, 2000/2002/2007:7). It helps us to improve our health; to grow and process food and fiber better, to harness and use energy more efficiently; to move people and things easier; to make products to enhance our lives; and to build structures that provide shelter and comfort (Dugger, 2011), and to communicate more effectively. This is in line with the goal set forth for technology by the National Science Education Standards, thus; “the goal of technology is to make modifications in the world to meet human needs” (NRC, 24). In the broadest sense, “technology extends our abilities to change the world; to cut, shape, or put together materials; to move things from one place to another; to reach further with our hands, voices, and senses” (AAAS, 41). Technology is very concerned with what can and should be designed, made and sustained from natural world materials to satisfy human needs and wants.

To effectively and efficiently modify the natural world technology relies largely on scientific knowledge. In fact, modern science and technology as it were, are inseparable; finding a dividing line between both is unlikely. Science may be said to be the product of minds seeking to reveal the natural laws that govern the universe while technology, on the other hand, seeks to find practical ways to use scientific discoveries profitably.

Human Dignity: A Conceptual Analysis

What is human dignity? The English expression ‘human dignity’ consists of the predicate ‘human’ and the noun ‘dignity’. The adjective ‘human’ qualifies the noun ‘dignity’ signifying that there may be other kinds of dignity. The one in question here is the human kind. Etymologically ‘human’ is related to the Latin word ‘*humus*’ meaning ‘earth’ so that human means being earthly. Going by the Biblical account of creation, man is created from the earth. Very importantly too, to be ‘human’ implies, but is not limited to rationality, kindness, and fallibility.

‘Dignity’ comes from the Latin noun ‘*decus*,’ meaning ornament, distinction, honor, glory. Generally speaking, dignity means the standing of one being entitled to respect. It may be defined as the status of worthiness to deserve respect. It is most often earned through ones actions, efforts, and achievements or acquired through inheritance or endowment.

The conjunction of ‘human’ and ‘dignity’ forms the expression ‘human dignity’. It refers to the status of human beings entitling them to respect. Without equivocation every human

being is entitled to dignity. The principle of human dignity is a universal affirmation that human beings have the highest value and it is clearly in the interest of everyone to be respected.

Historically, the development of the idea of human dignity is captured in four stages using a time typical framework. First is the cosmo-centric framework of antiquity represented by Cicero and which explains human dignity on the basis of nature. Second is the Christo-centric framework of the Middle Ages represented by Thomas Aquinas for whom the human person is defined as a subject distinguished by dignity. The possession of human dignity is anchored on man remaining free and rational. Thirdly, Immanuel Kant, who is also regarded as the modern father of human dignity represents the logo-centric framework which explains human dignity as a tribute to reason. According to Kant autonomy is the reason for dignity. It is because humans are autonomous - capable of making moral laws unto themselves that their nature is dignified. Kant argues for all people to submit themselves to a self-legislated universal law, built on the premise that all humans are to be treated as ends in themselves because they are autonomous and free and thereby possess dignity. He holds that “every rational being exists as an end in himself and not merely as a means to be arbitrarily used by this or that will” (Kant, 35). We must treat humanity (including ourselves) always as an end and never simply as a means. Finally, Mary Wollstonecraft represents the polis-centric framework of post-modernity which explains human dignity in relation to social acceptability. Each of these ways of accounting for human dignity can be understood as a source of the idea as it appears in the Declaration of Human Right of 1948.

Human dignity is the basis of human rights and is thought to have universal normative validity as the basis for various rights. It is thought that all people are endowed with dignity universally regardless of their status, or their birth. Impliedly, all people are equal in rights. The worth of human dignity is expressed in some international agreements about rights. According to Roberto Adorno;

they provide valuable guidance for the understanding of human dignity when they state: first, that dignity is “inherent... to all members of the human family” (UDHR, Preamble); second, that all human beings are “free and equal in dignity and rights” (UDHR, Article 1); third, that “these rights derive from the inherent dignity of the human person” (ICCPR and ICESCR, Preamble) (Adorno, 5).

Science and Technology as a Challenge to Human Life and Human Dignity

It is glaring that modern science and technology has profoundly impacted on human life and dignity. Life has become much more enjoyable with advancement in science and technology just as human dignity has been boosted. It is pertinent however, to note that science and technology has caused man enormous misery and in some of its activities negates the idea of sanctity of life and universality of human dignity. Was that the original intention of science and technology?

The original intention of science and scientists was not to undermine human worth or to erode his dignity. In fact, scientists traditionally studied natural phenomena to understand, describe and predict their operations. According to Shannon “the major purposes of science were to describe and predict nature” (Shannon, 128). However, two important events changed that orientation resulting in very serious challenges to human life and dignity. The first event was the detonation of the atomic bomb (Hiroshima and Nagasaki – 6th and 9th

August, 1945 respectively), which killed more than two hundred thousand persons (armed and unarmed) and completely destroyed the environment. It actually ended the Second World War but not without leaving an indelible scar on human consciousness. It left behind it agony, misery, sorrow, and evidence that modern science and technology have little or no regard for human life and dignity as traditionally thought.

Prior to the atomic bomb incidents Hitler had killed millions of Jews using poisoned gas, another product of science and technology. On record too is that since the destruction of Hiroshima and Nagasaki tons of deadlier and more sophisticated instruments of death have been developed by scientists and technicians. The nuclear war programme embarked upon by various countries typifies the agenda for destruction of life and disregard for human dignity. Since all these are only made possible through science and technology it is not a contradiction to say that modern science and technology inadvertently constitute a serious challenge to human life and dignity.

The second event that changed traditional orientation of science and technology was the discovery of the structure of the DNA molecule by Watson and Crick in 1953. “The discovery opened the door to significant development in genetics which culminated in a capacity to recombine genetic material from one organism into another to make a new entity” (Shannon, 128). These discoveries gave human being, new powers - the capacity to change nature, as against merely describing nature. As a result of the discovery of the DNA molecule, we now have the capacities that enable us to interfere directly in human life as well as other aspects of nature. We can now change nature according to our desires and wishes. How does this constitute a challenge to human life and dignity?

There is no harm in changing nature to meet genuine human needs, desires and wishes which are noticeably numerous and far-reaching. But because the human person is selfish and egocentric, there is always the tendency for him to abuse whatever capacity he has culminating in a dangerous and unwholesome bend. With the capacity to change nature according to human desires and wishes, man with his inclination to self-pursuit would alter nature for selfish benefits. It follows that, unless on rare occasions, man will disrespect others or employ others as means to attaining personal ends.

The denigration of the human person by science and technology is typified by abortion, organ transplantation, cloning, and environmental degradation, among others. Modern science and technology makes abortion look harmless and enticing by making it less painful and quicker. By swallowing a few tablets one can quickly and painlessly flush away a developing fetus. More so, pro-abortionists argue, strongly but erroneously, that one can do with/to her body whatever she wishes including removing an unwanted occupant (unborn baby). This same argument is also posited to back transgender orientation. Abortion has no regard for sanctity of life and its inherent preciousness.

The major argument of pro-abortionists is that the fetus is not a human being. The argument is misleading: the human fetus is a genuine human being with all the rights of any other member of the human community. But how does one prove that the fetus is a human being? We refer to two schools of thought - genetic and developmental schools of thought to substantiate the claim that the fetus is a human being (at least a developing human being). The genetic school of thought defines a human person as any being that has a human genetic code. The human fetus contains nothing but human genetic code distinct from those of other animals (even mammals). As a result the conjugation of the human female ovum and the human male sperm naturally produces a human being rather than any other thing. Basic biology informs us that a species reproduces after its own kind. Following the natural

order the human person carries the fetus of human beings just like other animals carry the fetuses of their kinds. Keith Moore writes that “the fertilized ovum, known as a zygote, is a large diploid cell that is the beginning of primordium, of a human being.” (Moore, 2). If the fetus were to contain the genetic code of the cow, it would not be regarded as a human person in anywhere. Besides, a new person is formed the moment the spermatozoa and the ovum join to form the zygote. There and then life begins and develops to a full-fledged human person. Without the zygote there cannot be anything like a human being, so abortion which terminates the life of the fetus destroys human life and undermines human dignity. The developmental school of thought holds that while the establishment of the genetic code established the basis for further development, some degree of development and interaction with the environment is necessary for a being to be considered as a full human person. The mother’s womb is the only natural and most conducive environment for the development of the fetus. Nature abhors that human fetus be carried in the womb of a cow or elephant or any other mammal for that matter. If such should happen the developmental process will be altered and the result will be altered as well.

The idea of organ transplantation ordinarily is a noble one intended to help restore life. One would not hesitate to commend the many cases of successful kidney, heart, and limb transplants which have saved the lives and restored the hope of many. However, organ transplant is problematic especially with acquiring the needed parts. In most cases those parts are exchanged for money. Rarely do people donate their parts freely. Consequently, trading in human parts has become a lucrative though illegal and unethical business. Without mincing words, commercializing human parts is degrading and dehumanizing. For that reason, organ transplant, made possible by modern science and technology, constitutes a challenge to human life and dignity.

Like organ transplant, cloning is a significant technological breakthrough and also challenge to human life and dignity. “Human cloning can be undertaken for two reasons: to produce children, who are genetically identical to the cell donor, or to produce embryos for research or to manufacture therapeutic products including tissues or organs for transplantation” (Somerville, 41). Both reasons are morally deficient. In the first case, to artificially produce children who are genetically identical to the cell donors is a usurpation of God’s powers – man playing God. It is the prerogative of God who is fair and just to determine the genetic constitution of any creature. In the second case, producing embryos for research purposes and manufacture of therapeutic products is ethically unwholesome. It gives researchers and manufacturers the impetus to create and destroy life as often as they deem fit since it involves trial and error approach. It reduces man to a laboratory product and places him at the same level experimental guinea pig. Where then is the dignity of man in that situation? Cloning undermines human worth.

Science and technology is by far the greatest cause of environmental damage which on its own is a major challenge to human life and human dignity. The Niger Delta region of Nigeria typically exemplifies the hazards of environmental degradation ensuing from oil exploration. Both fauna (especially aquatic life) and flora are all endangered due to pollution. Gas flaring on its part makes the air unclean resulting in innumerable health conditions. As it is with Niger Delta, so it is in nearly all the places with high level industrial concentration. In one way or the other, human life and dignity is challenged by these activities.

Panacea to the challenges posed by modern science and technology to Human life and Dignity

One can say, without being equivocal, that modern science and technology actually constitutes a serious challenge to human life and dignity. Borrowing the words of Odimegwu, modern science and technology has “handed down to us the trauma of dissociated personality”, (Odimegwu, 12). How can this anomaly be corrected without jeopardizing the gains of science and technology? It is appropriate to articulate and a panacea starting with finding out the origin of the problem. The origin can be traced to the over secularization of the human society and quest for pleasure. Secular humanism, the philosophy or world view which stresses human values without reference to religion or spirituality is responsible for the predicament. It is the abnegation of God as the source of life and resort to science and abstract reasoning. It offers man the license to do what he chooses without being answerable to any supernatural being. This philosophy may appeal to a whole lot of people but it is misleading for man is not just body but a composite of body and spirit. A holistic care for man requires that his bodily and spiritual needs are both taken into account. Unfortunately, secular humanism focuses on the body alone. The State has a role to play in rectifying the situation as opined by Aquinas. Odimegwu cites him thus; “Because man is composed of both material and spiritual natures, the State must recognize the rights of the spiritual society, the Church (*religious bodies*), to provide for the spiritual nature of man” (Thomas Aquinas, *Philosophical Texts*, in Odimegwu, 18).

Somerville rightly points out that religion no longer plays a major role in the life of man hence; God has been relegated to the back stage. In place of religion there is a transfer of our collective faith to “the extraordinary new science that has emerged” (Somerville, 19). As a panacea, there is a need to re-invent the importance of religion in our lives and a restoration of God to the centre of our being as against the prevailing scientific antagonism against religion, God, faith, and the supernatural. Science is basically concerned with natural things which are observable, measurable, determinable, replicable and predictable. The way out is to restore the relevance of God in the life of the human person. He is the sole giver of life; hence, the disrespect for human life is disrespect for God.

The challenge to human life and dignity can also be overcome by accepting the philosophy of *mmadi*. The philosophy of *mmadi* is anchored on African Philosophy which “offers people an ideal of human existence, an ideal of human dignity based on the belief that all beings created by God are ontologically good and deserving of care and respect” (Edeh, *Peace to the Modern World*, 4). By this “we should accept man as good within the context of creation: a confirmation of the mystery of man’s dealing with God” (Edeh, 5).

How can the philosophy of *mma-di* serve as a panacea to the challenges posed by modern science and technology to human life and dignity? In Edeh’s analysis; the human being (man) is the ‘good that is’, a derivation from *madu* – the shortened form of *mma-du* or *mma-di*; the Igbo word for human being. “Etymologically, ‘*madu*’ is a short form of *mmadi* (*mma-di*). “*Mma*” is the Igbo word for ‘good’, ‘a good’, or ‘the good’. ‘*Di*’ is from ‘*idi*’ which is the Igbo verb ‘to be’. (Edeh, *Towards an Igbo Metaphysics*, 100).

Why regard man as “the good that is” and what is the consequence? Edeh anticipates the question, thus further writes that;

the Igbo notion of “good that is” must be understood in the context of creation. For the Igbo the notion of “good” is derived from divine creation. To say that man is the “good that is” is not to say that man

is “good *in se*” for no one is “good *in se*” except God... The Igbo share the religious idea common to many people that man’s goodness is participated. Man is “good that is” in the sense that having been created by God, he is a product of his maker and hence shares in the being of his maker, the highest good. (Edeh, *Igbo Metaphysics*: 101-102).

Consequent upon man’s participation in God’s goodness, he deserves respect, care and dignity. Further, being created in the likeness of God human life must be highly esteemed; if we treat other men as “goods that are”, it is our duty to respect them and not use them as means to our selfish ends. This is exactly what modern science and technology lacks and needs to inculcate.

Conclusion

Evidently, science and technology has helped to improve the wellbeing of the human person. It has as well constituted a serious challenge to his life and dignity as made manifest in the wanton destruction of human life and treatment of human beings like lower animals. It is at the backdrop of this that Kant insists that no man should be treated as a means to any other end but as ends in themselves. Increasingly, the reverse is the case with modern science and technology, thus, the depletion of human dignity. The panacea is to restore God as the epicenter of human existence; and to treat man as “the good that is” in view of his semblance of God who is the ultimate good. In other words, over secularization of the human society needs a reappraisal so that the two natures of man – spiritual and material – are adequately provided for. The call therefore, is for science and technology to appreciate the place of God in human existence and see in others the goodness of God in view of respecting human life and dignity.

References

- Akpa, Ejike. (2011). *Logic, Philosophy and Human Existence; an Introduction*, Aba – Nigeria: Ark of Wisdom Publishers.
- American Association for the Advancement of Science (AAAS). (1993). *Benchmark for Science Literacy*. New York: Oxford University, Press.
- Andorno, Roberto. (2009). “Human dignity and human rights as a common ground for a global bioethics”, in *Journal of Medicine and Philosophy*, Zurich.
- Brunch, Bryer with Alexander Hellemans. (2004). *The History of Science and Technology*, New York: Houghton Mifflin Company.
- Edeh, Emmanuel. (1985). *Towards an Igbo Metaphysics*, Chicago: Loyola University Press.

- _____. (2006). *Peace to the Modern World*, Banbury, United Kingdom: Minuteman Press.
- International Technology Education Association (ITEA/ITEED). (2007). *Standard for Technological Literacy: Content for the Study of Technology*. Reston, VA.
- Kant, Immanuel. (1996). *Groundwork for the Metaphysics of Morals*, in *Practical Philosophy*, ed. M. Gregor, 35-108. The Cambridge Edition of the Works of Immanuel Kant. Cambridge: Cambridge University Press.
- McNeil, Ian (ed). (2002). *An Encyclopedia of the History of Science and Technology*, London: Routledge Publishing Company.
- Moore, Keith L. *Essentials of Human Embryology*, Toronto: B.C. Decker Inc.
- National Research Council. (1996). *The National Science Education Standards*, Washington, DC: National Academy Press.
- Odimegwu, Ike. (2008). *Philosophic Foundations of Politics*, Awka, Nigeria: Lumos Nigeria Limited.
- Oxford Advanced Learners Dictionary. (2015). Oxford: Oxford University Press.
- Richard, Feynman. (1968). "What is Science?" *The Physics Teacher* vol.7 issue 6, p. 313-320.
- Shannon, Thomas. (1997). *An Introduction to Bioethics*, New York: Paulist Press.
- Somerville, Margaret A. (2006): Searching for Ethics in a Secular Society, in *Ethics of Science and Technology*. Paris: United Nations Educational, Scientific and Cultural Organization.
- Valdes, Pablo and Julia Salinas. (2005). "Technology as Applied Science": A Serious Misconception that Reinforces Distorted and Impoverished Views of Science; *Science and Education*, New York: Springer.