

# Scientificalization and Technologization of Contemporary Society: A Preparatory Ground for World War III

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**Abstract:-** The 21<sup>st</sup> century has been mesmerized by unprecedented growth in science and technology, as well as its aggressive penetration into areas which it formally lacked applicability. Just as in other aspects of modern society, the 21<sup>st</sup> century has seen an increased use of science and technological innovations in the pursuance and maintenance of world peace. Most benefits have been accrued from the use of technological innovations such as satellite technologies, Global Positioning System (GPS), unmanned air vehicles (UAVs) among others in keeping surveillance on potential war sources or countries, to prevent the unexpected outbreak of war. There have also been growth in development, acquisition, and use of science and tech-powered ammunition and weapons such as nuclear, chemical and biological weapons and other war ammunitions such as drones, guns, among others with the primary intent of maintaining peace within a country as well as in the world in its entirety. Ironically, while the 21<sup>st</sup> century is praised for the technological revolution and sophistication in armoury which was assumed would increase stability and world peace, however, this quite the irony, as the century have been ridden by wars of different scales, hostility and large scale violence within and between nations; the century has also gained herself the status of “an age of war”. This study, therefore, is set to explore the possible threat to world peace as well as an impending potential outbreak of nuclear war due to the aggressive adoption of science and technology in the development of war ammunition and weapons of mass destructions such as nuclear, chemical and biological weapons.

**Keywords:** Science, Technology, World War III, Nuclear, Chemical, Biological, Weapon

## I. INTRODUCTION

The 21<sup>st</sup> century has been mesmerized by unprecedented growth in science and technology, as well as its aggressive penetration into areas which it formally lacked applicability. Science, according to Muhammad et al. (2013), is a logical venture which defines and presents knowledge in a manner that permits the verification of assumptions, as well as aid explanation of events taking place in the physical world. Science is an embodiment of knowledge, and ideas that are reliable and are not a deficit of rational and logical explanations (Muhammad et al., 2013); technology, on the other hand, is concerned with the hands-on application of scientific knowledge (Merriam-Webster, 2020). Science and technology are often used together, hence suggesting the existence of a relationship. Studies have argued that the relationship between science and technology borders largely

on the fact that while science is concerned with the examination of the natural world, technology, on the other hand, increases the ability of people to make modifications to the world (ITEA, 2000).

No doubt, the 21<sup>st</sup> century has received excess doses of the examination of the physical world as well as the alteration and modification of many aspects of the physical world, otherwise known as science and technology. Today, thanks to science and technology, contemporary society has made a giant leap in such areas as communication, education, medicine, security, finance, commerce and industry, governance, among many others (Jeffery, 2015). For example, before the development of electronic powered mails and telecommunications, information to distant relatives, friends, and other acquaintances were mostly conveyed via letter, through post offices, these letters may take up to a week or more before it gets to its destined location, hence, information as at that time run the risk of losing its relevance because the relevance of information lies on its availability, accessibility, and usability as at when needed. This is no longer the case now, as people can now comfortably stay in their homes and make meaningful communication or convey important information via electronic powered mails or mobile technologies at very high speed (Witold & Tomasz, 2017).

In the areas of transportation, in Nigeria for example, before the invention of automobiles, the most predominant medium of transportation was by foot, people are therefore forced to walk long kilometres as they practically had no other option, those who were a bit privileged rode on bicycles following its invention. However, today they are an array of comfortable, quick, and reliable transportation options both for long and short distances (Karimbakhsh & Ganizadegan, 2013). In the areas of buying and selling, visible changes have also been scored. Courtesy of technology, people do no longer necessarily have to visit physical shops or travel far distances to purchase desired goods and services, as people can now make purchases locally and international from their homes via internet and electronic powered mediums and have them delivered to them at their doorsteps (Olawole, 2016). Advancement in science and technology have brought about new product development, increased flow of business information, changes in advertising and approaches through which goods and products, as well information about them are

made available to the target consumers, as well as facilitates the development of new and more effective operational procedures (James & Charles, 2011)

In agriculture, the farming process has been revolutionized, unlike what was the main practice before which involves endless tilling of the land with hoes and cutlass, which is not only time consuming but also energy-sapping, countless numbers of farming tools and equipment which has greatly simplified the farming process has been birthed from technology, furthermore; advancement in science has also led to the introduction of improved seeds, manure and other innovations which significantly increase yam yields and by extension increase food security. Areas of food processing and preservation have also moved from the use of traditional technologies as sunning, salting, smoking, drying to the use of scientifically based methods such as acculturation, preservatives, and even storage in techno innovations as refrigerators, deep freezers and its likes (Shah, 2018). In the area of finance, Blockchain technology which is the core technology behind cryptocurrency is currently disrupting the global business process, with such cryptocurrencies as Bitcoin gaining increasingly momentum in global transactions (Brett, 2016), even in conventional banking systems technology has become the new competition and a tool for competitive survivals of banks in both developed and developing nation, as many of the banking services have become increasingly automated (Sarлак&Asghar, 2010).

The education system has not been left out, too; thanks to the growth in sciences and technology, knowledge has increased, and educators are better equipped with skills in handling the problems associated with teaching and learning. A most obvious change in education due to technology is the increase in the medium through which information is gained, transferred, stored, and retrieved. Today, the education system has made great progress towards borderless learning, such problems posed by distance has been meticulously dealt with, as people can now acquire education from educational institutions located in other countries while remaining in their countries, most amazingly from the comfort of their homes through electronic powered learning platforms (E-learning) over electronically powered devices such as a personal computer or even a mobile device (Bhuasiri et al., 2012; Eya, 2016).

The healthcare sector is not left that either; the advancement in science and technology has been said to alter the traditional practices of medicine and healthcare practices. The healthcare system has witnessed the influx of technological innovations in the diagnosis, and treatment of diseases, in the provision of care for both in and outpatients as well as in the management, storage, retrieval, and sharing of patient's information. Such technological innovations as mobile phones, computers, robotics technology, wireless devices, artificial intelligence and many others have become a mainstay in the healthcare system (Sorenson et al., 2018; WHO, 2018).

This study, however; seeks to focus on changes brought by growth in science and technology and their increased adoption in such areas as war, ammunitions and world peace. Just as in other aspects of modern society, the 21<sup>st</sup> century has seen an increased use of science and technological innovations in the pursuance and maintenance of world peace. Most benefits have been accrued from the use of technological innovations such as satellite technologies, Global Positioning System (GPS), unmanned air vehicles (UAVs) among others in keeping surveillance on potential war sources or countries, to prevent the unexpected outbreak of war. There have also been growth in development, acquisition and use of science and tech-powered ammunition and weapons such as warships to unmanned drones, warplanes nuclear, chemical and biological weapons and other war ammunitions such as drones, guns, among others with the primary intent of maintaining peace within a country as well as in the world in its entirety (Mallik, 2004; Asoqwo, 2014). Ironically, while the 21<sup>st</sup> century is praised for the technological revolution and sophistication in armoury which was assumed increase stability and world peace, the century unlike having to be ridden by wars of different scales, hostility and large scale violence within and between nations; the century has also gained herself the status of "an age of war" (Science Council of Japan, 1993). Modern society has been taken over by anarchy, drastic fall in core values, and the near-complete loss of humanness. As orchestrated in wars and rumours of wars, increase in gun powered homicides ravaging the homes, the streets and every corner of the society, statically, gun violence accounts for an annual death rate of 37,603 from the United States alone (Brady, 2020). There has also been a drastic onslaught of nuclear terrorism cum biological terrorism, which, according to Asoque, (2014), is the most dreadful to think of.

Contrary to the opinion that growth in science and technology can secure world peace and prevent the possible outbreak of large scale war, current events unfolding globally shows almost the direct opposite. Many high tech nations have leveraged on these growth to build and invent weapons with the capacity to inflict large scale destruction. The growth in science and technology has drastically transformed the way battles are fought (Independent Commission on Multilateralism, 2016). For instance, prior to the advancement in science and technology and its aggressive adoption in security, most wars were fought via the physical exchange of violent force between two or more warring parties, however, that is not the case anymore. With the use of nuclear, chemical and biological weapons, and other tech-powered weapons warring countries can secure landslide victory over their opponents without much delay, physical combat nor even resistance from the enemy nations as evidenced in the atomic bombing of Hiroshima and Nagasaki in 1945 during the second world war, a move which greatly crippled the Japanese military wit, and thus, contributed to bringing the war to an end, (War History, 2020) as well as in the story surrounding the most recent elimination of Qassem Soleimani, of Iran by

the United States (Aljazeera, 2020). This sure sounds like a sure way of controlling aggressive nations; but great dangers lie with the misuse of these science and tech-powered war ammunitions as the same way it can be used to tame aggression swiftly, in like manner it can be used to cause uproar and stir up war, especially, when these ammunitions falls into the hands of the wrong people.

Even in some cases, these tech superior countries may opt for the use of military action, instead of diplomatic approaches in the enforcement of their desired change of regime in distant sovereign nations (Mallik, 2004). In another case scenario, the presence of these science and tech-powered ammunition in a country stirs up fear in neighbouring nations, as well as among nations who have had a direct or indirect collision with the supposed tech superiority country. This in most cases activates the race for the development and acquisition of these science and tech-powered ammunitions such as nuclear and biological weapons, this is the case between the United States and Russia, United States and China, Pakistan and Israel, Iran, and Israel, North Korea and South Korea and the list goes on and on. The combined implications of this rat race for nuclear and biological weapons among nations is seen in the increased presences of these weapons of mass destruction on earth. The mere presences of these weapons pose not only a serious threat to world peace but also the continued existence of both humans, plants and animals (Asogwa, 2014).

No thanks to the growth in science and technology-powered armament, the contemporary world now faces greater threats as never seen before. Today, the world government is battling with keeping these nations at bay, by advocating the need for nations to cut down not only the production but as well as the use of these weapons. This has led to series of global conventions and treaties yet; there have been increasing account of nations going against these treaties; hence the world can never be said to be free from threat as the presence of these weapons already prepares the ground for an impending outbreak of what may be called Third World War. Most notably, this study does not in any way dispute or discredit the contributions of science and technology towards the attainment of growth and development in virtually all spheres of the society, however; it tries to point out how the advancement in science and technology and their use in armoury increases the volatility of the world to the outbreak of a large scale

## II. THE CONCEPT OF SCIENCE AND TECHNOLOGY

Science as a concept is defined as the systematic use of experiment and observation in the study of the edifice and behaviour of the physical and natural world. It entails the formulation and development of verifiable explanations and predictions of general natural events based on evidence, as well as the deployment of the information, data or knowledge arrived at during this process (National Academy of Sciences, 2008). Science also implies to the search and use of knowledge and apprehension of the natural and social world

via the use of logical methodologies which are evidence-based (Science Council, 2020).

Technology as a concept is said to be dynamic, and also to entertain some degrees of difficulties in its interpretation, observation and evaluation which is influenced by its abstract nature, these basic characteristics of technology as a term and many others have accounted for the difficulty in arriving at a universal definition of what technology is and is not, and thus pave the way for the array of definitions available on the subject matter (Blomstrom and Kokko, 1998; Brey, 2009; Wahab, 2012). Examples of researchers who have attempted to define technology include, Kumar *et al.* (1999), who noted that technology is comprised of two basic components, which according to the researchers are physical and informational. Accordingly, the researchers noted that the physical aspect of technologies embodies the aspect of technology that can be seen; they include technological innovations as equipments, tools, products, blueprints, processes and techniques. In contrast, the informational component of technology is made up of knowledge and expertise in such areas as production, marketing, management, among others.

Researchers such as Lan and Young, (1996), explained that technology is often linked with the arrival at a certain outcome, finding solutions to specific problems, execution and completion of tasks via the adoption of specific skills as well as the deployment of knowledge and exploitation of assets. Going further; Lovell, (1998); Bozeman, (2000) elucidates that the idea of technology as a concept goes beyond the technology that a product embodies, to encompasses the knowledge of its utilization, applicability as well as the process employed in the development of the product (Lovell, 1998; Bozeman, 2000). For Burgelman *et al.* (1996), the concept of technology can best be described as the embodiments of both practical and theoretical understanding, artefacts and skills which can be deployed in the creation and development of services, products, cum the production and delivery systems of such products and services. While Lin, (2003), provided a more generalist view, the researcher opined that technology is not seen only in products and services, but is also embodied in processes which may be physical or cognitive in nature, tools, facilities, machines and even in people (Lin, 2003).

The effort from MacKenzie and Wajzman (1985), explains the technology to include all the processes and techniques employed in the incorporation of objects or artefacts which are physical, the steps taken in creating the objects as well as the logical explanations and meaning ascribed to the physical objects. Mascus (2003) added that the idea of technology as a concept presents technology as that essential knowledge and information which are crucial in the actualization of an anticipated production outcome based on the strategic combining of designated inputs such as “production processes, intra-firm organizational structures, management techniques, and means of finance, marketing methods or any of its combination”. For Tepstra and David (1985),

technology is more like a cultural system, which concerns itself with the relationships between man and the environment which he lives in. Similarly, Asoque (2014) sees technology as extension and deployment of scientific findings, discoveries and conclusions to aspects which allows these discoveries to make a direct or indirect impact on humanity as well as the human environment. From the various definitions provided by scholars on what technology is, the following facts can be deduced, first, is that technology does not happen by accidents, as it always requires human effort to fine-tune and materialize it. Secondly, technological outcomes can be a process, services, knowledge or even a product such as in the case of vehicles, electronic appliances, ICT gadgets, aeroplane, drones, warheads, and even medicine and medical equipment and devices among many others. Technology as a service is typified in most automated services, such as online shopping, internet banking, and much other technology-aided services, also technology as knowledge is underlined by the processes adopted in the development of a product/services or arriving at an improved solution to a problem.

### III. SCIENTIFICIALIZATION AND TECHNOLOGIZATION OF CONTEMPORARY SOCIETY: A PREPARATORY GROUND FOR WORLD WAR III

The contributions of science and technology in the promotion of global peace and security and as well as bringing positive changes in the quality of human life globally is not in doubt, nor can it be debated. However; what is in doubt is the longevity of these peace and security secured by science and technology in the world. The growth in science and technology in the 21<sup>st</sup> century has been marked by an increase in terrorism, hostility, and conflicts in virtually all parts of the world. From Nigeria, Syria, Libya, Yemen, Somali, Congo, Egypt, Ukraine, Iran, Iraq, Afganistan, North Korea, South Korea, Israel, Niger Republic and the list goes on and go. These nations are either engulfed in terrorism, or by insurrection and hostility arising from rebel groups, or by intense rivalry from neighbouring countries.

There have been a shift on the primary justification for the promotion of Nanotechnology, which predominantly is focused on the development of nuclear and molecular technology. The justification for the creation of these technologies was formally to help solve the problems relating to the shortage in energy; however, this seemingly harmless technology has metamorphosed into the greatest source of danger to human life and threat to world peace-the danger of nuclear war (Asoqwa, 2014). The nuclear threat is increasingly becoming pronounced with many nations (Iran, Pakistan, Libya, Syria, and Burma) joining the list of the nuclear states. Despite the efforts made by a world government like the United Nations towards reducing as well as stopping the growth in nuclear armament as well as other sources of threat, specifically, despite the efforts put in place by the UN, to prevent Iran from increasing their possession of uranium, as Iran has sworn that her use of uranium will be limited for energy production, there is still a growing fear of

Iran reverting to using the uranium for the production of a nuclear weapon, especially, as Iran has been named among the major sponsors of global terrorism (Asoqwwa, 2014; Daniel, 2018).

Accounts from David (2019), showed that such countries as North Korea have been notorious for its involvement in the exportation of ballistic missile technology to several countries, which includes the crisis-ridden Syria and terrorism sponsor states like Iran. North Korea, despite the heavy sanctions melted on the nation, have in many ways showed their interest in the proliferation of harmful technologies. Specifically, in the year 2017, it was noted that North Korea for two consecutive years has carried out an enormous number of ballistic missile tests, including its first ICBM tests (David, 2018). From the Russia side, reports abound that Russia, has successfully developed a ground-launched cruise missile (GLCM), a move which is said to contradict the Intermediate-Range Nuclear Forces (INF) Treaty purportedly.

Aggressive efforts have also been scored from the part of the Asian giant, China, who have reportedly modernize her nuclear missile force via the inclusion of more survivable road-mobile based systems as well as via enhancing its silo-based systems. Going further, China has been reported to have also embarked on the testing of hypersonic glide vehicle, while it has sustained her effort in the development of the JL-2 submarine-launched ballistic missile (SLBM) through the services of her arm force- People's Liberation Army (PLA) (David, 2018).

In Syria, there have been accounts of the use of what is considered to be the largest attacks via chemical weapon since from the year 2013, August. The Syrian government, have deployed the use of a chemical weapon (the nerve agent sarin) in their attacked launched against rival groups on the 4<sup>th</sup> day of April, in the year 2017, at Khan Shaykhun, there have been equally similar reports on the use of chemical weapons by the Syrian regime to launch an attack at rival groups in 2014, and 2015. What is even more troubling is the unwillingness of the Syrian regime to honestly disclose the complete elements of her chemical weapon initiatives to the Chemical Weapons Convention (CWC). This has continued to be the case in Syria despite the efforts of the Organization for the Prohibition of Chemical Weapons (OPCW), who have tiredness toiled to bring a lasting solution to the discrepancies in Syria's chemical weapon possession declaration. That the world has not experienced the outbreak of a nuclear war is what Richard Butler of Australia called an act of 'good fortune' (Butler, 1996). Capturing the status quo, Eneh, (2000), noted that

“The greatest problem facing man and his ecosystem today is the possibility of a nuclear war. The nuclear weapons of destruction such as the atomic, hydrogen and neutron bombs have been stockpiled in the war arsenals in both developed and

developing nations, awaiting the opportunity for their release in spite of man's pretence of the delimitation of their proliferation" (2000: 59).

Consequently, there have been increase in the number of terrorist groups as well as in the number of attacks launched by these terrorist groups globally. In fact for people living in areas that have suffered persistent terrorist attacks, as seen in the events unfolding in some states in the Northern part of Nigeria, terrorism is gradually becoming a norm, while suicide bombing is increasingly being embraced by people. No thanks to the use of high tech powered weapons as armoured tanks, AK-47, and other war ammunitions, the Boko Haram insurgent group have successfully set the Northern part of Nigeria on fire, killing over an estimated 17, 000 people while displacing over an estimated 2.2 million people in Nigeria (Mercy Corps, 2016).

Accordingly, Asogwa (2014), have noted that the state of terrorism, insurrection, and violence in the modern society has taken great heights, which it could not have taken without the aid of science and technology. There have been speculations that such degenerative diseases as the HIV/AIDS Virus, as well as the dreaded Ebola, the disease did not come to be naturally, but were manufactured as part of an array of biological weapons (Asogwa, 2014).

Invariably, it is exactly what is being speculated about the most recent pandemic, ravaging the entire human population. Hence there have been increased speculations on the originality of the novel Corona virus which broke out in China and have so far infected more than 3 million people globally, and accounting for over 250 thousand deaths globally (WHO, 2020). More also, the outbreak of the Corona Virus have left strong negative marks on the economy of great nations and is shaking the economic foundations of many third world countries. However, it has not to be established if the Covid-19 virus was biologically engineered or if it was natural. It is however saddening, that what was initiated to bring solutions to the daily challenges facing humanity, have been misused to the point that it serves as the greatest source of danger and threats to humans, plants, and animals as well as to the stability and peace of the world.

#### IV. CONCLUSION

This paper has meticulously explored the gains and losses of science and technology in the modern technology, with emphasizes on the possible threats emanating from the misuse of science and technology, such as seen in their uses in the creation of weapons with the capacities to inflict large scale destructions whose impacts cannot be erased even over time. This paper submits that the misuse of science and technology is seen in its use in the creation of a nuclear, chemical and biological weapon of any sort. Although, the creation of nuclear weapons was defended by those who argue its deterrence prowess; however; the danger in it still outweighs its good. Although, following the end of the Second World

War, there have been increased effort from the United Nations towards ridding the world of the presence of these weapons of mass destruction. However; there is a strong need for the enforcement compliance from the nuclear nations, as well as ridding access to the materials and technologies required for building these weapons by states or nations which are recognized sponsors of terrorism if the impending nuclear weapon is to be averted.

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