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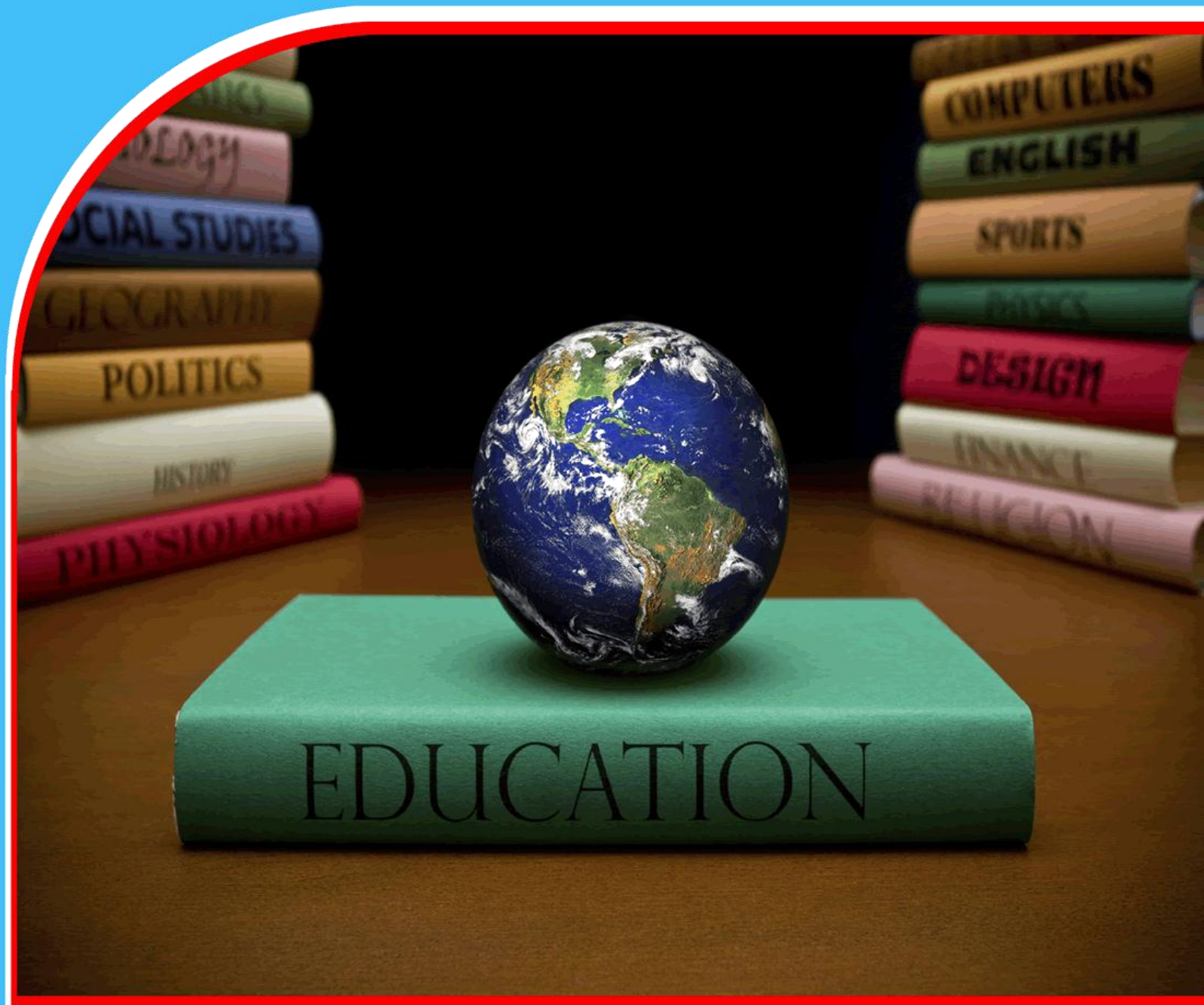

HUMAN EVOLUTION AND TECHNOLOGICAL EVOLUTION: A HISTORY OF INSTRUMENTALIZATION, DEVALUATION AND BETRAYAL

Ankia Emmanuel Gha

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HUMAN EVOLUTION AND TECHNOLOGICAL EVOLUTION: A HISTORY OF INSTRUMENTALIZATION, DEVALUATION AND BETRAYAL

Ankia Emmanuel Gha; PhD in the Philosophy of Technology

Corresponding Author's Email: ankiagha@yahoo.com

Abstract

The principle of evolution applies to every creature in the world and permits us to understand the various stages through which progress is achieved. The emancipation of the human race portrays an evolutionary process through which the human intellect is uplifted above and beyond the realms of ignorance and naivety. It is a project of enlightenment, and just like any other project, the results we obtain are directly derived from the actions that precede them. In fact, we only achieve the objects of our desires. Our quest for a proper understanding of the human race goes through the various domains that characterize our educational systems around the world. Biology, Chemistry, Physics, Economics etc., all permit us to perceive the human intellect from different perspectives. But it would appear that technological evolution, which has also played a key role in the emergence of the human society, has not been properly appraised; at least, this is the accusation put forward against human culture by French Philosopher, *Gilbert Simondon.* (Simondon: 1958). He thinks that technic has suffered prejudicial judgment from human culture, which has condemned it even before understanding its true mode of existence.[1] From his view point, the conflict that has emerged between man and the machine, or better still, between culture and technic is caused by a misunderstanding of the technical being. The goal of this paper is to find a point of agreement between man and the machines that characterize his daily life, in view of a better world.

Keywords: *Devaluation, evolution, humanity, instrumentalization, technology*.

[1] **Simondon, Gilbert**, *On the Mode of Existence of Technical Objects*, Paris, Aubier, Editions Montagne, 1958, P. 1.

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INTRODUCTION

It is strange that in the study and teaching of history, so little attention is paid to the history of technology. Political and constitutional history, economic history, naval and military history, social history—all is well represented and adequately stressed. The history of technology is neglected in comparison yet, in a sense, it lies behind them all. (McNeil, Ian, An Encyclopedia of the History of Technology, Routledge, London and New York, 1990)

Human beings have evolved in the light of their technical know-how; the history of human evolution can also be expressed as a history technological evolution. From the *Stone Age, Antiquity, Medieval Age, Age of Enlightenment, Modern Age* and the *Post Modern Age*, we can perceive the progressive emancipation of the human mind in the light of the technical aptitudes manifested at each stage. Our struggle to master the Universe would be impossible without a mastery of technical objects (Simondon: 1958). Beginning with primitive technical elements such as knives, spears, javelins etc, to the most sophisticated machines that exist in the world today, humanity expresses its genius; technology has permitted man to proof his worth. It is therefore surprising and rather unfair that little attention has so far been paid to the proper study of the genesis and evolution of technical objects.[2]

The neglect of technical objects has prevailed over the generations; even though technic has played a pivotal role in the evolution of the human race. This neglect has been masked by a superficial recognition of technical objects, seen as loyal servants to humanity. Yes, even the slave has some dignity, which may be recognized once in a while; small privileges, for countless efforts put in on daily basis. But we question the genuineness of this acknowledgement, especially when it only covers a mountain of pain and frustration. This has been the situation between man and technical objects; man has reduced technicality to slavery, and has only recognized it as a means to numerous ends.[3] He has always seen technic as a loyal servant, bound to protect humanity against the harsh forces of nature and serve his numerous desires. He has failed to see the humanity that is embedded in the technical being; his appraisal of the latter has always been blurred by prejudice, devaluation and instrumentalization; the goal is clear, maintain technical objects under human control. However, we do understand the logic of this position, *for the master to remain master, the slave must remain a slave.*

French philosopher and Engineer, Gilbert Simondon, sets out on an interesting mission; to bring out the humanity that is hidden within the machine, and by so doing, restore the ontological dignity of the technical being. He thinks that the proper understanding of technical objects begins with the understanding of the factors that constitute their genesis and evolution. If this is achieved, then we will realize the humanity that lies within technical objects and their reinstatement onto the table of values will be assured.

But this approach, which seeks to bring the machine closer to man, seems to ignore the fact that the two parties, though sharing the same history, do not evolve on the same wavelength. Human evolution is characterized by *events, lessons, successes and failures, joys and pains*; which have molded the human mind and have laid the foundation for every social, political,

[2] Simondon, 1958.

[3] A functionalist perspective that considers the validity of a method by taking into account the end results. If the results are good, the method to reach them is justified. This ideology is problematic because it clears the way for terrible and inhuman actions, which focus solely on the attainment of their selfish ends, and care less about the atrocities that might be committed in the process.

moral, cultural and economic institution that exists in the world today. Technology, on the other hand, has only served man in the accomplishment of his dreams. It is true that in the "*dialectics of the master and the slave*"[4] the slave, brought up in the midst of his master; under his shelter, studies his mode of life, learns to be like him; envies his position. Through hard work, perseverance, ruse and betrayal he finally overthrows his master, to become the new master. This process continues as an endless story of trust and betrayal; the master becomes the slave and the slave the master, over and over again. Looking at it closely, can we not say that the relationship between man and the machine follows a similar pattern?

Dejected and reduced to slavery under human control, technical objects have suffered discrimination over the generations. The gradual acknowledgment of their worth within the human society has enhanced their status, bringing them closer to man. They have, in a certain way, gained access to the prestigious *table of values.* But this acknowledgment did not last for long. The events that characterized the 20th Century, mostly during and after the Second World War; the atomic bombs on Hiroshima and Nagasaki, biological weapons, the inhuman treatment of Jews in concentration camps by the Nazis; all the terrible things that have taken place in the last few decades in name of technological research raise important ethical questions concerning technic and its rightful place within the human society.

A. The Emergence of Technical knowhow

Human beings are undoubtedly the most advanced creatures that live on earth. This position is fully deserved, for humanity has made great use of its rational faculties; we make the best of what we have. Credit goes to man, who has worked so hard over the generations to improve his living conditions. In fact, we can rightly say that humanity is a *blessing to the world.* Human beings, through their physical and intellectual endeavors, transform the world to create wonderful things. The story of human invention is a story of natural potential. The world has offered the human race with all the necessary elements that permit us to express our humanity; beyond doubt, our world makes us more human.

Gilbert Simondon sees technic as the appropriate mediator between man and the world; our technical know-how lays down the very conditions for our appraisal of the universe. For instance, the naked eye is unable to see deep into space; but with the help of a telescope, we can observe far into other galaxies; the microscope plays a similar role in the inverse direction. Aircrafts give us "wings"; with them we can go where we want. In fact, technology gives us the chance to fulfill our most insane dreams.

Our relationship with technology is a story of romance; we helm from the same origins, we interact to bring "magic" into the world. Mutual interaction between man and technical objects can be perceived everywhere, at every time. We need to dive back into history lane, and perceive the pattern of our evolution; we need to view our lives as they unfold; as they are forged, projected from the realms of nothingness, in which reigns ignorance, before materializing into our ultra-modern world, where intelligence and organization carry the day. We've got to be keen with our inquiry; we need to be patient, devoted and resilient, for the task we have at hand is no easy one. With some perseverance, we shall definitely make meaning out of the existential dilemma that inhibits the world; and maybe this understanding will help us find the way, a path to salvation. We may after all save the world from ignorance,

[4] **Jessop, Bob**, in *The Communist Manifesto as a Classic Text*, Lancaster University, 2017, P.4.

and lead humanity to a better future. Is it not the job of the wise man to show the way? Are we not the guardians of humanity?

The goal is one; establish harmony in the midst of chaos, unity in the midst of diversity, peace in the midst of war. The accomplishment of this ambition is the prize; the only valuable trophy that can make us proud. We'll look back to our origins, to the genesis of our intellect, and learn the lessons we can afford, for this is all we have. To find a way ahead, we must master the obstacles and stepping stones that lie behind us, for it is the same story that will be told again and again, just like night and day, which keep coming up over and over, like an endless return; always new, but always the same. Maybe the mysteries of the world are not so mysterious anyway; maybe they are just strange, not because strangeness is their mode of being, but simply because we've got a limited perception of reality. Let's begin our journey.

1. **Antiquity**:

Antiquity generally refers to the ancient times, the period of human history when man's knowledge of the world and the forces that govern it is limited. During this period, man is referred to as the *ancient man*, *pre-historic man* or *early man*. He lives in caves, clothes himself with tree backs and animal skin, feeds on fruits and other wild plants. He is unable to live a settled life, given that he lacks the capacity to establish a consistent lifestyle.[5] This period of human existence is characterized by the constant struggle for survival, and man is not so different from the other creatures of the world.

However, humanity harbors within its mind the capacity to create and use technical objects, even though, at this period in time, it operates far below the average. This confirms one fact; *the human use of technical know-how has always been an integral element of progress in our world, playing a key role in the emergence of the human society*. The goal is not to do a run-down of all human efforts, but to show the element of technicality that is contained in the genes of this race. By the way, is this not what permits man to function in the world? One way or the other, it is evident that the history of the human mind is, as a matter of fact, visible in the historical development of technical objects.

The human mind is at the center of everything that takes place in the world; it is at the center of all that has happened from times immemorial. Nothing has happened without it, nothing can be done without it; it determines what we are with respect to other creatures; who we are today, and will certainly play a key role in our becoming. We cannot break away from it, for it is in us; it underlines our very existence. In short, it is who we are. Ancient philosophical conceptions had to do with the operations of the mind, as it sought to understand the mysteries of the universe. It would be an error for us to consider our task more important than the ones that characterized those days. We have done nothing but inherit thought; we have thrived on the path shown to us by our ancestors; we are historical beings, forged through the mould of historical discoveries, and fashioned in the image of the objects that were created therein. The expression of the human intellect was manifested through the myths and believes that were passed on from generation to generation by the various communities that lived on earth. In this light, Ancient Greek philosophers in the likes of Socrates, Plato, Aristotle, to name but these, played a cardinal role in the evolution of human thought. Our quest to understand the

[5] **McNeil, Ian**, *An Encyclopedia of the History of Technology*, Routledge, London and New York, 1990.

origins and evolution of technology and its relationship to humanity will be greatly enhanced by one of the myths narrated by Plato, the *Promethean Myth.*

1.1: ***The Promethean Myth***

The Promethean myth is actually an imaginary speech, narrated by Plato on behalf of Protagoras, the Sophist.[i] The aim is to bring forth his conception regarding the origin of civilization. Plato is an *idealist*,[ii] and seeks to emphasize on its superiority over materialism. The reasoning behind the myth is that human beings are who they are because of their innate faculties, given to them at the beginning of time by the gods, hence, putting them above the other creatures of the world. The argument here is centered on the *teachability of virtue*[iii]. Thus goes the myth;

Protagoras engages in a debate with Socrates, in which he defends the position that political virtue, just like any other human intellectual endeavor, can be taught. But this can only be possible to those who can learn it. He thinks that this form of virtue can be taught only to the human species because of their intellectual capacity to learn. "*These have explained to you that what Socrates and I call virtue-the sum of right dealings in human relations, justice, piety, sophrosyne, and the rest is a necessity of social existence. From this it follows that every member of society must have virtue. And if everyone is to have it, everyone must learn it, for how else could an art be acquired?"*[6]

To further explain his point, Protagoras narrates the myth of Prometheus[7]. He thinks that not only can virtue be taught, it can be done by virtually everyone, to all. This is thanks to the human capacity to learn and teach virtue to their fellow humans, and this begins from the birth of humanity. We must note here that the position of Socrates is that virtue cannot be taught, and even if it came to teaching it, the task would be reserved for a few and then great leaders such as Pericles would have been able taught their art to their offspring. But this is not the case, given that the values that inhibit every human being are unique and cannot simply be taught to anyone.[8] We will be back on this analysis.

Zeus[9] charges Prometheus and Epimetheus to distribute powers to all mortals in order to permit them survive against the harsh conditions that reign on earth. Epimetheus proposes to do the distribution, while Prometheus takes the task to do the verification at the end of the exercise to ensure that the job has been properly executed. Epimetheus sets out to share the different powers to the creatures of the world; to some he gives strength and strong teeth e.g. the big cats; lions, tigers, jaguars etc, to others he gives poisonous venoms (snakes, scorpions etc), to some he gives wings and feathers to keep them warm. He enables smaller species to reproduce at a faster rate, such that even though hunted by the larger predators, equilibrium will be maintained; to others he gives the capacity to run fast to enable them escape from predators. He continuous with his job, and finally comes to man. But unfortunately, he has exhausted his stock of powers and has nothing left for the human being. (Prot. 321c)

[6] **Plato**, *The Protagoras*, The Bobbs-Merrill Company, INC. The Library of Liberal Arts, (Benjamin Jowett's translation), 1956.

[7] Prometheus; The Greek god of Fire and Craft, chiefly honored for stealing the fire from Zeus in the stalk of a fennel plant and giving to mortals for their use.

[8] **Plato,** *The Protagoras*, Ibidem.

[9] **Protagoras, 320d-323c; Zeus** : The supreme god of all Greek deities. He sends out Epimetheus and Prometheus to distribute talents to all mortals living on earth in order to enable them survive against the harsh conditions of the world.

So Epimetheus imprudently exhausts the entire stock of talents given to him by Zeus, and has nothing left for the human race. Here is man, helpless and defenseless against the dangers of the world. Nevertheless, Prometheus is more astute than his brother, and quickly devices a means to remedy the situation. This consists of stealing from the table of the goddess Athena, the wisdom of the arts and fire from Hephaestus. With these two powers handed over to man, human beings could now build weapons with which to defend themselves against harsh forces of nature. This marks the entry of technical know-how into the world; technique becomes a human heritage. It comes in as a measure to correct the epimethean mistake committed due to imprudence and spontaneity.[10]

However, the human race still could not succeed in dominating the world; even though they tried to come work together, they ended up hurting one another and eventually broke up to live separate and isolated lives. They couldn't build a coalition, and so remained weak, even though they had been equipped with quite interesting talents. It is at this stage that Zeus comes in again. He really cares, not only for humanity but also for all the creatures that live on earth. He commands Hermes to equip humanity with two additional powers, the sense of Justice and of shame.

These two capacities turn out to be the master piece, as they permit humanity to enact laws that govern life within the society, hence, making it possible for the different individuals that live within it to collaborate with one another. Justice ensures that there is fairness and mutual understanding among human beings, makes sure that transgressors of the law receive appropriate punishment for their crimes. Justice brings morality into the world; it enables humanity to make better use of reason in the promotion of peace and harmony in the world. Thanks to this capacity, societies develop and human emancipation takes a great boost; educational institutions are created, enhancing objective reasoning and hence permitting the human race to develop into what we have today.

The sense of shame, on the other hand, ensures that humanity sticks to the moral and ethical principles that govern the society. This definitely draws the line between man and the other organisms that live on earth. For instance, animals can mate in the public, without manifesting any sense of shame. This is not the case with man, who will always seek to do so in a more respectful manner; he would not love to be viewed as person that has no dignity. Justice and shame silence the animal that lives within man, and condition him to give priority to his moral and ethical standards. But what does this myth teach us about the intellectual emancipation of the human race with respect to technical evolution?

1.2: ***The Significance of the Myth***

There are a handful of lessons to learn from the promethean myth. The first one is the key role played by technical know-how in the preservation of the human race. The imprudence manifested by Epimetheus in the distribution of powers among the mortals leaves man at a disadvantage, as he is left defenseless. But the measure taken by Prometheus to resolve the problem offers man the opportunity to become master of the world, as he detains the know-how to make various devices to protect himself against the harsh forces of nature. In this light, his disadvantage is transformed into an advantage, because not only does he make weapons, he also builds machines which go a long way to improve his living standards.

[10] **Balaban, Odette**, *Plato's Protagoras*, University of Haifa, Haifa Mount Camel, 1999, P.3

The second lesson we can learn from this myth is that technical know-how alone couldn't ensure human emancipation, let alone man's survival on earth. The ability to create weapons and other tools didn't guarantee cohesion within the human community, given that greed, jealousy, laziness, egotism and other forms of human weaknesses still carried the day. Men fought against one another for domination, and this made them unable to come together and live an organized life. Isolated from their fellow counterparts and alone against the forces of nature, man could not stand for long; humanity remained the underdog of the world, despite its mastery of the arts and fire.

The third and final lesson we derive from the promethean myth is the indispensability of morality for the survival of the human race. The inability of technical know-how to ensure peace and objective collaboration within the human community permits us to understand the importance of the ethical dimension of the human intellect. It is morality that ensures respect and collaboration within the society; without this aspect, the society becomes no less than a jungle, in which reigns the law of the strongest. Here, only the strongest do survive, while the weak perish. This is the law of evolution, as explained by Charles Darwin.[11]

The Darwinian view of life is more or less effective with the other organisms of the world. We notice this determinism within the animal kingdom, where the survival of each species depends on its capacity to adapt to the natural conditions that reign on earth. But humanity remains the only species which is capable of going above the realm of natural determinism to orientate itself on a pattern of evolution different from the one proposed to it by instincts. Animals depend solely on their instincts to feed, reproduce and protect themselves from danger. With the human being, everything is reorganized according to the laws of reason, and every decision is programmed and properly analyzed before execution. We notice here some mutual collaboration between the practical application of techno-scientific know-how and the moral attributes of man. From the promethean myth, we can affirm beyond doubt that the ethical dimension of the human intellect plays a cardinal role in the organization of our post-modern society. The optimum manifestation of human collaboration with the machine is seen from the age of enlightenment onwards. But it will be important that we note a few facts concerning technological evolution during the middle ages.

2: *The Medieval Age and the Abduction of the Human Mind*

The medieval Age is the period in human history which runs from the 6th to the 16th Centuries (500-1500). It runs from the fall of the Ancient Roman Empire, after its invasion by the Ancient Northern Europeans (Barbarians), to the Italian and English Renaissance, which marks the rebirth of classical learning. It is mostly considered to be a dark period for objective reasoning, given that little importance is paid to the mind and its preoccupations; truth is derived from heaven and passed onto humanity via the clergy and the Priests (considered to be the servants of God). Little progress is made in the domains of science and technology during this period, and religion is the dominant institution in the world. The middle ages

[11] **Darwin, Charles**, *On the Origin of Species*, Down, Bromley, Kent, 1859. Darwin thinks that organisms evolve by adapting themselves to the conditions that reign on earth, through the generations; survival is determined by the capacity to withstand the harsh conditions of life and take advantage of the favorable ones. Only the strongest do survive and live to pass on their genes to the next generation. This takes the form of *natural selection* when it comes to reproduction, given that every species is naturally gifted with the capacity to choose the strong and healthy genes for its offspring, in order to maximize their chances of survival.

witness the emergence of Islam, founded by Mohammed in the 7th Century,[12] as a revolt against Christianity, which had so far overshadowed all religious affiliations. Scientific and technical truth during this period is designed or forced to corroborate with religious truth. The scientific view of the world is conceived with respect to religious believes, and any contrary position is seen as disloyalty to divine wisdom and control. Human knowledge is deemed to be so shallow, unable to show humanity the way to salvation; meanwhile religious truth is all we need to find our way through a world full of confusion and ignorance.

When we talk of the abduction of science in the Middle Ages, we do not entail that no progress was made in this domain during this period; we simply emphasize on the domination of religion during this period, and its excessive involvement in scientific issues. Religion claimed to master the truth concerning the fundamental concepts of life, such as questions concerning the origin and finality of life on Earth, the goal of man in the world and the manner in which he must behave. Religion intervened in everything, and was viewed as the highest authority in the world. The principal objective of Spinoza is to specify the limits of religion in scientific issues, but this will be the subject of another article. The enslavement of the objective mind to dogmatic beliefs during the Middle Ages makes of it a dark period in this history of objective emancipation, hence, the name, "Dark Ages". It is a period in which the mind is under captivity, unable to study the world and its natural laws freely. That which hampers the development of science obviously hampers the development of technicity, given that technique is nothing but the practical application of scientific know-how.

The role of technical objects within the human society will remain subordinate over the generations. But judging from the onset, we might have been tempted to think that Plato, through the promethean myth, sought to give credit to technical objects, for saving humanity from extinction, but the reality is that the myth only helped to strengthen the position idealism over materialism.[13] Plato is an idealist who has no regards for anything physical; *appearance blurs our vision, and keeps us away from the real things found in the world of thoughts*.[14] This derogatory view of technical reality during antiquity was simply amplified during the Medieval Age.

But the Medieval period did not only obscure scientific inquisition, it actually laid the foundation of the renaissance. This happened mostly thanks to the introduction of the works of Aristotle to Western Universities, a move which reopened the door to objective reasoning. Aristotle, in his Physics, conceives reality as a product of the interaction of four main causes; the material cause (the substance that composes the object), the formal cause (the form it takes in existence and which differentiates it from other objects), the efficient cause (the force that is involved in its transformation) and the final cause (the purpose for which the object exists; its goal). Through the four causes, we can see the operations of science and technic in the transformation of the objects of the world. It suffices to master the natural constitution of

[12] **Pounds, Norman**, *The Medieval City*, Greenwood Press, p.ix

[13] **Iliadis, Andrew,** in *A New Individuation, Deleuze's Simondon Connection*, Media Tropes, Vol. IV (2013, P.89) Idealism is the school of thought which holds that the truth of things is found in the mind, which conceives them and defines them. They are void of essence, and need the human mind to make meaning in the world; their essences are found in the mind. Materialism, on the other hand, holds that the truth about the objects of the world can be gotten nowhere else than the things themselves. We get an idea of their essences through observation and experimentation. They, as Iliadis states, sensitize us on their properties and instruct us on how to use them.

[14] **Plato**, *The Republic*, Book 7.

these objects, then they can be used according to their various properties to build various objects in the world.[15] To embrace Aristotle's philosophical ideas marked the beginning of the renaissance, as objective reasoning once more saw the light of day. The renaissance actually marks the rebirth of the creative abilities of man in his interaction with the objects of the world. If the end of the Medieval comes with renewed interest in the technical dimension of life, the renaissance actually marks its invitation onto the human prestigious table of values.

3*: The Renaissance: Technique dines with Man*

The renaissance is the period of human history that runs from the 14th to the 17th Centuries. It marks an era of enormous cultural, political, economic and social transformation in Europe. It follows the rediscovery of Greek classical philosophy, most precisely the philosophy of Aristotle. Other great actors of the Renaissance include Galileo Galilee (1564-1642), who stresses on the importance of mathematics within the domains of science and technology, *Leonardo da Vinci* (1452-1519), Italian painter and inventor responsible for painting the *Mona Lisa* and the *Last Super*, *Réné Descartes* (1596-1650), French Philosopher and Mathematician greatly considered to be the father of modern philosophy and famous for stating, "I think, therefore I am"[16], *Nicolaus Copernicus*, *Thomas Hobbes*, etc.

The renaissance comes with the reawakening of the human mind in its interactions with the world, adopting the Aristotelian conception of the world and the effects of causality within it. Another important factor that characterized this period is the invention of the printing press which made it possible for a greater majority of the people to have access to information. The beginning of the 14th Century sees the birth of a cultural movement in Europe called Humanism. Humanism promoted the ideology that man is the center of his own universe; humans need to acknowledge human achievements in education, classical arts, literature and science. Religion loses its position as the dominant social and political force within the society, as the valorization of human efforts gains ground. So far, the history of human emancipation is parallel and even complemented by the evolution of science and technology; in the nut share, the evolution of the human mind is seen in its capacity to give an objective account of the objects of nature and the laws that govern them. This is only visible in man's activities within the domains of science and technology.

Our main objective here is to trace the evolution of the human intellect, in the light of techno-scientific evolution and the relationship of antagonism that has always existed between culture and technic from times immemorial. We noticed the derogatory treatment of technic during and after antiquity. The renaissance comes with the rebirth of the desire to discover the wonders of the world; in the same way that the pre-Socratics had been interested in the original element of the universe and the constitution of matter within it. Science and technology finally get the recognition they deserve, and this propels humanity into a brand new age, the Modern Age.

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[15] *The Medieval City*, Ibidem.

[16] **Descartes, Réné**, *Discourse on the Method of Reasoning*, (1637), Oxford University Press Inc. New York, Ian Maclean, 2006. The Cartesian affirmation, "I think, therefore I am" is in strict terms an announcement of the revival of the human mind. Man becomes the author of his own existence through auto-realization. It is no more necessary for humanity to wait for orders from heaven, as man can create his own rules based on his physical and mental conditions.

B: Modernity: Collaboration between Man and the Machine

The modern era comes after the Renaissance, and can be segmented into two sub periods, *early modernity* (marked by the invention of the movable printing press) and late modernity (marked by the Industrial Revolution); during this period, we witness an increase in scientific inquiry.[17] The modern era comes with the concretization of what had started with the Renaissance; if the renaissance got humanity's feet back on the ground, Modernity got man moving, as the fruits of human efforts culminate in great scientific progress, materialized by the Industrial Revolution.

The Industrial Revolution came along with so many benefits as far as the emancipation of the human race is concerned, it brings us back to the period when man was the "measure of all things, for those that are, that they are and for those that are not, that they are not"[18]. Man becomes the "master and possessor of nature" (Descartes: 1637); he uses his know-how to create a better world for himself. Modernity is the period where scientific knowledge is mostly instrumentalized for the benefit of the human race, or at least to part of it. The Industrial Revolution granted science and technic access to the table of values, as it permitted the full acknowledgement of the human intellect, which had so far been submerged by religious dogmatism. The modern age is thus characterized by the celebration of human faculties, and technical know-how is instrumentalized for the benefit of human dreams. The human being is considered to be a god on earth; he is the only one to set the rules that govern the society. Jean Jacques Rousseau's "Social Contract", published in 1762 went a long way to promote political liberalism on earth. Hence, the Renaissance, and later on the Modern Age came with a lot of freedom; freedom from religious dogma, ignorance, slavery, to name but these.

But it will be important for us to acknowledge the fact that Rousseau's "Social Contract" only follows the path that had already been paved by Thomas Hobbes in his 1651 publication, "The Leviathan". Hobbes explains that true emancipation and progress only occur within the human society when people cease to live in the "State of nature"[19] and instead choose the State of Law. In order for human beings to ensure collective peace and harmony within the society, they need to enter a social contract with the governing powers of the State by giving up part of their freedom; they have to forgo part of their rights, in order for their protection and the protection of their property to be ensured. The conditions that reign within the State of Nature do not favour mutual coexistence, given that everyone claims equal rights to goods and services. The struggle to monopolize these goods and services brings social unrest; the State of Nature leaves no chance for harmony and cohesion within the society. This problem is solved when a strong government is put in place to protect the rights of the poor against the rich on the one hand, and also protect the wealth of individuals, on the other hand. The reawakening of the human mind during the Age of Enlightenment and its consistent elevation during Modernity ushers humanity into a brand new era, and help in the development of a new humanism.

The momentum of techno-scientific change is maintained, as man continues to forge a better life for himself; the centralization of the benefits of the Industrial Revolution within the hands of a few fortunate individuals leads to emergence of Capitalism. Capitalism ensured the

[17] **University of Minnesota** *Understanding Media and Culture*.
[18] **Protagoras of Abdera**, Ibid, (485-415)
[19] **Hobbes, Thomas**, *The Leviathan*, (University of Oregun, rbear(at)uoregun.edu), 1651.

wellbeing of the ruling class, the Bourgeoisies, and accentuated the exploitation of the poor. (Robert E. Litan, William J. Baumol, Carl Schramm, in *Good Capitalism, Bad Capitalism*, 10th March 2008). Gradually, due to the negative reputation of Capitalism within the realms of the larger population, the esteem for human faculties, that had enabled humanity show its worth will begin to loose momentum, as the desire to dominate the world will lead to wars. Mindless of all the progress that had been made in the domains of science and technology, human rights, in fact, the humanism of man, the key factor of the Renaissance and the Modern era seemed to be helpless in front of the new problems that emerged under the banner of economic, social and political liberalism. Wars need weapons, sophisticated weapons, and the new techno-scientific capacities of human beings permit them to create dangerous armament, some of which pose a real problem to the survival of the human race. This development will later lead to the ejection of technic from the human table of values.

Simondon comes in as an advocate for the technical being, and his main objective is to restore the lost ontological dignity of technical objects. He thinks that technic was judged and condemned prejudicially, and was given little or no chance to defend itself. This is the situation that prompts the philosophy of technique laid down by Simondon; he thinks that the technical being has not yet been fully appraised, yet has been condemned. He deplores this situation in the introductory part of his *Mode of Existence of Technical Objects (MEOT)*; *Culture behaves towards the technical object much in the same way as a man caught up in primitive xenophobia behaves towards a stranger. This kind of, misoneism directed against machines does not so much represent a hatred of the new as a refusal to come to terms with an unfamiliar reality. Now, however strange this reality may be, it is still human, and a complete culture is one that enables us to discover that this stranger is indeed human. Still, the machine is a stranger to us; it is a stranger in which what is human is locked in, unrecognized, materialized and enslaved, but human nonetheless.*[20]

Simondon writes his MEOT at the dawn of the Second World War. Technological evolution is considered an enemy to humanity, given the dreadful effects of its inventions during and after the war; the atomic bombs, biological weapons, notwithstanding the mad euphoria that comes with the necessity to carry out research in certain domains. Jacques Ellul sufficiently stresses the negative aspects of technological evolution in his *Technological Society*, published in 1954, four years after the official end of the Second World War.

1: *Technic, from Enslavement and Instrumentalization to outright Condemnation*

We have followed technical evolution over the generations in the light of human emancipation. Here we are in the modern era, where the Industrial Revolution ushers humanity into a brand new era, the age of machines. The Industrial Revolution refers to the economic, social and political changes that took place in the 18th Century in England and spread to the rest of Europe. The principal instigator of this revolution is the invention of the steam engine by Thomas Savory in 1698.[21] The steam engine is a heat engine which performs mechanical work using steam as its working fluid; its force is derived from steam pressure, which pushes a piston back and forth inside a cylinder. This force is transformed by a connecting rod and flywheel rational force for work.

[20] **Simondon, Gilbert**, *MEOT*, p.1.

The main fact to note about this period is that it permitted the creation of industries, which could now produce at a large scale. The discovery of the steam engine increased productivity and permitted the satisfaction of a greater proportion of the society. Modernity came with a more flamboyant life style, even though it also brought along a handful of problems. While some scholars see enormous progress for humanity in this period, others think it was actually a curse. They think it is at this particular stage that the truth about the true impact of technic on human beings is seen, not really as a true servant of humanity, but as a traitor; technic is thought to have betrayed man, by tricking the latter with a "fake evolution," fake wellbeing and doubtful future. Once man was considered to be the master of the world; this status has been jeopardized by technological evolution.

2: The Betrayal

We have had a glimpse of the relationship that has existed between man and technical objects over the generations and based on our analysis, we can say that humanity has used its technical know-how to pave its way to the summit of the world, becoming in this way "master and possessor of nature". [22] But the place attributed to technical knowledge at every stage of human development on the one hand, and the outright condemnation of the latter by some authors on the other hand, brings to light a rather antagonistic collaboration between man and technic. It is clear that there has been misunderstanding between man and technic, which leads to its betrayal. We recall that the technical capacities of man have, in more than one case, enhanced the survival and emancipation of the human race; the Promethean Myth permits us to see how this technical know-how, stolen from the table of the gods and passed onto humanity, ensured our survival against the harsh forces of nature. Even at this stage, technic was relegated to the realm of practical activities that are reserved to the under-privileged. Plato, in his Republic makes it clear that technic is reserved for the artisans, the lowest rank of people in the society.(Plato: The Republic).

During the Medieval period, technic is subdued to religion and this ushers humanity into a dormant era; yet still, at the reawakening of the human intellect during the Age of Enlightenment, science and technic come to our aid. Right through the Modern Age into the Post Modern era, technology has gone a long way to help humanity manifest its genius. Yet what did it receive in return? Dejection, devaluation and instrumentalization is all technic has received from human culture. Jacques Ellul stands out as one of the most prominent critics of the technological revolution; he actually dedicate his entire career to the devaluation of technic. His 1954 publication, *The Technological Society*, is geared towards the profound criticism of technology and all that goes with it. It would appear that only bad things come from technic, only illusions, only dreams and nothing else (Ellul: 1954, p. 215). Technic has been betrayed by man on so many occasions.

CONCLUSION

The interaction between man and technic is undoubtedly one of the oldest love stories that has ever existed in the world, but their romance has not been fair. While technic has given its all to make man a better being in the world, there has been little or no acknowledgment from the latter. Man has always looked down at the technical dimension of life, often reducing it to the rank of things without essence. However, the efforts of Gilbert Simondon to restore the lost ontological dignity of technical beings has gone a long way to revive interest in technology.

[22] **Descartes**, **Réné**, op.cit.

This study permits us to learn one main lesson; human beings have benefited a lot from technical know-how, and need to pay more attention to the domain of science and technology in order to have a better grasp of issues directly and indirectly related to our immediate and future wellbeing. Technology is like the Sun, we cannot prevent its rays from falling on our heads; so instead of over-emphasizing on its disadvantages, it would be better for us to seek a better mastery of the technological movement and draw the best from it. As the saying goes "You do not bite the finger that feeds you". We have a lot to gain from technology, but we need to enhance our understanding of the subject, in order to ensure better results.

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