

LITERATURE AND THE SCIENTIFIC QUEST FOR SUSTAINABLE AFRICAN DEVELOPMENT IN THE TWENTY-FIRST CENTURY

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Abstract: *The improvement or change to nature brings out the birth of modern science. Francis Bacon's¹ Novum Organum is the Scientific Method of inquiry which propels the scientific and technological advances that resulted in industrial revolution as witnessed in most developed nations of the world- United Kingdoms, United State of America, Canada and Asian Countries. African nations are also struggling to meet up with the developed nations but unfortunately and surprisingly, they are backward to the consternation of the whole World. This paper investigated why African nations lack innovation and invention to the extent that none of the nations is included in the list of developed nations in the world. An in-depth analysis of an African literary work, Chukwuemeka Ike's *The Bottled Leopard*² is done critically to identify the source of Africa's problem of underdevelopment. It was revealed that African nations are following the failing path of western science to develop. The study, therefore, concluded with the suggestion that African nations need to refrain from following the failing path of western science to imbibe a new science that would amalgamate matter and spirit as demonstrated by the ancient ancestors in the land of Egypt, thereby, creating a new holistic paradigm that can rescue humanity from the catastrophe that materialistic science will unleash on human race.*

Keywords: Literature; Culture; Development, Sustainable; Scientific Quest

¹ Francis Bacon, an English Philosopher, works on scientific substitute for the prevailing system of thought called Novum Organum in 1620.

² Ike, Chukwuemeka (1985) *the Bottled Leopard*. Ibadan: University Press.

INTRODUCTION

Nature unexplored is a mystery. It is miraculous and even magical to the primitive mind and ancestors. The primitive people first attribute the wonders of nature to deities or gods.³ These include god of Thunder, fire, Stones, water, mountains, iron, moon, sun and even in animals like elephant, leopard, lion and even snakes⁴ that are adored as they act as casual agents that were worshipped and adored. The improvement or change to nature could be seen as change over the medieval alchemists whose practices were shrouded in mystery or secrecy that bring out the birth of modern science which started in 1626 A.D. The Scientific quest however, propels scientific and technological advances that are observed in the developed nations of the world. It is worthy of note that hardly can one live at present without electricity, pipe borne water, cars, mobile phones, computers and internets, the products of modern science.

Unfortunately, when nations in other continents are moving forward, increasing, growing and industrialized, African nations are crawling. But as we can see, African nations are not relenting; they are struggling frantically to meet up with the developed nations of the world. It is imperative for African scholars and researchers to make adequate findings in order to solve the problems permanently. These have been the major objective of this paper.

³ Cited in Adetiloye, P.O. (2009), "The Scientific Quest and Africa in the 21st Century" A Lecture Paper Presented at the 49th Anniversary Meeting of Notre Dame College, Usi Ekiti Alumni Association on May 30, 2009.

See Salute to the Elephant (trans. Adebayo Babalola) in K.E Senanu & T. Vincent (Annotated) (1976) A Selection African Poetry, Essex: Longman p 10.

THEORY AND LITERATURE REVIEW

Introduction Francis Bacon's theory "Novum Organum" is used as a mode of analysis for the analysis and discussion of this paper. This theory, otherwise, called "Scientific Method of Inquiry" is found useful and palatable in this paper. It is the major problem we seek to address. It is our intent in this paper to investigate if the scientific method of inquiry, the major tool the modern science used by the civilized world to develop sustainably will actually work also for Africa. If not, the study will seek possible solution meant for the continent to develop sustainably.

The paper is content with an historical review done by P.O. Adetiloye in his lecture paper titled "The Scientific Quest and Africa in the 21st Century" The Lecture Paper is presented at the 49th Anniversary Meeting of Notre Dame College, Usi-Ekiti, Alumni Association on May 30, 2009. In this paper, scholars such as Adewale Thompson, Fagun (1992) as well as many other historical scholars in the globe are cited in the work. An extract of the review appears in this work.

Baconian Method: According to Encyclopedia Britannica, 'Baconian Method' is a methodical observation of facts as a means of studying and interpreting natural phenomena.⁵ Francis Bacon formulates this Empirical Method early in 17th Century. His method, *Novum Organum* centres on new instrument built on three main steps viz: a description of facts, a tabulation or classification of those facts into categories which include the instances of its absence or its presence in varying degrees and the rejection of whatever appears in the light of these tables, not to be connected with it. It is a fact that Bacon may be credited with recognizing, in their essence, the method of agreement, the joint

⁵ www.britanica.com

method of concomitant varieties. His emphasis on the exhaustive cataloguing of facts, however, has since be replaced as a scientific method for it provided no means of bringing investigation to an end of insightful delimitation of the problem by creative use of hypothesis.⁶ As said, the Empiricism of Francis Bacon consists of the construction of what he calls table of discoveries of which he distinguishes three kinds – tables of presence, of absence and of degrees, this is, in the case of any two properties, such as heat and friction; instances in which they appear together, instances of which one appears without the other and the instances of which their amounts vary proportionately. The ultimate purpose of these tables, according to Bacon, is to order facts in such a way that the true causes of phenomena (the subject of Physics) and the true forms of things (the subject of metaphysics which is the study of nature of being.⁷ In fact, Francis Bacon’s scientific Method of Inquiry centers on the following facts in his philosophical thought:

1. asking question about something you observe,
2. doing background research to learn what is already known about the topic
3. Constructing the hypothesis
4. experimenting to test the hypothesis
5. Analyzing the data from the experiment and drawing conclusions.
6. Means of bringing investigation to an end of insightful delimitation of the problem by creative use of hypothesis.

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In summary, it is seen that Bacon’s thought is based on the possibility of scientific knowledge based only upon inductive reasoning and careful observation of events of nature. Though, the method has many advantages, it has a major drawback, this is on statement that “scientific knowledge must derive from critical investigation of data, test of hypothesis using the process of inductive reference, the scientific quest, however, propel scientific advances and any inference outside the scientific procedure is regarded as being unscientific. It will therefore, be unacceptable, irrational, mumbo-jumbo and superstitious. This has been our major argument.

The Destruction of African Science and Civilization:

Adetiloye (2009)⁸ makes a historical review on how African science is weakened and turned into shreds as a result of external invasion to African civilization in Egypt. According to him:

There is advanced science in Africa in 5500 BC when the Egyptian pyramid was built with advanced knowledge of mathematics and architecture that still eludes science today. At the peak of its glory, neighbouring empires became jealous of wealth

⁶ Op.cit.

⁷ Cited in en.m.wikipedia.org.wiki.Francis.

⁸ Ibid.

and power of the ancient civilization. The Egyptian pyramid builders and Sun worshippers were under constant warfare over a period of about three thousand years during which various empires were growing around Egypt tried to take possession of the land, their knowledge and wealth. Ancient Egypt was attacked several times by the Arabs (Babylonians, Persians, Assyrians and Chaldeans). The fierce shepherd kings, the Hyksos, overran Egypt with their chariots in 1700BC. The Hyksos ruled over Egypt for more than a hundred years.”⁹

He continues:

In 700 BC, the Assyrians captured the black Egyptians and carried them into slavery. The Persians (Iraq) laid their own siege in Egypt in 525 BC. Most of the migrated black population from ancient Egypt tried to settle in the lower Nile where they regrouped and made feeble but unsuccessful attempts to regain their control of Egypt. Later, Greece took control of the land. Then, the Romans harnessed North Africa as part of the Roman Empire with the advent of Christianity and dealt more blow on what remained of the mixture of the emerging civilization of the black aborigines and the Arabs who initially conquered and subsequently settled in Egypt to control Egypt and her wealth and resources. The

aggression and struggle to control Egypt and her wealth continued till 13th century AD¹⁰.

Adetiloye (2009) cites Adewale Thompson that:

“Many Africans who rebuffed the doctrines of the Roman Catholic Church were condemned to death”¹¹.

Adewale goes on to say:

...let us remember that the persecution of the 5th and 6th centuries AD were against mathematics, philosophy, architecture and the sciences which Alexandrian Church felt had caused the congregation to have funny ideas about life, contrary to what was taught by the church¹².

On this issue, Sir Thompson adds that:

The followers of St. Cyril burnt books on mathematics and geometry, destroyed libraries and museums and sacked schools and universities which were declared the centers of anti-Christians doctrines. Ironically, the great scientific discoveries in Mathematics and Astronomy which the irate Roman Catholic Clerics discredited and destroyed between the first and sixth centuries AD. In North Africa were pioneered in the middle Ages by Notable Monastic Scholars of the Catholic Cathedra

⁹ P.O. Adetiloye (2009), op.cit.

¹⁰ Ibid.

¹¹ Ibid.

¹² Fagun (1992) cited in P.O. Adetiloye (2009), op.cit.

Colleges such as Copernicus, Galileo, Blaise, Pascal and Roger Bacon¹³.

Still on the warfare that brought the embattled African civilization, in Ancient Egypt into shreds, Adetiloye quotes Fagun (1992) who comments on the issue that “the Catholic converts were attacked by Arians from Spain in 429 AD, during which Carthage was capture and recaptured by Justinian’s General in 533 A.D. Then, the Muslim Saracens invaded Africa and recaptured Carthage and took over completely in 709 A.D.”¹⁴

According to scholars who remarks on the issue of Egyptians attacks, their comment is that the

Series of attacks lasted about 300 years and the black aborigines who were the victims of the invasions and impositions migrate to other places. The victims of those initial invasions of the black race who ran for dear lives exist in pocket today in Egypt, Israel, Saudi Arabia, India etc. but remain concentrated in Africa, South of the Sahara. Manchib White, in his book, titled *Ancient Egypt*,¹⁵ extensively covers the historical calamities that the series of invasions brought to Ancient Egyptians appear to have been convinced that their place of origin was African rather than Asian.

It is also seen according to researchers that the Egyptian invaders who took over what remained in Egypt, could not build on the pyramid culture which they inherited from their captives. They have no choice but to forbid the settlers from getting the sanctuary of the ancient in order not to invoke the wrath of gods. It is historical irony that the black race which is world-wide revered for their talent, wisdom and pioneering many scientific feats in ancient time for centuries are now regarded as a primitive race that is derided by other races in the so called modern world. Unfortunately, Africa is still at present technologically backward. The ancient Egyptian civilization concentrated on education, urban development and commerce but not on a strong military defense capacity as a result of which they fell victims of turbulent warfare that spanned over thousands of years. Ancient Egyptian could not therefore, establish a strong continuity of their ancient scientific heritage with modern Egypt.

THE DESTRUCTION OF AFRICAN SCIENCE

It has been established that the destruction of African Science is as a result of protracted attacks by Arabs, Christians from Rome and Muslim Saracens from Spain ever before science started in Europe in 17th century. African science started in ancient Egypt about 5000B.C. In ancient Egypt, Mathematics, Astronomy and Architectures attained its peak as evidence by the construction of the Ancient Pyramid of the Egyptian by the black African aborigines well before the conquest and dispersal of Africans. The ancient and the authentic science of nature in ancient Egypt were destroyed only for science to be rediscovered in 17th century in Europe, but at a lower level. We should note that up till today, modern science is far from the attainment of science in ancient Egypt. This may sound absurd,

¹³ Ibid.

¹⁴ Ibid.

¹⁵ Ibid.

but if scientific quest is to unravel the mysteries and secrets of nature. Modern science is still far behind this attainment, more so, when modern scientific quest only promote material wealth. This is to say that modern science has failed to promote spiritual wealth, a feat which ancient African science achieved in ancient Egypt.

The Failure of Modern Science

It has been revealed that the ancient and authentic science of nature in ancient Egypt was destroyed only for modern science to be rediscovered in 17th century in Europe but at a lower level. Despite this, modern science fails to accept that man is both physical (terrestrial) and spiritual (celestial) and failure to have a unified paradigm of both that have grave short term consequences for the survival of the human species on planet Earth. Some of the short term consequences are poor distribution of wealth that capitalism and offshoot of western materialistic science created. It has also resulted in poverty of the masses particularly in Africa as well as other less developed countries of Africa, Latin America and Asia. Another problem created by modern science and technology is global warming and recently, the global epidemic, *corona virus* tagged (covid-19).

It is of course, noteworthy that the rebirth of an authentic science can save humanity from eminent catastrophe and destruction of human civilization by filling the vacuum that western science has created. This is where the title of this paper becomes apt, "Literature and the Scientific Quest for Sustainable African Development in the Twenty-First Century" The role of literature is seen in term of 'nature.' An in-depth analysis of a notable African literary work, Chukwuemeka Ike's *The Bottled Leopard* is done here to provide an insight to the reflection of what Africans are experiencing when we talk of science and technology. This is an attempt to get to the root of the problems and help to provide plausible

suggestions on what to do to nip the problem in the bud. An in-depth analysis of the text goes thus:

"Chukwuemeka Ike's *The Bottled Leopard* is set in Igboland, Eastern Nigeria in the year 1947. The novel focuses on two different worlds viz: the world of Ndikelionwu, where Igbo traditions and culture prevail and the world of Government College, Ahia. This is the prestigious secondary school built by colonial government of the day to offer British-type education to future Nigerian leaders. In the novel, it is seen that the efforts by the Church Missionary Society and the colonial government to uproot the people from their traditional beliefs and ways of life proved abortive. The students are brought up to regard their culture as primitive, mumbo jumbo and as something to be discarded in order to acquire the modern scientific outlook. The College is modeled after the prestigious British public schools. Many of the Masters are British and the speaking of Nigerian languages is prohibited to minimize divisive influences.

Amobi Ugochukwu, the principal character in the novel provides the link between the two worlds. Amobi action moves from Ndikelionwu, his home town to Government College, Ahia, where he is a first year student. In the College, he is taught to divest himself of his primitive traditional ways and beliefs for him to fit into the life of the college and benefit maximally from its excellent programme. Amobi, himself, sees his admission to the college with its excellent masters as an invaluable opportunity to obtain scientific answers to some of the mysteries of the traditional beliefs. Amobi is highly interested in investigating the traditional belief widely held at Ndikelionwu, that a man with supernatural powers could control the activities of a given leopard from time to time after performing the prescribed rituals. His interest in the investigation is initially prompted by curiosity. Later, to his

horror, he learnt from a *dibia*¹⁶ at Ndikelionwu that a deceased uncle widely reputed for his supernatural powers over leopards has transformed his powers to Amobi through reincarnation. Through his inquisitive mind, Amobi sees a link between the claim about men possessing leopards and the Biblical story of a man possessed by a demon and Jesus Christ transferring the evil spirit from him into swine. A master at the college points out to Amobi his agreement with the claim that it is possible for the spirit to leave human body temporarily, leaving the body vacant, and either enter into another body or re-enter the original body, and that such idea is not peculiar to Africa. This support makes Amobi to be more confident that the college would help him to get at the root of leopard phenomenon. But to his surprise, as events unfold, it becomes clear that Amobi could not obtain assistance he expects a brilliant expatriate master considers the belief a primitive superstition unworthy of the attention of civilized schools. It is equally unfortunate that brilliant Nigerian teaching staffs who considers the subject worthy of serious scholarly attention lacks the courage to say so in the public for fear of being branded primitive. This has been the major reason why African has not been able to develop significantly within her culture and science. The brilliant Nigerian teacher warns Amobi sternly not to tarnish his public image by raising the matter again at school. Meanwhile, Amobi has no choice but to subject himself (secretly) to the traditional solution to his mysterious problem pending the time he could use his learning to probe the mystery behind African Science.

As time flies, two letters are written at different times to Amobi by the girl of his dreams attesting to two other supernatural experiences rooted in the widespread belief that an external supernatural could control the actions of human

being at a given time. Here, western education offered no solution, compelling the victims to seek traditional solution secretly. There have been rumours that medical consultants in our Government Specialist hospitals and even in Teaching hospitals do inform patients secretly to seek alternative solutions to their cases when all efforts proved abortive. This has been the major argument of this paper. It is evident that all efforts by African to follow the path of western science to develop scientifically and technologically like the so called world developed nations have proved abortive. Hence, alternative solution is imperative.

CONCLUSION

So far, it has been revealed through this study that all efforts by Africa to follow the path of western science to develop scientifically and technologically like the world developed nations have failed; it is now left for African schools to brace themselves and face the challenges through the confines of their science. We should note that Africa is already disadvantaged by the fact that today's concept of development emanates from outside his culture just as we see in Chukwuemeka Ike's *The Bottled Leopard*. This makes African nation, a late starter. But we should note that no culture is entirely devoid of redeeming qualities. The aspect of culture that would make Africans feels at home to be developed and introduce. Africans culture that make African feel at home could selectively be developed and introduced into what is emulated from the West. Olusegun Adekoya (2011) argues that the relevance of Ogun could be harnessed to the technological transformation of the African society, especially, Black Africa in the twenty-first century. Wole Soyinka is seen performing the same role as we see in the character of Amobi in *The Bottled Leopard*. This is an exemplification of the roles expected of our artist, scientists and technologists. We need strong individuals who can brace the odds and openly

¹⁶ Dibia is an Igbo word for Soothsayer.

make researches in the confine of our culture and science to make our society develop and move forward. We are now calling the African scholars, and researchers to do the same (making Africa to develop through innovative in the domains of culture. This approach is akin to Japanese model “where the so called westernization of Japan was carried out in a selective manner, in which the Japanese themselves made the choices. In this manner, culture would become part of the mainstream of the developmental process, but more importantly, the African would be psychologically prepared to face the task of development.

It is also suggested that the African scholars, scientists and technologists make adequate research to detecting how the rebirth of an authentic science can save humanity from imminent catastrophe and destruction of human civilization by filling the vacuum that western science has created.

Evidently, it has been revealed that the science of today in Africa is predominantly textbooks. This is a stereotype of science; it is evident that with this, Africa will fail. Africa, therefore, needs to digest textbook as well as African indigenous science in order to release a new science which is basically physical (that is, terrestrial) and spiritual (celestial) as demonstrated by the ancient ancestors in the land of Egypt.

The unification of science, literature (nature) and religion equally matters. It is pertinent that we emulate a seasoned researcher, P.O. Adetiloye, who carries out various researches on the design and evaluation of interactions on simple to complex cropping system. In one of his researches. Here, Adetiloye links the Mathematics of complex interactions in cropping system. The maximum possible combinations or crop mixture of two, three and

four crops were 4, 27, and 256¹⁷. This is synonymous to Ifa divinations of the Yoruba which has 256 chapters known and called *Awon Odu Ifa*. (Ifa divination Corpus). This comprises an Ancient mathematical system derived from binary combinations of head and tail in $(p+q)^{18}$ binomial distribution. Adetiloye is able to transform this mathematically to $(u+q+r+s)^4$ polynomial distributions. From this, one could infer from Ifa divination the possibility for Mathematics to be transformed to higher geometrical formats. The 16 major Odu Ifa divination is also the 16 logic function from which computer logic circuits are formulated from the coincidental discoveries and subsequent research on Ifa divination mathematics that an advances Mathematical system developed in ancient times by the Yoruba race for divination purposes ever before the dawn of modern science. It is, therefore, no wonder why the former Executive Governor of Osun State, of the Yoruba Southwestern, Nigeria, Ogbeni Rauf Aregbesola, branded Computer (opón Ìmò)¹⁹.

The pertinent questions confronting the pursuits of the scientific quest in Africa should be carefully looked into. These include, how to redesign the school curricula, who to redesign them, how to integrate the indigenous knowledge system into Western Science. The quality of facilities needed in the educational system should also be carefully looked into.

If these suggestions are carefully observed, we will for sure be able to see that the scientific genius is not lacking in Africa but is presently impeded such is that our God given creativity and inventive talents cannot functions properly with the present colonial system of education in our primary, secondary and tertiary institutions. This is where a lot of works has to be done. Otherwise,

¹⁷ Cited in P.O. Adetiloye (2009) op cit.

¹⁸ Ibid.

¹⁹ OPOn Imo could be transliterated to mean “board of Knowledge.

even if the present number of our universities increases from thousands to millions we will still not be technologically developed until we move from textbook science towards the digestion and assimilation of science to release a new energy that can liberate our originality, creativity, innovativeness and inventiveness.

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