FOLKLORE OF TECHNOLOGY, INVENTIONS AND DISCOVERIES*

Da Mihi Locum Standi, Et terram Movebo

There are many ways of studying folklore. The literary scholar treats folklore as literature or as source materials for literary masterworks. The historian regards folklore as data supplying folk attitudes toward historical events and figures. The anthropologist sees folklore as a people's autobiographical description of themselves

The educator thinks of folklore as part of the treasured heritage of national and ethnic groups which can be used to enrich and enliven otherwise routine curricular offerings. And so the members of different disciplines come to the materials of folklore with different ideas as to how folklore should be understood and utilized. (Alan Dundes,‖ Ways of studying Folklore‖ in T.P. Coffin 1968:37).

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What do the folks say about technology, inventions and new discoveries? Benjamin Franklin{1706—1790},American statesman and scientist was once asked :

What is the use of a new invention?

His answer:

What is the use of a new-born child?

The new electronic interdependence recreates the world in the image of a global village{Marshall Mcluhan 1911-80). One machine can do the work of 50 ordinary men (Elbert Hubbard 1859-1915)

Man is a tool-using animal… without tools he is nothing, with tools he is all. (Thomas Carlyle 1795-1881).This extraordinary metal (Iron), the soul of every manufacture, and the main spring perhaps of civilized society. (Samuel Smiles 1812-1904: Men of Invention and Industry (1884). The Britain that is going to be forged in the white heat of this revolution will be no place for restrictive practices or for outdates methods on either side of industry (Harold Wilson 1916-95).

- Referring to the ―technological revolution‖. Speech at the Labour Party Conference, 1 October 1963).

God has made man upright; but they have sought out many inventions (Ecclesiastes).

The mouth is the radio (i.e. transmitter) of the African (Kenya).

The definitions of a few terms will help us in our pilgrimage:

Folklore is that art form, comprising various types of stories, proverbs, sayings, spells, songs, incantations, and other formulas, which employs spoken language as its medium (Richard A. Waterman).

Technology is scientific knowledge used in practical ways in industry, for example, in designing new machines (Oxford Advanced Learner‘s Dictionary). You may wish to call it applied science.

Over the ages discoverers, inventors, and technologists have risen to certain heights in their specializations and have applied their findings and discoveries in their environments, solving challenges and changing them for development in order to move forward, identifying the challenges first, then finding ways to conquer them, and getting the way forward, foreseeing the prospects, savouring the flavour of prospects even before the prospects materialize.

The intention in this paper is to highlight some general principles deducible from lessons learnt, messages perceived in the way and manner that the inventors, discoverers and technologists have carried out their discoveries in order to adopt them to domestic needs.

Their characteristics, their idiosyncrasies, their philosophy of life, their attitudes to the challenges they face(d) and how they conquer(ed) such challenges and how they react(ed) to the conquest of the challenges as well as the aftermath will also be highlighted.

The bottom-line of it all is to see how the lessons learnt and the inspirations emanating from those inventions, discoveries and technologies have impacted and can still impact on people who will in turn adapt them for their domestic needs.

Geniuses have demonstrated that handicap is no hindrance to their ambitions. Thomas Alva Edison, who became deaf before his hey-day saw advantages in his affliction (K. M. Swezey).

The deafness which therefore cut off many personal associations… helped him concentrate on his work.

Below is a list of the likes of Alva Edison. He was imprisoned first for 12 years, then for 6 months. He is John Bunyan (1628-88) who spent the 6 months in writing the first part of Pilgrims‘ Progress. He was a cripple who later became Sir Walter Scott (1771-1832). He was deaf. He became a genius composer. I mean Ludwig van Beethoven (1770-1827). He was born 1884 and died 1945. He was stricken by paralysis (1921-24). He was Governor (1928-32), elected President (1932), elected President again (1936) elected President again (1940), (a new thing in his country‘s history), and elected President a 4th time (1944). Who was he? He was burnt so severely that his doctor concluded that he could never walK again. But he set the world record in 1934 by running a mile within 4 minutes and six seconds. His name is Glen Cunningham. One of the greatest of all time mathematical physicists was Albert Einstein (1879-1955) of the calibre of Galileo and Newton. What was his problem? He was not just a slow learner but even a retarded learner. These are the handicapped for you!

Persistence, has been proved to be one tool used by successful inventors. Edison exemplifies that group. Thomas Edison gave the world the fluorescent bulb.

Edison carried out over ten thousand experiments before he succeeded. At the age of nine his mother gave him a primer on physics. He challenged every statement in the book until he had tested it personally.

Africans have this type of phenomenon too:

Dog say when im nor sure say de thing im eye dey see na true, im go use im nose, because smell no dey lie. The idea here is to use fool-proof systems to get at the truth (Erekosima 1986:23)

Coconut say man wey no dey struggle with im kanda no fit drink im water. Meaning nothing worthwhile comes without serious struggle. Well say if you no dig, you no go know say water dey inside ground. That is no venture, no success. No pain, no gain.

What does the Bible say?

Bible talk say na God dey feed all de bird wey dey fly, but im no talk say God dey put dis food inside de bird dem nest o o…!

That is you must struggle for anything worthwhile. Must you wait for things to happen. Make things happen.

A good number of discoveries, or inventions happen by accident:

When Mark Twain (1835-1910) was asked to name the greatest of all inventors he answered; Accident.

Yes, indeed Archimedes got solution to his problem by accident.

The discovery of the theory of gravitation by Sir Isaac Newton also was by accident. Newton said that the concept of a universal force came to him while he was drinking tea in the garden and saw an apple fall (W B. Ency.)

> The fall of an apple, so goes the story related by Voltaire, led Newton to ponder on the nature of gravity and to reflect that what affected the apple might also affect the moon. If the moon were held to an orbit round the earth by the pull of gravity, he surmised, the same would be true of the planets in their orbits round the sun.

Africans also are not unaware of the law of gravitation:

What is above must come down to the earth (Ashanti).

Commenting on this proverb, anthropologist Rattray remarks:

> A dimly conscious recognition by some native Newton of one of nature‘s great laws.

Heard also is the subjoined saying purporting the same law:

> When any bird dies in the sky whatever happens, its feathers come falling to the earth (Ashanti).

Happily we glean the same idea from prophet Amos (3:5):

Is a bird brought to earth by a trap when there is no lure for it? –What goes up must come down and there is nothing you can do about it‖ is part of a song by the Nigerian singer Bongos Ikwe.

It is a good thing… to read books of quotations.. The quotations, when engraved upon the memory, give you good thoughts. They also make you anxious to read the authors and look for more (Churchill) .

One such quotation that leaps to mind is that given by Archimedes (c 287-212 B.C), when he discovered the mechanical value of the lever. The quotation was his proud manner of boasting of the discovery;

> Give me a lever long enough, and a fulcrum strong enough and single-handed I can move the world.
>
> –Da mihi locum standi, et terram movebo.‖ (Latin version).

Since Archimedes uttered this quotation he has produced many famous disciples who made use of the quotation to support or corroborate or garnish their speeches, their actions, their aspirations. Among such followers of Archimedes we can name Rene Descartes (1596-1650), the French Philosopher noted for his Cogito, ergo sum (I think, therefore I exist):

Archimedes, that he might transport the entire globe from the place it occupied to another, demanded only a point that was firm and immovable, so, also, I shall be entitled to entertain the highest expectations, if I am fortunate enough to discover only one thing that is certain and indubitable.

J.F. Kennedy (1917-1917) and President of USA 1961-1963 was also influenced by Archimedes:

–Give me a fulcrum, Archimedes is reported to have said and a place to stand - and I will move the world. The tools I have suggested can be out fulcrum- it is here we take our stand- let us move the world down the road to peace.

(J.F. Kennedy Presidential campaign speech proposing the united States Peace Corps, Nov. 2, 1960).

Robert F. Kennedy (1925-1968) also:

–Give me a place to stand,

said Archimedes and I will move the world,

These men moved the world, and so can we all .

Last, not by any means the least , the elder George Bush (1924-), President of the United States (1989 -1993) :

> Give me a place to stand and a lever strong enough and I can move the world. Well, the Heritage Foundation has been that place and their lever the truth. And so far, you have been real world movers.

Any such thing in Africa?

Yes, the lizard also boasts. The lizard has fallen from a great height and landed on his stomach. When he looks right and sees no body congratulating him. When he looks left still no body congratulates him, so he says:

> If no body congratulates me I congratulate myself.

Yes, the fisherman also does a similar thing:

> Fisherman wey go river catch big fish no dey pass backyard enter house. Na de main gate im dey pass so dat people go see am.

God saw what he has done and said, ~~It~~ is goodll

If the African, like Archimedes makes similar boasts, on what grounds does he make such boasts? For example, if the Director of

Advancement Office says that … ‗if I were given adequate funds and dedicated staff, I would make this Office one of the best on this planet‘, would he be able to carry out his boast? Does he possess the wherewithal and the support to execute the project?

Not that the knowledge is not there. It is latent waiting to be woken up. Once stimulated, it can be elicited and utilized.

In Meno, one of the Dialogues of Plato, the Prince of Philosophy, Socrates explains a theory about knowledge which says that knowledge about reality comes from within the soul through the instrumentality of ‗recollection‘ rather than from without through the instrumentality of instruction or teaching.

The soul is immortal. In the dialogue Socrates makes a boy, who knows nothing about Geometry construct a square twice the size of a given square. After two failed attempts, the boy succeeds without having been taught how to do it by Socrates. How could the boy have succeeded if the knowledge of Geometry was not already within his soul? (Moore, 2002 ; 48).

Socrates is suggesting that men‘s souls are immortal. Yes.

In the course of their journeys between reincarnations the souls acquire knowledge of all things they encounter.

Thus, when you say that you obtain knowledge in this life, what you are saying is that you are recollecting what you had known before your birth.

―The process which we call learning is a recovery of knowledge which is our own,‖ says Livingstone in Portrait of Socrates (1944:119). Such knowledge must be a gift from the gods. So over to you, Director and your galaxy of committed staff. As Archimedes indeed was prophetically saying of this Unit, ―Give them a place to stand and they will make this Unit one of the best in the world.‖

More often than not the new inventor has stood on the shoulders of the earlier ones. Who is greater: the originator or the imitator? Sir Isaac Newton (1642-1727).English scientist and mathematician, 1st inventor of ―the differential calculus on the method of fluxions ―, who in 1672 established the world's first ―Invention Factory ‖, ―one of the greatest names in the history of human thought‖, because of his enormous contributions to astronomy, mathematics and physics, ―the greatest and rarest genius that ever arose for the ornament and instruction of the species‖ (Hume 1711-1766) made a confession to the effect that:

> If I have seen further it is by standing on the shoulders of

Giants.

Alexander Pope (1688-1744) was not oblivious to the invaluable contributions made by Sir Isaac Newton to humanity . Hear Pope:

> Nature, Nature‘s laws lay hid in night. God said, Let
> Newton be! And all was light (Alexander Pope 1688-1744:
> Epitaph: Intended for Sir Isaac Newton (1730).

This type of confession and academic humility had been made earlier:

> We are dwarfs standing on the shoulders of giants.
> (Bernard of Charters in 1120).

Thomas Alva Edison (1847-1931), a persevering worker, who used to chase experiments to their last possible extent, took just such a step in an experiment for subduing an electric current. The same Edison, an1 American inventor and pioneer industrialist, who in October 1879, after thousands of experiments, made such a lamp, using carbonized thread, that burned for 40 hours, had admitted that he dreamed (around 1863, still under 20 years of age) of becoming an inventor, the ambition of which was stirred in 1868 when he discovered and read the famous Experimental Researches

in Electricity by Michael Faraday (1791- 1867) on whose shoulder he had stood.

Now, can the same or similar things be seen in African folklore?

Suspend your answer until you hear the following. When one stands on another shoulders, then he sees the market (Ashanti)

Finally, as I conclude, I will no longer give any meaning or any annotation to any of the sayings. For in African culture it is only a fool to whom you have to explain a proverb quoted.

Additionally, another African proverb says if a person asks for the meaning of a proverb quoted to him, it means that the bride-price paid on his mother is a waste.

Thus, we could go on and on mindful of areas in Science for example, but we have all that to the experts to avoid presumptiousness. As the Ashanti people brilliantly put it, –Although, the hen knows that the day has broken it begins by looking at the mouth of the cock to announce it.‖

Discoverers, inventors and technologists are geniuses. I adopt Edison‘s definition:

One per cent inspiration and 99 per cent perspiration.

By this definition Edison himself qualifies to be a genius. This is a man who used to work for days at a time. He would stop, however, but just for brief naps.

Does a genius really need formal schooling? No, Edison had only three months of formal schooling. Yet the genius altered the lives of billions of humanity with electric lights as well as phonographs. Do you know that this genius patented 1, 093 inventions during his life - time!

You must hear this also:

The height by great men reached and kept was not attained by sudden flights but they, while their companions slept, were toiling upwards in the night.

What is the message here?

Geniuses hardly have time for their wives. Speaking about one of them, an observer observes :

> Both his wives (i.e. one at a time) complained that he spent most of his time in the laboratory.

–A friend in need is a friend indeedll says a popular adage. How many friends does a genius really need?

> The inventor never had any really close friends. He

> worked too hard and too many hours to have much time for friends. His work remained his great joy and companion.

All work and no play makes Jack a dull boy.

Does this proverb apply to a typical genius? The following has been said of one inventor:

> However, he did set aside.July 4 to spend with his children and grandchildren.

How does a discoverer react to failures?

> Failure never discouraged ~~him~~. When about 10,000 experiments with a storage battery failed to produce results, a friend tried to console him:
>
> *Why, I have not failed. I've just found 10,000 ways that won't work, said the inventor.*

So how does all this relate to our domestic needs? How do we "technologize our domestic needs"? How many experiments can our scientists and inventors make before they give up? How many times shall I forgive my brother if he goes on offending me? How did Churchill put it? Never give up; never, never give up; never, never, never give up! In whatever useful endeavour you undertake.

And to a perceived success? When Archimedes discovered the formula which enabled him to prove —that a body plunged in a fluid loses as much of its weight as is equal to the weight of an equal volume of the fluid', he ran out into the street shouting:

Eureka (I have found it) eureka, eureka.

With that cry he ran out – naked!

How would an inventor react to a set-back? We take the case of Newton —when his dog knocked over a candle that burnt the almost completed labours of years:

> O Diamond, Diamond! You little know the mischief that you have done!

—A nation which lacks the spirit of hero-worship is not capable of historic achievements because it is on the high spot of an individual's biography that the inspiration of national rebirth is germinated‖ remarks Dr. Nnamdi Azikiwe, the first President of the Federal Republic of Nigeria. (1963-1966).

What does Dr Azikiwe mean? He means that —honour should be given to whom honour is due‖. Yes, Nigeria did just that to him. Many nations indeed do just that.

That is not all.

The American businessman, Henry Ford, believing that Alva Edison was probably the greatest inventor in world history, once suggested that the period of the life of Edison be termed the Age of Edison on account of his several monumental contributions.

29 years after Edison's death, Americans elected him to the Hall of Fame for Great Americans.

And what happened in July 1956? In that year President Dwight D. Eisenhower signed a proclamation that converted, Edison's research laboratory in West Orange, N. J. to a national monument.

In Thessalonians 5:21 we meet with St Paul's advice regarding the pursuit of what is good or true.

> Do not stifle inspiration…but bring them all to the test
>
> And then keep what is good in them and avoid the bad of whatever kind.

That is usual with inventors, technologists and discoverers.

> When Thomas Edison was a year old, Mrs Edison bought him a Chemistry book by Richard G. Parker, a well-known teacher of the mid-1800's. Edison would not accept as

true the statements made in the book. He tested every experiment himself to try to prove the author wrong.

Edison‘s major contributions to the world were not only in his invention of the electric light but also in making available to millions the world‘s first electric –power stations.

Many inventors have left their foot-prints on the sand of history. The legacy they created did not die with them but have been left behind to continue to serve humanity.

> In ancient Greece a young man had asked a philosopher to show him how he could be known in history. The philosopher answered, –You become known in history either by working hard in order to achieve a great name or you kill a great man. That is how one Pausanias, assassinated Philip II (382-336 B.C.), father of Alexander the Great. Inventors and discoverers rose to fame not by assassinating great men, but by inventing and discovering great things.

Inventors do not need to invent just anything; their inventions are people-oriented. Thus when in 1868, Edison invented an electric voting-recording machine, he traveled to Washington to sell it to Congress. The Congress Chairman pointed out that such a device

was the last thing that Congress would need: ~~It~~ takes 45 minutes to call the roll. In that time we can trade votes. Your machines would make that impossible‖.

Edison:

I will never again invent anything which nobody wants.

And in truth Edison henceforth began to busy himself only with the ~~d~~esperate needs of the world‖.

When we turn to Africa or rather, Nigeria, let our first port of call be Eastern Nigeria, where you will see remnants of Africa technology which the Biafran War gave birth to. Recently here in the University of Jos, a Professor of Botany, Professor Ogbonna, manufactured some table wines of international standard.

A colleague in Physics, Dr Gyang, wrote a paper on Berom technology. These are just a tip of the ice-berg. The Yoruba have an interesting, danceable song illustrating their technological acumen :

Bi owe e, bi owe e

Bi owe e, bi owe e

L‘anlu ilu agidigbo o

Bi owe e e

Ologbon ni ijo o o

O moron ni imo o o

Bi owe e, bi owe e e.

The drum, called agidigbo is an invention by the Yoruba. This drum is used during war periods to communicate important messages among their troups in different locations. How come we have not gone further?

We know that among some Nigerians there are devices that can torpedo the boasts of the approaching enemy reminiscent of the one used by Archimedes to sink the boast of the Romans when they were preparing to attack Syracuse. There are many Newtons in Africa, nay Nigeria. The are many Copernicuses, to name but a few. Once in a while we hear of new inventions. The radio carries the news, our television carries it, but sooner or later we hear no more about them. Sir, they are there. If you say that they are not there, somewhere….then, sir, you may be guilty of argumentum ex silentio!

Mr. Chairman, ladies and gentlemen from Georgia University, ,from God's own country, I hope that I am speaking the folk-mind when I suggest that the technology that is needed or envisaged for now and for the future, in order to help Africa and other developing countries to deliver their aspirations would bear in mind those for

whom technologists, inventors and discoveries are working, and ensure that those with disabilities and handicaps and others challenged in one way or the other are also in the list of the beneficiaries.

Mr. Chairman, Sir, a 14th century scholastic William of Ockham, a logician and a critical philosopher, introduced a scientific principle to the effect that whichever explanation has the fewest assumptions should be chosen. This principle of reducing assumptions to the barest minimum when one is trying to explain something has been called Ockham's Razor:

Frustra fit per plura quod potest fieri per pauciora.

It is pointless to do with more (things) what can be done with fewer things.

In Africa when the cock crows:

Kokoroko o o o ?

It is saying, ~~d~~on't exhaust your resources‖. We would not want to say all that needs to be said here. Otherwise, when we come to Georgia, what shall we say then? In Africa also we hear:

You do not say that because you want a child badly therefore

you should stay on top of your wife till day-break.

Laifin dadi, Ka rewa

Let me end this paper with a traditional song which says that whatever the author has said here is meant with all sense of responsibility. You are free to carry the news any where you like. With apology to T. S. Elliot, my end is in my beginning. –Da mihi locum standi, et terram moveboll:

Ibi e ri o o

E ki‘gbe ni lo

Ori ki I fo awun

Edo ki I dun ig bi

Otutu ki I ineja

La le odo

A ki iki odidimade, ko ku roju

Ibi e ri o o …

Ibi e ri e e

E ki gbe mi l o o o etc.