THE ODDITY OF TIME AND TIME IN AFRICAN WORLDVIEW

Inameti Lawrence Udo *PhD*
Faculty of Arts, Department of Philosophy
Akwa Ibom State University, Ikot Akpaden
Mobile: +2348069007369
E-mail: inamsifon2004@yahoo.com
&

Emmanuel Iniobong Archibong *PhD*
Faculty of Arts, Department of Philosophy
University of Uyo, Uyo.
Mobile: +2348032325087
E-mail: emmymark2jr@gmail.com

Abstract

Time is a riddled-paradoxical reality that has bewildered the human mind since antiquity. Despite its slippery and puzzling disposition, it tends to wield enormous influence in almost everything that is done under the sun. Our most common-sensical conception of time divides it into the past, the present, and the future in a straight line fashion. Complicated as the concept of time may seem, attempts to understand time was pushed beyond proportion by Albeit Einstein. In His Special Theory of Relativity, time becomes relative having no absoluteness different from how time was previously conceived. Thus, the relativity of time disturbs the human mind because it contradicts her intuition. This work critically focuses its attention on the odd posture that time assumes especially in Einstein theory of relativity as contra-distinguished from our earlier conception of time in everyday life while at the same time showing the not too technical posture of time as conceived in the African worldview.

Introduction

The tricky nature of time has been one of the major problems of philosophy alongside its existence. As Archibong rightly noted, "the complexities of time still remain a very interesting and fascinating mystery to man…it may not be a contradiction to say that man can be said to know and not know time" (245). Is time well thought of as flowing? If so does it flow from future to past with us stuck like boats in the middle of the river or does it flow from past to future, bearing us with it? And might it flow faster or slower? These questions seem harder or absurd enough to encourage us to reject the metaphor of time's flow. But if we do not think of time as flowing, how do we conceive of its passage?

What distinguishes the present from the past and future, or is there no objective distinction? (Blackburn, 314).

Time more than space, seemed not to be real or measurable because most, if not all of it, so far as it consists of periods rather than moments, seems not to exist at any given moment and what fails to exist now seemed less real than what merely fails to exist here (Lacey, 204). Reflection on the passage of time and on the present moment shows that that is all a person can be said to have.

A famous attack on the reality of time was made by Mc Taggart, who distinguished two series of temporal positions. The A series contains notions like past, present, future which apply to different events at different times. The B series contains notions like earlier than, simultaneous, after, which permanently link whatever events they do link. He then argues that the B series itself, without the A series cannot account for change, and so for time, while the A series involves either a contradiction or a vicious regress, some try to make the B series basic by defining "present" as simultaneous with this utterance.

Time, unlike space has only one dimension, and an apparently irreversible direction. This irreversibility is connected with the second law of thermodynamics, which says that entropy, or lack of organization, tends towards a maximum in isolated systems. For time to be reversed would by this law to be broken (Lacey, 204). However, this law can be analyzed as an effect of the statistical probabilities governing matter in motion: of all the possible configurations of a set of particles that can follow after a given initial state the vast majority correspond to a higher degree of disorder that exists in that state. The subject is however controversial. Archibong gives us further insight with respect to time arrows thus:

> There are at least three different arrows of time. First, there is the thermodynamic arrow of time, the direction of time in which disorder or entropy increases and the psychological arrow of time. Under the psychological time, we feel time passes, the direction in which we remember the past but not the future. Finally we have the cosmological arrow of time where the universe is expanding rather the contracting (255).

Time furthermore, was defined by Zeno as the interval of motion. A simple illustration would be comparing a faster and a slower object traveling the same

journey: the spatial co-ordinates of the journeys do not differ, so it must be in some other "interval" or "dimension" that the journeys do differ; and that interval is time. Chrysippus further specified that time is the interval of the world's motion, not thereby contradicting Zeno, but moving the focus from this or that part of time to time taken as a whole. (Cooper, 170).

Einstein's special theory of relativity treats space and time together as space-time. The main point of this is that in certain cases one event preceding another depends on the observer's motion relative to the two events, and motion involves both space and time. We shall now briefly examine time as conceived by three major thinkers before focusing on Einstein proper followed by the African understanding of time.

Time in Aristotle's Thought

What gives time its direction and what accounts for the asymmetry between past and future? Can we make sense of timeless existence, or can we only make sense of existence in time? Is time infinitely divisible, or might it have a granular structure, with there being a smallest quantum or chunk of time? Many of these problems are first posed in Aristotle's *Physics*, in the form of paradoxes or problems about the very existence of time.

For Aristotle, only individual substances, which are compounds of form and matter, can be said to exist in an unqualified sense, everything else being attributes of these substances (Gale, 1). Time is defined as the number of movement in respect of 'before' and 'after'. Motion is an attribute of a substance, and time in turn is an attribute of motion. Time is not motion, but the number or measure of motion. Motion is potentially time and becomes such in actuality only when its temporal succession is noted and measured by some sentient creature. Thus time is not a substantial entity which is capable of existing separately from other things. It has no reality independently of the changes that substances undergo. It has being only as an attribute of substance.

Aristotle *Physics* Book 3-4 contains a set of essays on the related issues of change, infinity, place, void and time (Hankinson, 140). Aristotle is, in a variety of senses a *finitist*. He rejects the idea that there can be actualized in infinite sets of things, including its appearance, the natural numbers. This causes him some difficulties with time, since he holds the world to be without beginning, and hence must (in some sense) allow that there must have been an infinite number of rotations of the heavenly body. However, time and motion are indeed infinite, as is thought,

but the parts that are taken do not persist. There exists now no infinite collection of present moments (Hankinson, 141).

Five concepts are central to the study of nature and natural objects according to Aristotle. They are: (a) change itself. (What a process of change actually is), (b) The sort of infinity that characterizes the magnitudes studied in physics (physical magnitudes, change itself, time), (c) how we should understand the place of a thing (every natural object it would seem, has to be somewhere at each moment), (d) whether we need to think that there are any void spaces in the natural world (e.g. to make movement possible) (e) what time (something required if there is to be change at all) actually is. Aristotle puts it succinctly when as he avers:

> To suppose that the infinite does not exist in any way at all leads clearly to many impossible results; time will have a beginning and an end, a magnitude will not be divisible into magnitudes, a number will not be infinite (Cooper, 138).

Furthermore, Aristotle sees time as a universal order within which all changes are related to each other. Thus his claims that the now is like a moving thing, and that time depends for its existence on the mind. He deduces the continuity of time, its infinite divisibility from the continuity of motion, which in turn is deduced from the continuity of the space traversed. Since the space traversed is continuous, motion must be continuous, and since there is motion, therefore the time that measures it, because there is a one-to-one correspondence between each point of the trajectory and a moment of time.

Time is made continuous by the indivisible, present now-movement, which links the past to the future by serving as the termination of the past and the beginning of future, just as a mathematical point dissects a line by serving as the end of one segment and the beginning of the other (Hardie and Gaye, 218-21).

Time in Plotinus' Thought

Plotinus in the Third *Ennead,* raises many objections to Aristotle's analysis of time, his main criticism being that Aristotle's definition of time as the number of movement in respect to before and after suffers from the fatal defect of circularity (Gale, 2). Time obviously, cannot be a number, but is what is numbered. Before and after, if they are to refer to temporal relations, must mean before and after in time, rather than in the space traversed. Furthermore, motion presupposes time

since motion is defined as the occupation, by one entity, of a continuous series of places at a continuous series of times.

Time is defined in terms of motion and motion in terms of time. Thus we have a circular chain of definitions, and Aristotle tells us only how we measure time, not what time is. Plotinus assumes that time must be something apart, a 'kind to itself', a thing 'within itself'. All motions and rest occur within time, but time does not occur in something else.

Time in Augustine's Thought

Augustine famously lamented to the question "what then is time"? For him, if no one asks me, I know: if I wish to explain it to the one that asketh, I know not. This summarizes the mystery that time holds for him (Gale, 3). His predicament can be analyzed in the following ways: he has an immediate experiential awareness of time; and moreover, he knows how to use ordinary temporal expressions about past, present, and the future, and earlier and later than. Yet oddly enough, when he tries to give a verbal definition of time, he is struck dumb; for any definition he may propose winds up being circular.

Because time cannot be defined in an ostentative manner, there being nothing which we can point to and say "this is the present (past and future)", Augustine wonders how it is possible to measure time. He claims that we cannot say that a past (or future) time is long, because it does not exist now (Gale, 5). For Augustine the only way out of this anomaly is to say that time is a "protraction of the mind, and that when we measure time, we really measure a certain expanse in our conscious memory. Time then becomes essentially subjective or psychological. Past, present, and future time will all depend on the mind. There is only a present of things past, memory: present of things present, sight; present of things future, expectation (Pusey, xi).

Time in Einstein's Thought

So far we have considered three serious, though unsuccessful attempts to define time. However, one last person we shall consider here is Albert Einstein whose 1905 third article on Special Theory of Relatively changed forever the way we think about space and time. Einstein defines space as what we measure with a measuring rod and time as what we measure with a clock (Pagels, 16). Armed with this definition, Einstein asked how the measurement of time changes

between two observers moving at a constant velocity relative to one another. This brings us to the oddity of time in his Special Theory of Relativity.

Let us suppose one observer is riding on a moving train with his measuring rod and clock and his friend is on the station platform with his rod and clock. The person on the train measures the length of the window on the side of his car. Likewise the person on the platform measures the length of the same window as it moves by. How do the measurement of the two observers compare? Naively, we would think they must agree, after all, it is the same window that is being measured. But Einstein shows that this is incorrect by a careful analysis of the measurement process. The person standing on the platform with his measuring rod must see the window moving past him. In other words, light which bears information about the length of the moving windows must be transmitted to the person standing on the platform; otherwise it cannot be measured at all.

Even before Einstein, physicists knew the speed of light was finite but very fast, about 180,000 miles per second. But Einstein thought there was something special about the speed of light-that the speed of light is an absolute constant (Pagels, 17). No matter how fast you move, the speed of light is always the same. You can never catch up to a light ray (Blackburn, 314). To appreciate how odd this really is, imagine that a gun fires a bullet at some high speed. But the speed of the bullet is not an absolute constant, in that we can always catch up with the bullet with a rocket even then it may appear to be at rest. There is no absolute meaning to the speed of the bullet because it is always relative to our speed. But not so with light; its speed is absolute and always the same, completely independent of our own velocity. That is the odd quality of light that makes its speed qualitatively different from the speed of anything else.

Another postulate, the first in Einstein theory of relatively is that it is impossible to determine absolute uniform motion. Uniform motion proceeds in a fixed direction at a constant speed – basically coasting. Einstein postulated that you cannot determine if you are coasting unless you compare your motion relative to another object. The two observers, one on the train the other on the platform, illustrate this postulate. For the person on the platform it is the train that is moving. But the person in the train can just as well suppose he is standing still and the platform and the whole earth with it are moving past him.

It is the interplay between the relativity of motion for all material objects and the absoluteness of the speed of light which is at the root of all the unfamiliar

features of the world according to special relativity (Pagels, 18). Using these postulates, he showed that the person on the platform would actually find the length of the window on the moving train is shorter than the person on the train. As the train speeds up, the length of the window would be measured to be shorter and shorter by the person on the platform, until as the imaginary train approach the speed of light, the length of the window would shrink to zero. Because in our familiar world, the speed of most objects, like real trains, is so small compared to the speed of light, we never see such length contractions, which become dramatic only at speeds near that of light.

Einstein theory of relativity linked space and time. He showed that a moving clock marked time more slowly than one at rest. For the person on the platform, the watch on the wrist of the train's passenger actually moves more slowly - time slows down. If the train was moving near light velocity, time changes would actually slow down to close to zero. Likewise, the person on the train will see the watch of the person on the platform move more slowly. Absolute time is thus abolished. Time is measured differently for persons moving relative to one another.

In everyday experience, space and time do not appear to shrink. We might want to think that these odd effects of space and time are merely a mathematical fiction. But they are not because indeed, clocks really slow down when they move. Thus there is no universal time for all observers. The oddity of this theory is that, the stronger the force of gravity, the slower time flows. If a clock slows down, so does time. Therefore, we actually age more slowly in a gravity field than someone in a gravity-free environment. That means people that live in gravity field environment aged less than those that lives in gravity- free environment. By virtue of this difference in gravitational force, it has been observed that "by a tiny amount, people in Denver actually aged more rapidly than those in Washington D.C." (Pagels, 36).

Time in African Worldview

The African logic that Etuk proposes is founded upon how reality is perceived. This perception of reality invariably affects the logic behind it. Etuk using the concept of time as an example asserts "that even the West recognizes what is called "African time". Thus, "the difference lies rather in that, while the Westerner feels himself controlled by time and is literally enslaved by his chronometers, the African gives the impression that time was made for man". In

African worldview time is held to be a part of its religious universe and it is in viewing time from that point of view that it will make sense. Time for Mbiti therefore, "is simply a composition of events which have occurred, those which are taking place now and those which are immediately to occur" (72).

Time affects and influences the life and attitudes of African peoples and to a large extent determine their economic as well as religious lives. While the scientific concept of time is linear, i.e. three dimension of past, present and future, that of the African is two dimensional i.e. past and present, without a necessary future. Mbiti notes that "the future is virtually absent because events which lie in it have not taken place; they have not been realized and cannot, therefore constitute time"(17).

African time moves from present to past (i.e. from "Sasa" to "Zamani") while the scientific conception of time moves from past to future. "Sasa" stretches into the short future with a dynamic present and an experienced past. "Zamani" is the unlimited past which also has its own past, present and future, but on a wider scale (Mbiti, 24). A very big difference between African time and scientific time is that, in scientific or technological society, time is a commodity which must be utilized, sold and bought, but in traditional African life, time has to be created or produced. Man is not a slave to time; instead, he makes as much time as he wants (Mbiti, 19). Etuk made a similar observation when he posits that "…while the Westerner feels himself controlled by time, and is literally enslaved by his chronometers, the Africans gives the impression that time was made for man" (112).

Time therefore for the African is something real because in it they carry out their farming activities of planting, weeding, fishing, harvest, burial and so on. But time is not a master to the African, but a slave. African understanding of time is founded upon her cultural worldview and is inseparable from it. It is also related to human life thus the rhythm of time is felt in birth, puberty, initiation, marriage, procreation, old age, death and entry into the community of the departed down to the company of spirits. Thus, "our understanding of it may help to pave the way for understanding the thinking, attitude and actions of the people, which is based on experience and observation of phenomena rather than a mechanical process like a clock" (Azenabor, 53).

So in contrast, time for modern science is mathematical and this understanding has aided technological development about the knowledge of the laws governing

the universe. The symbol of this time is the clock by which every event in nature is ordered, arranged and managed. However for the Africans, time is deduced from phenomena in nature and is integrated into their metaphysical worldview. Interestingly for the Africans, time is eternal and doesn't only terminate in the natural universe.

The scientific outlook of the universe is one replete with laws. These laws are arrived at through hypotheses and theories. A scientific law simply "means statement of universal facts which have been tested repeatedly and confirmed to reflect facts of the world. Laws are postulated working principles which help the scientists to work out an ordered and systematic method of scientific investigations" (Ndianefoo 19). Causality or causation on the other hand, "is the relation between two events that holds when given that one occurs, it produces, or bring forth, or determines, or necessitates the second" (Blackburn , 57). Hence, time as a concept is at the centre of scientific investigations of facts, theories and postulations. Interestingly however, time has now become a Siamese twin with space giving us a space-time continuum in science with counter intuitive and odd posture which are absent in the African conception and worldview of time.

Conclusion

Einstein's approach to the understanding of time is a revolutionary shift from what hitherto characterizes time as conceived by earlier thinkers. Apart from time, space and mass being relative, Einstein further postulated that every material event in the universe is influence by the interplay between this relativity of motion and the absoluteness of the speed of light. Understanding time in physics requires that we distinguished our subjective experience of space and time from what we can actually measure about them. This is where most of the difficulties we have in understanding time stem from.

From our brief excursion into the slippery nature of time, we can at least come up with such findings as: time is a real entity which has a mental and psychological dimension. But above all, other factors influence time, just as time also influences other factors too in nature. In whatever way we want to perceive time, it is the same side of a coin and Africans may not be scientific in outlook but worthy of note in the African conception of time is something that can be manipulated and managed. Hence, the clock is not an instrument for the strict measurement of time to the African. Time therefore to the African is not odd as we see in the western tradition but a reality in which life and death takes place.

This underscores the erroneous idea of African time which is held as a pejorative expression for how Africans treat time by the West. Notwithstanding, time is not made for the African, but the African for time.

Works Cited

Archibong, E.I. "Udo Etuk on Remembering the Future: A Possibility in Quantum Mechanics" In: *Humanism, Globalization and the Relevance of Philosophy: A Festschrift in Honour of Professor Udo Akpan Etuk* (eds) Uduma O. Uduma and Francis Etim. Eket: Inbonet Resources, 2016.

Azenabor, Godwin. *Modern Theories in African Philosophy*, Lagos: Byolah Publishers, 2010.

Blackburn, Simon. *Oxford Dictionary of Philosophy*. Oxford: University Press, 2005.

Cooper, J. M. "Aristotle" In: *The Cambridge Companion to Greek and Roman Philosophy* (ed.) David Sedley, Cambridge: Cambridge University Press, 2006.

Etuk, Udo *The New Humanism,* Uyo: Jamae Press, 2012.

Gale, R. M. (ed.) *The Philosophy of Time: A Collection of Essays*. London: MacMillan Publishers, 1968.

Hankinson, R. J. "Science" In: *The Cambridge Companion to Aristotle* (ed.) Jonathan Barnes. Cambridge: Cambridge University Press, 2007.

Hardie, R. P. and Gaye, R. K. (Trans.) *Aristotle's Physics* Book IV, Oxford: Clarendon Press, 1930.

Ndianefoo, Ifechukwu. *A Critical History of Philosophy of Science,* Awka: Divine Press, 2016.

Lacey, A. R. *A Dictionary of Philosophy*. London: Routledge and Kegan Paul, 1976.

Mbiti, J.S. *African Religions and Philosophy,* Nairobi: Heinemann, 1969.

Pagels, H. R. *The Cosmic Code: Quantum Physics as the Language of Science.* Toronto: Bantam books, 1982.