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5. TIME

An African Cultural Perspective

INTRODUCTION

The Africans' concept of time is rooted in their indigenous worldview of understanding the interconnectedness and holism of their place in the universe. It is framed in discrete terms of circular patterns that are marked by the space between two events. While Western science presupposes rectilinear time, indigenous worldviews frame time as cyclical terms of related space size, progression and continuity. This comes from long observation of other elements of the universe that are applied in managing time. Time is defined in qualitative terms rather than as quantitative, numerical, physical, measured space. It is embedded in real-life events and is learnt from recurrent natural events. This means that time is deduced from life events and is a lived experience. These natural events include, life (for example, menstrual cycle, cockerel crowing, and the behaviour of snakes and frogs), celestial (for instance, the sizes and direction of shadows, appearance and patterns of stars), among others. Such events are synchronized to human activities and life experiences that give the African conception of time a perceptual dimension. For example, the peoples' observations of the sun's position in the sky coincide with their cycles of work and rest through their everyday chores for survival. This lived experience dimension of African time embraces the physical, emotional, mental and spiritual relationships associated with African rituals, myths and ceremonies. This chapter unpacks this African conception of time that harmonizes with the myriad of cycles observed in the world. The author draws from the *Karanga* cultural background to give insights into cycles, progression and continuum in the African lens of time. The author consulted some elders of a rural community of Bindura District in the Mashonaland Central province in Zimbabwe to enrich the chapter. Furthermore, the author illustrates that this cyclic understanding of time enables Africans to envisage futuristic events (for example, *mukwerere*—rain-making ceremonies) as marked by previous related events and the hope of having these events fulfilled to sustain life. This chapter has the potential to influence some people, particularly those from a western cultural background, to understand and appreciate the African concept of time as an alternative way of knowing. In addition, the chapter might provoke research in time from the African perspective in different localities. The chapter is organized around four broad areas: African indigenous worldviews, rectilinear time,

G. Emeagwali & E. Shizha (Eds.), African Indigenous Knowledge and the Sciences, 65–78.

a circular socio-cultural frame and a multidimensional socio-cultural perspective. It concludes with a critical multidimensional application of this chapter's content to indigenous knowledge discourse.

THE AFRICAN CONCEPT OF TIME

Time is a fundamental aspect of human life and experience. It is shared by all humans despite their cultural background. However, conceptions of time vary among humans. The differences are rooted in different ways of knowing and living with nature in different parts of the world. Thus, the concept "African concept of time," is to a larger extent an acknowledgement of the diversity of worldviews held by people of different cultural backgrounds. In relation to time, some worldviews might converge with the African concept while others may be divergent and conflicting. Many people, particularly those with a western cultural background use the expression "African time" to imply that Africans do not value rectilinear time, are non-time conscious and have no sense of time. Surprisingly, even some of the African western-educated scholars, like Mbiti (1969), hold this perception. Such people might not know that they are almost assimilated into the western ways of understanding and the use of time. An examination of the African frame of time will go a long way to unveil the perspective of Africans about time as a socio-cultural reality. This chapter might contribute to the decolonization of the minds of some African indigenous people that seem to have lost the sense of African-centred thought and wisdom. In fact, the perception that Africans have no sense of time raises epistemological and ontological debates. The 'real' Africans have no sense of the western perspective of time. However, these Africans have a strong sense of time rooted in their African indigenous ontologies and epistemologies. African indigenous time is programmed into real-life events and relates to the survival of indigenous people. Africans have a socio-cultural frame of time that sustains their lives. Their concept of time contrasts with the rectilinear model that is rooted in the Western worldview, which is practically alien to 'real' African thinking.

THE AFRICAN WORLDVIEWS: *UNHU/UBUNTU*

An understanding of the *Unhu/Ubuntu* worldview is required to grasp an understanding and respect for African concept of time. *Unhu*—an African indigenous worldview shares assumptions with other indigenous worldviews. But before unpacking what the *Unhu* worldview entails, perhaps there is need to clarify the use of the term indigenous in relation to this chapter. The term indigenous is hard to define. McKinley (2007) asserts that "indigeneity is a heterogeneous, complex concept that is contextually bound" (p. 202). In the literature, it is often used as a descriptor to identify or characterize something (for example, people, knowledge, culture, worldviews, etc.) in relation to places of habitation or origin. The qualification "contextually bound" does not only indicate that "there is no universal definition

of Indigenous" (Aikenhead & Ogawa, 2007, p. 555), but also links anything that is characterized as indigenous to a particular locality. The people and their knowledge, views of the world and cultures are linked to the genealogy and "descendants of the first people to inhabit a locality or place" (Aikenhead & Ogawa, 2007, p. 556). Often these people and their knowledge systems are likely to have experienced various forms of colonization by western dominating nations. African people, their knowledge, cultures and worldviews were and are still dominated and marginalized by western hegemonic ideologies. As such, Odora Hoppers (2002) links the term indigenous to the people, knowledge, worldviews and cultures that have been or were previously colonized and dominated, and currently striving to decolonize themselves and their knowledge systems from western imperialism (Battiste & Henderson, 2000). This view covers all indigenous people around the world, including the Aborigines of Australia, Maori of New Zealand, the First Nations of Canada, Indians, Africans and many others.The term *Africans*, in this chapter, refers to the indigenous people with a genealogy of African ancestors. Although some of these people might have been colonially exposed to western cultures, they have to a large extent retained their African ways of knowing and worldviews.

Simpson (2000) observes that indigenous people view life and knowledge in the universe as holistic, cyclic and interdependent. Holistic connotes completeness, which means, one whole made up of inextricable and interwoven parts. Battiste and Henderson (2000, p. 43) contrast the holistic, indigenous knowledge worldview to the reductionist nature of western scientific worldview. They argue:

> No separation of science, art, religion, philosophy or aesthetics exists in indigenous thought; such categories do not exist. Thus, Eurocentric researchers may know the name of a herbal cure and understand how it is used, but without the ceremony and ritual songs, chants, prayers, and relationships, they cannot achieve the same effect. (Battiste & Henderson, 2000, p. 43)

It is evident, therefore, that within the whole of existence, all the elements of nature form a web of interrelationships. They intimately connect with this whole and are dependent on each other. The cyclical view of the world originates from the idea that all things are in a constant motion or flux (Little Bear, 2000). For something that is holistic, constant motion is observed in cyclical and repetitive patterns. For instance, the human life cycle has a regular pattern that results in conception, birth, growth and death.

Africans, like any other indigenous people around the world, live in harmony and intimate relationships with their non-human cohabitants. Africans believe in ordered responsibilities and roles within their communities but insist on respectful relationships among the human and non-human members of the community. Indigenous people have lived with these elements, studied them and developed knowledge and skills that enable them to survive. They have become specialists in understanding the interconnectedness and holism of their place in the universe. Be that as it may, these indigenous worldviews vary from place to place. According

to Cajete (2000), the place is a land space, a locale to a group of people habiting it. It provides its habitants with the environment to interact with and learn from for living purposes. The place is also relational as well as experiential. As a result, the land describes the nature that provides a blueprint for living well in it and all that is necessary to sustain life (Michell, 2005). Consequently, epistemological and ontological variations come from contextual individual experiences accumulated in one's land of origin.

Unhu is an African worldview that is a variant of the indigenous worldviews and one manifestation of the many worldviews that are reflective of African communities. *Unhu* emphasizes symbiotic relationships among members of African communities (Moyra, 2008). Within a typical African village, the biological (people, animals and plants), the physical (mountains, rivers) and the spirits (metaphysical) elements are all related and dependent on each other. These elements make up a larger whole that embodies two dialectical wholes, the first and the second worlds (Matsika, 2012). The first world relates to the metaphysical world whilst the second world relates to the physical world. In the language of Ermine (1995), the first and second worlds relate to the indigenous outer space and inner space respectively. Within the *Unhu* worldviews, one example of the manifestation of the interactions between the spiritual and natural world within a community is ancestral relationships defined through totems. Totems, usually animals, like the Shava (Eland), connect the living to their ancestors and the animal. According to Ampadu-Agyei (2003) cited in Francis (2008):

> Totems refer to vegetables or animals which are revered by individuals, particularly a group of people or a tribe as sacred. A totem can be an animal, a plant or any other natural object believed to be ancestrally related to a tribe, clan, or family group as a tutelary spirit. For this reason, the members do not eat, kill or trap such animals or birds or fish. (pp. 19–20)

The places where ancestors are buried are defined as sacred and this provides another link to the caves. Within an indigenous community, spirituality is highly respected as it embodies relationships between people and ancestors, self and collective empowerment, metaphysical and psychic powers, healing and wholeness (Dei, 2011). It connects and holds together these natural and metaphysical elements. The human respect of spirits allows them to be guided by the 'I am because others are' principles of communalism (Moyra, 2008) and sustaining familial relations (Weaver, 2001).The *Unhu* worldview presumes that all people within the village are relatives. This way of viewing a group of people leads to treating each other with respect for the good of the entire group or community. At an individual level, cultural-traditional values of good manners and empathy are needed for dialogue and building of collectivism (Shizha, 2010).

The *Unhu* worldview, as any other indigenous worldview, holds epistemologies that predicate time cyclically. The cyclic conception of time is in contrast to the western scientific epistemology that presupposes rectilinear time. "Cyclical time

swings back and forth, rhythmically, between repeated events" (Kearney, 1984, pp. 98–99) providing discrete and functional purposeful time interpretation. By perpetuating events in the past, indigenous Africans conserve their history, propagate ancestor and deity worship, and continue a strong sense of African religious customs. It enables predictability in the life history of a culture.

RECTILINEAR TIME

Universal rectilinear time is presupposed by western scientists and, therefore, rooted in western scientific worldviews. Bolter (1984) argues that the concept of rectilinear time is a product of western scientific knowledge and the creation of the mechanical clock. He draws this argument from his study of the concept of time held by ancient Greeks, Europeans in the Middle Ages and Renaissance, and modern computer engineers. He believes that the western scientific inventions that resulted in the rectilinear concepts of time have roots in cultural technologies. Consistent with the indigenous ontologies of multiple realities, Bolter (1984) argues that prior to the era of the mechanical clock, the concept of time varied in accordance with the technologies of specific western cultures. Such a culture-specific perspective of time frames multiple time concepts that contradict the universal rectilinear time concept grounded in Western scientific culture. As is quite familiar to many, rectilinear time is a quantitative ratio-scaled measurement. It is uniformly and limitlessly linear, and calibrated by identical, mathematical, arbitrary units. Through a series of western scientific works, rectilinear time became an abstracted western scientific reality from Newton's (1687) Principia: "Absolute, true, and mathematical time, of itself, and from its own nature, flows equably without relation to anything external" (Cajori, 1962, p. 6). This marked the abandonment of the western cultural conception of time in favour of rectilinear time in the history and philosophy of science. To date, many Africans and non-Africans heavily depend on the watch for time. The watch has become the symbol for rectilinear time.

CIRCULAR SOCIO-CULTURAL TIME

An alternative to rectilinear time is cyclical time (Peat, 1994). It is a shared social-cultural conception of time among many indigenous cultures. It is a concept of time that harmonizes with the myriad of cycles observed in nature (Aikenhead & Ogawa, 2007). The cycle forms a whole and, therefore, makes the understanding of time discrete. However, to Africans, what is important is what happens in the space between two events that leads to one complete cycle, rather than the number of lived cycles. This provides a descriptive sense of time. The kind of thought system about time which the author observed among the Elders as the author grew up in a rural village is intimately linked to patterns of nature and social-cultural events. Reflecting back to life in the village, the author now realises that the Elders tied time to different types of events, such as cattle herding, ceremonies, meal times and

even human development and growth. These human activities were and are aligned with natural events, including the life process of plants and animals, and celestial and seasonal patterns. When a baby boy was born, the Elders in the village would comment: "a boy is born again in this village. We need to plant more *mhunga* (pearl millet) and *rukweza* (finger millet)." To the Elders in the Gwizi community of Chibi district of Masvingo in Zimbabwe, the birth of many male children in the village was a sign of a drought year—the African's conception of time as a socio-cultural lived experience (Babalola & Alolan, 2013).

As yet another example, a day's cycle is arrived at in several ways, including the sunrise. Every sunrise meant a complete day. The sizes of the cycles varied and built into the future, at the same time leaving landmarks of the past. They identified different cycles such as life cycles, celestial cycles, seasons, and daily cycles, using a variety of observations. Their observations were triangulated to validate their reality of time cycle. For example, the cock-crows are compared with different patterns of movement of the sun, moon and stars. To the African, both the event and human socio-cultural activities that take place between the two similar events constitute cyclic time. The notion of time is based on cyclic phenomena; hence, their time is cyclical as opposed to Western science's rectilinear notion of time.

African ways of knowing time reflect an intimate relationship with nature, which "tend to focus on relationships between knowledge, people, and all of creation" (McGregor, 2002, p. 2). Thus, the African's observation of nature and socio-cultural activities make up commonly agreed-upon ways of determining a day, week, month, season and year without reference to the calendars and clocks. The author's parents were western-trained primary school teachers, but interestingly they incorporated the cyclical conception of time in their home and the rectilinear conception of time within their professional workplace context. The moment they got home from school, they would put their wrist watches in locked drawers and resume managing home chores within a cyclic, cultural conception of time. Drawing from the conversation the author held with some Elders about time, today rural community people, despite wearing watches, still culturally manage their time through observation and oral transmission. In fact, this oral tradition within real-life activities of passing knowledge, from one generation to the next, is typical of indigenous Africans (Dei, 2011).

As a matter of survival, each generation sought to live in harmony with other creations of nature, learn from the other and made good use of the knowledge gained. Africans strongly believe that their knowledge and wisdom comes from their ancestral spirits, instructed by the Great Spirit (Ngara, 2007). The Great Spirit is God, which indigenous Zimbabweans express in diverse dialects, including *Mwari, Musikavanhu, Nyadenga, Musiki*. As such, Africans reckon that all their co-habitants (for instance, animals, insects, the stars) within their communities hold knowledge they can learn and make use of in their daily lives, as guided and mediated from God by their ancestral spirits. They share the belief that the Great Spirit created the non-human aspects of the physical world for humans to use respectfully, to

live and prolong their lives in the second or physical world (Matsika, 2012). Their *Unhu* worldview leads them into appreciating and respecting the presence of other elements of the community and the knowledge they hold for them. They have been taught by their parents and experiences in the villages that the eyes, ears and mind are opened up by their ancestral spirits to generate wisdom from their co-habitants and get life out of them. They believe that the Great Spirit wants them to live a good life through hard work and respectful use of the natural resources. Time is a resource whose utilization has to reflect the worldview of communalism and values of respect and sacredness. As such, Africans are educated to synchronize their survival chores with daily, monthly, seasonally and yearly cycles. They predict weather patterns and time based upon observations of behaviour of flora and fauna in their surroundings to prepare for their day. For instance, the crowing of the cock plays a significant role in predicting time. As I introspected on my upbringing with reference to the concept of time from an African perspective, I vividly recall my mother shouting at us (my sisters and me) each time we overslept and did not wake up after the cock had crowed for the third time. My mother would say:

> The cock has crowed for the third time, all the birds are now moving around but you are still sleeping. How many times do I have to tell you that the crowing of the cock means get up and work for your children? (But I was still in primary school). What will be of you when you become a mother? Sleep after the cock crows and wake up when the sun is above all the trees…your children will always be hungry. I warn you no man would marry such a woman.

These words carry a socio-cultural meaning of time that is linked to signals from birds, the position of the sun relative to the size of the tree and *behaviour shaping* in anticipation of community-expected values, and futuristic roles at adulthood. This expression of time is typical in many African villages. In fact, the start of the day is linked to the natural phenomena occurrences within the community environment. Human activities, such as tilling the land, sowing, pounding grain or other activities start with the events occurring in the natural environment. These include the sounds of domesticated birds and the position of the sun. For instance, my mother insisted on her children waking up between the second and third cock crow despite her uses of rectilinear time-keeping at school. This was the time to get up and start our daily chores. She insisted on paying particular attention to the sound of the head cock. By so doing, she was instilling the values of working hard and being responsible. My father would always talk of wisdom time. By wisdom time he referred to the sleeping night time during which he educated us that it was time for the ancestors and the Great Spirit to give us life directions through dreams. He always said, "Go to sleep, do not waste time lest you will miss *njere dzehope.*" Figuratively, this Shona expression means wisdom rooted in dreams.

As I grew older, I realised that Elders in my village, including my biological parents, grandmothers and relatives in our community triangulated the animal-indicated time with not only astronomical patterns of stars like *hweva* (morning star

or Venus planet), and weather patterns, but also the position of the sun relative to the heights of mountains and trees. The Zezuru Elders (a tribe within the Shona people of Zimbabwe) who participated in the *dare* (Shona cultural meeting) conversation session of time referred to *hweva* as *nyamasasi.* My mother made reference to the rising of the sun, its position in the sky and related it to the height of trees. The Elders, for instance, can determine the break of dawn by viewing the *hweva* star and the accompanying *vutonga* (dawn). The local villagers reinforced this link between celestial bodies to heights of mountains, hills and trees in managing time when one of them said:

> There was an early morning bus to Harare that left this place around four o'clock in the morning. We never used the watches but just new the time to get to the bus stop when the nyamasasi was in line with that mountain (he pointed at it).

Vutonga is the red-orange colour seen in the sky in the direction of the sunrise. It is seen just before the *hweva* star rises. The teaching about the *hweva* and its morning time indication is embedded in the Shona song *kunze kwayedza kunotanga hweva* (the *hweva* has risen indicating dawn).

From sunrise, the members of an African community use shadows cast by them, buildings or plants. They locate the position of the sun using their hands, eyes and body sensations to determine working and resting time. Furthermore, when the Elders are working in the fields, they judge the time to return home as determined by the weather conditions, the length of return journey alongside the sounds of certain stork birds. For instance, one Elder, a member of the village head council, said:

> When we hear the crow of the haya (Rain cuckoo) bird we know that the rains are coming. These birds drink water from mhango yemuti (cavity of the tree). It celebrates the coming of the rains by crowing. It makes different sounds that show how far the rains are. So if it makes a sound that shows that the rains will drop in a short while (mvurayehore) we go home early. The other sound means the rains are coming but later on and this gives us more time to work. The silence of this bird means there are no rains.

The excerpt above reinforces the argument that African time is tied to events, natural and human. Africans rely on nature for deciding resting and working time. They also predict weather patterns through a deep understanding of the behaviour of other living animals in their environment. Every community member learns what the sounds of the bird mean from experience. In this case, the Elder holding such knowledge simply pronounces that it was time to go home when the *haya* bird has spoken. The next time this bird crows, everyone else, including children, will know the meaning behind the crowing. In Buhera district in the Manicaland province of Zimbabwe, Mararike (1999) established similar interpretation of the singing of the *haya* bird in the early summer as signalling the beginning of the season. This agrees

with Mapara's (2009) finding that the Karanga people foretell the falling of rain in the next hour or two upon hearing the sound of *dzvotsvotsvo* (the rain bird). Stock birds also predict weather patterns. For example, the surfacing of *madzoramombe* (migratory birds or white storks) in Zimbabwe indicates an imminent rain season.

In African cultures, the days are small cycles that feed into larger cycles of weeks, months and years. Days, weeks, months and years are repetitive and progressive. Cultural taboos, rituals and ceremonies serve as markers of time during the small or bigger cycles. To emphasize this observation one village head said:

> Too many sugar or mobola plums presage little rainfall and a drought summer season and therefore low harvest. The ancestors provide these fruits so that people do not die of hunger. It also informs us to conserve our reserves as much as possible for future consumption. We also start outsourcing food (kusunza). This also helps us to prepare for plants or crop varieties which do not require a lot of water.

The excerpt above gives insights into the African socio-cultural concept of time in several ways. First, the sugar plum (*muzhanje*) and mobola plum (*muhacha)* trees bear fruits towards the rain season but some Shona communities in Zimbabwe believe that too many mobola plums signal a drought season. Apart from these trees, the Elders construe the budding of other trees like the *munhondo* (*berlinia globiflora*) and *musasa* (*brachystegia spiciformis)* as indicative of summer being around the corner and time to prepare for sowing. Tree flowering (*pfubvunza)* provides some indication of time because they bloom and bear fruit only once a 'year', thereby giving the people an easy way to determine the coming of a new and busy agricultural season. Villagers use the flowering time of the *munhondo or mutondo* tree to decide what crop to sow on a bigger piece of land that year. When these trees flower early they know that it was a wet season and they consider planting *mupunga (*indigenous rice) or maize, more than *rukweza/zviyo* (finger millet), *mapfunde* (sorghum) and *mhunga* (pearl millet). The late flowering of these trees is interpreted as signalling a drought year. This is when more drought-resistance crops were planted on a bigger hectare of the field in contrast to those in need of adequate rains. Every year such observations were made and Elders reckoned a complete cycle of a year with such events.

The summer season is recognized in other ways that evidence Africans' belief in the spiritual rooted life. For instance, Elders present a sample of field crops to the ancestors before the people are allowed to consume the crops. This cultural protocol is followed as a way of thanking the ancestors for the good rains and the crops. The initial consumption of crops is sanctioned by the traditional chief after the *kusuma* (a cultural gesture of respect, appreciation and reciprocity). The Elders said the crop samples are presented to places recognized as sacred. They emphasized that the violation of this cultural taboo led to the destruction of crops by wild animals such as baboons. Violation of cultural taboos is regarded as a sign of disrespect that calls for

punishment not of the offender but the entire community or many communities. This collective punishment is again a manifestation of the communal worldview of the African people. At the end of good harvest a similar event is conducted as a cultural ritual that serves to thank the ancestral spirits for the peace and harvest granted to the community people. The *kusuma* before eating the crops and after harvesting are connected to the ripening of field crops. Such ceremonies are conducted on predetermined fixed dates, but are dependent on the natural progression of life, agriculture and nature. They follow natural cyclical events; human life processes and associated rituals also follow natural cyclical events. For example, it is not unusual to hear Elders talk about holding a ritual to bring the spirit of the dead into the home (*kurova guva*) after the rain season. Most community members holding this cultural belief are aware that it is a taboo to hold the 'spirit return home' ritual before the grave of the dead person has been rained upon. So this ritual has no fixed quantitative measure, rather it is determined by the death event and the raining event. Again the event is linked to the time of the year.

Apart from field crops, most African people also judge time based upon the behaviour of several insects and frogs. For example, the appearance of black insects (*chifuramumera*) is associated with the beginning of the planting time. These insects only appear during the planting to harvesting period. The Elders recognize the frog sounds as their way of celebrating the rains. They understand the patterns of rainfall from particular sounds of some frog species. The bull frog croaking with high tone signified rains coming in the next day. Their observations of the behaviors of other living organisms is used to predict the quality of the season. For example, the incessant singing of *mandere* (day-flying chafers) signals the nearness of rainfall. Likewise, the singing of *nyenze* (cicadas) signals the commencement of rains in two to three weeks' time. Other insects that inform them about the cropping season include *makugwe (brachytrupesmembranaceus)* and *mopani* worms. Muguti and Maphosa (2012) established similar patterns in their study of indigenous weather forecasting among the Shona people.

In each cycle, there is rest time and work time garnered from weather patterns, plant and animal life processes and the state of the harvest. For instance, in a day cycle, the night is put aside for resting and the day for working as determined by the darkness and light. During the day, the sun's position, the heat, direction and positions of shadows as well as individuals' feelings, determine resting and working times. The light from the sun is viewed as purposeful to enable the community members to see what they will be doing throughout the day. Week cycles are mostly separated by a period of rest called *chisi*. This is a cultural taboo that bars community people from doing hard work such as planting, tilling and ploughing on a day designated by the Chief of the community. The month of *Mbudzi* (November) is regarded as sacred and, therefore, cultural activities such as marriages, rituals and ceremonies are suspended. Elders believe that this is the period when their ancestral spirits are carrying out meetings in their spiritual realms to decide on the request from the second world and other important issues of human life.

MULTIDIMENSIONAL SOCIO-CULTURAL TIME

There are several socio-cultural events that are conducted within the "right-time and sacred-time" concept of Africans. Members of a family, for instance, may gather for the "spirit of the dead return home" ritual (*kurova guva*). This ritual involves several stages. One of the stages vital to subsequent stages of this cultural process is called *kuzunza mbudzi* (making the goat shake). This goat shaking stage is culturally symbolic to the emotional state of the returned spirit and his or her acceptance to be returned home. It determines the progression and pace of subsequent events of the ritual process.

Lee, Yen and Aikenhead (2012) made similar observations among indigenous Elders in the Amis community when they found out that Elders "talk about 'when the time is right', then we can start an event or progress with it" (p. 1188). Thus, an event should begin or progress with the Elders' satisfaction that the environment is conducive to all the involved parties, the spiritual and physical people. Not only does the people's holistic (physical, emotional, mental and spiritual) state of being need to be in sync with the event, but more importantly the inner and outer spaces as well. What is happening in the physical world should be in alignment with the happenings of the first world. So the Elders wait for such cultural symbolic signals irrespective of how much time it takes. The Elders are aware that repetitive cycles in indigenous outer space interact with cycles in inner space (Ermine, 1995). Such cultural rituals and ceremonies are believed by the Africans to be spiritually connecting the present people in the first world with those of the past generations in the second world. As Lee et al. (2012, p. 1188) explain, such cultural ceremonies through the lens of cyclic time are "not time living in the past, but a natural relationship in the web of relationships of existence presupposed by indigenous ontologies."

From another perspective, indigenous time operates within a socialized conception. Such a perspective means that time is programmed into socio-cultural norms and values that shape human behaviour and interpersonal relationships. Socialized time originates from the *Unhu* worldview. It challenges Mbiti's (1969) view of time as having no academic importance. Systems programmed on linear time obviously conflict with indigenous systems of education which are embedded in the real and cyclic lives of the Africans. Apart from being reckoned by animal sounds, plant behaviour and astronomic patterns of the stars, moon and sun, time is attached to social activities such as milking cows, fetching water and time of return from the fields. These social activities carry cultural survival meaning. Knowing is embedded in those activities as exemplified by nature observations. The *Unhu* philosophy dictates that through the lens of socialized time, the use of time chores does not sacrifice social duties and human relations on the rectilinear time punctuality. This is because community interests and living in harmony surpasses an individual's interests.

Another dimension focuses on situations in African cultures when time is multitask managed and not controlled by successive and sequential events based on linear views of time. In this sense, time is polychromous, that is, an individual

simultaneously does more than one thing within a given period. This again contrasts with western culture and its academic programs that are sequential, successive and ordered. For instance, it is typical of African ways of living in rural communities for mothers to till the land, at the same time nursing or carrying the baby on their back while looking after the goats. In other words, responsibilities are combined within the same period of time and are rooted in the collectivism principle of *Unhu* as well as the circular sense of time. Such an approach also manifests itself at interpersonal interactions and relationships. It is, therefore, not unusual for Africans to engage in simultaneous conversations. This is different from managing one thing at a time in a strict sequence rooted in the western culture of managing rectilinear time. The criticism that Africans have a lax attitude about time may be ignoring this polychronic approach in managing tasks, events and interactions. As Lee et al. (2012) argue, this reveals the holistic time sense that takes care of the emotional and spiritual aspect of others. All this is grounded in the *Unhu* worldview that calls for respect, empathy and togetherness.

The African perspective of time has a past, present and future dimension contrary to Mbiti's (1969) view that focuses only on the past and immediate. With respect to the Yoruba perspective of time, Ayoade (1997) explains that the future life even extends beyond the end of this life to an afterlife. Drawing from my own experience and the group conversation I had, futuristic time is inferred from various symbolic expressions that make reference to infinite time. For example, the metaphor "*chisi hachieri musiwacharimwa*" meaning that the consequences of violating cultural taboos are not immediate but prolonged, implies a future event. Another example is that when the Shona people in rural Zimbabwe are conducting the rain ceremonies (*mukwerere*), they consult their ancestors to determine the future. The infinite future comes with the living anticipating several more rain ceremonies in the future.

Despite the events I have discussed above that denote discrete time, Africans manage their time on definite and accurate time, that is, when the socio-cultural context demands that things must happen, have effect, or must be done at a particular time. Some rituals need to be conducted on definite time, particularly those associated with healing and exorcism. In such cases, Africans engage in the measurement of such specific time. For example, the ritual might be said to start with the first cockcrow and surely by that time people will be gathered to perform it. The Elders use figurative or symbolic expressions that depict definite time. For example, the statement that "*tisangane nehweva*" implies "let's meet with the rise of *hweva* star" and is specific and accurate. Such examples show that Africans also conceive time in the punctual sense. However, all this depends on the context of the event.

CONCLUSION

This chapter reflects on Africans' conceived ideas about time. Drawing from the discussions above, the argument is that Africans are as time-conscious as all other races, such as Europeans, Asians and others. But its discrete, multifaceted and

socio-cultural context contrasts with the numeric, continuous and objective nature of linear time. It is not that Africans have no sense of time and are lax towards time, rather than their time concept is broad, multifaceted and socio-culturally specific. It extends beyond the physical world of reality into the metaphysical world. The African conception of time is rooted in indigenous worldviews of interconnectedness, interdependence and spirituality among all elements of nature. It is therefore reflective of the African cultural identity and worldviews. So calling on African individuals to be punctual or on the clock when they are being pensive, implies asking him or her to abandon their African indigeneity. Real Africans will not necessarily do so, if operating under sacred time.

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REFERENCES

Aikenhead, G., & Ogawa, M. (2007). Indigenous knowledge and science revisited. *Cultural Studies of Science Education*, *2*(3), 539–620.

Ayoade, J. A. (1997). Time in Yoruba thoughts. In R. A. Wright (Ed.), *African philosophy: An introduction* (pp. 93–111). Washington, DC: University Press.

Babalola, S., & Alolan, A. (2013). African concept of time: A socio-cultural reality in the process. *Journal of Education and Practice, 4*(7), 143–147.

Battiste, M., & Henderson, J. Y. (2000). *Protecting indigenous knowledge and heritage.* Saskatoon, SK: Purich Publishing.

Bolter, J. D. (1984). *Turing's man: Western culture in the computer age.* New York, NY: Viking Penguin Inc.

Cajete, G. (2000). Indigenous knowledge: The Pueblo metaphor of Indigenous education. In M. Battiste (Ed.), *Reclaiming indigenous voice and vision* (pp. 181–191). Vancouver, BC: University of British Columbia Press.

Cajori, F. (1962). *Sir Isaac Newton's mathematical principles of natural philosophy and his system of the world (Principia)*. Berkeley, CA: University of California Press.

Dei, G. S. J. (2011, November 16). *Studying, researching and teaching African indigenous knowledges: Challenges, possibilities and methodological cautions*. Retrieved June 6, 2014, from www.unisa.ac.za/news/docs/Studying_researching

Ermine, W. (1995). Aboriginal epistemology. In M. Battiste & J. Barman (Eds.), *First nations education in Canada: The cycle unfolds* (pp. 101–112). Vancouver, BC: University of British Columbia Press.

Francis, L. (2008). *Significance of animal symbolism among the Akans of Akyem Abuakwa traditional area*. Thesis submitted to the School of Graduate Studies, Kwame Nkrumah University of Science and Technology, Kumasi in partial fulfillment of the requirements for the Degree of Master of Arts in Art Education, Faculty of Fine Art, College of Art and Social Sciences.

Kearney, M. (1984). *World view.* Novato, CA: Chandler & Sharp Publishers.
Lee, H., Yen, C.-F., & Aikenhead, G. (2012). Indigenous elementary students' science instruction in Taiwan: Indigenous knowledge and western science. *Research Science Education, 42*(6), 1183–1199.
Little Bear, L. (2000). Jagged worldviews colliding. In M. Battiste (Eds.), *Reclaiming indigenous voice and vision* (pp. 77–85). Vancouver, BC: University of British Columbia Press.
Mapara, J. (2009). Indigenous knowledge systems in Zimbabwe: Juxtaposing postcolonial theory. *Journal of Pan African Studies, 3*(1), 102–112.
Mararike, C. (1999). *Survival strategies in rural Zimbabwe: The role of assets, indigenous knowledge, and organisations.* Harare: Mond Books.
Matsika, C. (2012). *Traditional African education: Its significance to current educational practices with special reference to Zimbabwe.* Gweru: Mambo Press.
Mbiti, J. (1969). *African religion and philosophy*. London: Heinemann.
McGregor, D. (2002). Traditional ecological knowledge and the two-row wampum. *Biodiversity, 3*(3), 2–3.
McKinley, E. (2007). Post colonialism, indigenoous students and science education. In S. Abell & N. Lederman (Eds.), *Handbook of research on science education* (pp. 199–226). Mahwah, NJ: Lawrence Erlbaum.
Michell, H. (2005). Nēhîthâwâk of Reindeer Lake, Canada: Worldview, epistemology and relationships with the natural world. *Australian Journal of Indigenous Education, 34*, 33–43.
Moyra, K. (2008). Science education and worldview. *Cultural Studies of Science Education, 3*(3), 587–621.
Muguti, T., & Maposa, R. (2012). Indigenous weather forecasting: A phenomenological study engaging the Shona of Zimbabwe. *The Journal of Pan African Studies, 4*(9), 102–112.
Ngara, C. (2007). African ways of knowing and pedagogy revisited. *Journal of Contemporary Issues in Education, 2*(2), 7–20.
Odora Hoppers, C. (2002). *Indigenous knowledge and the integration of knowledge systems: Towards a philosophy of articulation.* Claremont, South Africa: New Africa Books.
Peat, F. (1994). *Lighting the seventh fire.* New York, NY: Birch Lane Press.
Shizha, E. (2010). The interface of neoliberal globalization, science education and indigenous African knowledges in Africa. *Journal of Alternative Perspectives in the Social Sciences, 2*, 27–58.
Simpson, L. (2000). Anishinaabe ways of knowing. In S. Koolage, L. Simpson, & N. Schuster (Eds.), *Aboriginal health, identity and resources* (pp. 165–185). Winnipeg, MN: Native Studies Press.
Weaver, H. N. (2001). Indigenous identity: What is it, and who really has it? *American Indian Quarterly, 25*, 240–255.