

The Logic in Yoruba Proverbs

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Abstract

This paper examines the question of logic in African philosophy through a systematic exploration of Yoruba proverbs as a useful cultural resource. Its basis is to strengthen the defence of logicity of traditional unlettered Yoruba-Africans. It argues, with illustrative examples, that proverbs are the axiomatic regimentation of formal logic in African philosophy. The paper establishes a close nexus between logic and language. Using the Yoruba language as an example, the paper shows that there are some elements of formal logical inferential rules and principles embedded in Yoruba proverbial thought. As a matter of universal application, these logical principles are conventionally used in Yoruba cultural milieu to evaluate discourse, reasoning and thoughts. In addition, this paper identifies the critical challenges and difficulties that are confronted in the course of exploring the logic in Yoruba proverbs. To overcome these challenges future studies need to construct indigenous logical symbolism indicative of logical discourse in contemporary African philosophy.

Keywords: Logic; Rationality; Proverbs; Language; Yoruba

1. Introduction

The flurry of debate that has permeated the philosophical atmosphere in Africa for the past four decades has succeeded in addressing the question of whether there is an African philosophy or not. Today there is overwhelming evidence that African philosophy has come of age. Discourse in the field has reached a significant stage in the areas of metaphysics, religion, social and political philosophy, ethics and epistemology among others. However, despite this intellectual feat in African philosophical discourse it is a concern that less attention has been paid to certain aspects of logical studies in African philosophy (Fayemi, 2007a, p. 1). This situation is further complicated by a lack of forward vision in the field. On the one hand, there is scepticism in constructing what can be called African logic. On the other, there is the question of how to explore the various types of logic (formal, informal, quantificational, modal, dialectical, etc.) in African philosophy. The dearth of scholastic interests and coinciding literature in these two aspects has not helped matters.

One major contributing factor that has impeded the silencing of the above scepticism is that early Western anthropological speculations (and some contemporary literatures) portray the mindset of Africans as structurally different, in terms of rationality, from that of Western minds. For example, Levy-Bruhl (1967, p. 21) described the African as a primitive being with a pre-logical mind, at ease in mysticism and magic, and governed by the law of participation rather than by logical canons. Horton (1977, p. 65) declared that traditional cultures never felt the need to develop logic as a formal discipline, concerned with questions about the nature and justification of human inference. In a similar vein, Wiredu (1980, p. 12) points out that our traditional culture was somewhat wanting in this aspect of logic, and this lack is largely responsible for the weakness of traditional technology and warfare, architecture and medicine in modern day Africa.

A number of commendable attempts have been made by some prominent African scholars (Winch, 1972; Evans-Pritchard, 1980; Bello, 1993, 2002; Sogolo, 1993; Irele, 1997; Isaac, 2001, among others) to free traditional Africans from the charge of pre-logicality and illogicality. However, these attempts surmount to a mere denial of the initial allegations. For this reason, an analysis of the existence of logic in traditional African societies is necessary. The present paper bridges this fundamental gap.

Momoh (1989) sees the logical question in African philosophy more of a challenge than a problem. According to him, 'It is a challenge to African philosophers to develop a formal logic that will capture the spirit and metaphysics of African philosophy'. Momoh (1989, XII), in his own attempt to resolve the problem, makes a distinction between logic in natural language and logic in artificial language. By the former he means critical, discriminating, rational and reasonable discussion and discourse in natural language. 'Logic here involves clarity of expression, the avoidance of fallacies, vagueness, ambiguity and contradiction in natural language' (1989, p. 174). Momoh also tells us that there are individuals in every culture who are logical in this sense, and African culture is no exception. His second sense of logic underscores the formal skill of a trained logician. Logic in artificial language is the setting up of constraints, variables, sentence connectives, deductions and transformation rules for deriving the formal validity of arguments. Even in this sense of logic, Momoh (1989, XI) argues that African philosophy can be logical. Patterns of reasoning inferences and discourse in African philosophy can also be formalised and tested for formal validity or invalidity, using known techniques of modern formal logic.

Makinde (1989) and Oruka (1984) argue that one can think logically without understanding the rules, nature and scope of formal logic. Oruka, citing *Modus Ponens*¹ as an example of a valid

¹ A Modus Ponens, also known as affirming the antecedent, is a valid inference drawn from a hypothetical or conditional proposition.

principle of inference, argues that such a rule, together with other logical principles (including the three fundamental laws of thought) can be recognised in any African thought system (1984, pp. 386-387). Makinde, on his part, further linked language with logic when he wrote, 'We cannot rule out in advance the possibility of a development of logical systems in any language or culture, even if no logical systems have yet been built in that language' (1989, p. 116). In a similar vein Omoregbe (1985) argues that 'The ability to reason logically and coherently is an integral part of man's rationality. The power of logic is identical with the power of rationality. It is therefore false to say that African people cannot think logically or reason adherently, unless they employ Aristotle's or Russell's forms of logic or even the Western type of argumentation' (Omoregbe 1985, pp. 4-5).

At this point we are in agreement with Momoh (1989), Makinde (1989), Oruka (1984) and Omoregbe (1985) in that all men are capable of logical reasoning. However, whether or not their logic is systematised is another question. These African philosophers believe that African logical thinking can be systematised. However, such systematisation would be in line with formal logic as known in Western philosophy. Logic, to them (with the exception of Momoh, 1989), is a theoretical and universal discipline, to be treated along the same lines as mathematics, music, chemistry and physics. The argument is that if philosophy has no boundaries, then *a fortiori*, logic has no boundaries either. The implication of this is that there is logic in Africa but there is no such thing as African logic.

This paper moves beyond the conclusions of Oruka (1984), Omoregbe (1985), Momoh (1989) and Makinde (1989). It provides a systematic exploration of proverbs, in order to strengthen the defence of logicity in traditional unlettered Africans. Given the multi-ethnic and linguistic structure of Africa, it is impossible in a paper of this nature to examine formal logic in all African proverbs. For this reason, the Yoruba proverbial structure is used as an illustrative example. In order to place our illustrations and positions on sound theoretical footing, a proper understanding of the nexus between logic and language is imperative to our argument, and will be discussed next.

2. Logic and language

Logic and language are two fundamental features of all human societies. The cultural experiences of any human group are couched in a language. Language in this sense can be viewed as a system of communication that relates what is to be communicated with something that communicates. For example, a message is communicated via a set of symbols conventionally accepted and understood by a social group (Palmer, 1976, p. 7). It is the medium through which human beings communicate, exchange thoughts, and express feelings and actions with one another. As a system, language is composed of signs and words, the meanings of which are socially determined. It is in this sense that language is essentially a social product that provides a framework for thought, and which also communicates thought. All human languages perform these functions. To the extent that people do not have the same capacity for language, people do not have the same measure of cognitive capacity, whether within the same culture or different cultures. While linguistic proficiency is not the sole basis of all thought, it must be noted that as much as being a good orator is a function of a better thinker, a poor or average speaker is not necessarily a bad thinker.

Logic is the branch of philosophy that studies methods and principles used to assess the evidential link between the premises and conclusions of arguments (Oke & Amodu, 2006, p. 29). It is the scientific and artistic study of the methods or principles of distinguishing correct/incorrect reasoning and valid/invalid reasoning. There can be no logic without language because language is what makes logic possible (Ogbinaka, 2002, p. 190). Thus, the existence of culture presupposes the existence of logic, and presumably, the existence of language presupposes the existence of culture.

Thought, which is prior to language, is expressed through language and it is an instrument of logical study. Logic, in dealing with any judgment or studying the principle involved in the process of reasoning, states all that is implicitly contained in the thought. Language, according to Uduma (1998, p. 377) is a primary tool of reason. It enables us to fixate, describe and organise our manifold experiences, and to profit from the experiences of others. Granted that reasoning is carried on in language, and logic is the study of inferences, a study of logic involves a study of language.

The upshot of the above discussion is that both logic and language are fundamental to human experience. With language, we organise our various experiences in the world. Our ability to organise these experiences systematically, and produce valid and correct inferences, demonstrates a logical ability. Without language, logic would be impossible, and without logic, language would be unintelligible. Man's ability to use language meaningfully presupposes a fundamental logical disposition. No human group that has language (no matter the level of development or whether written or unwritten) can be said to be pre-logical. The assumption that some cultures, especially traditional African societies, are devoid of logic is incorrect. This is supported by Bello's (2002, p. 243) observation that 'At the base of every language lies the process of classification, for example, of food and poisons, or of animals, plants and minerals. These classifications take the logical principles of identity and non-contradiction (two of the so-called laws of thought) for granted. No human group can ignore the distinction between foods and poisons and survive.' Bello argues that there is logic in every human society. For example, logic is generally known to operate with human thoughts, propositions and symbols. Symbolism in logic is used for precision, space and time saving. Clarity of expressions, the avoidance of fallacies, and contradictions, all central to logic, are conducted in natural language.

Momoh's (1989) earlier distinction between natural logic and artificial logic can further foster our understanding about the nexus between logic and language. As he observes, while natural logic involves a critical and rational discussion in natural language, artificial logic deals with the use of symbolism in the evaluation of arguments, language and reasoning. What is of immediate interest to us in Momoh's (1989) distinction is that language is central to the discourse of logic. Propositions expressed in ordinary (natural) language can be analysed by the same method as an artificial language when symbolised in formal logic. Both senses of logic are present in all human cultures. Logic is a language in the artificial sense of the word. This is because it has its own vocabulary, symbols, technical notations and rules, which an intending user has to learn and master in order to efficiently evaluate natural language in the light of its strengths and weaknesses. Logic is an instrument that improves ordinary language through detection, and avoids errors in thinking and language use across all varieties. We now turn to discuss the Yoruba proverb as an example of African logic.

3. The logical basis of proverbs in African culture: A Yoruba example

The pertinent question now is whether there is any material in the cultural worldview of the Yoruba that can be symbolically regimented using the techniques of formal logic. In this regard we find proverbs very useful, as they are axiomatically symbolic of formal logic in an African culture. Proverbs are an essential oral tradition that Africans use in storing and retrieving any aspect of their cultural worldview. For an African, what is not in proverbs is not real. More specifically, proverbs express reality. They are also a tool to provide evidence against ethnocentric arguments of Western scholarship that painted unlettered traditional Africans as pre-logical and irrational, given that proverbs are ancient indigenous creations of Africans.

Western anthropologists such as Levy-Bruhl (1967) have claimed that traditional Africans were pre-logical, magical, and primitive in their cultural mode of living. One quite specific reason for drawing this conclusion is that Aristotle's laws of thought do not appear to be observed in African

language (Hunnings, 1975, p. 4). While the laws of thought, as formulated by Aristotle, have been criticised on many grounds, it is interesting to note that they can still be observed in African language, and extracted from Yoruba African proverbs.

The first of the Aristotelian canon on laws of thought is the *law of identity*. It states that if a proposition is true, then it is true. In other words, if something is A, then it is A. One proverb that reflects this law among the Yoruba is set out in Example (1):

- (1) *Eni to jale lekan, to da aran bori, aso ole loda bo ara.* (Yoruba)
 Somebody who steals once, and covers himself with a royal garment,
 is still covered by the stain of the theft. (English)

The metaphoric and literal meaning of this proverb is that pretences of class do not detract from an essentially bad character. More specifically, the class of thief will always be a thief, irrespective of any pretence to the contrary. That is, something that is A is A.

The second law of thought is the *law of contradiction*. This law asserts that no class can be both true and false. At the same time, this implies that nothing can be both A and not A. This idea is expressed in the following Yoruba proverb (Ajibola, 1977, p. 3) shown in (2):

- (2) *Bi oba maa jo osaka ki o jo osaka, bi oba maa jo osoko ki ojo
 osoko, o saka nsoko, ko ye omo enia.* (Yoruba)
 If you want to dance to the osaka drum, dance to it; if you want to
 dance to the osoko drum, dance to it; to dance to both drums at the same
 time does not benefit a human person. (English)

This proverb is a warning against involving oneself in actions that are obviously contradictory. It illustrates the Yoruba's awareness of the *law of contradiction*, and their loathing for a person who acts or behaves in contradictory terms.

The last law of thought is the *law of excluded middle*. It states that something is either true or false. That is, anything must be either A or not A, as shown in Example (3):

- (3) *Meji ni ilekun, bi ko si sinu, a sisi ode; bi ko ti sinu, a ti sode.* (Yoruba)
 It is one of two ways with a door: it opens either inward or outward; it
 shuts either inward or outward. (English)

The meaning in (3) describes two ways to an element. It follows that a proposition must be either true or false. An element must either exist or not exist. While this Aristotelian *law of excluded middle* is not applicable to every event, it is important to note that it forecloses the possibility of a third element, option or value.

Let us examine further the logical implications of Yoruba proverbs by considering the rules of inference and their placement in the African cultural worldview. Rules of inferences are logical methods of inferential deductions used in proving the validity of arguments. They are rules because any argument that is capable of being reduced to their form (i.e. their correct substitution instance) is intuitively and automatically taken as valid. This validity is based on proven internal validity structure. Below are the rules of inference and their proverbial structural equivalence in Yoruba proverbial heritage:

MODUS PONENS (MP): The rule holds that:

If P then Q	·	P \supset Q	(Ali 2003, p.103)
P		P	
Therefore, Q		/ \therefore Q	

An example of the MP rule in a Yoruba African proverb is shown in (4):

- (4) *B'elejo ba m'ejoo re lebi, ko nipe lori ikunle.* (Yoruba)
 If one agrees that one is guilty in a case, then one will not stay long on his knees.² (English)

Now stated in MP the rule takes the following form:

Premise 1:	<i>B'elejo ba m'ejoo re lebi, ko nipe lori ikunle.</i>	
	If one agrees that one is guilty in a case, then one will not stay long on his knees.	P \supset Q
Premise 2:	<i>Elejo mo ejo re lebi.</i>	
	One agrees that one is guilty in a case.	P
Conclusion:	<i>Latara idi eyi, elejo ko pe lori ikunle</i>	
	Therefore, one will not stay long on his knees.	/ \therefore Q

Our next rule of inference concerns the form of disjunctive syllogism, as observed in Yoruba proverbs.

DISJUNCTIVE SYLLOGISM (DS): This is an inference of the form:

Either P or Q	·	P \vee Q
Not P		-P
Therefore, Q		/ \therefore Q

The DS rule is expressed in the Yoruba proverb shown in Example (5):

- (5) *Yala komo o jo sokoto, tabi kojo kijipa.* (Yoruba)
 Either a child resembles trousers, or she resembles *kijipa*.³ (English)

The Yoruba structure is as follows:

Premise 1:	<i>Yala komo o jo sokoto, tabi kojo kijipa.</i>	P \vee Q
	Either a child resembles trousers, or she resembles <i>kijipa</i> .	
Premise 2:	<i>Omo kojo sokoto.</i>	-P
	A child does not resemble the father.	
Conclusion:	<i>Latari idi eyi, omo yoo jo kijipa.</i>	/ \therefore Q
	Therefore, she will resemble the mother.	

We now examine a conditional statement represented by *hypothetical syllogism*.

² The meaning of this proverb is that admission of guilt hastens the resolution of contentious issues. For example, an accused person who has pleaded guilty does not have to go through a prolonged trial.

³ *Kijipa* is a kind of woman's wrapper and represents the mother. The trousers (*sokoto*) represent the father.

HYPOTHETICAL SYLLOGISM (HS):

The HS rule holds that two premises and the conclusion must be a material conditional statement. The consequence of the first premise becomes the antecedent of the second, while the antecedent of the first premise serves as the antecedent of the conclusion. The consequence of the second premise serves as the consequence of the conclusion (Achilike, 1999, p. 16).

The HS rule takes the schematic form:

If P then Q	P \supset Q
If Q then R	Q \supset R
If P then R	/ \therefore .P \supset R

The Yoruba proverb that captures the HS rule is shown in Example (6):

- (6) *B'ò koo ba r'okun, to ba rosa, yoo fi ori f'e leebute.* (Yoruba)
 If a boat goes to the sea and to the lagoon, it will still come to the shore. (English)

In symbolic logical terms, the components of the proverb can be represented as:

<i>Bokoo ba r'okun</i>	(If a boat goes to the sea)	P
<i>Bokoo ba r'osa</i>	(If a boat goes to the lagoon)	Q
<i>Yoo f'ori fe leebute</i>	(It will still come to the shore)	R

The hypothetical syllogistic argument in (6) can be represented as:

If a boat goes to the sea, then it can go to the lagoon .	P \supset Q
If a boat can go to the lagoon, then it will still come to the shore.	Q \supset R
/ \therefore . If a boat goes to the sea then it will still come to the shore.	/ \therefore .P \supset R

The rules of inference examined in Examples (4-6) represent simple arguments. We now turn to examine other rules of inferences with complex argument compositions, known as *the dilemma*.

THE DILEMMA:

The dilemma is a form of mediate inference. According to Ali (1995), it does not introduce a new logical principle into formal logic. Rather, it serves as a useful convention in combining hypothetical, conjunctive and disjunctive propositions in various ways to yield a complex argument (Ali, 1995, p.30). According to Ali, there are various kinds of dilemma (i.e., simple constructive dilemma (SCD), simple destructive dilemma (SDD), complex constructive dilemma (CCD) and complex destructive dilemma (CDD)). For our immediate purposes, we shall illustrate that Yoruba Africans are capable of dilemmatic reasoning. To this end, the two complex dilemmas (constructive and destructive) shall be exemplified.

COMPLEX CONSTRUCTIVE DILEMMA (CCD) has the standard statement form:

(If P then Q) and (If R then S)	(P \supset Q) (R \supset S)
P or R	P \vee R

Therefore, Q or S

∴ Q ∨ S

(Ali, 2003, p.104)

Such a form is explicit in the Yoruba proverb shown in (7):

- (7) *Bi eniyan n gun 'yan bo 'luu, yoo lotaa, bi osin n 'so'ko s'oja, yoo loree tire.* (Yoruba)
 If one is pounding yams to feed the whole town, one will have enemies,
 and if one is throwing stones into the market, one will have one's own friends. (English)

The proverb shown in (7) has four variables represented as:

<i>Eniyan n gun 'yan bo 'luu</i> (one pounds yam to feed the whole town)	P
<i>Eniyan yoo lotaa</i> (one will have enemies)	Q
<i>Eniyan n 'so'ko soja</i> (one throws stones into the market)	R
<i>Eniyan yoo loree tire</i> (one will have one's own friends)	S

To formulate the variables of CCD into an argument we have:

- Premise 1:** *Bi eniyan n gun 'yan bo 'luu, yoo lotaa, bi o si n so'ko s'oja, yoo loree tire.*
 (If one is pounding yam to feed the whole town, one will have enemies, and if one is throwing stones into the market, one will have one's own friends). (P>Q) and (R>S)
- Premise 2:** *Boya eniyan n gun 'yan bo 'luu, tabi eniyan nsoko soja.*
 (Either one pounds yam to feed the whole town or one throws stones into the market). P ∨ R
- Conclusion:** *Latara idi eyi, eniyan yoo lotaa tabi koo ni ore tire.*
 (Therefore, one will either have enemies or have one's own friends). ∴ Q ∨ S

We now move to examine proverbs that express the *complex destructive dilemma*.

COMPLEX DESTRUCTIVE DILEMMA (CDD): This rule is schematically represented as:

(If P then Q) and (If R then S)	(P>Q) (R>S)
Not Q or not S	-Q ∨ -S
Therefore, not P or not R	∴ -P ∨ -R

A Yoruba proverb that captures this rule is shown in Example (8):

- (8) *Bi omode ba subu, yoo wo iwaju bi agba ba subu yoo w'eyin.* (Yoruba)
 If a child falls he looks forward, but if the elder falls, he looks backward. (English)

This proverb shown in (8) is a conjunctive assertion of two conditional statements with four variables:

<i>Omode subu</i> (a child falls)	P
<i>Omode wo iwaju</i> (a child looks forward)	Q
<i>Agbalagba subu</i> (an elder falls)	R
<i>Agbalagba we'eyin</i> (an elder looks backward)	S

We formulate those variables in complex destructive dilemma form as shown:

Premise 1: *Bi omode ba subu, odidandan pe ko wo iwaju, bi agba ba subu, odidandan pe yoo we 'yin.*
(If a child falls, then he looks forward, and if the elder falls, he looks backward).
(P \supset Q) (R \supset S)

Premise 2: *Ninu k'omode ma woo iwaju tabi ki agbalagba maa w'eyin.*
(Either it is not the case that a child looks forward or it is not the case that an elder looks backward).
-Q v -S

Conclusion: *Latara idi eyi, yala k'omode ma suubu tabi k'agbalagba ma suubu.*
(Therefore, either it is not the case that a child falls or it is not the case that an elder looks backward).
/ \therefore -P v -R

To sum up this section on dilemma in Yoruba proverbs, we have shown that Yoruba language is capable of expressing not only simple logical rules and arguments, but also complex mediate inferences. In order to further show the logic in Yoruba proverbs, we shall now examine the logical rules of addition, conjunction and commutation.

ADDITION:

An addition is a rule of inference which states that given a simple or compound statement as one's only premise, one can validly conclude with an alternation statement of 'either ... or' by adding a new statement to the initial premise. The rule of addition has the statement form of:

$$\begin{array}{l|l} P, & P \\ \text{Therefore, either P or Q} & /:\text{P v Q} \end{array}$$

In Yoruba proverbial logical terms, we have the example of an addition in Example (9):

(9) *Aparo kan ko ga ju okan lo, ayafi eyi to ta gun ori ebe.* (Yoruba)
No partridge is taller than another unless one stands on a mound. (English)

The premise that emerges from (9) is as follows:

Premise 1: *Aparo kan ko ga ju okan lo* (No partridge is taller than another).
(P) is the only premise.

Conclusion: *Ayafi⁴ eyi to ba gun ori ebe* (unless one stands on the heap).
(Q) is added alternatively to the only premise.

Let us now consider the rule of conjunction and its observation in Yoruba proverbs.

CONJUNCTION:

The law of conjunction states that, given two independent propositions, it is valid when both premises are conjoined. Thus, we have the statement form of:

⁴ The word *ayafi* (unless) indicates the addition. It is a stylistic variant of 'either/or'.

P	P
Q	Q
Therefore, P and Q	$\therefore P.Q$

Traditional Yoruba Africans argued in strict accordance with this deductive rule of inference that exists in modern propositional logic. This rule is explicit in Example (10):

- (10) *Ijebu oda, Ijesha oo sun won leyan; oni wooni Ijebu-Ijesha.* (Yoruba)
 The *Ijebu* is not good a person, the *Ijesha* is worse off; you now claim to be an *Ijebu-Ijesha*.⁵ (English)

When interpreted in propositional logical terms the premise is shown as:

Premise 1: P: *Ijebu oda* (*Ijebu* is not good)

Premise 2: Q: *Ijesha oo sun won leyan* (*Ijesha* is worse off as a person)

Conclusion: P.Q: *Iwoni Ijebu-Ijesha*
 (You claimed to be *Ijebu-Ijesha*, that is, you are bad and worse off)

The proverb in Example (10) presupposes that the conjunct is cumulative, and the point of the proverb is an application of the rule of conjunction to a moral prescription.

The point that emerges from Examples (1-10) is that Yoruba proverbs provide evidence that traditional Africans were never pre-logical; they had the knowledge of logical rules of inference even before contact with the Western world. In addition to the rules of inference, there are other logical rules of deduction used to test the validity of arguments. These rules are known as the rules of replacement. Rules of replacement are determined by logical equivalent formulas used to prove the validity of extended arguments. It is interesting to note that such rules are also not alien to the Yoruba. To illustrate this point, let us consider the principle of *commutation*, the last logical rule under consideration.

COMMUTATION:

The law of commutation states that the arrangement of variables in conjunctive and alternation statements does not in any way affect the truth-value of such compound statements. It has the statement form of:

$$(P \vee Q) \equiv (Q \vee P)$$

$$(P \cdot Q) \equiv (Q \cdot P)$$

The proverb shown in Example (11) captures the commutation rule:

- (11) *Ka loso modii, ka lodii maso, ki idi saa ma ti gbofo.* (Yoruba)
 Wrap a cloth round the waist; wrap the waist around the cloth;
 just ensure that the waist is not naked. (English)

This proverb can be reformulated in sentential structure as:

⁵ This proverb is similar to saying person 'A's character is bad and person 'B's character is worse and person 'C' claims to be 'A' and 'B' personified (Fayemi, 2007b, p. 150).

<i>Ka loso modii ati ka lo dii maso,</i> (Wrap a cloth round the waist and wrap the waist around the cloth)	(P.Q)
<i>se dede</i> (is equivalent to)	≡
<i>kalo di maso ati kaloso modii</i> (Wrap the waist around the cloth and wrap a cloth round the waist)	(Q.P)

The most important point from Example (11) is that the truth value does not change, irrespective of how one swaps the conjunction.

4. Discussion

On the basis of our above analysis we argue that Yoruba proverbs are symbolic of formal logic in the African thought system. The logical structures explicit in all the above proverbs should not suggest a discovery or development of a unique Yoruba-African logic. Rather, they entail an application of a universal logic that expresses experiences and the cultural mode of the Yoruba. The proverbs show that logic, which constitutes one of the paradigms of rationality, is as much in evidence in Yoruba proverbs as in Aristotelian texts and other Western literatures.

The logical basis of Yoruba proverbs can be affirmed in the quadruple functions the proverbs perform. One, they explain the structural relationship that exists between premises and the conclusion of an argument. Second, they provide techniques for the appraisal of thought in terms of language precision, consistency and coherency in oratory. Thirdly, proverbs are employed in the daily discourse of the Yoruba. They offer prescriptions for life and serve as guides in shaping attitudes, behaviour and interaction with fellow men. The proverbs identify with cultural priorities and values. An understanding of the logical entailment of these proverbs is therefore important, it encourages people to think systematically in their daily discourse, as well as enhance the judicious, consistent and valid usage of proverbs in both written and spoken expressions. Such logical understanding enhances metaphoric meanings of Yoruba proverbs. Their use as an oral logical tool, employed by Africans to promote deeper thought, rightly interprets proverbs in the specific context of use. A proverb is both a linguistic and logical test of knowing whether one has the cognitive capacity to correctly associate the content of the proverb with its meaning.

Proverbs also serve as canons for evaluating beliefs and values to avoid a repetition of earlier mistakes committed by others. Logic functions in much the same way. Proverbs in Yoruba culture, as we have shown, respect some of the universal canons of logic. In Yoruba culture, as well as other African societies, logical principles and techniques are employed in both formal and informal discourses, evaluation of thoughts, human judgments and reasoning validation. The traditional Yoruba never formally set out universal logical rules of inference and validity techniques as we have in Western culture (due to the lack of early written culture). Nor do they have a proven body of unique logic with its internal logical criteria. However they, like their traditional Western counterparts, were able to make valid deductions, think critically, and comprehend intelligibly happening events in their natural world.

5. Conclusion

The African proverb is a veritable datum for philosophical speculation and analysis in African philosophy. Proverbs have shown that traditional Africans were rational and used logical canons of reasoning. We have described the logic of Yoruba proverbs in this paper through a philosophical analysis of the surface and structural forms of such proverbs. It should be stressed, however, that there are still other logical rules that have not been explored when considering logic in Yoruba oral

tradition. For example, some difficulties were encountered in the course of acquiring a valid and accurate proverbial structural form that correlated with certain rules of inferences and rules of replacement. We believe these challenges are not insurmountable, and call on African philosophers to devote more research interest into this aspect of African philosophy.

We are also of the strong view that a systematised African logical notation can be developed out of African indigenous linguistic and symbolic systems. Such research efforts in the area of African logical notations will not constitute a unique Yoruba logic. However, they will facilitate the conscious design and development of unique African logical symbolisms across different types of sets (e.g., formal logic, quantificational logic, modal logic, Boolean logic, etc.). The intensification of research efforts in the development of an African logical symbolism is imperative to the development of an urgently needed technical language for African science and software applications in indigenous languages.

Our discovery of logic in Yoruba proverbs holds a profound implication for education in 21st century Africa. The language of communication in the production and dissemination of knowledge, ideas and research findings, need not necessarily be in foreign (that is English or French) languages alone. Our analysis of some of the universal rules of logic and their applications in Yoruba proverbs shows that the Yoruba language is not inferior to other technically developed languages. In fact, language is capable of expressing not only old, but also new and emerging ideas and concepts in other languages and intellectual traditions. Our inability to explore the elasticity and richness of indigenous African languages in the teaching and researching of ideas, values, knowledge and information in contemporary Africa is as much due to ignorance as well as the overbearing effects of colonial languages on the thought and language patterns of contemporary Africans. While we are not calling for a radical break with such languages (that is, English and French that are lingua franca in Anglophone and Francophone African states respectively), our position is that African states should begin to address the active use of African indigenous languages in the teaching of subjects in African educational systems. This call should not be limited to the humanities-oriented subjects, but extended to the social sciences, natural sciences and other technical subjects.

A rational and balanced integration of indigenous languages with existing colonial languages in 21st century African educational systems will be both a conservational and transformative venture. Conservational in the sense of preserving indigenous cultural heritage through educational processes and practices, and transformative in the sense of placing Yoruba thought and language on a par with trends, issues, theories and best practice expressed in other global educational systems.

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