

A Descriptive Study of Level-Ordered Morphology in Oluwanga

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Abstract

This paper is a detailed description of the morphology of Oluwanga within the framework of the lexical morphology theory, which views the morphological structure of a word as consisting of several levels or strata that are reflected in the processes of affixation in the formation of words. In many languages of the world, the lexicon consists of two or more strata, as such, the study seeks to examine the number of strata in the Oluwanga lexicon and the extent to which the principles of the lexical morphology theory apply to the dialect, with a view to describing the resultant form of Oluwanga lexical items when subjected to the morphological processes of affixation. The data employed in this study was gathered through elicitation by the author who is a native speaker as well as through conversations conducted with four informants who are competent native speakers of the language. The study focused on two word categories, the noun and the verb, and the data collected revealed that the Oluwanga lexicon is hierarchically structured where derivational and inflectional affixes are mapped onto interlinked strata accompanied by the bracket erasure convention where the internal brackets formed during word formation get erased at each level.

Key words: Lexicon, stratum, derivation, inflection, affix, affixation, bracket erasure convention.

1.0 Introduction

This paper provides a broad overview of the morphological structure of Oluwanga within the lexical morphology framework. The proponents of the theory such as Kiparsky, (1982), Mohanan (1982), Katamba (1989) and Watson (2002) argue that the morphological structure of a word consists of several strata, with each stratum made up of morphemes that are involved in the processes of affixation and compounding. This means that the morphological processes of word derivation and inflection take place at different levels where each level comprises a series of morphemes packaged together to form words in a linear manner. The strata comprise words, which includes the root, base and affixes. Derivational affixes are added to the stem of a word to derive new words which are different from those on which the derivation is done. Inflection involves adding inflectional morphemes to the stem of the word. Naturally, level 1 affixes are closer to the root compared to level 2 affixes. The manner in which the affixes are arranged results in a concept referred to as the ordering of affixes.

This study bears significance on Bantu morphology in general and Oluwanga morphology in particular given that it employs an approach that is different from those of other scholars who have conducted research on the morphology of Oluwanga, and whose studies adopted a more structural morphological perspective without regard for the role of phonology in the word formation process. Structuralism in morphology analyzes the internal structures of words, focusing on how their components combine to create meaning and how these combinations adhere to the rules of a specific language. Other scholars have described Oluwanga morphology in terms of its typology as an agglutinating language. Green (2009, 2010) described Oluwanga strictly from the perspective of nominal and verbal morphology, while Marlo et al. (2019) looked at Oluwanga nouns in relation to the phonological aspect of voice.

The study employs a descriptive qualitative analysis as the research design. Taylor et al. (1975, p. 21) define qualitative research as a process of exploring data through a descriptive analysis of written words. The primary data was sourced from oral conversations conducted with four informants who are all fluent native speakers of the dialect. The data analyzed consisted of 50 nouns and 50 verbs sampled from a total of 500 words elicited orally by posing specific questions to the informants to obtain prompt responses which were recorded by the author. Four other fluent speakers of Oluwanga were engaged to check for the accuracy of the data provided by the informants. The secondary data was collected through library research where the relevant literature on lexical morphology was reviewed in order to guide the research. The analysis was done in a structured manner on account of the principles of the lexical morphology theory followed by the formulation of conclusions.

2.0 Oluwanga Dialect

A discussion of the lexical morphology of Oluwanga necessitates a brief discussion of the dialect. Lewis (2009) observes that Luwanga is a language of the Masaba-Luyia cluster of languages. Whereas other studies refer to the dialect as Luwanga, I deliberately choose to add the pre-prefix vowel 'o' to Luwanga in line with the standard practice of Luyia phonology where vowels are prefixed before the noun marking prefixes. This also corresponds to the way the speakers pronounce the name of the dialect.

Oluwanga is spoken by the Abawanga people who reside in Western Kenya and is one of the 17 dialects of *Luyia* that were initially identified in the larger *Luyia* nation. (Agongo 1993: Itabete, 1974; Were, 1967). Etakwa (2019) adds the *Olutura* dialect to the list of the Luyia dialects, making the total number of *Luyia* dialects 18. Angogo (1993) categorizes these dialects into three; namely: northern, central and southern. The northern dialects are the Lubukusu,

Lunyala, Lusamia, Lukhayo and Lumarachi. The central dialects are Oluwanga, Lumarama, Lutsotso, Lushisa, Lukabras, Lunyole and Lutachoni, while the southern dialects are Luidakho, Luisukha, Lutiriki and Luloogoli.

Maho (2009) refers to the dialect as *Wanga* and designates it as JE32a in the Tervuren classification system. Currently, there are no accurate estimates of Oluwanga speakers. The 2009 Kenya census shows that the then Mumias and Matungu constituencies, which are the main *Oluwanga* speaking areas, had a population of 359,381 inhabitants living in an area of 590 square kilometers at the time. At present, the areas dominated by Oluwanga speakers are the three sub-counties of Mumias East, Mumias West and Matungu. These areas are highly cosmopolitan and are inhabited by a large number of speakers of languages or dialects other than Oluwanga.

3.0 Principles of the Lexical Morphology Theory

This section briefly outlines the two main principles of the lexical morphology theory, namely the principle of ordering of affixes and the Bracket Erasure Convention. Proponents of the theory observe that the morphological processes involved in the formation of words constitute affixes which are added to the verb base or noun base of words at different levels. These processes lead to the formation of different word categories. The different levels are associated with a set of morphological rules. In some instances, the morphological rules are accompanied by phonological rules that determine the way the formed words are articulated. Kiparsky observes as follows:

The basic insight of level-ordered morphology is that the derivational and inflectional processes of a language can be organized in a series of levels. Each level is associated with a set of phonological rules for which it defines the domain of application. The

ordering of levels moreover defines the possible ordering of morphological processes in word formation. (1982, p. 131)

Citing examples from English, Kiparsky categorizes the English lexicon into three strata, where stratum 1 involves primary inflection (irregular inflection) manifested in processes such as umlaut, (foot→ feet), ablaut (sing→ sang) and past tense formation (creep→ crept). It also involves primary (irregular) derivation in the form of adding primary affixes to the base (accuse →accusation). Stratum 2 has secondary derivation (regular derivation) where secondary affixes are added to the base to derive other categories of words (great→greatness, brew→brewer) and compounding (stronghold, typewrite). Stratum 3 consists of secondary inflection (regular inflection) as in the case of pluralization (hat→hats) and past tense formation (pick→picked). The different forms that result from the processes of affixation are then mapped onto what is referred to as the lexical representation (LR), which is subjected to further rules to produce what is known as the phonetic representation (PR).

Katamba (1989, p. 259) argues in favor of a two-strata hierarchical structure. According to him, derivations take place at stratum 1 while inflections take place at stratum 2. Further, a suffix at any given stratum can be followed by other suffixes at the same level. This results in forms such as publ+ic+ity and pur+if+ic+at+ion at stratum 1 and re+re+make, care+ful+ness, lead+er+less at stratum 2 (1989, p. 269). He further observes that the same processes justify the existence of forms such as grammar, grammar-ian, grammar-ian-ism and not *grammar-ism-ian, (which is an ill-formed category). Mohanan, (1982, p.8) proposes a four-level hierarchical structure where derivational processes take place at both stratum 1 and stratum 2, whereas compounding and inflection take place at sstratums 3 and 4 respectively.

In the framework of this theory, the hierarchical nature of the lexicon is explained by the principle of ordering of affixes, which provides that words are made up of the root, base and affixes and that affixation is organized hierarchically. Level 1 affixes are closer to the root than Level 2 affixes. The process of ordering affixes can be exemplified by Figure 1 below:

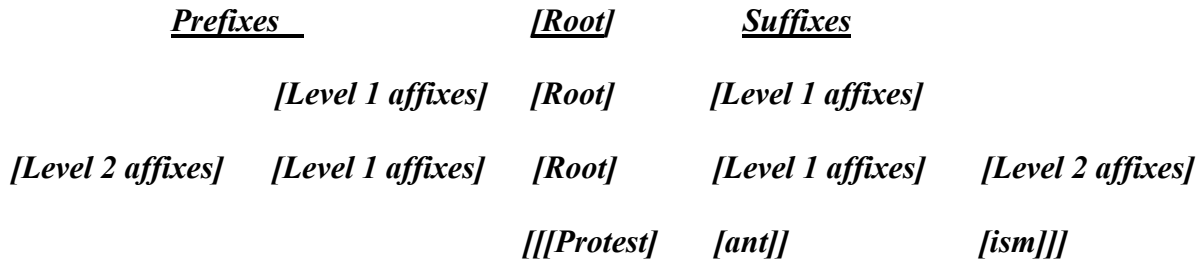


Figure 1: A Sketch of Level-Ordered Morphology

The lexical morphology theory also makes reference to the Bracket Erasure Convention (BEC), which is the process of doing away with internal brackets introduced during the affixation process. Durand (1990, p.175) observes that the Bracket Erasure Convention “erases the internal brackets at the end of each level.”

4.0 Oluwanga Morphology

This section describes aspects of Oluwanga morphology. The morphology of Oluwanga is categorized into noun and verb morphology, and can be described in terms of nouns, noun phrases as well as verbs and verb phrases. The basic word structure is formed out of morphemes which, structurally, may be free or bound morphemes.

There are two types of affixes in Oluwanga which are categorized depending on the position they take in relation to the root. These are the derivational affixes and inflectional affixes, with each type playing a different role within the word and in relation to the different words and roots. Like in all other world languages, inflectional affixes in Oluwanga inflect for

tense, number, (in noun class concordial agreement) and negation. Most of these inflectional affixes are prefixes and do not change the class of their stems. Derivational affixes indicate the different lexemes of the same word form and form a lexeme that is different from that of the stem.

4.1 Oluwanga Noun Morphology

This section describes the various noun classes in Oluwanga, and which are usually based on singular and plural distinctions. Appleby (1961,p. 8) observes that there are twelve classes of nouns in Luyia distinguished by prefixes. The rest are not based on singular and plural distinctions. Troyer (2007,p. 13) argues that Oluwanga has 19 noun classes which are readily identifiable as 19 out of the 20 basic Bantu noun classes plus one more noun class, which makes it twenty. According to her, some of the noun classes are semantically cohesive such that all the nouns in the class center around one semantic concept, and that whereas some noun classes are derivationally productive and can be used with almost any word, other noun classes are limited, and may exhibit little or no productivity.

Noun class pair	prefix (sg.)	prefix (pl.)	Gloss (English)
1/2	omu-xana	aβa-xana	'girl'
3/4	omu-kunda	emi-kunda	'farm'
5/6	li-tʃina	ama-tʃina	'stone'
7/8	eʃi-laro	efi-laro	'shoe'
9/10	i-tajwa	tsi-tajwa	'a cock'
11/12	olu-sala	tsi-sala	'stick'
13/14	axa-kuβo	oru-kuβo	'a small cloth'
15/16	oku-ndu	emi-ndu	'giant'

17/18	li-kulu	tsi-ŋgulu	‘thunder’
19/20	ol-woβa	oβwoβa	‘mushroom’

Table 1: Oluwanga Noun Classes

Below is a brief description of each of the noun classes.

Class 1: Words in class 1 take the class prefix *omu-* added to the root. The words usually refer to human beings with a few exceptions. This class is used for singular forms only. Example 1 illustrates class 1 nouns.

- (1) *omu-ndu* ‘person’
 omu-rutji ‘ruler’

Troyer (2007, p. 16) observes that in addition to these stereotypical class 1 words, there are other words which have no apparent noun prefix (or, in a few cases, have the prefix (*na-*), but which have agreement which matches that of other words in class 1. Further, some class 1 nouns refer to kinship ties as illustrated in 2 below.

- (2) *nabongo* ‘king’
 papa ‘father’

Class 2: Words in this class begin with the prefix *aβa-* and usually refer to types of people. They are the plural forms of class 1 nouns. Examples include:

- (3) *aβa-ndu* ‘persons’
 aβa-rutji ‘rulers’

Class 3: Words in class 3 start with the prefix noun class prefix *omu-*, but differ from class 1 nouns on account of gender and meaning. In this class are names of most trees and a number of

body parts as well as other words outside these classifications. The nouns in this class are formed by nominalization. The class refers to the singular form. Examples of class 3 nouns include:

- (4) omu-sala ‘tree’
 omu-xono ‘hand’

Class 4: Words belonging to class 4 begin with the prefix *emi-* and indicate the plural form of the class 3 nouns. They refer to body parts and other things found in nature. Example 5 shows class 4 nouns.

- (5) emi-sala ‘trees’
 emi-xono ‘hands’

Class 5: Class 5 words begin with the prefix *li-*, and refer to singular nouns. The /l/ is realized as the alveolar lateral flap /l/. However, some of the nouns begin with the form *eli-*, which is specific to nouns in which the lateral flap is followed by the palatal approximant /j/ or the long vowel /i/.

- (6) .li-tʃina ‘stone’
 .li-kulu ‘thunder’
 .li-joni ‘bird’
 elj-ani ‘vegetable’
 elj-uʃa ‘sun’
 eli-ira ‘name’

Class 6: Words in this class begin with the prefix *ama-*, and refer to the plural form of class 5 nouns. Further, some class 6 words do not have a singular form, especially the words that refer to uncountable things.

- (7) ama-tʃina ‘stones’

ama-kulu ‘thunders’

Class 7: Words in this class begin with the prefix *efi-* and express the singular noun form.

(8) efi-laro ‘shoe’

 ef-jalo ‘world’

Class 8: Class 8 words begin with the prefix *efi-* and are the plural forms of the class 7.

(9) efi-laro ‘shoes’

 ef-jalo ‘worlds’

Class 9: Words in class 9 begin with the prefix *i-* and refer to nouns in the singular form.

(10) i-tajwa ‘cock’

 iŋgoxo ‘chicken’

Class 10: Words in this class begin with the prefix *tsi-* and refer to the plural forms of class 9 nouns.

(11) tsi-tajwa ‘cocks’

 tsi-iŋgoxo ‘chicken’

Class 11: Words in this class begin with the prefix *olu-* and refer to some parts of the body as well as things found in nature. The words are in the singular form.

(12) olu-tfendo ‘journey’

 olu-sala ‘stick’

Class 12: Words in class 12 begin with the prefix *tsi-* and are the plural forms of class 11 nouns.

(13) tsi- ŋjendo ‘journeys’

 tsi-sala ‘sticks’

Class 13: Class 13 words begin with the prefix *axa-* and indicate singular nouns. The prefix *axa-* carries a diminutive connotation. In some cases, the nouns in this class carry a pejorative sense.

Whereas many of the nouns in this class begin with the vowel *a-*, there are instances where the noun begins with the prefix *xa-* without the vowel *a-*.

- (14) *axa-tumwa* ‘small maize’
 axa-tsu ‘small house’

Class 14: Class 14 words begin with the prefix *oru-* and refer to the plural forms of class 13.

They carry a sense of smallness or a derogatory sense of belittling the person or the thing referred to. Examples of class 14 nouns include:

- (15) *oru-tumwa* ‘small maizes’
 oru-tsu ‘small houses’

Class 15: Words in this class begin with the prefix *oku-*, and usually refer to nouns in the gigantic form. The nouns are in the singular form.

- (16) *oku-ndu* ‘giant’
 oku-remwa ‘huge banana’

Class 16: Words in this class begin with the prefix *emi-* and are the plural form of class 15 nouns.

- (17) *emi-ndu* ‘giants’
 emi-remwa ‘huge bananas’

Class 17: Words in this class begin with the prefix *li-*

- (18) *li-kulu* ‘sky’

Class 18: Words in this class begin with the prefix *tsi-* and are the plural forms of class 17 nouns.

- (19) *tsiṅgulu* ‘skies’

Apart from these noun classes, Troyer (2007) identifies other class nouns which carry different characteristics from those discussed above. These are classes that begin with the

prefixes *oβu-*, *oxu-*, *a-*, *xu-*, *mu-* as well as a noun class that replaces the augment of another noun. These may be exemplified as follows:

- (20) *oβu-suma* ‘ugali’
 oβu-rume ‘message’

4.2 Oluwanga Verb Morphology

The morphological structure of Oluwanga can be described by looking at the features of the verb. The verb is made up of several morphemes strung together, each of which occupies a particular slot in a series of slots. It comprises a root and one or more bound affixes. The root is the base level and is the morpheme that carries meaning, while the root plus an affix form the stem. The Oluwanga verb is either simple or complex. Example 21 illustrates the structure of a simple verb.

- (21) *ir-a* ‘kill’
 kon-a ‘sleep’

(where –a refers to the indicative mood).

Most simple verbs function as commands, while complex verbs have one or more inflections. This is because Oluwanga is an agglutinating language. Below are examples of complex verbs in Oluwanga:

- (22) *a-xup-i-re* ‘he/she has beaten’
 a-βa-xup-i-re ‘he/she has beaten them’

A key component of the Oluwanga verb is the subject pronoun which marks the speaker. The subject pronoun slot may be occupied by various morphemes depending on the speaker, whether first, second or third person, and depending on whether the speaker is in the singular or plural forms.

person	singular	plural
1st	e-	xu-
2nd	o-	mu-
3rd	a-	βa-

Examples of words comprising the subject pronoun prefixes include:

(23)	e-nzire	‘I have gone’
	xu-tsire	‘we have gone’
	o-tsire	‘you (sg.) have gone’
	mu-tsire	‘you (pl.) have gone’
	a-tsire	‘he/she has gone’
	βa-tsire	‘they have gone’

These forms are agreement personal prefixes for the personal pronouns and should not be confused for the personal pronouns found in the language. Below are examples of the person-subject agreement:

(24)					
1st person (sg.):	esje	e-	ʃin-	a	‘I dance’
	pronoun	agreement	root	-IND	
1st person (pl.):	efwe	xu-	tsi-	a	‘we go’
	pronoun	agreement	root	-IND	
2nd person (sg.):	ewe	o-	lol-	a	‘you see’
	pronoun	agreement	root	-IND	
2nd person (pl.):	epwe	mu-	fwal-	a	‘you dress’
	pronoun	agreement	root	-IND	

3rd person (sg.)	je	a-	βukul-	a‘he/she takes’
	pronoun	agreement	root	-IND
3rd person (pl.)	βo	βa-	loβol-	a ‘they select’
	pronoun	agreement	root	-IND

5.0 Discussion

Based on what has been stated above regarding the lexical morphology theory versus the structure of the English lexicon, we can now examine the structure of the Oluwanga lexicon with reference to the ordering of affixes principle.

5.1 The Ordering of Affixes in the Oluwanga Lexicon

5.1.1 Introduction

The process of word formation in Oluwanga reveals a two-strata structure, where stratum 1 consists of derivational processes while stratum 2 comprises inflectional processes. Both processes involve the addition of affixes to the word base. In stratum 1, the affixes are added within the word stem whereas in stratum 2, the affixes are added outside the stem of the word. In other words, derivational affixes precede the inflectional affixes in the word formation process.

5.1.2 Stratum 1 Morphological Processes

In the Oluwanga lexicon, the morphological processes that take place at stratum 1 involve deriving the subject, the infinitive, and the verbal noun from the verb base. The derivation process takes the forms discussed below.

5.1.2.1 Derivation of the Subject. This process involves nominalization where the class 1 noun prefix *omu-* is added to the verb base thereby resulting in the formation of the subject. In some instances, the process is accompanied by phonological processes such as palatalization,

vowel raising, glide formation and consonant strengthening. These processes will not be discussed here because they are not within the scope of the study.

(25)

	Verb base	pfx+verb base	LR	PR	Gloss
(i)	[raka]	[omu+[raka]]	[omu+raka]	[omuratʃi]	‘one who plants’
(ii)	[βixa]	[omu+[βixa]]	[omu+βixa]	[omu+βiʃi]	‘one who keeps’
(iii)	[iβa]	[omu+[iβa]]	[omu+iβa]	[omwifi]	‘a thief’
(iv)	[ikula]	[omu+[ikula]]	[omuikula]	[omwikuli]	‘one who opens’
(v)	[loka]	[omu+[loka]]	[omuloka]	[omulosi]	‘a sorcerer’

In the data above, the LR and PR abbreviations stand for lexical and phonetic representation respectively. The data in (25) illustrates a morphological process that takes place at level 1 where a prefix is added to a verb base in a nominalization process where the nominalized noun is used in the subject clause. The affixation produces a lexical representation (LR) which undergoes several phonological processes. At the lexical representation level, the internal brackets introduced to both the verb base and the process of affixing the prefix to the verb base are done away with in what we referred to earlier as the bracket erasure convention.

5.1.2.2 Derivation of the Infinitive Noun. An infinitive may be defined as a verbal which could function as a noun, adjective or adverb. In the data below, the process of deriving the infinitive from verbs involves the addition of the nominal prefix *oxu-* to the verb base.

(26)

	Verb base	pfx+verb base	LR	PR	Gloss
(i)	[rema]	[oxu+[rema]]	[oxurema]	[oxurema]	‘to cut’
(ii)	[ikula]	[oxu+[ikula]]	[oxuikula]	[oxwikula]	‘to open’

The data in (26) shows a level 1 morphological process that involves adding the prefix *oxu-* to a verb base to derive the infinitive noun. The lexical representation (LR) exhibits some phonological processes. Further, the process of bracket erasure occurs at the same level.

5.1.2.3 Derivation of Verbal Nouns. In Oluwanga, verbal nouns are derived through the process of adding the prefix *oβu-* to the verb base as illustrated in example (27).

(27)

	Verb base	px+verb base	LR	PR	Gloss
(i)	[xola]	[oβu+[xola]]	[oβuxola]	[oβuxoli]	‘action’
(ii)	[βixa]	[oβu+[βixa]]	[oβuβixa]	[oβuβijī]	‘keeping’
(iii)	[iβa]	[oβu+[iβa]]	[oβuiβa]	[oβwifī]	‘theft’

This morphological process takes place at level 1 in the Oluwanga word formation processes. It is accompanied by phonological processes that occur in word final positions in the examples where the vowel /a/ becomes /i/. These are common phonological rule that applies to most Bantu languages to which *Oluwanga* belongs.

5.2 Stratum 2 Morphological Processes

As stated earlier, the stratum 2 morphology in Oluwanga is essentially inflectional. It may be classified into two forms; namely stratum 2 nominal morphology and stratum 2 verbal morphology. Stratum 2 nominal morphology involves inflection for number, whereas stratum 2 verbal morphology includes formation of the passive, reciprocal and causative verbs as well as inflection for tense.

5.2.1 Formation of the Passive Verb

The formation of the passive verb involves inflecting the verb by introducing the glide sound [w] in the penultimate position of the verb as shown below:

(28)

	Verb base	verb base+aff	LR	PR	Gloss
(i)	[xupa]	[xupa]+aff]]	[xupwa]	[xupwa]	‘beaten’
(ii)	[xaβa]	[xaβa]+aff]]	[xaβwa]	[xaβwa]	‘sought’

This morphological process is limited in scope since it is not accompanied by a phonological process at the LR level. However, it is subjected to the bracket erasure convention and this results in one bracket at the phonetic representation level.

5.2.2 Inflection for Number

This stratum 2 morphological process is based on the noun-class system of Oluwanga. Pluralization involves replacing the singular marking prefix of the noun with the plural marking prefix as shown below:

(29)

	Noun base	noun base+aff	LR	PR	Gloss
(i)	[omurutʃi]	[[omurutʃi]+aff]	[aβarutʃi]	[aβarutʃi]	‘rulers’
(ii)	[eʃisala]	[[eʃisala]+aff]	[eʃisala]	[eʃisala]	‘chairs’
(iii)	[omuxono]	[[omuxono]+aff]	[emixono]	[emixono]	‘hands’
(iv)	[jixuwa]	[[jixuwa]+aff]	[amaxuwa]	[amaxuwa]	‘words’
(v)	[inzuʃi]	[[inzuʃi]+aff]	[tsinzuʃi]	[tsinzuʃi]	‘bees’
(vi)	[olukano]	[[olukano]+aff]	[tsingano]	[tsingano]	‘tales’
(vii)	[axakofu]	[[axakofu]+aff]	[orukofu]	[orukofu]	‘old men’ (dim.)
(viii)	[okundu]	[[okundu]+aff]	[emindu]	[emindu]	‘giants’

As stated earlier, Oluwanga has noun classes based on singular and plural distinctions. During the process of inflecting for number, the morphological process is limited to adding the

noun class prefix to the noun base with no accompanying phonological processes. However, the internal brackets are erased at the lexical representation level.

5.2.3 *Inflection for Tense*

5.2.3.1 Formation of the Present Tense. In Oluwanga, the present tense verb is formed by inflection, which involves adding to the verb base the prefixes *e-*, (first person singular) *xu-*, (first person plural) *o-*, (second person singular) *mu-*, (second person plural) *a-* (third person singular) and *βa-* (third person plural). These prefixes mark the person. Example (30) illustrates the first, second and third person pronouns which mark the present tense.

(30)

	Verb base	px+verb base	LR	PR	Glossa-,
(i)	[tsja]	[en+[tsja]]	[entsja]	[enzja]	‘I go’
(ii)	[tsja]	[xu+[tsja]]	[xutsja]	[xutsja]	‘we go’
(iii)	[tsja]	[o+[tsja]]	[otsja]	[otsja]	‘you go’ (sing)
(iv)	[tsja]	[mu+[tsja]]	[mutsja]	[mutsja]	‘you go’ (pl.)
(v)	[tsja]	[a+[tsja]]	[atsja]	[atsja]	‘he/she goes’
(vi)	[tsja]	[βa+[tsja]]	[βatsja]	[βatsja]	‘they go’

Example (30) illustrates a morphological process that takes place at level 2 where a prefix is added to a verb base to produce the present tense. In some instances, the morphological process is accompanied by phonological processes at the lexical representation level to produce the phonetic representation. Example (i) shows the phonological processes of homorganic nasal assimilation process at the PR level. The internal brackets introduced in the process of affixation are done away at both verb base level and the LR level with only one bracket remaining at the PR level.

5.2.3.2 Formation of the Continuous Aspect in the Present Tense. The present continuous tense means that the action is still in progress. It is formed by adding the person marking prefixes *e-*, *xu-*, *o-*, *mu-*, *a-* and *βa-* and the tense marking suffix *ηga-* to the verb base as illustrated below:

(31)

	Verb base	pfx+verb base	LR	PR	Gloss
(i)	[tɛxɑ]	[e+[tɛxɑ]+ηgɑ]	[ɛndɛxɑŋgɑ]	[ɛndɛxɑŋgɑ]	‘I am cooking’
(ii)	[tɛxɑ]	[xu+[tɛxɑ]+ηgɑ]	[xutɛxɑŋgɑ]	[xutɛxɑŋgɑ]	‘We are cooking’
(iii)	[tɛxɑ]	[o+[tɛxɑ]+ηgɑ]	[otɛxɑŋgɑ]	[otɛxɑŋgɑ]	‘You are cooking’
(iv)	[tɛxɑ]	[mu+[tɛxɑ]+ηgɑ]	[mutɛxɑŋgɑ]	[mutɛxɑŋgɑ]	‘You are cooking’
(v)	[tɛxɑ]	[a+[tɛxɑ]+ηgɑ]	[atɛxɑŋgɑ]	[atɛxɑŋgɑ]	‘He is cooking’
(vi)	[tɛxɑ]	[βa+[tɛxɑ]+ηgɑ]	[βatɛxɑŋgɑ]	[βatɛxɑŋgɑ]	‘They are cooking’

The data in (31) shows that the process of forming the present continuous tense involves the addition of a prefix and a suffix to the verb base. This morphological process is also accompanied by the phonological process of epenthesis (in i), where a nasal /n/ is inserted before /t/ to produce *ent-*. After a nasal, voiceless stops often become voiced, and so /t/ becomes /d/ after the nasal /n/. The process of bracket erasure happens in stages where the left bracket in the verb base is first erased upon affixing the person marking prefix followed by the erasure of the bracket on the right of the verb base when the suffix marking tense is added. This leaves the verb base and the affixes within one bracket at the LR level. The resultant form is subjected to the phonological process of epenthesis followed by a phonetic representation of the word in the continuous aspect of the present tense.

5.2.3.3 Formation of the Present Tense + ‘still’. This is a meaning expressed by combining present tense with the idea of continuation. It refers to an action or state that started in the past and continues up to now. In Oluwanga, this is formed by adding the prefix morpheme *fi-* to mark tense as well as the pre-prefixes *e-*, *xu-*, *o-*, *mu-*, *a-*, and *βa-* to mark the person as illustrated in the example below:

(32)

	Verb base	px+px+verb base	LR	PR	Gloss
(i)	[naβa]	[e+[fi+[naβa]]]	[efinaβa]	[efinaβa]	‘I still sew’
(ii)	[naβa]	[xu+[fi+[naβa]]]	[xufinaβa]	[xufinaβa]	‘We still sew’
(iii)	[naβa]	[o+[fi+[naβa]]]	[ofinaβa]	[ofinaβa]	‘You still sew’ SG.
(iv)	[naβa]	[mu+[fi+[naβa]]]	[mufinaβa]	[mufinaβa]	‘You still sew’ PL.
(v)	[naβa]	[a+[fi+[naβa]]]	[afinaβa]	[afinaβa]	‘He/she still sews’
(vi)	[naβa]	[βa+[fi+[naβa]]]	[βafinaβa]	[βafinaβa]	‘They still sew’

The morphological process in (32) is limited to affixation where a prefix and a pre-prefix are added to the verb base without any accompanying phonological process. Bracket erasure happens when two brackets are erased as the pre-prefix and the prefix are added to the verb base.

5.2.3.4 Formation of the Present Perfect Tense. This describes an action that happened in the past but is still relevant or connected to the present time. In Oluwanga, the process involves the addition of the pre-prefix morpheme that marks tense followed by the prefix marking person as illustrated below:

(33)

	Verb base	px+verb base	LR	PR	Gloss
(i)	[kona]	[nda+[xa+[kona]]]	[ndaxakona]	[ndaxakona]	‘I have slept’

- (ii) [kona] [xwa+[xa+[kona]]] [xwaxakona] [xwaxakona] ‘We have slept’
 (iii) [kona] [wa+[xa+[kona]]] [waxakona] [waxakona] ‘You have slept’ SG.
 (iv) [kona] [mwa+[xa+[kona]]] [mwaxakona] [mwaxakona] ‘You have slept’ PL.
 (v) [kona] [ja+[xa+[kona]]] [jaxakona] [jaxakona] ‘He has slept’
 (vi) [kona] [βa+[xa+[kona]]] [βaxakona] [βaxakona] ‘They have slept’

In (33), the prefixes *nda-*, *xwa-*, *ja-*, *mwa-*, and *βa-* are person markers while the morpheme *xa-* is the tense marker used to indicate the just past perfect tense. The process of bracket erasure occurs when the brackets are removed from the verb base and the subsequent processes of affixation thereby leaving one bracket at the phonetic representation level.

5.2.3.5 Inflection for Just+Past Tense. This is a descriptive term that refers to an action that happened very recently, just before the present time. In other words, it refers to the immediate or recent past. In Oluwanga, this is formed by adding a person-marking prefix and a suffix-marking tense to the verb base as illustrated below:

(40)

	Verb base	px+verb base	LR	PR	Gloss
(i)	[kona]	[[en+[kona]]+re]	[enkonere]	[enjonere]	‘I had slept’
(ii)	[tsja]	[[en+[tsja]]+re]	[entsire]	[enzire]	‘I had gone’
(iii)	[βura]	[[en+[βura]]+re]	[enβurire]	[emburire]	‘I had passed’
(iv)	[xupa]	[[e+[xupa]]+re]	[exupire]	[exupire]	‘I had beaten’

In (40), the prefixes *e-*, *xwa-*, *ja-*, *mwa-*, and *βa-* are person markers while the morpheme *re-* is the tense marker used to indicate the near past tense.

5.2.3.6 Inflection for the Near Future Tense. This process involves adding to the verb base the tense marker prefix *la-* to show that an event will take place later in the same day. A pre-prefix is also added to mark person as shown below:

(42)

	erb base	pfx+verb base	LR	PR	Gloss
(i)	[fira]	[nda+[la+[fira]]]	[ndalafira]	[ndalafira]	‘I will win’
(ii)	[fira]	[xu+[la+[fira]]]	[xulafira]	[xulafira]	‘We will win’
(iii)	[fira]	[o+[la+[fira]]]	[olafira]	[olafira]	‘You will win’ sg.

5.2.3.7 Inflection for the Mid Future Tense. The mid future tense refers to the period from tomorrow to a few days later. This tense is formed by adding the person marking prefix followed by other pre-prefixes marking tense.

(43)

	Verb base	pfx+verb base	LR	PR	Gloss
(i)	[tsja]	[ni+[en+[tsja]]]	[nientsja]	[nenzje]	‘I will go’
(ii)	[tsja]	[ni+[xu+[tsja]]]	[nixutsja]	[nixutsje]	‘We will go’
(iii)	[tsja]	[ni+[o+[tsja]]]	[niotsja]	[notsje]	‘You will go’ sg.
(iv)	[tsja]	[ni+[mu+[tsja]]]	[nimutsja]	[nimutsje]	‘You will go’ pl.
(v)	[tsja]	[ni+[a+[tsja]]]	[niatsja]	[natsje]	‘He/she will go’
(vi)	[tsja]	[ni+[βa+[tsja]]]	[niβatsja]	[niβatsje]	‘They will go’

The data in (43) reveals that in the formation of the mid future tense, the morphological process of affixation involves adding the pre-prefix *ni-* to mark tense followed by the prefix that marks the person.

5.2.3.8 Inflection for the Far Future Tense. The process of forming the far future tense involves adding the person marking pre-prefixes as well as the prefix *li-* that marks the far future tense to the verb base as illustrated below.

(41)

	Verb base	pfx+verb base	LR	PR	Gloss
(i)	[fina]	[ndi+[li+[fina]]]	[ndilifina]	[ndilifina]	‘I will dance’
(ii)	[fina]	[xu+[li+[fina]]]	[xulifina]	[xulifina]	‘We will dance’
(iii)	[fina]	[o+[li+[fina]]]	[olifina]	[olifina]	‘You will dance’ sg.

The process of bracket erasure also takes place and results in one bracket at the PR level.

5.2.3.9 Inflection for the Near Past Tense. This is a form used to describe an action that happened recently, usually just before the present time. In Oluwanga, it is formed by adding a person marking prefix to the verb base as shown below.

(44)

	Verb base	pfx+verb base	LR	PR	Gloss
(i)	[xalaka]	[nda+[xalaka]]	[ndaxalaka]	[ndaxalaka]	‘I cut’
(ii)	[xalaka]	[xwa+[xalaka]]	[xwaxalaka]	[xwaxalaka]	‘We cut’
(iii)	[xalaka]	[wa+[xalaka]]	[waxalaka]	[waxalaka]	‘You cut’ sg.
(iv)	[xalaka]	[mwa+[xalaka]]	[mwaxalaka]	[mwaxalaka]	‘You cut’ pl.
(v)	[xalaka]	[ja+[xalaka]]	[jaxalaka]	[jaxalaka]	‘He/she cut’
(vi)	[xalaka]	[βa+[xalaka]]	[βaxalaka]	[βaxalaka]	‘They cut’

5.2.3.10 Formation of the Past Perfect. This past perfect is formed by adding a person marker prefix to the verb base followed by a verb extension that marks the tense as illustrated in (45).

(45)

	Verb base	px+verb base	LR	PR	Gloss
(i)	[saβa]	[nda+[saβa]]	[ndasaβire]	[ndasaβire]	‘I had requested’
(ii)	[saβa]	[xwa+[saβa]]	[xwasaβire]	[xwasaβire]	‘We had requested’
(iii)	[saβa]	[wa+[saβa]]	[wasaβire]	[wasaβire]	‘You had requested’ sg.
(iv)	[saβa]	[mwa+[saβa]]	[mwasaβire]	[mwasaβire]	‘You had requested’ pl.
(v)	[saβa]	[ja+[saβa]]	[jasaβire]	[jasaβire]	‘He had requested’
(vi)	[saβa]	[βa+[saβa]]	[βasaβire]	[βasaβire]	‘They had requested’

5.2.3.11 Formation of the Reciprocal Verb. The reciprocal verb is that which shows that an action is being performed on two or more subjects. It involves two or more people doing something to each other or with each other. It usually combines a verb and a pronoun which is referred to as a reciprocal pronoun.

(46)

	Verb base	verb base+sfx	LR	PR	Gloss
(i)	[xaβa]	[[xaβa]+na]	[xaβana]	[xaβana]	‘search for one another’
(ii)	[fesja]	[[fesja]+na]	[fesjana]	[fesanja]	‘greet one another’
(iii)	[koŋa]	[koŋa]+na]	[koŋana]	[koŋana]	‘check on one another’

The data in (46) illustrates that the process of forming a reciprocal verb is by adding the suffix na- to the verb base. The resultant form is a word which when glossed occurs as a phrase or a sentence.

5.2.4 Formation of the Causative Verb

Causative verbs are those that show that someone or something causes something to happen as shown below:

(47)

	Verb base	verb base+aff	LR	PR	Gloss
(i)	[rula]	[[rula]+aff]	[rula]	[rusja]	'to cause to go out/remove'
(ii)	[sa:βa]	[[sa:βa]+aff]	[sa:βa]	[sa:fja]	'to wash someone else'

In example (i), the causative verb [rusja] is formed by adding the suffix –ja to the verb base. The resultant form becomes rulja which is followed by a consonant change rule of lenition where /l/ changes to /s/ due to the influence of the palatal glide /j/. The PR form becomes [rusja].

In (ii), the causative verb [sa:fja] is formed by adding the suffix –ja to the verb base, followed by a phonological process of devoicing where /β/ changes to /f/ which results into the form [sa:fja]. The verb base is then subjected to the bracket erasure rule and results in a single bracket at the phonetic representation level.

5.2.5 Applicative Verb Extension in Oluwanga

This type of verb extension indicates that an action is done for someone or something else as illustrated below.

(48)

	Verb base	verb base+aff	LR	PR	Gloss
(i)	[kula]	[[kula]+V]	[kulira]	[kulira]	'to buy for someone'
(ii)	[xalaka]	[[xalaka]+V]	[xalaka]	[xalatʃira]	'to cut for someone'

Example (48) illustrates a process of verb extension that takes place when changes are introduced into the verb base. In many Bantu languages, verbs take extensions (suffixes) that add meaning.

In (i), the suffix is –ir- (often called the applicative extension. Bantu verbs usually end with a final vowel –a.

In (ii), the addition of the applicative extension suffix –ir- triggers several phonological processes. These are palatalization where the velar stop /k/ becomes the postalveolar affricate /tʃ/ before the front vowel /i/. The resultant form becomes [xalatʃa]. This is followed by vowel raising where a high front vowel /i/ is inserted after the affricate.

6.0 Conclusion

This study has shown that the Oluwanga lexicon comprises two strata, 1 and 2. Stratum 1 is essentially derivational in nature, where affixes are added to the word base to derive words from other word categories, whereas Stratum 2 is fundamentally inflectional. The data analysed has revealed that in most cases, the morphological processes are usually followed by the erasure of brackets at both the verb or noun base levels as well as the lexical representation level, with the resultant form being marked onto the phonetic level. The study has demonstrated that Oluwanga's morphological structure aligns with the arguments presented by the lexical morphology theory. This study has presented a fairly comprehensive analysis of the morphology of Oluwanga, with the assertion that indeed phonology plays a significant role in the morphological patterns of the dialect in the sense that the morphological process of affixation is normally accompanied by phonological processes such palatalization, homorganic nasal assimilation, vowel coalescence as well as consonant and vowel substitution.

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