

A Morphological Analysis of Micro-variations on Verbal Extensions in ciLungu, ciMambwe and ciNamwanga Languages

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Abstract

Guthrie (1948) classifies ciLungu as M14, ciMambwe as M15 and ciNamwanga as M22. The study was undertaken to enrich the available scanty grammar by establishing and analysing the morphological micro-variations on verbal extensions and the accompanying vowel harmony. The descriptive framing informed the study. Qualitative design, descriptive approach, comparative, elicitation and document analysis methods were used. The study shows that micro-variations in the three languages exist in applicative, causative, reversive, stative, intensive, reciprocative, frequentative and perfective extensions. For instance, ciLungu and ciMambwe attach the semi-vowel [w] before the suffix marker [-ela] or [-ila] which is not applicable in ciNamwanga when forming applicative verbs. In addition, ciLungu uses the voiceless fricative glottal [h] in the suffix of long causatives and intensive extensions while ciMambwe and ciNamwanga use [i] which is realised as [y]. On the other hand, the study reveals that the reduplicative, passive and reflexive extensions have similar principles.

Keywords: Morphological, analysis, verbal extensions, variations, Zambia

1. Introduction

This study analyses the morphological variations of verbal extensions in Lungu or ciLungu, Mambwe, Icimambwe or ciMambwe and Namwanga or ciNamwanga [Henceforth ciLungu, ciMambwe and ciNamwanga] languages which are spoken in Zambia (see Halemba, 2007; Bickmore, 2007; Siame, 2019; and Siame and Banda, 2021). The study is an evaluation of the verbal morphology of three closely related languages under study which are at the peripheral of the Northern and Muchinga Provinces in

Zambia, along the corridors of Zambia and Tanzania. Given Nurse and Philippson (1999), the three genetically related languages are believed to be from one ancestor language, the Fipa in Southern Tanzania. However, the three languages are not official languages and have very little literature known and documented.

In terms of geographical position, ciLungu is spoken in Mpulungu District on the western side of Mbala in the Northern Province of Zambia (Bickmore, 2004). The native speakers of ciMambwe are found in Mbala and Senga Districts of Northern Province in Zambia (Halemba, 2004). On the other hand, ciNamwanga is spoken in Nakonde and Isoka Districts in Muchinga Province and is on the eastern side of Mbala District in Zambia (Sinkamba, 1984).

Historically, Guthrie (1948) classifies ciLungu as M14 and is spoken in parts of the Northern Province of Zambia as well as in Southern Tanzania. Guthrie (1948 and 1971), classifies ciMambwe as M15. However, ciNamwanga is classified as M22 (Guthrie, 1948). In addition, the native speakers of ciNamwanga are said to have come from Fipa and Nyika in Tanzania.

Considering that the languages have been classified differently (Guthrie, 1948), but are said to originate from one ancestor language, Fipa (Nurse and Philippson, 1999), the article aims to analyse the morphological variations of verbal extensions of ciLungu, ciMambwe and ciNamwanga languages to document the similarities and differences of the verbal morphology and their related vowel harmonies.

2. Theoretical issues and the verbal structure of Bantu languages

The overall verbal structure of Bantu languages is divided into two morphological domains, namely; the verbal stem and the macro stem. The *verbal stem* comprises the verb root, any verbal extensions, certain Tense, Aspect and Mood (TAM), suffixes and the Final Vowel. On the other hand, the *macro stem* includes; the subject and object markers. Interest in this article is in the verbal stem and root extensions as attested in studies by scholars such as; Hyman (1991), Katamba (1993), Nkolola (1997), Nurse and Phillipson (1999), Hyman and Mtenje, (1999), Bickmore (2004) and recently, Mtenje (2016), Mkochi (2017), Mtenje-Mkochi (2018) and, Mtenje-Mkochi and Mtenje (2019). The verbal structure can be summarised as follows:

[SM NEG TAM [MACROSTEM OM [STEM Root Extension(s) TAM FV]

It is noteworthy that Halemba (2007) documented a *Mambwe–English dictionary* to which he attached a brief supplementary grammar of the Mambwe language. The scholar established the word structure for nouns and verbs as prefix + root which is similar to the word structure of ciLungu (Bickmore, 2004). Halemba (2007) also identified the following extensions for ciMambwe: applicative, causative, reversive, verbs of state, repetitive, intensive, reciprocal, completive, reduplicative and reflexive. Halemba (2007), a catholic priest, laid a good foundation for the establishment of verbal extensions in ciMambwe. However, based on the confession by Halemba (2007) that he was not a linguist, and that the list of extended verbal forms in Mambwe he had identified was not exhaustive and required further analysis, this study is designed to provide a more profound and detailed analysis of the verbal extensions. In addition, this study has included the frequentative extension, which was not identified in Halemba (2007).

The comparative Bantu theoretical and descriptive framing of the above studies informed the analysis of ciMambwe, ciLungu and ciNamwanga verbal extensions on the verbal structure. Descriptive study is a component of documentary linguistics which deals with languages which are less documented like the ones under study. The descriptive framework has been used to compare and contrast the linguistic features in terms of verbal extensions. The descriptive theory uses words and sentential expressions which are then analysed for what they are (Mutch, 2005). Sebastien (2016) posits that descriptive theory is a set of propositions that attempts to describe something such as verbal extensions in ciLungu, ciMambwe and ciNamwanga. In doing the analysis, our focus will be on observed similarities or sameness, and on variations. Variation can be defined and operationalised as observed change or a slight difference in the form or version of the same condition or phenomenon. The following are the verbal extensions that have been identified and compared in this study to establish the micro-variations; applicative, causative, reversive, passive, repetitive, intensive, reciprocal, completive, reduplicative, reflexive and frequentative.

3. Methodological issues

The study used the descriptive research design which was backed by the qualitative research approach that is non-numerical and subjective (Brink and Wood, 1998). The comparative Bantu morpho-phonology methodology was chosen to account for the similarities and variations in the actualisation of verbal extensions on the verbal structure of ciLungu, ciMambwe and ciNamwanga languages (see for

example, Nurse and Phillipson, 1999; Kadenge and Simango, 2014; Mtenje 2016; Mtenje-Mkochi, 2018; Mtenje-Mkochi and Mtenje, 2019).

Data for ciLungu were collected from Northern Province in Mpulungu District, ciMambwe in Mbala and Senga Districts and ciNamwanga from Muchinga Province in Isoka and Nakonde Districts where native speakers are found. Each language had two informants for data collection and verification. Being a descriptive study, the collected data were analysed thematically using descriptive and analytical skills. Data analysis went hand in hand with data collection (Mugenda and Mugenda, 1999). Being a speaker of the three languages, the lead author applied his intuitive knowledge of linguistic experiences to arrive at morphological variations on the verbal extensions (see Merriam, 1998).

4. Findings/Discussion

4.1 Verbal extensions in ciLungu, ciMambwe and ciNamwanga

This paper compares and contrasts the following verbal extensions; applicative, causative, reversive, passive, repetitive, intensive, reciprocal, completive, reduplicative, reflexive and frequentative.

4.1.1 Applicative verbal extension

The study shows that the applicative verbal extension is about applying something and is sometimes referred to as prepositional verbal form. The verbal form shows the relationship which a person or thing has with what the action is being done for. Applicative verbs in ciLungu, ciMambwe and ciNamwanga are realised in *three* different ways as follows:

The first realisation of the applicative verbal extension is demonstrated in the examples below:

	Language		Main verb	Applicative verb
(1)	ciLungu and ciMambwe	a	<i>tama</i> [ta-m-a] ‘to break’	<i>tamila</i> [la-m-il-a] ‘to break for’
		b	<i>lema</i> [le-m-a] ‘to hold’	<i>lemela</i> [le-m-el-a] ‘to hold for’

	Language		Main verb	Applicative verb
(2)	ciNamwanga	a	<i>taama</i> [ta-am-a] ‘to break’	<i>taamila</i> [ta-am-il-a] ‘to break for’
		b	<i>leema</i> [le-em-a] ‘to hold’	<i>leemela</i> [le-em-el-a] ‘to hold for’

The analysis of the first demonstration above in (1a) and (2a) suggest that when the vowel in the verb root contains [a], [i], or [u], the final vowel changes to [i] in the applicative verb root, thereby adding the suffix marker [-la] to form [-ila]. When the main verb root contains [e] or [o], the final vowel changes to [-e] followed by the suffix marker [-la] to form [-ela] as the governing rule in the applicative verbal form. The study shows that the three languages have the above two rules, namely; [-ila] and [-ela] which govern the formation of the applicative verbal form. The rule for the formation of the applicative verbs in (1a-b) and (2a-b) are the same in ciLungu, ciMambwe and ciMambwe respectively. The variation exists in the prefix where in (1a-b) there is a short vowel in ciLungu and ciMambwe. On the contrary, in (2a-b), the prefix in ciNamwanga applicative verbs allow for vowel lengthening.

The second realisation of the applicative verbal extension in ciLungu, ciMambwe and ciMambwe is illustrated in the examples below:

(3)	Language		Main verb	Applicative verb
	ciLungu and	a	<i>solola</i> [so-lol-a] ‘to choose’	<i>solwela</i> [so-lu-el-a] ‘to choose for someone’
	ciMambwe	b	<i>salula</i> [sa-lul-a] ‘to fry’	<i>salwila</i> [sa-lu-il-a] ‘to fry for someone’

(4)	Language		Main verb	Applicative verb
	ciNamwanga	a	<i>sola</i> [s-ol-a] ‘to choose’	<i>solela</i> [so-lel-a] ‘to choose for someone’
		b	<i>salula</i> [sa-lul-a] ‘to fry’	<i>salulila</i> [sa-lul-il-a] ‘to fry for someone’

The analysis of example (3a) of the applicative verbal extension establishes that the main verbs in ciLungu and ciMambwe which end with [-lol-a] change into [-wela] realised as [-u-el-a] after verb roots which do not have these vowels [a], [i] or [u], and [-lul-a] change to [-wila] realised as [-u-il-a] in [3b] after verb roots which contain the vowels [a], [i], or [u].

We argue that the variation exists in ciNamwanga where verbs ending with [-ola] in (4a) in the suffixes of the main verb roots with [a], [i] or [u] change into [-e-] followed by the suffix marker [-la] to form [-ela] as the established governing rule. We also argue that variation is observed in (4b) where the suffix [-a] in the main verb changes to [-i-] before introducing the suffix marker [-la] as opposed to (3b) which drops off the suffix marker [-la] in the main verb, changes a high back vowel [u] to a voiced bilabial glide [w] before the addition of the suffix marker [-ila].

We also argue that while ciLungu and ciMambwe use [-wila] in (3b) after verb roots which contain [a], [i], or [u] to change to applicative verbs, ciNamwanga uses [-ila] as a suffix marker. We further argue that the overall variation in example (3a-b) for ciLungu and ciMambwe is that the applicative verbs before the suffix marker introduce a high back vowel [u] which is realised as a semi-vowel (voiced bilabial glide) [w] before [-ela] to form [-wela] and [-ila] to form [-wila] respectively. On the contrary, ciNamwanga in (4a-b) does not take on the semi-vowel [w] before the suffix marker hence maintaining [-ela] and [-ila]. In other words, in ciLungu and ciMambwe, there is what we shall call *labialisation* of the root from the main verb [-lol-] ‘solola’ and [-lul-] ‘salula’ to [-lu-] as leading to ‘solwela and ‘salwila’. The voiced lateral approximant is dropped leading to the creation of a voiced labial-velar approximant sound. We further observe that the ciNamwanga language retains the root [-lul-] when forming applicative verbs.

The third realisation of the applicative verbal extension in ciLungu, ciMambwe and ciMambwe languages is shown below:

	Language		Main verb	Applicative verb
(7)	ciLungu and ciMambwe	a	<i>Panya</i> [pa-ni-a] ‘to dress chicken’	<i>Panyizya</i> [pa-ni-izi-a] ‘to dress chicken for someone’
		b	<i>Sezya</i> [se-zi-a] ‘to remove’	<i>Sezezya</i> [se-zezi-a] ‘to remove for someone’

	Language		Main verb	Applicative verb
(8)	ciNamwanga	a	<i>Panya</i> [pa-ni-a] ‘to dress chicken’	<i>Panyízya</i> [pa-ni-ízi-a] ‘to dress chicken for someone’
		b	<i>Sezya</i> [se-zi-a] ‘to remove’	<i>Sezézya</i> [se-zézi-a] ‘to remove for someone’

The analysis of the third demonstration about the applicative verb extension further establishes that main verbs which end with [-ya] change into [-izya] if they come after [a], [i], or [u] in the verb root, and into [-ezya] when they follow [e] or [o] in the verb root in all the three languages under study. We argue that ciLungu, ciMambwe and ciNamwanga languages infix the elements [-iz-] and [-ez-] in the stems of the main verbs before the element [-ya] which operates as a suffix marker during the creation of applicative verbs to form either [-izya] or [-ezya] respectively.

The three closely related languages use the same rules, that is, [-izya] and [-ezya] to create applicative verbs as established above regarding example (7a-b) and (8a-b). However, we argue that there is a

variation in example (8a-b) where there is a high tone in both examples on the vowels preceding the suffix marker, that is on [í] in (8a) and [é] in (8b) in the applicative verbs.

4.1.2 Causative verbal extension

The causative verbs influence the result of an action. There are short and long causatives in ciLungu, ciMambwe and ciNamwanga languages.

4.1.2.1 Short causative verbal extension

The formation of short causatives in ciLungu, ciMambwe and ciNamwanga languages is presented and analysed using examples below:

	Language		Main verb	Short causative verb
(9)	ciLungu and ciMambwe	a	<i>ukukoma</i> [u-ku-kom-a] 'to be strong'	<i>ukukomya</i> [u-ku-komi-a] 'to make strong'
		b	<i>ukwánkána</i> [u-ku-ánkán-a] 'to share'	<i>ukwánkányá</i> [u-ku-ánkáni-a] 'to divide or make divisions'

	Language		Main verb	Short causative verb
(10)	ciNamwanga	a	<i>ukuwoma</i> [u-ku-u-om-a] 'to be strong'	<i>ukuwomya</i> [u-ku-u-omi-a] 'to make strong'
		b	<i>ukwánkáná</i> [u-ku-á-nkán-á] 'to share'	<i>ukwánkányá</i> [u-ku-á-nkáni-á] 'to divide or make divisions'

The analysis of examples (9-10) shows that short causatives in ciLungu, ciMambwe and ciNamwanga languages are formed by adding a suffix marker or element /-i-/ which glides to [y] before a non-identical vowel thereby causing a change of the preceding consonant. We argue that the short causative extension in the three languages is formed by infixing the high front vowel [i] realised as [y] between the last consonant in the root which is usually a nasal, either [m] or [n] respectively and the suffix which is usually [-a].

There are variations between (9a) and (10a), and (9b) and (10b) in ciLungu, ciMambwe and ciNamwanga languages. We argue that in ciLungu and ciMambwe in (9a), the main verb as well as the extended one uses the element [-ko-] in the root as opposed to [-wo-] in ciNamwanga in (10a). We

further argue that in (9b), ciLungu and ciMambwe have a high tone on a low front vowel [a] in the prefix and root positions while in (10b), ciNamwanga uses a high tone on a low front vowel [a] in the prefix, verb root and final vowel positions to express the short causative verbs.

4.1.2.2 Long causative verbal extension

The study reveals that ciLungu, ciMambwe and ciNamwanga languages form long causative verbal extensions as demonstrated in the examples below:

	Language		Main verb	Long causative verb
(11)	ciLungu	a	<i>ukwaazima</i> [u-ku-azim-a] 'to smoke'	<i>ukwaazimiisha</i> [u-ku-a-azimiish-a] 'to cause to smoke'
		b	<i>ukupoompa</i> [u-ku-poomp-a] 'to inflate'	<i>ukupoompeesha</i> [u-ku-poompeesha-a] 'to cause to inflate'

	Language		Main verb	Long causative verb
(12)	ciMambwe and ciNamwanga	a	<i>ukwaazima</i> [u-ku-peep-a] 'to smoke'	<i>ukwaazimiisya</i> [u-ku-a-azimiisi-a] 'to cause to smoke'
		b	<i>ukupoompa</i> [u-ku- poomp-a] 'to inflate'	<i>ukupoompeesya</i> [u-ku-poompees-a] 'to cause to inflate'

The examples above illustrate *long causatives*. We argue that long causatives in ciLungu in (11a-b) are formed by adding the suffix [-iisi] which changes to either [-iish-] or [-eesh-] due to phonological processes. In addition, we argue that in ciMambwe and ciNamwanga languages, as can be seen in (12a-b), long causatives are formed by adding the suffix [-iisi] which changes to either [-iisy-] or [-eesy-] through the process of gliding. We observe that all the three languages under study allow for vowel length in the long causative suffixing elements as can be seen in examples (11-12) above.

We also argue that ciMambwe and ciNamwanga have the same principles in the formation of long causatives. We further argue that there is a variation in ciLungu in (11) which uses the voiceless glottal fricative [h] in the suffix marker [-iisha] or [-eesha] while ciMambwe and ciNamwanga use a high front vowel [i] which is realised as a voiced palatal glide [y].

4.1.3 Reversive verbal extension

The study reveals that ciLungu, ciMambwe and ciNamwanga languages have reversive extensions on the verbal structure as illustrated below:

	Language		Main verb	Reversive verb
(13)	ciLungu and	a	<i>ukuyala</i> [u-ku-i-al-a] ‘to close’	<i>ukuyula</i> [u-ku-i-ul-a] ‘to open’
	ciMambwe	b	<i>ukunyunga</i> [u-ku-ni-ung-a] ‘to sieve’	<i>ukunyungulula</i> [u-ku-ni-ungulul-a] ‘to re-sieve’
	Language		Main verb	Reversive verb
(14)	ciNamwanga	a	<i>ukwiyala</i> [u-ku-i-i-al-a] ‘to close’	<i>ukwiyula</i> [u-ku-i-i-ul-a] ‘to open’
		b	<i>ukunyunga</i> [u-ku-ni-ung-a] ‘to sieve’	<i>ukunyungulula</i> [u-ku-ni-ungulul-a] ‘to re-sieve’

Arising from the above examples, the study establishes that reversive verbs are formed by adding the suffix marker [-ula] as in examples (13a) and (14a) as well as [-ulula] in (14a) and (14b). We argue that the reversive verbs undo or act oppositely hence contradicting the action of the main verb. We also argue that the transcription of the main and extended verbs is the same in all three languages. For illustration's sake, in example (13a) the transcription of the main verb is [u-ku-i-al-a] while the reversive extended verb is [u-ku-i-ul-a] and in (14a), the main verb is [u-ku-i-i-al-a] while the reversive extended verb is [u-ku-i-i-ul-a]. We note that in examples (13a) and (14a), the vowel [-a-] in the root of the main verb changes to [-u-] in the reversive verbs while in (13b) and (14b), the reversive suffixing element [-ulula] is infixed between /ŋg/ realised as [ng] in the root of the main verb and the suffix [-a] to form the reversive extended verb in all the three languages. We also observe that in (13a) the three languages use [i] which is realised as [y] before the suffix marker in both the main and the reversive extended verb.

The variation lies in the prefix where (13a) uses [-ku-] while (14a) uses [-kwi] which is transcribed as [ku-i]. The other variation is that ciLungu and ciMambwe languages in (13a) have a single glide [y] before the suffix marker while ciNamwanga in (14a) has two glides [w] and [y] before the suffix marker.

4.1.4 Passive verbal extension

The findings reveal that the three languages extend verbs by using the passive extension as shown in the examples below:

	Language		Main verb	Passive verb
(15)	ciLungu,	a	<i>ukuuma</i> [u-ku-um-a] ‘to beat’	<i>ukumwa</i> [u-ku-umu-a] ‘to be beaten’
	ciMambwe and ciNamwanga	b	<i>ukuviimba</i> [u-ku-viimb-a] ‘to cover’	<i>ukuviimbwa</i> [u-ku-viimbu-a] ‘to be covered’

The analysis of example (15) above suggests that the passive extension in ciLungu, ciMambwe and ciNamwanga languages is formed by adding the passive element /-u-/ between the root and the suffix, and is realised as a voiced bilabial glide [w]. Therefore, the passive verbal extension acts on the object which receives the action. We argue that the passive extension considers the action of the receiver of the action (object) and not the doer (subject). We further argue that the three closely related languages have the same rule, form, meaning and usage of the passive extended verbs.

4.1.5 Stative verbal extension

The three closely related languages have stative extended verbs as demonstrated below:

	Language		Main verb	Stative verb
(16)	ciLungu and ciMambwe	a	<i>ukufula</i> [u-ku-ful-a] ‘to wash’	<i>ukufulika</i> [u-ku-fulik-a] ‘to be washed’
		b	<i>ukutama</i> [u-ku-tam-a] ‘to break’	<i>ukutameka</i> [u-ku-tamek-a] ‘to be broken’

	Language		Main verb	Stative verb
(17)	ciNamwanga	a	<i>ukufula</i> [u-ku-ful-a] ‘to wash’	<i>ukufuulika</i> [u-ku-fulik-a] ‘to be washed’
		b	<i>ukutama</i> [u-ku-tam-a] ‘to break’	<i>ukutamika</i> [u-ku-tamik-a] ‘to be broken’

The analysis above reveals that stative verbs are formed by adding the suffix marker [-ik-] after the vowel [a], [i], [o], [u] or [-ek-] after [e] or [o]. We argue that the addition of a suffix marker [-ik-] is necessary because it changes verbs from transitive to intransitive. We also argue that the addition of the suffix marker [-ik-] after the vowel [a], [i], [o], [u] or [-ek-] after [e] or [o] to form passive verbs only happens in ciLungu and ciMambwe as shown in example (16). We further argue that ciNamwanga only uses the suffix marker [-ik-] irrespective of the following vowel as can be seen in example (17).

4.1.6 Intensive verbal extension

This verbal extension refers to doing something a lot. Intensive verbal extensions are found in all three languages under study as shown in:

	Language		Main verb	Intensive verb
(18)	ciLungu	a	<i>ukutina</i> [u-ku-tin-a] ‘to press’	<i>ukutinisha</i> [u-ku-tinisi-a] ‘to press a lot’
		b	<i>ukuleeta</i> [u-ku-leet-a] ‘to bring’	<i>ukuleetsha</i> [u-ku-leetesi-a] ‘to bring a lot’

	Language		Main verb	Intensive verb
(19)	ciMambwe	a	<i>ukutina</i> [u-ku-tin-a] ‘to press’	<i>ukutinisya</i> [u-ku-tinisi-a] ‘to press a lot’
	and ciNamwanga	b	<i>ukuleeta</i> [u-ku-leet-a] ‘to bring’	<i>ukuleetesya</i> [u-ku-leetesi-a] ‘to bring a lot’

The analysis of the above examples suggests that the intensive extension in ciLungu in (18a-b) is formed by adding the suffix marker [-isi] to the root which phonologically changes to either [-ish-] or [-esh-]. We argue that intensive verbs in ciLungu in (18a-b) are formed by changing the final vowel [-a] into [-isha] after the vowels [a], [u] or [i] and [-esha] after [o] or [e]. In ciMambwe and ciNamwanga in (19a-b), intensive verbs are formed by adding the suffix [-isi] which is realised either as [-isy-] or [-esy-] due to phonological processes acting upon them to harmonise the vowels by using the semi-vowel during the formation of intensive verbs. It can be argued that ciMambwe and ciNamwanga have the same principles in the formation of intensive verbs. It can further be argued that intensive verbs in ciMambwe and ciNamwanga in (19a-b) are formed by changing the final vowel [-a] into [-isya] after [a], [u] or [i] and [-esya] after the vowels [o] or [e].

However, the variation is observed in ciLungu language in example (18) which uses the voiceless glottal fricative consonant [h] in the suffix marker in [-isha] or [-esha]. On the other hand, the intensive verbal extension in ciMambwe and ciNamwanga languages use a high front vowel [i] which is realised as a semi-vowel or a voiced palatal glide [y] in [-isya] or [-esya].

4.1.7 Reciprocal verbal extension

The study shows that the languages under study have reciprocating verb extensions as shown in the illustrations below:

	Language		Main verb	Reciprocated verb
(20)	ciLungu, ciMambwe	a	<i>ukusaakula</i> [u-ku-saakul-a] ‘to comb hair’	<i>ukusaakulana</i> [u-ku-saakulan-a] ‘to comb each other’

	and ciNamwanga	b	<i>ukuluma</i> [u-ku-lum-a] 'to bite'	<i>ukulumana</i> [u-ku-luman-a] 'to bite each other'
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The examples above demonstrate that reciprocated verbs are formed by adding the reciprocating element /-an-/ to the transitive verb to give the sense of acting upon each other. We argue that in this extension, the three closely related languages under study use transitive verbs which take direct objects. We also argue that ciLungu, ciMambwe and ciNamwanga languages have reciprocating verbal extensions which apply the same principles. We further argue that the only noticeable variation is in terms of stress, a situation where ciNamwanga stresses the syllables in the root before the suffix marker or reciprocating extension as observed in (20a) which has [-ku-] and [-lu-] in (20b). On the other hand, we argue that in ciLungu and ciMambwe languages, all the syllables are unstressed in the root before the suffix marker.

4.1.8 Reduplicative verbal extension

Reduplication is a process of extending the verbs by repeating the stem. The study shows that this verbal extension exists in ciLungu, ciMambwe and ciNamwanga languages as in:

	Language		Main verb	Reduplicated verb
(21)	ciLungu, ciMambwe	a	<i>ukuvwanga</i> [u-ku-vu-ang-a] 'to talk'	<i>ukuvwanga-vwanga</i> [u-ku-vu-ang-a- vu-ang-a] 'to talk repeatedly'
	and ciNamwanga	b	<i>ukutunda</i> [u-ku-tund-a] 'to urinate'	<i>ukutunda-tunda</i> [u-ku-tu-nd-a- tu-nd-a] 'to urinate repeatedly'

The analysis above shows that the reduplicative verbal extension is used to express the action in the present simple tense. We argue that the reduplicative verbal extension is formed by linking the stem to the main verb using a hyphen (-) to form one word and express repetition of the action as illustrated in example (21) above. We also argue that the reduplicated verb expresses a present habitual behaviour. We further argue that the extended verb is used to express either a good or bad habit. The reduplicative verbal extension exists in ciLungu, ciMambwe and ciNamwanga and the same rule applies to the three languages respectively.

4.1.9 Reflexive verbal extension

The study establishes that the three closely related languages have reflexive verbal extension as exemplified below:

	Language		Main verb	Prefix	Reflexive verb
(22)	ciLungu, ciMambwe and ciNamwanga	a	<i>letelela</i> [le-telel-a] ‘to bring trouble’	i-	<i>iletelela</i> [i-le-telel-a] ‘to bring trouble upon oneself’
		b	<i>temwa</i> [te-mu-a] ‘to love’	i-	<i>itemwa</i> [i-temu-a] ‘to love oneself’

In example (22), the reflexive verbal extension shows the action which is done by oneself. In the analysis above, we argue that the reflexive verbal extension is formed by attaching the reflexive vowel [i] before the stem/root of the extended verb as in (22b) or before the prefix of a particular verb which is to be extended as in (22a).

We, therefore, argue that the high front vowel [i-] in (22a) works as an augment or pre-prefix while in (22b), it works as a prefix. We also argue that in ciLugu, ciMambwe and ciNamwanga, the vowel [i] is invariable and always remains despite all verbal changes.

We further argue that in example (22a-b), the vowel [i] works as a reflexive pronoun and does not fuse with any other vowel before and after it. Therefore, the study establishes that there are no variations in this verbal extension in terms of form, meaning and usage in ciLungu, ciMambwe and ciNamwanga respectively.

4.1.10 Frequentative verbal extension

The study establishes that the frequentative verbal extension talks about doing something repeatedly. The other term that means frequentative is repetitive.

Therefore, the frequentative verbal extension exists in the three related languages as illustrated below:

	Language		Main verb	Frequentative verb
(23)	ciLungu and ciMambwe	a	<i>tama</i> [t-am-a] ‘to be broken’	<i>tameeka</i> [ta-mek-a] ‘to be broken into small pieces’
		b	<i>koma</i> [ko-m-a] ‘to chop or cut’	<i>komola</i> [ko-mol-a] ‘to chop or cut into pieces’

	Language		Main verb	Frequentative verb
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(24)	ciNamwanga	a	<i>tama</i> [t-am-a] 'to break'	<i>tamika</i> [ta-mik-a] 'to be broken into small pieces'
		b	<i>koma</i> [k-om-a] 'to cut'	<i>komaula</i> [ko-maul-a] 'to cut into pieces'

In the above illustrations in (23), the study shows that in ciLungu and ciMambwe, verbs ending in [-ula], [-uka] or [-ika] change into [-ola], [-oka] and [-eka] respectively. We argue that [-uka] is used as a derivation suffix for verbs ending in [-ula] to show the repetition of the action. We further argue that the opposite is true for ciNamwanga in example (24) which uses [-ula], [-uka] and [-ika] to create frequentative verbs.

4.1.11 Perfective verbal extension

The study reveals that perfective verbs show the degree of a particular action in ciLungu, ciMambwe and ciNamwanga as demonstrated below:

(25)	Language		Main verb	Perfective verb
	ciLungu and ciMambwe	a	<i>poka</i> [p-ok-a] 'to take by force'	<i>pokelela</i> [po-kelel-a] 'to take by force forever'
		b	<i>pata</i> [p-at-a] 'to hate'	<i>patilila</i> [pa-tilil-a] 'to hate forever'

(26)	Language		Main verb	Perfective verb
	ciNamwanga	a	<i>poka</i> [p-ok-a] 'to take by force'	<i>poclelela</i> [po-clelel-a] 'to take by force forever'
		b	<i>pata</i> [p-at-a] 'to hate'	<i>patilila</i> [pa-tilil-a] 'to hate forever'

The above examples suggest that the perfective verb shows that the action has been brought to completion. The verb expresses the perfect result of an action. We argue that the perfective verb resembles the applicative verb in examples (1-4) which uses [-il-] and [-el-] as governing principles. However, the difference is that in perfective extension, [-ila] and [-ela] change to [-ilila] and [-elelela] in ciLungu, ciMambwe and ciNamwanga respectively. We argue that perfective extension reduplicates the rules for the applicative extension hence the results in the output are: [-il-] → [-ilil-] and [-el-] → [-elele-]. The three languages use the same principles to create perfective verbs. Moreover, the variations are in (25a) where ciLungu and ciMambwe use the voiceless velar plosive /k/ before the root while in (26a) ciNamwanga uses the voiceless alveolar affricate /tʃ/ realised as /c/ to create perfective verbs.

5. Conclusion

The study was undertaken to compare the morphological variations in verbal extensions in ciLungu, ciMambwe and ciNamwanga languages. Eleven verbal extensions were identified and analysed namely; applicative, causative, reversive, passive, repetitive, intensive, reciprocal, completive, reduplicative, reflexive, frequentative and perfective. The study shows the variations in applicative, causative, stative, reversive, intensive, perfective, reciprocating and frequentative extensions.

The first variation is that ciLungu and ciMambwe use short vowels in the prefix while ciNamwanga allows vowel lengthening in applicative verbs. In addition, ciLungu and ciMambwe attach a voiced bilabial glide [w] before the suffix marker [-ela] or [-ila] which is not applicable in ciNamwanga when forming applicative verbs. In short causatives, ciLungu and ciMambwe use the element [-ko-] in the root as opposed to [-wo-] in ciNamwanga. A further variation is that ciLungu and ciMambwe have vowel length in the prefix while ciNamwanga uses short vowels in short causatives. In long causative and intensive extensions, the variation is seen in ciLungu which uses the voiceless glottal fricative [h] in the suffix marker while ciMambwe and ciNamwanga use a high front vowel [i] which is realised as a voiced palatal glide [y]. In reversive extension, the variation lies in the prefix where ciLungu and ciMambwe use [-ku-] while ciNamwanga uses [-kwi-]. In stative extension, ciNamwanga uses the suffix marker [-ik-] only irrespective of the following vowel as opposed to ciLungu and ciMambwe which use both [-ik-] and [-ek-] to change main verbs to the stative extension. Under the reciprocating extension, ciNamwanga stresses the syllables in the root before the suffix marker while ciLungu and ciMambwe do not. In frequentative extension, the main verbs in ciLungu and ciMambwe which end in [-ula], [-uka] or [-ika] are changed into [-ola], [-oka] and [-eka] when creating frequentative verbs while ciNamwanga does the opposite. Finally, the perfective verbal extension in ciLungu and ciMambwe languages uses the voiceless velar plosive /k/ before the root while ciNamwanga uses the voiceless alveolar affricate phoneme /c/ which is transcribed as /tʃ/.

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