| **RESEARCH ARTICLE**

Reduplication as a Rich Word Formation Process in Runyambo

Lea Mpobela

Senior Lecturer; Department of Languages and Linguistics; School of Education, Saint Augustine University of Tanzania. Mwanza, Tanzania
Corresponding Author: Lea Mpobela, **E-mail**: rafikilea@yahoo.co.uk

---

| **ABSTRACT**

This study investigated reduplication in Runyambo. Reduplication has been studied in both the Bantu and non-Bantu languages. Studies have shown that reduplication is a rich word-formation process that affects word categories differently in different languages. This inspired me to conduct a similar research in Runyambo. This study employs the autosegmental phonology theory with the principle of CV templates and reduplication, as suggested by Marantz (1982). Secondary data were collected from the Runyambo-Kiswahili-English dictionary by Rugemalira (2002), while primary data were collected from two native speakers of the language. The informants provided consent before the data collection process began. Runyambo was found to have a rich process of reduplication, both total and partial. Patterns of partial reduplication were observed, including CVC-a, CV, and CVCV. Also, copying parts of roots without affixes seems productive, as coping roots with affixes are found in C-verbal roots and CV adjectives and adverbs. The CV ideophones and enclitis were copied in triplicate, forming CVCVCV reduplicants. Both meaningful and meaningless roots combine to form reduplicants in Runyambo. Generally, reduplication affects nouns, verbs, adjectives, adverbs, pronouns, enclitics, and ideophones in Runyambo. Studies should be conducted in different languages because these features are unique to each language.

---

1. Introduction

This paper discusses reduplication in Runyambo, a Bantu language spoken in the Karagwe and Kyerwa districts of the Kagera region of northwestern Tanzania. Reduplication has been widely studied by various scholars using different theories. Reduplication varies between languages. In addition, they can be analyzed differently based on different theories. According to Masahiko (2011), reduplication is a phonological and morphological process in many languages. Reduplication is defined by Katamba and Stonham (2006:184) as a special case of ordinary affixational morphology, where the affixes which are phonologically underspecified, receive their full phonetic expression by copying adjacent segments. He considers only reduplication, which results in a change in grammatical function, meaning, or word class. This occurs when the copying results in derivational or inflectional effects on the resulting form. It may indicate repetition, distribution, plurality, increased intensity/size, continuity, or habitual activities. Similarly, Kager (1999) defines reduplication as a kind of affixation in its morphosyntactic contribution and its linear position with respect to the stem. This suggests that morphosyntactically, it forms categories such as plural, and morphologically, it appears as a prefix or suffix to the stem.

Discussing reduplication in Makkan Arabic, Mansour and Hasan argue that reduplication may affect verbs, nouns, and adjectives. They add that it usually results in morphological and semantic changes in the original word or base. Hyman (2009) reports that reduplication is a feature of Bantu languages, as it affects syllables, verb stems, words and phrases. He presented evidence that some types of verb reduplication are present in PB. He suggests that in PB, verbal reduplication involves the whole word

(prefixes + root + suffixes + FV), verb stem (root+extensions+FV), verb base (root+ extensions), and verb root. The same categories are reported by Inkelas and Downing (2015) in different Bantu languages and takes examples of full stem reduplication from Ciyao *telec-el-a* 'cook for someone' > *telec-el-a-telec-el-a* 'cook for someone frequently, reduplication with no inflectional suffixes as in Ndebele *lim-el-a* ' cultivate (PERF), *lim-e-limela* 'cultivate for/at a little, here and there' and root reduplication from Kinyarwanda *rim-w-a* 'be cultivated' > *lim-aa rimwa* 'be cultivated several times'. These variations make Inkelas and Downing to suggest that reduplication can be treated as either affixation of compounding at the root, stem or word level.

In a study on Amele, a Gum language spoken in Papua New Guinea, Roberts (1991) discusses the functions of reduplication that are not different from those of affixation, including:

i.   Plurality applying on nouns like *bolob* 'trap' >*bolob-bolob* 'many traps' and adjectives as in ben 'big' > ben-ben 'many big things';
ii.   Similarity of likeliness applying on non-possessed and possessed nouns as on *boh* 'plate' > *boh-boh* 'like a plate' and gel 'fence' > *boh-boh* 'like a fence';
iii.   Inclusiveness or distribution to some possessed nouns, demonstrative and possessive pronouns and the postpositions *na* 'in, at' and *nu* 'for' as in *ameg* 'eyes' > *ame-meg* 'eyes of everyone', *adi* 'how' > *adi-adi* 'however',   *na* 'in, at' *na-na* 'in everyone, at every place';
iv.   Intensification applying to the adjectives like *fil* 'different' *fil-fil* 'very different', emphatic word *dih* 'just' > *di-dih* 'just now' and the postposition *na* 'with' as in *?ebit na* 'slowly' > *?ebit na-na* 'very slowly'.
v.   Simultaneity as in *be?* 'to come up' > *be-ben* 'as he came up';
vi.   Iterativity, as in *budue?* 'to thud' *budu-budue?* 'to thud repeatedly'

The above functions, among other things, indicate how reduplication is among the main word formation processes in Amele. Other functions include reciprocity, reflexivization, and quote closure. In Fox (Mesquakie), an Algonquian language spoken in Iowa, reduplication is most productively applied to verbs, with monosyllabic reduplication indicating a continuative habitual aspect as in *nowi.- wa > na.-nowi.-wa*, 'he goes out' and bisyllabic, indicating an iterative aspect, as in *nowi.-wa > nowi-nowi.-wa* 'he goes out now and then'. Verbs can also be reduplicated to indicate the plurality of incorporated nouns and the distribution of numbers and quantifiers. Reduplication of verbs in Fox can play a derivational role as in *kana-kanawi.ni* '(a) speech' derived from *kana-kanawi.wa* 'he gives a (formal) speech' the lexicalized form of *kanawi-wa* 'he speaks. ' The derivational function of reduplication is also reported by Masahiko (2011) in Tok Pisin, which is spoken in Papua New Guinea. In this language, reduplication alters the category of the word to which it is attached. This happens with some nouns including *ting* 'idea' which is reduplicated to form a verb *ting-ting* 'think, worry'. This paper discusses the functions of reduplication in Runyambo and accounts for its formation using the auto segmental phonology theory.

Supporting this, Raymy (2000:5) argues that the only difference between reduplication and other forms of affixation is the precedence relationship between the two concatenated phonological structures. This implies that, as discussed above, reduplication plays a role similar to that of affixation. Crystal (2008:407) argues that in reduplication, the form of a prefix/suffix reflects certain phonological characteristics of the root. Kager (1999) adds that reduplication has the special property of not being fully specified in segmental content.

In Kirundi, adjectives can be reduplicated to emphasize the case in which the entire stem is copied (Brassil, 2003). However, the given data in the same language indicate that in the reduplication of CVV roots, the long vowel of the root is shortened, which marks the contrast between the root and the affix. He provides the examples presented in the examples in 1:

1.   a)   *mibíi*   *mibíimibí*   bad
        b)   *gakée*   *gakéegaké*   little by little
        c)   *batóo*   *batóobató*   small

The terms in one can be differentiated from the terms with the skeleton CVCV in *magúfi* which becomes *magúfimágufi* 'short' and *makúru* which becomes *makúrumákuru* 'important'. The case is also different in the VVCV skeleton of adjectives, in which the agreement prefix *ba-* in the given example *ba-iiza* affects the high VV skeleton, making them low, as in *bézabéeza*. In *bezabeeza*, it can be said that the copied part is attached as a prefix, as differentiated from those in Example 1, on which the copied forms are attached as suffixes. While Brassil looks at these terms in relation to how the two copies are different and adhere to the Obligatory Contour Principle, this paper looks at how the reduplication process takes place and the phonological alteration of some sounds, including deletion, shortening and vowel harmony. It also does not consider the differences in tone, as it applies the principle of CV Templates and reduplication, as applied by Katamba and Stonham (2006) in different languages.

Phonological alteration is evident in the Chumash language, in which some parts are deleted in copied forms (Applegate, 1976). This is called partial reduplication, and this study deals with it, among other things. In this kind of reduplication, a part of a word is repeated, leading to phonological effects on the resulting form. The same condition is presented by Katamba and Stonham (2006:185, 187) in different languages, including the Agta and Tagalog languages in northern Luzon in the Philippines. The examples he presents include the deletion of parts of the copied forms like *baluktot* 'crooked' > *baluubaluktot* 'variously bent' from Tagalog and *takki* 'leg' > *taktakki* 'legs' in Agta. These examples present two facts about reduplication: the phonological effects on the roots, and the marking of grammatical alterations and changes in meaning (inflection and derivation). The same is presented by Applegate (1976:281) in Chumash, as in 2:

2.   *s-talik*   >   *staltalik* 'his wifes'
        c'aluqay >   *c'alcaluqay*   'cradles'
        s-pil-kowon   >   *spil-pilkowon*   'it is a spilling
        Spil-tap >   *spit-pitap*   it is falling in'

In the Chumash examples in 2, parts of the stems were deleted from a copied segment. For instance, *-ik* is deleted in *stalstalik* 'his wife', while *-uqay* deleted in the *c'alcaluqay* 'cradles'. The differences between the stem and reduplicated affixes also differ in Akan (A Kwa language spoken in Ghana) monosyllabic and disyllabic verbs. The differences in this language, however, are in terms of vowels in which a copy exhibits a different vowel, as presented by Boakye (2015:69). For example,

3.   a)   *dá*   >   *dìdá*   'sleep'
        b)   *pέ*   >   *pìpέ*   'look for something'
        c)   *fέ*   >   *fĭfέ*   'to sprout'
        d)   *tã´*   >   *tĭtã´*   'fart'

In the data in 3, the reduplicants exhibit a change in vowels. The differences between the copied segments and stems differ in many languages, drawing attention to the interface between morphology and phonology, highlighting the need for CV remplates and reduplication principle in accounting for the formation processes of the reduplicated words in Runyambo.

Deletions, vowel harmony, and other phonological alterations, including tonal differences, are present in different languages, such as Amele (Roberts, 1991), Fox (Dahlstrom, 1997), Tiv (Maduagwa, 2012), Kirundi (Brassil, 2003), Chumash (Applegate, 1976), and Newar (Paudyal, 2023). This evidences the fact that reduplication in Runyambo needs attention, as it reflects many unique features that may be different from the studied languages. CV templates and reduplication principle of auto segmental phonology are used to account for the formation of reduplicates, indicating whether the attached item is a prefix or a suffix.

2. Reduplication in Different languages
This section presents a literature review on reduplication, focusing on its types and how it is processed, including its features. It also presents the theoretical framework guiding this study, which is Autosegmental Phonology. The study applied the CV template and reduplication principle.

2.1 Kinds of reduplication
Total reduplication, also referred to as full reduplication, is defined by Tameemi and Farhan (2018:86) as the exact repetition of a sound or word. Maduagwa (2012) argues that only total reduplication occurs in Tiv, a southern Bantoid Tivoid language. In this language, only nouns and adjectives are reduplicated to form adjectives and adverbs. Aziz and Nolikasari (2020:48) define full reduplication as a kind of reduplication that involves the exact repetition of a similar word. They report that in the Jamee language spoken in Indonesia in the province of Aceh, full reduplication is found in verbs, nouns, adjectives, and adverbs. Total reduplication is also said to be a feature of Proto Bantu which is still found in the present day Bantu languages including Kiswahili e.g. *cekaceka* 'laugh continuously' from *ceka* 'laugh', Yao like *kava-lave* 'go from place to place' from *lave* 'start early in the morning'. Wanja (2014) and Fredinand (2021) report full reduplication in Kiembu, a Bantu language spoken in Embu county of Kenya, and Luganda spoken in Uganda, respectively, which is common with verbs, nouns, adjectives, adverbs in both and prepositions and pronouns in Kiembu. This indicates that total reduplication is a feature of the Bantu language family to which Runyambo belongs.

Total reduplication has been reported to be productive in other language families, including Malayic languages. As reported by Almasamadani and Taibah (2014), full reduplication is the most productive type of reduplication in Palembang, a Malayic language spoken in South Sumatra Island in Indonesia. As in other languages, content words such as nouns, verbs, and adjectives can be fully reduplicated with functions of pluralization, iteration, distribution, delimitation, and concession.

In Amele, total reduplication is differentiated into whole-word reduplication and whole-stem reduplication. Roberts (1991) presents the evidence that in some cases, the whole word including affixes is reduplicated as in *oso* 'one' > *oso-oso* 'any one' while in others, only the stem is reduplicated and the inflection is attached to the reduplicated stem as in *gudu-en* 'he ran' > *gudu-gudu-en* 'as he ran'. Whole-word reduplication applies to all the major word classes in Amele, whereas the whole stem applies only to verbs. While Roberts reports whole-word reduplication as a type of full reduplication, other scholars, such as Wanja (2014) and Ismiat (2021), take it as partial reduplication. Isimiat (2021:474) presents that full reduplication in the Sumbawa Besar dialect can result in a different word category. In Sumbawa, full reduplication in some instances performs a derivational function as it changes the word category as it is in *lao* 'slow' (Adj) > *lao-lao* 'slowly" (adv), *senang* 'slow' (Adj) > *senang-senang* 'slowly' (Adv), *mangan* 'eat' (V) > *mangan-mangan* 'a picnic' (N).

 In Palembang, functional word reduplication performs two functions: nominalization of function words,where function words lose their original grammatical category or create additional meanings that are not associated with their non-reduplicated counterparts (Almasadani and Taibah, 2019:124)
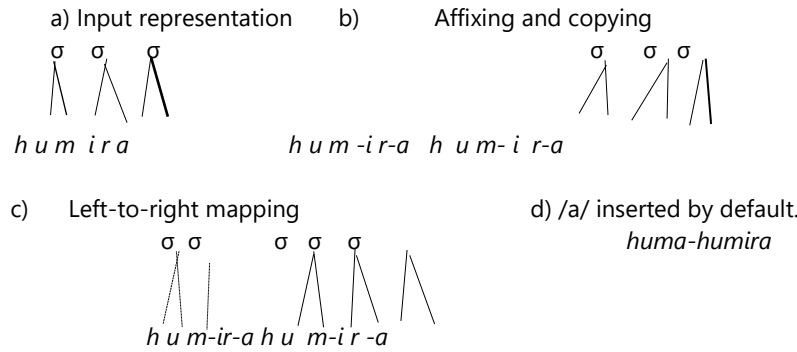
Wanja (2014) reports partial reduplication in Kiembu, which he claims is uncommon. In the given data, derivational affixes *nd-* and *w-* are not reduplicated as in *ndasa* 'tall' > *ndasarasa* 'a bit taller' and *weɣa* 'goodness'> *weɣaeɣa* 'a bit better'. in Kiembu, pre-stem affixes do not reduplicate as in *ne-ma-ra-oka* 'they are coming' > *nemaraokaoka* 'they are coming closer' and *ko-ma-rɛɣa* 'to reject them' > *ko-ma-rɛɣarɛɣa* 'to reject them a little'. In addition, Hyman (2009:180) reports the lexicalized verb root with CV reduplication in Bantu producing CVCVC as in *tetem-* 'tremble, *titim-* 'be frightened', *pepet-* 'winnow', and *tʊtʊm-* 'tremble, quake, thunder'. This seems to be a feature of PB as in the reconstructed **de-demb-* 'swing, hang, float' from **demb-* 'be hung up, hover, swing' and **mu-mun-* 'suck in mouth' from *mʊn-* 'suck'

In Sumbawa, the last part of the base is partially repeated to form partial reduplication. The prefix is not reduplicated making the bysyllabic root reduplicated as in *barema* > *baremarema* 'together', and *bakemes* > *bakemesmes* 'smile'

Zymet (2018) applies Optimality Theory to analyze reduplication specifically of possessives in Maragoli, a Bantu language of the Luyia family spoken in Western Kenya. This study applies the autosegmental phonology theory to account for the morphophonological features of reduplicatives in Runyambo. Reduplication in this study is treated as a form of affixation, which is not unique to this study. Spaelt (1997) suggests that the designated original part is called the base, whereas the copied part is called a reduplicant. He presents cases in which a reduplicant is a prefix, suffix, or infix in different languages. He gives the data from West Trangan, including *ma'nelay* >*ma'nel'nelay* 'sour', and *eta'nira* >*eta'nir'nira* '3s- have diarrhea'. He also gives instances of prefixing and suffixing in Mangap-Mbula, an Astronesian language spoken on Umboi Island off the cost of Papua New Guinea as presented in 4 and 5:

4.   Prefixing
'baada   *bad'baada*   'you(sg) be cring'
'boozo   *boz'boozo*   'very many'
'zwooro *zwor'zwooro*   'you (sg) be stretching'
'wooro   *wor'wooro*   'vines'
Ti-meete *ti-met'meete*   '3pl die'

5.   Suffixing
'posop   *'posopsop*   'you (sg) be finishing'
'molo   *'mololo*   'very long'
Ga'rau   *ga'raurau*   'you (sg) be approaching'
A'mbai   *a'mbaimbai*   'you (sg) be very good'

Similar to other forms of affixation in different languages, reduplication in Mangap-Mbula performs various functions including aspect, intensification, and plurality. Downing (2000) accounts for the reduplication pattern of consonant initial stems, in which the verbal reduplicant is a bysyllabic prefix and ends in a fixed vowel */a/*. He claims that the unmapped portion of the copied stem deletes and the fixed */a/* is inserted by default, as in the derivation of *huma-humira* 'beat for' from *humira*.

Figure 1: The derivation of humahumira 'beat for

a) Input representation   b)   Affixing and copying

σ σ σ   σ   σ σ

h u m i r a   *h u m -i r-a h u m- i r-a*

c)   Left-to-right mapping   d) /a/ inserted by default.

σ σ   σ σ σ   *huma-humira*

h u m-ir-a h u m-i r -a

In the data in Figure 1, *-ira* is deleted leaving only *hum-* as a reduplicant which in Kinande needs to end with */a/* which Downing assimilates with inflectional final suffix */a/* on verbs in Bantu. This vowel is referred to as the linker vowel by Hyman (2009:179). The same process is reported in Kiembu by Wanja (2014) that the extension suffixes attached to the root are not reduplicated as in 6.

6.   a)   *remi-ðia* help someone cultivate' > *remaremiðia* 'help someone to cultivate for a while'
     b)   *Ruɣa-nera* 'cook for one another' > *ruɣaruɣanera* 'cook for one another for a while'
     c)   *Mɛɲɛ-rɛra* 'take care of'   > *mɛɲamɛɲɛrɛra* 'take a little care of'

This type of reduplication seems evident in many Bantu languages. Since almost all of the reported cases are on verbal reduplication, we need comprehensive studies on other word categories to determine whether that is a feature of verbs only or whether it exists in other word categories as well. Because Runyambo is a Bantu language, similar to Kinande and Kiembu, it is likely to have similar features. Therefore, this study examines this feature of reduplication of verbal and other word categories in Runyambo.

Despite being a morphological process, reduplication cannot be discussed without considering its phonology. This is because it involves copying the phonological content of the base, which includes segments and prosody. McCarthy and Kimper (2012) accept that phonological processes are crucial in any discussion of reduplication. He agrees that in partial reduplication, the template is a prosodic constituent syllable (σ) or foot (*ft*), and constraints on these constituents determine how templates are satisfied.

2.2 Autosegmental Phonology Theory

This study employs the autosegmental phonology theory proposed by Goldsmith in 1976. This suggests that phonological representation consists of a string of segments with a string of other elements called outosegments and a specified mapping between them. In this theory, it is argued that outosegmental representation consists of two or more tiers of segments, with each tier consisting of a string of elements that differ with regard to their specified features. These strings include a string of consonants and vowels, referred to as prosodic elements; CV tiers; CV skeleton; and a string of phonemic elements called melody elements.

The principles of CV templates and reduplication as presented by Marantz (1982), were employed. According to this theory, reduplication is understood as the affixation of a CV skeletal morpheme to a stem. The affix has the same melodic features as the copied part of the stem. He argues that the entire phonemic melody of the stem is copied over the affixed C-V skeleton and linked to the C and V slots of the skeleton. The association must follow a simple set of principles governing the association of melodies with CV slots to yield grammatical words. Therefore, he takes affixation as the copying of skeletal morphemes in which the shape of the copied material in reduplication is fixed for the reduplication process. In other words, the shape is independent of the hierarchical structure of the copied morpheme.

In their discussion of CV templates and reduplication, Katamba and Stonham (2006) explain CV templates as a morphological concept developed to analyze reduplication that does not involve constituent copying. The CV template observes the following:

i.   The shape of the reduplicative CV template.
ii.   Nature of reduplication. i.e: prefix, suffix or infix.
iii.   The part of the base copied.
iv.   The direction of mapping.

The following mapping principles in Reduplication are followed in this paper

i.   Introduce an under-specified affix (prefix, suffix, infix)
ii.   Create an unassociated copy of the phonemic melody of the root or stem or base
iii. Associate the phonemic melody copied onto the CV skeleton one-to-one with vowels in V slots and consonants in C slots.
iv.   Erase all the superfluous phonemic materials or CV slots on the skeletal tier, which remain unassociated at the end.

These principles have been applied to different language families. For instance, Indrawat (2008) applies this theory to Indonesian reduplication. Marantz (1982) applies it to different languages including Quileute, Tagalog, and Agta. It is applied by Katamba and Stonham (2006) in Luganda, a Bantu language similar to Runyambo, the focus of this study. Because reduplication in Runyambo applies with other forms of affixation, the procedures of affixation are also included.

3. Methodology
This study is descriptive in nature, because it uses descriptions. Qualitative data were collected through documentary reviews and introspection in which naturally occurring conversations from which reduplicants were collected were recorded. Secondary data were collected from the Runyambo-Kiswahili-English dictionary by Rugemalira (2002), whereas primary data were collected from two native speakers of the language. Grammaticality judgement was applied in collecting primary data. I prepared a list of reduplicated words reflecting the structural properties of the reduplicatives collected from the dictionary and asked the informants to judge teir grammaticality and provide their meanings in Kiswahili language. The participants were selected using snowball sampling. Data were analyzed using tabulation and morphological parsing.

To adhere to research ethics, I acquired a research permit from the Directorate of Research, Innovation, Community Engagement (DRICE) of the Saint Augustine University of Tanzania. Also. the informants were asked to fill in Kiswahili informed consent form before they were involved in the process. Each informant was informed verbally of the objectives of the study and asked to freely participate in the process of data collection that they both accepted. Kiswahili (a Tanzanian national language) was used as a medium of instructions due to the informants linguistic background.

4. Reduplication in Runyambo
In Runyambo, reduplication was found to be a productive word formation process. It affects both long and short roots, resulting in several patterns of CV copying, including the whole stem, CVC, CV, VCV, and CVV. Both partial and total reduplications were encountered in the language. Some reduplicated words are formed from meaningful roots, whereas others are formed from meaningless roots. Some words in Runyambo have reduplicative features, but the parts that form them are not meaningful words in the language. A word such as *mayongoyongo* seems to have formed from *yongo* which is not meaningful in Runyambo. In addition, the words *gure* and *wiita* forming *oruguragure* and *wiwiita* are not meaningful words in the language, despite the fact that they possess the features similar to meaningful words, such as *sekura* forming *sekasekura*, *sindika* forming *sindasindika*, and *-bhuzi* forming *emburabhuzi*. This indicates that Runyambo is rich in reduplication. The other meaningless roots and resulting words are listed in Table 1.

Table 1: Meaningless roots forming reduplicants

Root	reduplicant	Gloss
kooyo	*Omukooyooyo*	Type of three
hugu	*Ecihuguhugu*	Butterfly
	oruhuguhugu	bat
tiri	*Ecitiritiri*	Empty maize cob
ngoro	*Ecingorongoro*	Snail shell
nyege	*Omunyeganyege*	Type of plant found near lakes
nka	*enkanka*	palate
kana	*Orukanaakana*	dewlap
zangano	*Oruzangazangano*	Evening, getting dark, dusk
yongo	*oruyongoyongo*	flamingo
	amayongoyongo	Type of heron
kamusungu	*kamusungusungu*	Crested eagle
runku	*Runkunku*	Seasoned thief

The roots in Table 1 are meaningless in Runyambo. They do not seem to exist as words in a language. Roots such as *yongo* and *hugu* are used to form more than one reduplicant, as presented in the table. However, their reduplication does not differ from

that of meaningful roots. The same forms have been reported in Jordanian Arabic by Abu-Abbas and Alomari (2024), who call the process, doubling a semantically empty unity. In Jordanian Arabic, this involves the doubling of meaningless syllables to produce meaning-bearing words.

It was found that reduplication in Runyambo applies in different word categories including nouns like *mwanamwana* 'type of beans', *omugabhagabha* 'type of herb', *ecicumucumu* 'type of plant,' *omukonikoni* 'witch catcher'. This process is productive for nouns, and results from both meaningful and meaningless roots. The noun stems formed by this means possess all the morphosyntactic features of nouns, including receiving augments and noun-class prefixes. The distribution of nouns in different noun classes is presented in Table 2.

Table 2: Noun classes for nominal reduplicatives

Noun Class	Reduplicant	Gloss
3/4	*Omukooyooyo*	Type of three
	Omunyeganyege	Type of plant found near lakes
	omugabagaba	
	omukonikoni	'witch catcher
5/6	*amayongoyongo*	Type of heron
	amatondotondo	spotted
	Ecibonyabonyo	'fine/ punishment'
7/8	*Ecihuguhugu*	Butterfly
	ecihoorahoore	'crown of the head'
	Ecitiritiri	Empty maize cob
	Ecingorongoro	Snail shell
9/10	*enkanka*	palate
	Emburabhuzi	'a she goat'
	Embirabhire	green sour plantain'
	entaratare	'a real lion'
11	*Orukanaakana*	dewlap
	Oruzangazangano	Evening, getting dark, dusk
	oruyongoyongo	flamingo
	oruhuguhugu	bat
12	*akooyooyo*	Lukeworm temperature
	kamusungusungu	Crested eagle
	akarengorengo	'peak/highest point,
15	*okureereeta*	To wander by

The identified reduplicated nouns belong to noun classes, as indicated in Table 2. Noun classes 1 and 2 seem to lack reduplicants. Most reduplicants are either profoundly singular or plural, and lack their counterparts. For instance, nouns such as *amayongoyongo* 'type of heron' lack the singular, as there is no word *iyongoyongo*. This may be because these birds move into the flocks. The other nouns whose plurals were not found are those in classes 11 and 12. On the other hand, all verb reduplicants can be nominalized through augment *o-* and noun class 15 prefix *-ku-* as in *okubheihabheiha* 'to entice, seduce', *okubhonyabhonya* 'to subject to hardship' *okuhendahenda* 'to cut, snap into pieces'. A discussion of verb reduplication is presented below.

Verbal reduplication is a productive process in Runyambo. Most verbs in Runyambo can be duplicated. Some may form words that do not seem meaningful in the language, but sounds are possible because of the patterns. Similar to reduplicated nouns, reduplicated verbs possess all the features of verbs, including receiving inflectional affixes such as tense, aspect, mood, and verb extensions. The examples are presented in Table 3.

Table 3: Verbal Reduplicants

Root	Verbal Reduplicant	Meaning
rwara	*rwararwara*	Be sickish
iruka	*irukeiruka,*	Ran fast
yanguha	*yangayanguha*	Be fast
guruka	*guraguruka*	Jump aimlessly
rima	*rimaarima*	Dig
sasa	*sasasasa,*	Be unwell
bheiha	*bheihabheiha*	'entice, seduce,
bhonda	*bhondabhonda*	'become bent with edge,
jira	*jirajira*	Be fast/do hurry
fa	*firafire*	Low quality/old/bad

Verbal reduplication affects most verbs in Runyambo, some of which are presented in Table 2. The reduplicated verbs possess all the features of the verbs, including receiving TAM affixes, except for a few whose reduplication includes affixes such as *firafire* which already has a perfective marker *-ir-e*. For instance, there can be constructions such as:

7. a) *Omwana narwararwara*
   omwana ni-a-rwararwara
   o-   mu-ana   ni-a-rwararwara
   AUG-cl.1-child FOC-cl.1-sickish
   'The child is sickish'

   b) *Maria bhakamubeihabheiha*
   Maria bha-ka-mu-bheihabheiha
   Maria cl.2-Pst-OM-entice
   'Maria was enticed by them. ' (lit. Maria enticed her).

   c) *Mukaka nabhondabhoda*
   Mukaka ni-a-bhondabhonda
   Grandmother FOC-cl.1- bend
   'Grandmother is bending'

   d) *Ebhihimba bhifirafire*
   ebhi-himba bhi-firafire
   AUG- cl.8-bean cl.8-bad
   'The beans are bad'

As seen in the examples in 8, reduplicant verbs possess all the inflectional properties of verbs, they agree with the nouns and receive the TAM. They can also receive verb extensions, as in *akabheihabheiwha* 'she was enticed'. Reduplication seems more productive for verbs than for any other words category. This is reflected in many studies of Bantu, including Kiembu by Wanja (2014) and Kinande by Downing (2000).

In Runyambo, it was also found that some adjectives were formed through reduplication. Adjectives are reduplicated to form adjectives and adverbs depending on the affixes they possess. The reduplication of CV adjectives involves affixes and roots. Examples of reduplicated adjectives are presented in Table 4.

Table 4. Adjectival Reduplicants

Adjectival Reduplicant	Meaning
kankurunkuru	Old cereal
Runkunku	Seasoned thief
Mucemuce	Somewhat thin
kacekace	Somewhat small
bhisibhisi	Really uncooked
hangohango	Somewhat big

Table 4 shows that adjectives are reduplicated in Runyambo. For instance, the adjectives *kuru* 'old', *ce* 'small', *bisi* 'uncooked' and *hango* 'big' are reduplicated to form adjectives, adverbs or nouns. For instance, *kankurunkuru* is a noun, *mucemuce* and *bhisibhisi* are adjectives. *Kacekace* can also be used as an adverb to mean merely. Adjectives in Runyambo are reduplicated after the attachment of affixes as is discussed in the next section.

Adverbs can be formed through reduplication of adverbs and enclitics. The adverbs in Runyambo undergo total reduplication to form other adverbs with similar or intensified meanings. Mostly, they add to the intensity of the verb or adjective being modified. The adverbs formed by reduplication are listed in Table 5.

Table 5. Reduplicant adverbs in Runyambo

Root	Reduplicant	Gloss
Kwo	*kwokwokwo*	'really, indeed'
jubha	*jubhajubha*	'shortly (future or past), just soon'
je	*jejeje*	'very well'
hati	*hatihati*	'just now'
kwona	*kwonakwona*	'whatever the case/ whatsoever'
wenka	*wenkawenka*	'lonely'
rumo	*rumorumo*	'seldom, merely'
kuce	*kucekuce*	'rarely, merely'
muno	*munomuno*	'severally/often'
bhuri	*bhuribhuri*	'frequently, regularly'
rumo	*rumo na rumo*	'once in a while/rarely/merely'
bhwangu	*bhwangubhwangu,*	'really quickly/fast'
kace	*kacekace*	'little by little, gradually'
mpora	*mporampora,*	'slowly, silently'
kubhi	*kubhiikubhi*	'somewhat badly'
hace	*hacehace*	'at a somewhat small place'

As reflected by the data in Table 5, some adverbs are derived from the enclitics *kwo* 'indeed' and *je* 'well'. Such enclitics are attached to verbs in order to make them adverbial. In contrast to the other reduplicated adverbs mentioned above, the CV enclitics are in triplicate. This is because they are monosyllabic; thus, they appear better in triplicate.

Some pronouns in Runyambo are reduplicated as in *iweiwe* 'really you' *itweitwe* 'really us' which show insistence. Others include

8.   a)   *Weenaweena* 'anyone'
        b)   *hoonahoona* 'any where'
        c)   *bhoonabhoona* 'any of them'

The ideophones in Runyambo are formed through reduplication, some copying part of the head, and others being new formatives. Rugemalira (2005:108) argues that ideophones are formed through reduplication while others are onomatopoeic, with two arbitrarily formed. Ideophones semantically designate 'very' and 'really'. Such ideophones occur with verbs as in (9).

9.   Yera *peepeepe*   'be very white'
        Iragura *sirisiri*   'be very black'
        Tukura *tukutuku*   'be very red'
        Fuka *fukufuku*   'be very cold'
        Nunka *cuucuucu*   'smell very bad'
        Hora *horohoro*   'be very cold'
        Nura *nurinuri*   'be really sweet'
        Yoca *bhugubhugu*   'be very hot'
        Yera *tiitiiti*   'be very white'
        Iragura *sisisi*   'be very black'
        Yera *pepeepe*   'be very black'
        Guma *guruguru*   'be very hard'

Among the ideophones in (9) *tukutuku, nurinuri, fukufuku* and *horohoro* are formed by reduplicating a part of the verb that they intensify. Mpobela and Lusekelo (2019) argue that most adjectival concepts in Runyambo are presented through verbs. Others seem to have been formed arbitrarily, without coping with any part of the root. Consequently, *siri and bhugu* are neither meaningful words in Runyambo nor do they form a part of the verbs intensified by ideophones.

Generally, reduplication is very productive in Runyambo and affects almost all word categories in the language, including nouns, verbs, adjectives, adverbs, pronouns, enclitics, and ideophones. They exhibit unique morphological behaviors, as discussed below.

### 4.1 CV Template and Reduplication in Runyambo

Reduplicants differ depending on the root of the reduplicated word. In most cases, the reduplicants are bisyllabic. Most reduplicants are attached as prefixes to word structure. Language reveals both total and partial reduplication. Total reduplication involves copying the entire stem, as in the structures in (10).

10.   *giragira*   'be fast'
        rwararwara   'be sickish'
        Mucemuce   'somewhat small'
        kacekace   'slowly'
        bhwangubhwangu   'fast'
        mporampora   'slowly'
     Weenaweena   'anyone'
        hoonahoona   'any where'

In the examples in (10), the whole stem is copied, and in the present case, the stems are bisyllabic, resulting in an acceptable structure of reduplicant affixes, which are mostly bisyllabic in Runyambo. From these examples, it can be argued that reduplication occurs in almost all word categories in a language. Nouns are reduplicated as in *mwanamwana* 'a kind of beans,' *omugabhagabha* 'a medicinal plant' and *amayongoyongo* 'heron'. Verbs are also reduplicated as in *jirajira* 'be fast (work)', *rwararwara* 'be sick sickish', *sasasasa* 'be somehow sick, in pain', *irukeiruka* 'be fast'. Adjectives like *mucemuce* 'somehow thin', *mutomuto* 'somehow young', *kankurunkuru* 'old cereals' are also formed through total reduplication of stems. Adverbs *bhwangubhwangu* 'fast', *mporampora* 'slowly', *kucekuce* 'merely'; pronouns like *iweiwe* 'really you', *itweitwe* 'realy us', *imweimwe* 'really you', and quantifiers like *hoonahoona* 'any where' and *weenaweena* 'any person' are other instances of reduplication in Runyambo.

The structure of the nominal reduplicants in Runyambo shows that, in most nouns, augments, and noun-class prefixes are attached after reduplication. This is evidenced in nouns such as *omugabhagabha* in noun class three and *amayongoyongo* in noun class 6. *Mwanamwana* is different from the two, as it is the name of beans, and it is suggested by Mpobela (2024) that names lack some noun properties, including augments. Therefore, in the case of *mwanamwana*, both the root *-ana* 'child'and noun class one prefix *-mu-* are reduplicated, leaving out only the augment. The structure of *omugabhagabha* can be represented in CV templates as follows:

Figure 2. The derivation of omugabhagabha 'a medicinal plant'
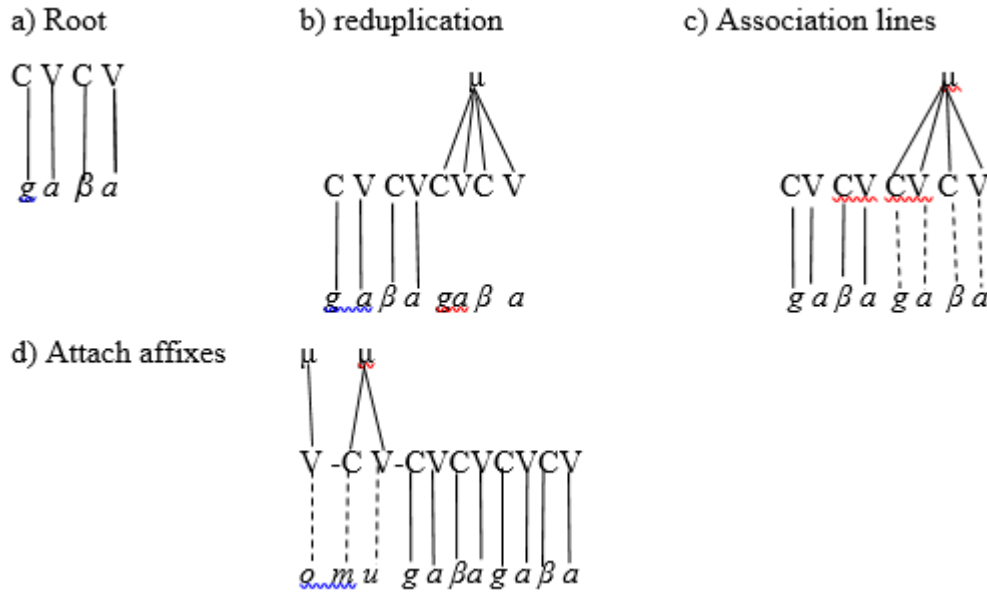
Output: *omugaβagaβa*

The example in Figure 2 indicates the morphological processes involved and that reduplication occurs before the attachment of an augment and noun class prefix. This also happens with verbs such as *sasasasa* which can also receive affixes after reduplication, as in *nasasasasa* 's/he is somewhat in pain' and *narwararwara* 'she is sickish*. Such verbs however cannot receive verbal extension, reflexive affixes and other inflectional affixes than the focus *ni* and SM.

In the past, one can say, for instance, *akabha narwararwara* 'she was being sick several times. Since verbs in Runyambo take the final vowel as an obligatory affix, the total reduplicated verbs take the root together with the final vowel. I take reduplicant as a suffix because the noun class prefix is believed to attach more to the stem than the reduplicant morpheme. However, in total reduplication, it is difficult to determine which part is the stem and which part is the reduplicant. In Runyambo, words with a single syllable like *-ce* 'small' takes affixes before reduplication as in *mu-ce-mu-ce* 'some how small' *ka-ce-ka-ce/ku-ce-ku-ce* 'merely'. This behavior is also reflected in adverbs such as *bhwangubhwangu* from *-angu* 'fast'.

There are a few instances of total reduplication of polysyllabic roots. Adverbs like *kabhirikabhiri* 'repeatedly', *ijweriijweri* 'few days ago' and *bhweigorobhweigoro* 'evening before darkness' are formed through total reduplication of trisyllabic roots. However, this is not a productive process in Runyambo.

In Runyambo, patial reduplication was observed, in which only a part of the root is copied. In most cases, the vowel *-a* is attached to the CVC-copied part. Similar to total reduplication, the prefixes are not copied. This leads to the argument that affixes are attached after the reduplication process. Reduplicants in partial reduplication are attached as prefixes. The default inflectional final vowel suffix *-a* as suggested by Hyman et al. (1998), is attached to the reduplicated CVC affix to make it bisyllabic, as in the nouns in (11).

11. *Emburabhuzi*   *e-m-bhur-a-bhuzi*   'a she goat'
    Embirabhire   *e-m-bhir-a-bhire*   'a green sour plantain'
    entaratare,   *e-n-tar-a-tare*   'a real lion'
    Oruguragure   *o-ru-gur-a-gure*   'cock crests
    omunyeganyege   *o-mu-nyeg-a-nyege*   'type of plant found near lakes'
    Acihoorahoore   *e-ci-hoor-a-hoore*   'crown of the head'
    Ecibhonyabhonyo   *e-ci-bhony-a-bhonyo*   'fine/punishment'
    omukaraakare   *o-mu-kar-a-kare*   'castor oil tree'
    entokatoke   *e-n-tok-a-toke*   'sour banana resembling cooking banana. '

The examples in (11) show how partial reduplication occurs in some nouns in Runyambo. The CVC root is copied and the vowel -*a* is attached to it. This seems to be a feature of the verbs in Ndebele. Hyman, et. al (1998) argue that the CVC verb roots in Ndebele reveal this feature, whereas longer roots do not. This in Runyambo is reflected in nouns as well, in which case the CVC part of the noun root is copied. This is unique in Runyambo, as the final vowel -*a* seems to be the default on reduplicant nouns. In (a), the reduplicant ends with /r/ instead of /z/ which is observed in the root. This is probably because the proto term for 'goat' as reconstructed by Guthrie was -*budi* and most of the */d/s became /r/s in Runyambo, and final /i̧/ and /u̧/ changed the preceding consonants into /z/ through spirantization. This may explain why the attachment of -*a* makes it /r/ hence, *emburabhuzi*. In the remaining nouns, the last consonant is deleted in the reduplicant and instead *a*- is attached. The derivation of these words are shown in Figure 3.

Figure 3. The derivation Embirabhire 'a green sour plantain'
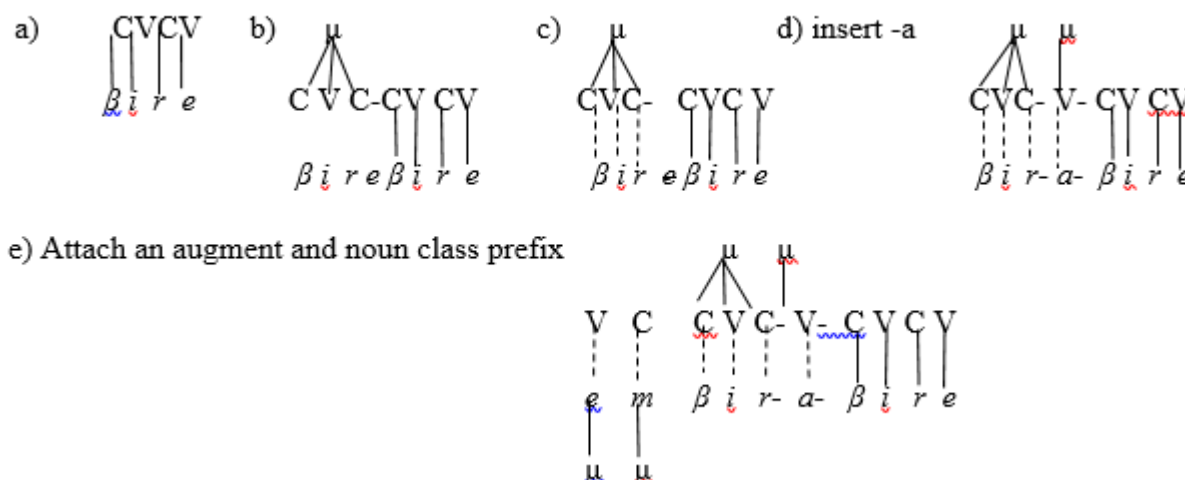
Output *embiraβire*

In Figure 3, the word *embiraβire* has to pass through stages in which both morphological and phonological processes are involved. The CVC part of the root is copied, resulting in the deletion of the final vowel -*e* of the root. After deletion, the default inflection final vowel suffix -*a* is attached to the copied CVC-reduplicant, making it CVCV, which is an acceptable reduplicant in Runyambo. The augment *e*- and a noun class 9 prefix -*m*- are then attached to complete the structure. The attachment of -*m*- changes the fricative /β/ to /b/ resulting in an output, *embiraβire*. This seems to be a process involving all nouns of this kind. In other words, nouns with CVCV roots undergo this reduplication process when they undergo partial reduplication.

This process is also reflected in verbs in which the verb root for CVC- verbs is copied, living out the extensions that are attached as suffixes to the reduplicated word forming an output. Just as in nouns. The default final vowel -*a* is attached to the CVC root to make it bisyllabic. The reduplicant prefix receives -*a* and in this case forms a possible root in the language, as in (12).

12.   *Bhurirwa*   'loose something; *bhur-a-bhurirwa* 'suffer, be bewildered'.
        Bhuza   'loose something'   *bhur-a-bhuza* 'bewilder, pester with too many demands'.
        Rimira   'cultivate for' *rim-a-rimira*   'cultivate for/at severally'

Bur- and *rim-* in examples in (12) are possible roots in Runyambo. The suffixes are not copied in this form of reduplication; only the root is copied and the default inflectional final vowel is inserted after reduplication. Just as affixes are attached after reduplication in nouns, verbs also exhibit the same traits. This happens with CVC- verb roots. *Bhuza (βur-i-a)* 'loose something' is a causative verb whose final consonant has been changed from /r/ to /z/ because of the causative -*i*. Therefore, not all final affixes are copied but only -*a*, and affixes like *e, ire* are not copied except in a few instances of the C- verb root in which -*ir*- is copied. We can generally say that this is insertion rather than coping, as reflected in the long verbal roots and other word categories.

This result contrasts with the findings of Hyman et al. (1998). Long verbs form reduplicatives like CVC verbs. They argue that for a CVC-a reduplicant to be possible, a word that should be copied should be a possible root in a language that makes the long roots in Ndebele copy the first two syllables of the verb root. Reduplicants of this type are listed in Table 6.

Table 6: CVC-a verbal reduplicants in Runyambo

Root	Gloss	Reduplicant	Gloss
Kurura	pull	*kurakurura*	Pull fast
Yanguha	Be fast	*yanganyanguha*	Be very fast
Sekura	hit	*sekasekura*	Hit severally
Kambura	Demorish	*kambakambura*	'pull down violently
Yerura	winnow	*yerayerura*	Winnow fast
Rahuka	Be fast	*raharahuka*	Be very fast
Bharura	Bust open	*bharabharura*	Bust open severally
Cumita	pierce	*chum-a-cumita*	Pierce severally/violently
Sumika	tie	*sumasumika*	Tie severally/loosely
Rundaana	collect	*rundarundaana*	Collect fast
Fumuka	Be holed/torned	*fumafumuka*	Be holed/torned severally
Faatikana		*faatafaatikana* ,	'(affair) fail
Gutura	Cut/break	*gutagutura*	'cut in pieces,
Teruka	'fall off a balancing position,	*terateruka*	'be unreliable/inconsistent
Bharuka	Be bust open	*bharabaruka*	Be burst open severally

The data in Table 6 present the long verbal stems in which only the CVC- part of the root is reduplicated, and just as with nouns and bysyllabic verbs, the default inflectional final vowel suffix *-a* is attached to the copied CVC- reduplicant, forming a bisyllabic reduplicant that is attached as a prefix. This differs from other Bantu languages as claimed by Hyman et. al (1998) to copy the bisyllabic part of a stem if the verb is polysyllabic. The copied part of such verbs does not take default *-a* as only the possible roots can take the structure of CVC-*a*. In Runyambo, CVC-*a* is possible in polysyllabic verbs, as shown in (13).

13.   *Sumika*   *sumasumika*   'tie loosely'
        Cumita   *cumacumita*   'piece fast/severally
        Bharura *bharabharura*   'bust open severally'
        Rahuka *raharahuka*   'be very fast'
        Yerura   *yerayerura*   'winnow fast'

The CVC part of the verb stem is copied as in *sum-* in *sumasumika*, *cum-* in *cumacumita*, *bhar-*in *bharabharura*, *rah-* in *raharahuka,* and *yer-* in *yerayerula* in (13). Similar to nouns and bisyllabic verbs, *-a* is inserted after deletion of the remaining part of the stem after reduplication. This renders the reduplication of Runyambo unique to polysyllabic verbs. The derivations of these verbs are shown in Figure 4.

**Figure 4: The derivation of sumasumika 'tie severally/loosely'**
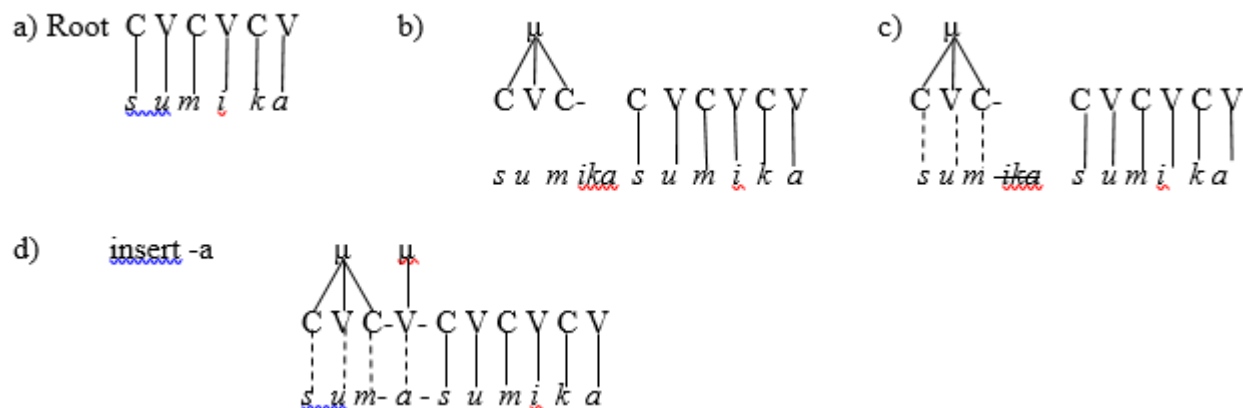
Output: *sumasumika*

The derivation in Figure 4 presents four stages that are less than the five stages found for nouns that must be formed with an augment and a noun class prefix. Reduplicated verbs in Runyambo can take all the verbal inflectional categories as argued earlier.

Some instances of special forms of reduplication have also been reported. For instance, the noun *omwana* 'child' can be reduplicated to *omwanayana* 'a real child'. In this case, it can be argued that the VCV- root *-ana* is copied and a glide */j/* is inserted to fulfill the structural requirements, resulting in */omwanajana/* (*o-mu-ana-j-ana*). The other unique form is the verb *kwezigaziga* 'delay due to no good course' in which the initial vowel of the root *-e* is not copied. In this form, it is assumed that the reduplicant is attached as a suffix in which the first vowel is deleted, as shown in Figure 5.

Figure 5a: The derivation of ezigaziga 'delay due to no good course'
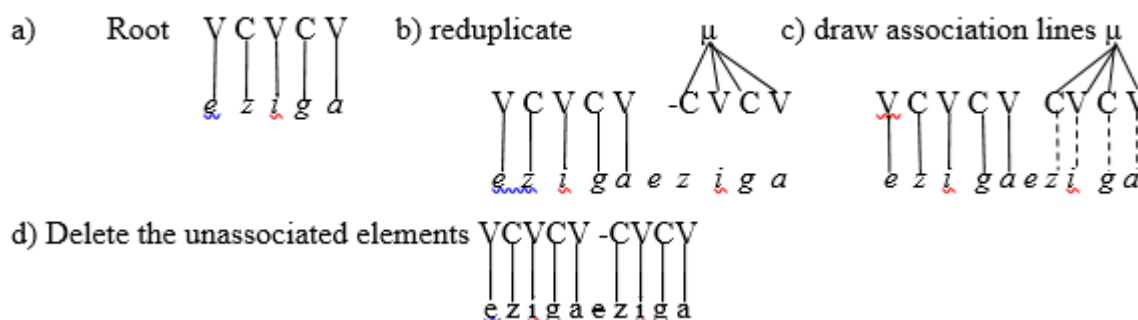
Output: *ezigaziga*

Figure 5a presents the derivation of the verb *-ezigaziga* from the root *eziga*. Reduplicated words in Runyambo behave like other stems and receive all possible inflectional processes. Some affixes can be attached to a reduplicated word, and when this happens, morphophonological processes, including vowel elision, spreading, and glide formation, apply where necessary. For instance, if the reduplicant starts with a vowel such as *ezigaziga* and the vowel in the attached prefix has a high vowel /i/ or /u/, it is linked to the previous C slot. The initial vowel of the reduplicant is then linked to the V-slot originally associated with the high vowel, as shown in Figure 5b.

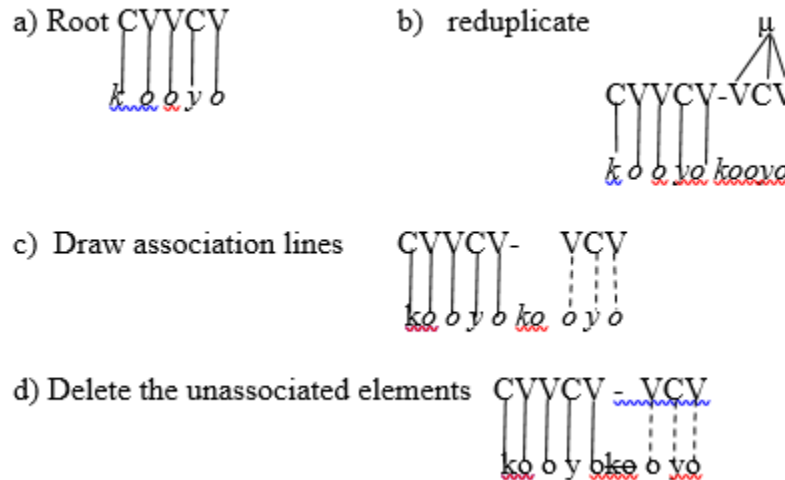**Figure 5b: Attachement of affixes on *-ezigaeziga***
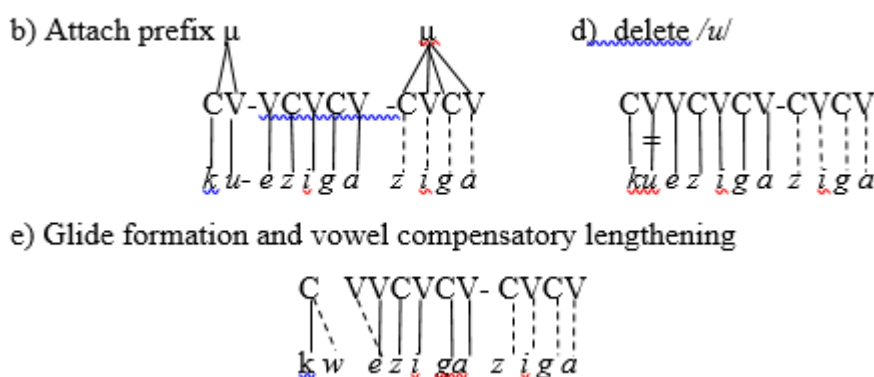
Output *kwezigaziga*

In the derivation in Figure 5b, the combination of the high back vowel */u/* and mid front vowel */e/* results in a glide */w/* making the consonant of the prefix *ku-* to spread and the vowel */e/* lengthen to accommodate the features of the two vowels */u/* and */e/*. Only one instance of this type has been reported.

The other reduplicants found in the language include the VCV- copy involving total reduplication as in *ma-aya-aya* 'late high rains, *o-ru-oyo-oyo* 'appetite, and partial reduplication as in *o-mu-kooyo-oyo* 'type of tree'. This process is unique and less productive. In nouns such as *mayaaya* and *omukooyooyo* the roots seem to be meaningless, while in *oruoyooyo,* the root *-oyo* 'heart' is meaningful, as it can be found in *omwoyo, emyoyo* etc. The derivation of omukooyooyo is shown in Figure 6a.

Figure 6a: The derivation of *omukooyooyo* 'type of a tree'

a) Root CVVCV — kooyo
b) reduplicate CVVCV-VCV — kooyo koovo
c) Draw association lines CVVCV- VCV — kooyo ko oyo
d) Delete the unassociated elements CVVCV - VCV — koo y oke o yo

Output: *kooyooyo*

The resulting reduplicated word in Figure 6a is a noun, and like other nouns in Runyambo, it must belong to a noun class where the augment -o and noun class three (plants) prefix -mu are attached. The attachment is shown in Figure 6b.

Figure 6b: The attachment of prefixes on *kooyooyo*

Attach Augment and noun class prefix — VCVCVVCV-VCV — omu koovo oyo
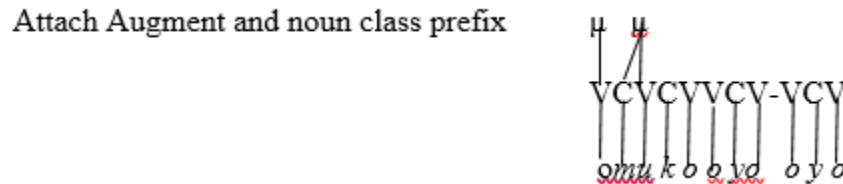
Output: *Omukooyooyo*

Similar to other stems in Runyambo, reduplicated words function as inputs for other word formation processes. Inflectional affixes of tense, aspects and noun class affixes are attached to the reduplicated word to complete the structure as shown in Figure 5b and 6b. This is because such affixes are not part of the reduplicant. These are attached after the reduplication process.

It was also found that there are some instances of single-syllable redupication in which a CCV or CV syllable is copied. This is also found in few instances including in words whose roots are meaningful as *mabhwabhwa* 'dog's teets' from -*bhwa* 'dog' *orucaaca* 'down/day break' from -*ca* 'become down/morning', *orujwajwa* 'saliva/dribble' from *jwa* 'leak' and *omwongongo* 'type of pumpkin' from -*ongo* 'pumpkin'. On the other hand *enkanka* 'pilate, derives from a meaningless root *enka* which is not a meaningful root in Runyambo. The words in this group are nouns.

On the other hand, short verbs, that is, C- reduplicate in a special way, as b the perfective suffix -*ir-e* is attached to the root before reduplication, resulting in CVCV reduplicants such as CVC verbs. Two verbs of this kind were found including *f-* 'die' and *j-* 'go' as in (14).

14.   *Abhihimba bhifirafire*
        Akandetera ebhitoce bhifirafire
        Omwipipa ameizi gajirajiremu

The examples in (14) present the fact that although less productive, the reduplication of C- verb is unique as it allows affixes to be copied. This differentiates it from other forms of verbal reduplication discussed above, in which only roots or parts of roots are copied. The verb f- 'die for instance receive the perfective suffix -*ire* resulting into -*fire* 'dead' on which the normal verbal reduplication process of the CVC-a is performed.

Just like C- verbs, the CV adjectives like *ce* 'small' requires the affixation before reduplication in which the affixed form is reduplicated as in *muce* 'small/thin (person)' to *mucemuce* 'somewhat thin' *bhacebhace* 'somewhat few people'. In these forms,

the adjective *-ce* receives noun class one and two agreement patterns before being reduplicated. Such an adjective can receive as many noun class agreement prefixes as possible depending on the nouns with which it appears.

Adverbs, such as adjectives, are formed differently depending on their length. The CVCV roots undergo total reduplication, as in *bhuribhuri* 'every time' and *hatihati* 'just now. The VCV/VCCV roots receive affixes before reduplication as follows:

15.   *a)*   *Ku-ona*   *Kwonakwona*   'anyhow'
       b)   *U-enka*   *wenkawenka*   'alone. Lonely'
       c)   *Ru-mo*   *rumorumo*   'merely'
       d)   *Ku-bhi*   *kubhiikubhi*   'somewhat badly'

The words in (15) undergo total reduplication. Reduplication of VC roots, as in i) and ii), shows that the prefixes that occur with them, especially those with high vowels, become glides. Cook (2013) reports the same forms in Zuru, which makes it different from Ndebele. This shows that reduplication as a process may be universal, but its forms and procedures are not universal as they differ from one language to another.

The other instance of reduplication in Runyambo was found on ideophones like *je* 'well' and *kwo* 'really' from which we get *jejeje* 'well' and *kwokwokwo* 'really/indeed'. Three copies of an ideophone are found in the reduplicated word. The same happens with enclitics where we have *sisisi* 'really black.'

The other instances of reduplication involve lengthening of vowels in a reduplicant. This is a partial reduplication in which a final vowel of the copied CVCV reduplicant is lengthened as in *oruhuguuhugu* 'bat', *ecirokooroko* 'dewlap, adams apple', *ecinyimaanyími* 'shadow' and *orukanaakana* 'dewlap'. The derivation of these examples is shown in Figure 7.

Figure 7: The derivation of Oruhuguhugu

There was no deletion of any sound. Reduplication is total with lengthening of the vowel, which makes it unique. The same can be said about *orucaaca* in which the vowel *-a* on a copied *ca* is lengthened. The other reduplicant found in this group is the adverb *kubhiikubhi* 'somewhat badly' which is derived from an adjective *bhi* 'bad'.

CVV reduplicants have also been encountered in Runyambo. Three words formed by reduplicating a CVV part of the root were found including, *wiiwiita* 'cause a sharp sensation especially in the mouth', *reereeta* 'wonder by' and *kuukuubha* 'be inflexible'. While *kuukuubha* and *reereeta* have meaningful Runyambo roots *kuubha* 'polish, rub' and *reeta* 'bring' respectively, *wiiwiita* seems not to have a root *wiita* which is not meaningful in Runyambo. Other examples include *tetema* 'tremble' and *titira* 'be cold and wet'.

5. Conclusion
Generally, reduplication is among the productive word formation processes in Runyambo, as in other languages, as discussed in the literature. This affects words in categories such as nouns, verbs, adjectives, adverbs, pronouns, ideophones, and enclitices. Interestingly, the patterns were similar across word categories. For instance, long verbs and nouns are reduplicated in a similar manner by coping the CVC and attaching the suffix *-a* to the copy, making it CVC-a. Both total and partial reduplication of meaningful and less meaningful roots are found in the language. The reduplication of part of the root without affixes seems to be productive for the reduplicants, including the roots and affixes, which were only found to occur with C-verbs, CV adjectives and adverbs. The CV template and reduplication principle is applicable as presented by Marantz (1982). This study calls for more research on reduplication in other languages from Bantu and non-Bantu families.

Author contribution statement

Lea Mpobela: Formulated the idea and created the topic
                                   Conducted a research and investigation
                                   Analysed data
                                   Designed the methodology
                                   Planned and executed research activity
                                   Verified the results and other research outputs
                                   Wrote the original draft of the research paper
                                   Review and edits the paper and works on all the comments from the reviewers

About the author: Lea Mpobela, a senior lecturer at Saint Augustine in Tanazania, holds a doctoral degree from the University of Dar es Salaam. For the last six years, she has taught graduate courses and supervised graduate linguistics students. Her publications are based on morhosyntax, morphology, historical linguistics, and onomastics.
ORCID : Lea Mpobela http://orcid.org/0000-0002-3695-1110

References

[1]   Abu-Abbas K. H., and Alomari, A. R., (2024). Morphological Reduplication in Jordanian Arabic. Form and Function. *Congent Arts and Humanities,* 11(1), 1-13. https://doi.org/10.1080/23311983.2024.2353985

[2]   Abu-Mansour, M. H., (2015). A study of internal reduplication in Makkan Arabic. *Journal of Asian and African Studies,* 90, 29-60

[3]   Alsamadani, M., & Taiban S., (2019). Types and functions of reduplication in Palembang. *Journal of Southeast Asian Linguistics Society,* 12(1), 113-142. http://hdl.handle.net/10524/52447

[4]   Applegate, R., (1976). Reduplication in Chumash. Margaret Langdon and Shirley Silver (eds). *Hakon studies,* 271-283. The Hague: Mouton

[5]   Aziz Zulfadi A., & Nolikasari V., (2020). Reduplication as a word formation process in the Jamee language: A variety of Minang spoken in Sowth Aceh. *Studies in English language and Education,*7 (1), 43-54. https://doi.org/10.24815/siele.v7i1.15693

[6]   Boakye E. B., (2015). Reduplication in Akan. Unpublished M.A thesis. Nerwegian University of Science and Technology.

[7]   Brassil D., (2003). Patterns in Kirundi reduplication. *San Diego Linguistic Papers,* 1, 43-82. https://escholarship.org/uc/item/55x0q967

[8]   Crystal D., (2008). *A dictionary of Linguistics and Phonetics,* (6th ed.). Blackwell Publishing Ltd.

[9]   Dahlstrom, A., (1997). Fox (Mesquakie) reduplication. *International Journal of American Linguistics,* 63(2), 205-226. http://www.jstor.org/stable/1265918

[10]   Downing L. J., (2000). Morphological and prosodic constraints on Kinande verbal reduplication. *Phonology*, 17, 1-38. https://doi.org/10.1017/S0952675701004146

[11]   Fredinand A., (2021). Analysis of morphological reduplication in Luganda lexical categories. *Journal of University of Namibia Language Centre,* 6(2), 70-77. https://journals.unam.edu.na/index.php/JULACE/article/view/1698

[12]   Hyman L. M., (2009). The natural history of verb-stem reduplication in Bantu. *Morphplogy,* 19, 177-206. https://doi.org/10.1007/s11525-009-9140-y

[13]   Hyman L. M., et.al., (1998). Morphosyntactic correspondence in Bantu Reduplication. K. Hanson and S. Inkelas, (Eds.). *The nature of the word. Essays in Honour of Paul Kiparsky,* 273-310. John Benjamins.

[14]   Indrawat N. K. M., (2008). The application of the autosegmental phonology theory to the Indonesian Reduplication. *Linguistika,* 15(29), 232-244.

[15]   Inkelas S., & Downing, L. J., (2015). What is reduplication? Typology and analysis part 1/2: the typology of reduplication. *Language and Linguistics Compass,* 9(12), 502-515. https://doi.org/10.1111/lnc3.12166

[16]   Isimiati. S., (2021). Types, functions and morphological process of reduplication in Sumbawa Besar dialect. *Journal of languages and Language teaching,* 9(4), 471-479. https://doi.org/10.33394/jollt.v%vi%i.4257

[17]   Kager, R., (1999). *Optimality theory.* Cambridge University press.

[18]   Katamba F., & Stonham, J., (2006). *Morphology* (2nd Ed.). Red Globe Press.

[19]   Maduagwa G. O., (2012). Re Reduplication in Tiv. *Multidisciplinary Journal of Empirical Research,* 10(1), 1-6.

[20]   Marantz, A., (1982). Re Reduplication. *Linguistic inquiry,* 13(3), 435-482. https://www.jstor.org/stable/4178287

[21]   Masahiko, N., (2011). Reduplication in Tok Pisin: Forms, functions and Uses. *Asian and African Languages and Linguistics,* 6, 61-70. https://api.semanticscholar.org/CorpusID:127679062

[22]   Mpobela, L., & Lusekelo, A., (2019). Properties of the adjective category in Runyambo. *South African Journal of African Languages,* 39(3), 1-10. https://doi.org/10.1080/02572117.2019.1672335

[23]   McCarthy, J. J., & Kimper W., (2012). Reduplication in Harmonic Serialism. *Morphology,* 22, 173-232. https://doi.org/10.1007/s11525-012-9203-3

[24]   Paudyal, R. R., (2023). Reduplication in Newer language: An empirical study. *A peer Reviewed Journal of Interdisciplinary Studies,* 9(1), 92-105. https://doi.org/10.32674/jise.v9i1

[25]   Raimy, E., (2000). *The Phonology and morphology of Reduplication.* Mourton De Gruyter.

[26]   Roberts J. R., (1991). Reduplication in Amele. *Papers in Papuan Linguistics,* 1, 115-146.

[27]   Rugemalira J. M., (2002) *Runyambo -Kiswahili-English and English-Runyambo Kiswahili Lexicon.* Languages of Tanzania Project.

[28]   Spaelti P., (1997). Dimension of variation in multi-parttern reduplication. PhD thesis. University of Califonia.

[29]   Tameemi, I. M., & Farhan M. A., (2018). Identifying the pragmatic meaning of reduplication in some selected English sentences. *International Journal of Management and Applied Science.* 4. (12), 86-88.

[30]   Wanja N. P., (2014). A study of morphological reduplication in Kiembu. Unpublished MA dissertation. University of Nairobi.

[31]   Zymet J., (2018). A case for parallelism: reduplication - repair interaction in Maragoli. *UC Berkeley Phonology Lab annual Report.* 302-342.