

# Reduplication and Phonological Copying in Lukisa Dialect

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## Abstract

Reduplication is a grammatical process that occurs in human languages in which a whole linguistic constituent or part of it is repeated to form a new constituent. Reduplication can be both a morphological and phonological process of forming a new compound word by repeating all or part of a word. The reduplication involves a double selection and insertion of morphological constituents that agree in their semantic and syntactic specification such as root or stem. Phonological duplication is where the copying picks the closest phonological input restricted to cases of phonological necessity such as a vowel or consonantal sound and copies it without calling for semantic change of the reduplicant. Lukisa, a Luhya dialect is expected to exhibit a wide range of patterns in reduplication which varies from one element being copied to an entire phrase. Although linguistic forms of reduplication have been explored at lexical and functional levels, there is need to validate phonological copying as a limitless linguistic resource and an integrated facility in language. Therefore, the objective of this study was to describe the manifestation of phonological copying in reduplication in Lukisa dialect through phonological processes such as: vowel lengthening, vowel change and change in syllable weight. Inkellas and Zoll (2005) Morphological Doubling Theory, MDT was adopted for this study where the aspect of phonological copying whose scope is limited to narrow sets of contexts restricted to cases motivated by phonological necessity as what is copied is either a single vowel, consonant or syllable with a possible phonological modification of either or both the constituents. This phonological copying occurs as a side effect of semantic identity which postulates that reduplication results when morphology calls twice for a constituent of a given semantic description with a possible phonological modification of either or both constituents.

**Keywords:** Reduplication, Phonological Copying, Morphological Doubling

## 1. Introduction

This research paper attempts to explain the phonological processes that accompany reduplication in Lukisa dialect. The lexical items reflecting the phonological processes that accompany reduplication in Lukisa were analyzed in order to demonstrate the interaction between duplication and the phonological processes that include: vowel lengthening, vowel change and change in syllable weight.

The data analysis was done basing on Inkellas and Zoll (2005) Morphological Doubling Theory. Although the defining property of reduplication in MDT is semantic rather than phonological identity, there are to be sure phenomena that can be called reduplicative in that a phonological element is doubled but which is not amenable to morphological doubling analysis, in part because the doubled element is something very small, like a single consonant or vowel and in part because the doubling has purely a phonological purpose rather than being associated with semantic change.

MDT sees the role of phonological copying and its scope to be limited to narrow sets of contexts. Phonological constituents copying is restricted to cases motivated by phonological necessity. It is therefore the pursuit of this study to delve into phonological constituent reduplication in Lukisa dialect with evidence of motivation of doubling out of phonological necessity.

## 2. The Luhya Language Group and Lukisa Dialect

According to Wambunya (2007), Luhya is a Bantu language of Western Kenya. Their migration to the current Luhya land (a term of endearment referring to the Luhya primary place of settlement in Kenya after the Bantu expansion dating back to the 1450's). further to this, Luhya refers to both the people and their language. There are 19 sub tribes that make up Luhya: *Ababukusu, Abidakho, Abashisa, Abisukha, Abakabarasi, Abanyole, Abasamia, Abatiriki, Abawanga, Abakhayo, Abawanga, Abamarachi from the West, Abanyala, Abalogoli, Abanyala, Abamasaba, Abatura and Abatachoni* and *Abatsotso*. Musimbi (1989) observes that the initial traditional settlement of the Luhya was the Western Province of Kenya, comprising of the current Kakamega, Busia, Bungoma and Vihiga counties although there is a spill over to Trans Nzoia and Uasin Gishu counties.

Lukisa is spoken by Abashisa of Khwisero Sub County, Kakamega County, Western Kenya. Khwisero sub county is divided into two administrative units: Khwisero East and Khwisero West.

## 3. Literature Review

Okello (2007) studies reduplication in Dholuo: A Morphological perspective. The study dwells on the phonological processes of reduplication in Dholuo in an effort to establish the linguistic elements affected by reduplication in Dholuo and to what extent the reduplication interacts with morphology and phonology. The study reveals that there are some processes on vowels which are perceived as cases of phonological copying. The processes include: vowel deletion, vowel lengthening, vowel harmony and glide formation. Examples of vowel lengthening in Dholuo are:  $k\epsilon:m \rightarrow k\epsilon m-k\epsilon:m$  "bitter or sour",  $ti:n \rightarrow tin-ti:n$  "rather small or smallish". Okello (2007) observes that the phonological shape of the first syllable in the reduplicative is different from that of the second syllable due to the stress placed on it. The second syllable in Dholuo is stressed hence a heavy syllable while the first syllable is light, not stressed.

On vowel deletion, Okello (2007) observes that it involves loss of segments. This leads to compensatory lengthening of the remaining vowels as in:  $le + aciel \rightarrow la:ciel$  "one exe". In the reduplicative, the mid front vowel segment /e/ in the daughter input is deleted in the reduplicative  $la:ciel$  "one exe". As a consequence, the low central back vowel /a/ in the reduplicant construction is lengthened to compensate for the loss of /e/ through deletion. This was for the interest of this study as the researcher sought to investigate the linguistic aspect of reduplication and the phonological duplication process involved in Lukisa dialect. The point of divergence from this study was that although Okello's (ibid) based her study on Dholuo, a Nilotic language which has an isolating morphology and majorly used MDT, the current study was on Lukisa, among the Luhya Bantu speakers.

Oduor (2002) dwells on the syllable weight and its effects on Dholuo phonology. The study addresses reduplication in terms of syllable weight. The study majorly looks at reduplication as the repetition of syllables basing on the Base Reduplicant Correspondence Theory (BRCT). This was of interest to the current study as the researcher attempted to assess and analyze the phonological effects of syllable weight in Lukisa dialect basing on the phonological tenet of the Morphological Doubling Theory. The point of divergence between Oduor's (2002) study and the current study is that the former was on Dholuo, an isolating Nilotic language based on BRCT while the current study was on Lukisa dialect of Luhya, an agglutinating language based on MDT.

Nyaga (2014) identifies the phonological aspects of vowel harmony between the vowel in the root and that in the infix, vowel lengthening especially in the penultimate position to connote emphasis and vowel substitution whereby there are case of a high vowel being substituted with a low vowel and vice versa in Kiambu. The study also revealed that the reduplication also affected tone words in Kiambu where tonal patterns changed in reduplicated forms. As much as Nyaga (ibid) applied the MDT, the present study applied the phonological copying tenets of the MDT to explore the phonological copying processes that accompany reduplication in Lukisa dialect such as vowel lengthening, change in syllable weight and vowel change basing on the phonological tenet where phonological copying makes predictions about the potential phonological modifications of elements involved and what is copied is proximal, the closest eligible elements such as a vowel, a consonant or a syllable in the phonological environment.

## 4. Methodology

The study adopted a descriptive research design. Stack and Hockings (1999) observe that qualitative research employs primarily qualitative techniques and involves discovering a variable and attempting to define or describe it. According to Mugenda and Mugenda (1999), a descriptive research design aims at describing a particular state of affairs or an incident and involves collecting data that attempts to describe human behavior, attitudes and values.

The study population comprised of Lukisa words sampled from Lukisa dialect speakers through Focus Group Discussions. Native speaker intuition of the principal researcher was also applied. With the use of reduplication data extraction guide, the researcher who is a native speaker of Lukisa used his competence in the language to generate and extract relevant data.

According to Milroy (1987), a researcher studying a native language can directly assess the language by means of their own linguistic competence based on Chomsky's view on competence and grammatical knowledge. According to Chomsky (1957:12), "the part of a speaker's knowledge of his language consists of knowing the lexical items of the language and based on his knowledge, the native speaker will be able to differentiate what is grammatical and what is not. To avoid the risk of native speaker intuition bias, the researcher got complimentary data from Focus Group Discussants.

#### 4. Discussion

This section focuses on describing the phonological processes that accompany reduplication in Lukisa dialect whereby what is copied is either a single vowel, consonant or syllable with possible phonological modification of either or both constituents. The lexical items reflecting the phonological processes that accompany reduplication in Lukisa were analyzed in order to demonstrate the interaction between reduplication and phonological processes that include: vowel lengthening, vowel change and change in syllable weight. The data was analyzed basing on Inkelas and Zoll (2005) Morphological Doubling Theory.

##### 4.1. Phonological Processes Involving Vowels

When reduplication occurs in Lukisa, certain phonological processes are attested in which there is the doubling of constituent sounds but ideally, purely for phonological purposes where the closest phonological input restricted to phonological necessity is repeated exactly or with a slight change. this could be a vowel sound, a consonantal sound or a syllable which occurs as a side effect of semantic identity. The phonological processes realized here are involved data on vowels from native speaker intuition and secondary sources to the Focus Group Discussions.

##### 4.2. Vowel Lengthening

According to Omondi (1982), vowel lengthening is a product of stress. Every stressed syllable may be lengthened since length is a function of stress. Vowel lengthening is therefore a phonological process of enhancing vocalic strength by reduplicating or copying of a sound. Oduor (2002) posits that stress is realized by doubling vowels. Oduor therefore observes that stress is the tendency of lengthening vowels although syllables are also stressed depending on their phonological structure.

According to Kanyoro (1983), doubling the vowels as written seems to be the most practical way of representing the process of vowel lengthening hence depicting phonological duplication since a given sound segment is doubled for phonological necessity within that phonological environment.

Considering the Lukisa data:

*okhuyiyayiiya* /ox<sup>v</sup>jjijaji:ja/ "to keep walking aimlessly"

*okhuchendachenda* /ox<sup>v</sup>tʃɛndaʃɛ:nda/ "to walk around allover"

The Lukisa verb /ox<sup>v</sup>jjijaji:ja/ denotes the action of aimlessly moving around. In this data, the front high vowel /i/ is lengthened through doubling in the phonological environment between the palatal glide /j/ in the reduplicant /ji:ja/ in its penultimate position. This conforms to the fundamental claim of MDT that reduplication involves semantic rather than phonological identity. The theory stipulates that reduplication results when morphology calls twice for a constituent of a given semantic description. In this data, the reduplicant "yiiya" /ji:ja/ which occurs with a possible phonological modification of either or both constituents, in which case there is the phonological aspect of lengthening the front high vowel /i/ in the penultimate position of the reduplicant. This validates the fact that MDT as a native identity theory calls for surface phonological identity between the two copies "yiyayiiya" /jjijaji:ja/ which occurs as a side effect of semantic identity. Initially, the root verb /jjija/ means "to walk around" but upon phonological duplication, there is the copying of and eventual lengthening of the vowel /i/. semantic identity arises because of the selection of exactly the same morphological identity of the two daughters. MDT (2005) then views phonological as a situation where the morphological construction contains the same number of daughters, prototypically two which are identical in their semantic and syntactic features, which then has one of the daughters modified phonologically by phonological rules or constraints associated with their construction, hence the manifestation of the vowel lengthening in /ji:ja/.

On the other hand, the Lukisa verb *okhuchendache:nda* /ox<sup>v</sup>tʃɛndaʃɛ:nda/ means "to keep aimlessly walking around." The mid front unrounded vowel /ɛ/ is lengthened through doubling in a morphological environment between a palatal alveolar affricate /tʃ/ and an alveolar nasal stop /n/ in the reduplicant /tʃɛ:nda/ in its penultimate position. This affirms the fundamental principle in MDT (2005) that reduplication involves semantic rather than phonological identity and that surface phonological identity between the daughter input and the reduplicant input occurs as a side effect of semantic identity. The theory asserts that reduplication results when morphology calls twice for a constituent of a given semantic description, herein, we have the daughter input /tʃɛnda/ and the reduplicant /tʃɛ:nda/. The reduplicant input as the mid front rounded vowel sound /ɛ/ lengthened in the penultimate position

In the Lukisa data involving reflexive pronouns in:

*okenenakeene* /akenɛnake:ne/ "the real themselves" used for things

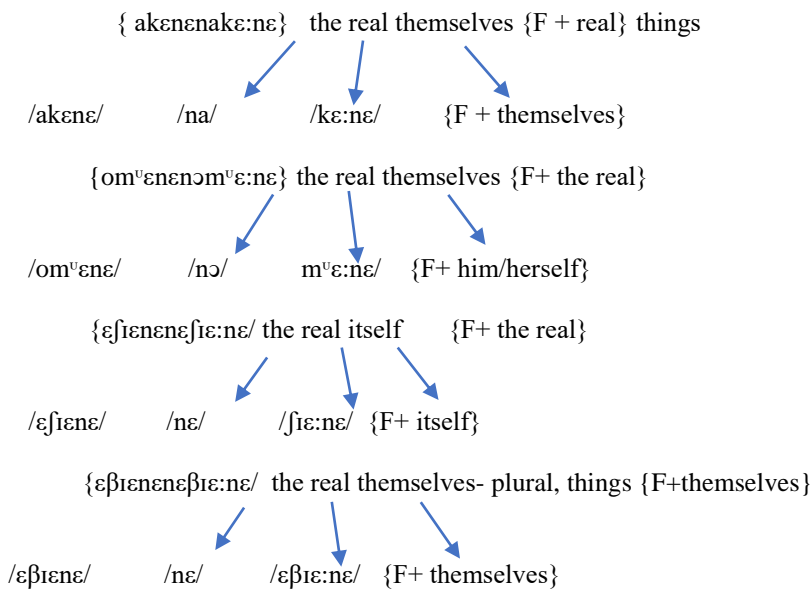
*omwenenomweene* /ɔm<sup>v</sup>ɛnɛnɔm<sup>v</sup>ɛne/ "the real himself"

*eshieneneshiene* /ɛʃɛnɛɛʃɛne/ "the real itself"

*ebienenebieene* /ɛβɛnɛnɛβɛ:ne/ "the real themselves" used to refer to things.

The data above depicts phonological reduplication, various forms of linker morphs are placed in between the base and the reduplicant. The added value that is attached to this form of reduplication is the semantic theme of emphasis in reflexivization. This kind of reduplication is evident in reflexive pronouns. The introduction of the linker morphs "na", "nɔ" and "ne" does not

interfere with the phonological shape of both the base and the reduplicant as the variety of the applicable linker morph in Lukisa are a third daughter of the respective reduplicative constructions as demonstrated in:



In MDT, the phonological identity is not a prerequisite, the central idea is the semantic identity of which in the data above, the introduction of the respective linker morphs /na/, /nɔ/ and /nɛ/ brings in the semantic theme of emphasis in each of the reflexive pronouns in the reduplicated forms. Independently, the linker morphs are semantically empty when there is no evidence or proof that they, as opposed to the reduplicative construction they occur with, distinctively contribute to any specific meaning of the reduplicative construction, (Inkelas and Zoll, 2005:37).

In the above reduplicatives involving reflexives, there is the lengthening of the mid front vowel sound /ɛ/ in the reduplicant to bring out the phonological process of vowel lengthening in the reduplication process. According to MDT, the primary phonological issues arising in the reduplication are phonologically modified relative to how they would appear in isolation. Herein, the reduplicants to show the semantic theme of emphasis in the reflexives /nakɛ:nɛ/, /nom<sup>v</sup>ɛ:nɛ/, /nɛʃiɛ:nɛ/ and /nɛβiɛ:nɛ/ undergo vowel lengthening as they are cases motivated by phonological necessity. This is supported by the thesis of MDT which posits that reduplication is driven by the presence of an affixal morpheme, RED which has the grammatical requirement to phonologically copy material in a phonologically adjacent string. The morpheme RED phonologically copies the base as in the reduplicant in the reflexives /kɛ:nɛ/, /m<sup>v</sup>ɛ:nɛ/, /ʃiɛ:nɛ/ and /βiɛ:nɛ/. Inkelas and zoll (2005) further states that MDT is an identity theory in the sense that the surface phonological identity between the two copies occurs as a side effect of semantic identity, often as the simplest, or the only way to ensure semantic identity is to select exactly the same morphological entity for the two daughters. The reduplicants in the respective reduplicated reflexive pronouns presuppose the double occurrence of morphological constituents meeting particular descriptions to bring out the semantics of emphasis is expounded by the presence of the respective linker morphs as third daughters in the reduplication process.

The same morphological reduplication takes place in Lukisa accompanied by an internal alteration of the lengthened sound. When vowel lengthening occurs in Lukisa as a phonological process that accompanies reduplication in the penultimate position, it is accompanied by a morphological process where the roots totally reduplicated as respective plural or singular markers of /a/, /ɔ/ and /ɛ/ in the respective roots of the words /akɛnɛ/, /om<sup>v</sup>ɛnɛ/, /ɛʃiɛnɛ/ and /ɛβiɛnɛ/ are dropped when the respective reduplicatives are formed. The findings of this study indicate that as much as there is vowel lengthening in the penultimate position of the reduplicant, the lengthening comes with total reduplication where the whole root is doubled and it is on the reduplicant that vowel lengthening manifests.

#### 4.3. Reduplication and Syllable Weight

Katamba (1992) posits that traditionally, the major distinction drawn between syllable types found in languages has been between open syllables and closed syllables. An open syllable ends in a vowel while a closed syllable ends in a consonant, but even in those languages that allow closed syllables, there is often a clear preference of open syllables. Further to this, Katamba (1993) observes that the consensus today is that more important than the traditional classification of phonological systems in terms of open and closed syllables is their classification on syllable weight. Generally, languages in which a distinction between light and heavy syllables is drawn fall into two camps, the light syllable where the rhyme contains a short vowel and a heavy syllable where the rhyme contains either; a long vowel or a diphthong followed by one or more consonants or a short vowel followed by at list a consonant.

According to Ondondo (2013), Kisa has both open and closed syllables. Closed syllables occur at the phrasal level only as a result of apocope. The most common open syllable in Kisa, as in other Luhya languages (Marlo, 2006 and Mutonyi, 2000) is the CV syllable where the consonant is followed by a vowel in a word. Another open syllable type occurs in Kisa in CVV syllable where the consonant is followed by two vowels before another syllable.

We have Lukisa words such as “khatiiti” /xatr:ti/, “tsingoongo” /tʃiŋɔ:ŋɔ/, /aβɔ:βɔ/ and /ɔβ<sup>u</sup>βiβi:βi/ which indicate that given vowel sounds have been lengthened in the respective reduplicatives accompanied with morphological doubling in given phonological environments. Phonological reduplication that affects syllable weight occurs in Lukisa vowel sounds within morphologically reduplicated words that exhibit open syllables. In this case, a given vowel that occurs between two consonantal sounds as the phonological environment is stressed through lengthening to gain weight. In the sampled data for this study, there is stress on the penultimate or second last syllable in the reduplicated word. This is manifested in the morphologically reduplicated and phonologically doubled Lukisa words:

*khatiiti khatiiti* “smallish” /xatr:ti/  
*tsingo tsingoongo* “villages” /tʃiŋɔ:ŋɔ/  
*omusoli omusoliili* “an attacker” /ɔm<sup>u</sup>sɔli:lɪ/  
*abo aboobo* “yours” /aβɔ:βɔ/

The vowels in the penultimate syllable have been lengthened in the reduplicant. Stress is also placed on the penultimate syllable. We can conclude that the penultimate syllable is heavy unlike the first and last syllables in the respective words. In the above Lukisa data, the reduplicatives which are both trisyllabic and polysyllabic have penultimate syllables stressed hence heavy. This adequately accounts for the observation that reduplication through vowel lengthening affects the weight of the syllables in the penultimate position of given lexical items.

In the case of the data in /xatr:ti/ for “small” which is a reduplicative formed through partial reduplication of the reduplicant syllable /ti/ doubled and added to the root word /xati/. The resultant reduplicative /xatiti/ is an open syllable which has the CVCVCV order. There is the lengthening of the second vowel in /tr:/ which has a syllable in the penultimate position. In this data, the front unrounded high vowel /i:/ is stressed through lengthening in a phonological environment between the velar stop /t/ which is of the root and the reduplicant. This makes the lengthened syllable heavy unlike the first and the last syllable of the reduplicative. The first syllables are short vowels hence coming out as light syllables.

The bisyllabic reduplicative possessive pronoun /aβɔ:βɔ/ which means “yours” has the reduplicative syllable /βɔ/ added to the root daughter of the demonstrative pronoun /aβɔ/ which means “those”. The reduplicant syllable is preceded by the root syllable /βɔ/ on which a plural morpheme marker /a/ is attached. In this phonological copying, the mid back rounded vowel /ɔ/ is lengthened to bring out stress hence the heavy syllable weight within an open syllable that is made up of CVCV. The mid back unrounded vowel is in the penultimate position or syllable and its lengthening within that phonological environment makes it a heavy syllable unlike the first and the last syllables in the reduplicated word. This phonological reduplication through vowel lengthening affects the syllable weight in Lukisa since the lengthening of the respective vowel sounds places emphasis on the vowel in the penultimate position.

In the reduplicative noun /ɔm<sup>u</sup>sɔli:lɪ/ which means “an attacker” formed from the root word /ɔm<sup>u</sup>sɔli/ by partial reduplication through doubling the reduplicant syllable /li/. There is the stress placement through the lengthening of the high front unrounded vowel /i/ found in the phonological environment of the two alveolar laterals /l/. The lengthening of the vowels within a morphologically reduplicated word of the open syllable with CVCVCV order. We therefore conclude that in this data, the penultimate syllable that bears the lengthened vowel sound /i/ is heavy unlike the first, second and final syllables in the polysyllabic word in its penultimate position. The first two syllables and the last one have short vowels and therefore said to be light syllables.

/tʃiŋɔ:ŋɔ/ is a Lukisa reduplicative formed from /tʃiŋɔ/ through partial reduplication that exhibits phonological copying through vowel lengthening. There is the lengthening of the back rounded vowel /ɔ/ in the penultimate position of a syllable occurring between the nasal /ŋ/. As a consequence, the lengthening brings out stress hence making the second syllable heavy unlike the first and the last syllables of the reduplicative which have short vowel sounds hence depicted as light syllables.

The Lukisa intensified reduplicative adjective /ɔ-β<sup>u</sup>βiβi:βi/ which means “very bad” formed through partial reduplication of /ɔβ<sup>u</sup>βi/ through the manifestation of triplication of the /βi/ syllable in the root word. This reduplication is accompanied with vowel lengthening of the high front unrounded vowel /i:/ in the penultimate position. This is unlike the first, second and final vowels in the reduplicative which are short vowels hence said to depict light syllables. The lengthening of the front unrounded vowel in /i/ in the reduplicative construction depicts phonological adjustment of the vowel sound resulting into a heavy syllable. The lengthened vowel sound is a phonological manifestation of stress and consequently a heavy syllable occurs in the phonological environment of the bilabial fricative /β/.

According to Inklelas and Zoll (2005) in the Morphological Doubling Theory, reduplication results when morphology calls twice for a constituent, mostly a stem and then either of these constituents may further be phonologically modified. These two forms of reduplication have several distinguishing characteristics: morphological reduplication serves a morphological purpose that involves derivation of new lexical items and the semantic change that accompanies it, while phonological duplication serves a phonological purpose which entails a single reduplicated segment rather than the larger chunks of morphological reduplication. To Inklelas and Zoll (2005), morphological reduplication takes place before any phonological modification has taken place.

Considering the data in /xatr:ti/, /tʃiŋɔ:ŋɔ/, /ɔm<sup>u</sup>sɔli:lɪ/ and /ɔβ<sup>u</sup>βiβi:βi/, there is the morphological reduplication that takes place whereby, partially, part of the root is doubled with the /tʃi/, /ŋɔ/, /li/ and the triplication of /βi/ in /ɔβ<sup>u</sup>βiβi:βi/. A side from the partial reduplication which is morphological, there follows phonological copying to bring out the syllable weight through phonological copying of the respective vowel sounds through lengthening hence making the respective vowels long thus

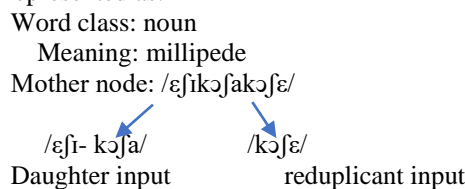
bringing them out as heavy syllables in their penultimate position unlike those in the same morphologically reduplicated words at their start and final positions of the syllables.

Inkelas and Zoll (2005) thesis on phonological doubling postulates that in phonological copying, the respective inputs do not bear the same semantic features but have phonological features. This implies that there is no formal similarity features that link each of the inputs in the reduplicative, herein the mother node. In the data on phonological copying and syllable weight, there is the lengthening of the respective vowel sounds in the Lukisa words that exhibit open syllables. The copied vowels within the given syllables do not depict any semantic or syntactic independence. The lengthened sounds that bring out syllable weight are not subject to any morphological reduplication in which the morphosemantics of reduplication are embedded. The syllable inputs doubled are phonological constituents which only serve a phonological purpose.

4.4. Vowel Substitution

According to Gachungi (2007), vowel substitution is a phonological pattern in which vowels change in a repeated word to form a new word with a specific meaning. In this situation, a high vowel may be substituted with a low vowel or vice versa. Vowel substitution in reduplication is a productive process that results into the formation of new words. There was the exemplification of the following data samples on the aspect of phonological copying that involves vowel substitution in Lukisa in which a vowel sound in the root input changes through substitution in the reduplicative form.

We have Lukisa words such as *eshikoshakoshe* /ɛʃikɔʃakɔʃɛ/ in which we find a change in the vowel sounds from /a/ in the root input to /ɛ/ in the reduplicant. Vowel substitution is evident in the reduplicated Lukisa noun form *eshikoshakoshe*. In the pseudo reduplication, the resultant reduplicative construction, herein the mother node, has no meaningful connection between the reduplicative, with either of the underlying input elements when analyzed separately. The Lukisa noun /ɛʃikɔʃakɔʃɛ/ arises out of pseudo reduplication accompanied by vowel substitution. The root daughter input /ɛʃi-kɔʃa/ which has a singular prefix morpheme /ɛʃi/ attached to it is meaningless on its own. It has neither a semantic nor syntactic reference in Lukisa. Together with the reduplicant syllable inputs in *koshe* /kɔʃɛ/ which is equally semantically and syntactically meaningless. The two inputs can only be meaningful in their reduplicated forms which brings out *eshikoshakoshe* /ɛʃikɔʃakɔʃɛ/ which is a noun that refers to a millipede. This can be represented as:



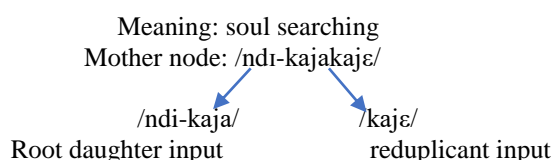
In the doubling of the root daughter input syllable /kɔʃa/, it gives rise to the reduplicative, the mother node /ɛʃi-kɔʃakɔʃɛ/ which depicts linguistic pseudo reduplication of the Lukisa noun which is a manifestation of the Morphological Doubling Theory tenet on phonological copying. As much as there existed respective daughter syllable inputs which were doubled to give rise to the mother node, it is notable that if the two daughter input syllables are separated and analyzed in isolation so that we have what seemed as the first daughter input and the reduplicant syllable input, then the respective input daughters cannot qualify to be analyzed from MDTs morphosemantic perspective as per the thesis of semantic inputs in reduplication which calls for semantic identity between the daughters and not phonological identity.

However, the doubling of the syllabic inputs brought to the fore the fact that the syllables /kɔʃa/ and /kɔʃɛ/ are respectively doubled as phonological inputs without bringing in semantic change because the doubling of the input syllables is purely for phonological necessity. The reduplication inputs in this case of phonological copying do not bear any semantic or syntactic features as postulated in the MDT tenet on the identity of the semantic inputs but bear phonological features that link each of the inputs in the resultant mother node. The syllable inputs do not independently carry any related meaning to the Lukisa noun *eshikoshakoshe*. However, when doubled and used together, the resultant mother node is semantically and syntactically meaningful, referring to a millipede, which falls in the noun class category.

Further to the pseudo reduplication, there is the vowel substitution in which the low central vowel /a/ in the first daughter input syllable /kɔʃa/ changes to the mid front unrounded vowel /ɛ/ when the total reduplication occurs to form the noun /ɛʃi-kɔʃakɔʃɛ/. In this scenario, mid low central vowel /a/ is substituted with mid front unrounded vowel /ɛ/ in the process of reduplication. This happens because vowel substitution is one of the phonological processes that interact with reduplication in Lukisa. This conforms to the MDT (2005) tenet on phonological copying where copies in the reduplication are phonologically modified relative to how they appear in isolation. the theory propounds that phonological copying and its scope is limited to narrow sets of contexts as in the reduplication that leads to vowel substitution

Vowel substitution was also manifested in the Lukisa verb *ndikayakaye* /ndikajakajɛ/ which means “to soul search” or “be in spiritual supplication” that goes with commitment to the supreme creator. In this pseudo reduplication, the resultant reduplicative, herein the mother node has no meaningful connection with either of the underlying input elements of the root daughter input and the reduplicant input. The Lukisa verb *ndikayakaye* is a product of both pseudo reduplication and vowel substitution. The root daughter input /ndi-kaja/ which has an attached singular morpheme marker /ndi/ to it is meaningless on its own, it has neither a semantic nor syntactic reference in Lukisa, together with the reduplicant syllable input *kaye* /kajɛ/ which is equally semantically and syntactically meaningless. The two inputs are only meaningful in their reduplicated form which resulted in the mother node *ndikayakaye* /ndikajakajɛ/.

Word class: verb



In the doubling of the root daughter input syllable /kaja/, it gives rise to the mother node, the reduplicant /ndɪ-kajakajɛ/ which is a manifestation of linguistic pseudo reduplication in the Lukisa verb depicting the MDT (2005) tenet on phonological copying which emphasizes on the copying of a single element and the copying of a particular segment is limited to narrow sets of contexts motivated by phonological necessity. In as much as there existed the respective daughter syllable inputs which are doubled to give rise to the mother node, it was worth noting that when the respective daughter and reduplicant inputs are separately analyzed in isolation, then the respective daughter inputs do not qualify to be analyzed from the morpho semantic perspective as per the MDT (2005) thesis on semantic inputs in reduplication which calls for semantic identity and not phonological identity between the inputs in morphological doubling.

The doubling of the syllabic inputs brought out the fact that the syllables brought out the fact that the syllables /kaja/ and /kajɛ/ are respectively doubled as phonological inputs without any semantic change involved because their doubling is purely for phonological necessity. In this data, there is the phonological process of vowel substitution in which the low central vowel /a/ in the first daughter input in /kaja/ changes to the front mid unrounded vowel /ɛ/ when the total copying of the root has taken place to form the reduplicative /ndɪkajakajɛ/.

## 5. Conclusion

The paper clearly demonstrates that the phonological processes that interact with reduplication in Lukisa dialect as per MDT (2005) do not result into semantic change. What happens is that what is copied is something very small like a consonant, a vowel or syllable and this copying has a purely phonological purpose rather than being associated with semantic change. The analyzed data brought out the fact there is usually some phonological modification of the respective inputs that accompany phonological doubling. The phonological doubling in Lukisa was partial and only limited to narrow sets of contexts. The phonological processes of vowel lengthening, vowel substitution and change in syllable weight were explored. Lukisa data, basing on the MDT tenets on the inputs of phonological copying indicated that inputs in phonological copying do not bear the same semantic features but have phonological features that bear no formal similarity features that link each of the features of the reduplicative. There was the doubling of either a sound, vowel or consonant or the syllable without altering the word class category of the input root word nor change the semantic connotation of the word.

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