

Phonological Descriptions in Kémunasukuma: Processes and Rules

Simon Chipanda

The Mwalimu Nyerere Memorial Academy Department of Language Studies

Email: serikalchipanda@yahoo.com

ABSTRACT

This paper aims at describing phonological processes in Kémunasukuma dialect of the Kísukuma language because there is no evidence of any literature of Kisukuma phonological processes despite the existence of a number of literature on Kisukuma. Thus, we are obliged to fill this content gap. Methodologically, the study used documentary review and focus group discussion. Six (6) Sukuma informants were used for focus group discussion and three (3) Sukuma documents were selected for the review. During data analysis, the Natural Generative Phonology approach was used in which principles that govern the association of phonological and phonetic representations of mapping as the rules of the algorithm were applied. It was found that deletion, coalescence, Palatalization, affrication, insertion, vowel lengthening, nasalization, assimilation, gliding, aspiration and phonological processes in the language under discussion. It can be concluded that other phonological phenomena such as voicing, aspiration, dissimilation, metathesis, vowel weakening and strengthening that seem to be found in the Kisukuma language need investigation.

Keywords: *Kisukuma, Phonological processes, Phonological rules*

1. INTRODUCTION

Kisukuma is the western Tanzania Bantu language spoken in the Southeast of Lake Victoria in the United Republic of Tanzania. According to Guthrie's classification, Kisukuma (F. 21) belongs to group 20 of zone F. The group also includes, Kinyamwezi (F. 22), Kisumbwa (F. 23), Kikimbu (F. 24) and Kimbundu (F. 25). Kisukuma has 4 dialects Batibo, (1985, p. 9) and is named according to geographical orientations: Kemunasukuma (Northern), Kémunngweli (Western), Gimunakiiya (Eastern) and Kémundama (Southern). This study focuses on Kémunasukuma since it is the standard dialect of Kisukuma. However, Kisukuma has been documented more in tone; this does not guarantee the absence of other phonological processes which the paper aims to investigate.

There are several phonological processes in the world which are manifested in our natural languages being the phonological processes and non-assimilatory processes. This paper describes phonological processes which are less reported in Kisukuma language compared to other Bantu languages. Many Bantu philologists agree that

there are different forms of phonological processes in Bantu languages, which ought to be investigated and documented by scholars. From this base Kisukuma phonological issues have been reported by many scholars (Richardson, 1959; Matondo, 2003; Batibo, 1985; Goldsmith, 1985a; Roberts, 1992; Sietsema 1989) to mention but a few. Most of these scholars have discussed tone manifestations in the Kisukuma language.

Batibo (1976, 1985) looked at the phonology and morphology of Kemunasukuma language and generated sound inventory and the way they appear with tones; in the case of morphology, the author identified verb extensions and nominalization. The data in 1 describe Batibos causative formation in the Kisukuma language,

(a) Bet-a pass > bet-y-a make to pass (b) Li-a eat > *l-is-y-a cause to eat

The data in1 according to Batibo show that causative phonemes {y} and *{isy} are attached at the end of the root bet- and l- respectively. There is neither deletion nor replacement of causative phoneme as it is claimed by the current study. Moreover, Batibo, (1991) looked at the tone structure in Kisukuma nominal forms and proposed an LH melody mobile H tone in Kisukuma. Batibos work is very useful to the current study because the author has simplified for us the sounds found in Kisukuma and the way tone is marked.

Matondo (2003) studied Gimunakiiya a dialect of the Kisukuma language. His study focused on tonal transfer in the reduplicative system in Kisukuma. Among other things, his presentation outlined causative in passing whose objective was to see how reduplication takes place. The data in 2 illustrate the following:

(a) Gu-sab-y-a be rich

(b) Sab-y-a + sab-y-a cause to be rich (Matondo, 2003, p. 200)

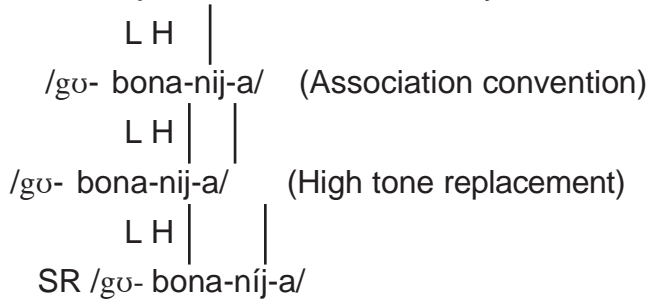
The data show that the causative phoneme /y/ attaches to the verbal root and the meaning changes. Matondo used Optimality Theory (OT) for reduplicants and tone evaluation and their constraints. However, Matondo did not exhaust the claim on the phenomenon of the phonological process which is the result of causative phonemes. The current study aims to fill this gap by using a generative phonology approach.

Chipanda, (2017) investigated Kemunasukuma, a dialect of Kisukuma, focusing on morph ordering structures in Kisukuma verbal extension and the manner they are reflected within the Lexical Mapping Theory. Along with other phonemes, the study looked at many other causative phonemes in Kisukuma language as in /y/, /j/, /ch/, /sh/, /ny/ and /ŋ/ though he did not study the processes which result to these causative phonemes.

Goldsmith (1985a) studied Kisukuma tone diachronically and revealed that diachronically there was a lexicalized process of H tone replacement by one TBU and this process was represented as LH tone melody.

1. The data in 3 illustrate,

UR: /g_U- bona-nij-a/ to see simultaneously



The data show the formation of simultaneous morph with the emphasis on H tone replacement. This finding is different from the finding in the current study as it focuses on a phonological process whose result is causative phonemes in the Kisukuma language. Muhdhar (2006)s investigation of verb extensions in Kemunakiya, another dialect of the Kisukuma language found that among other things, particles such as* - ij-, *-ej-, -ish- and -esh- are causative phonemes in this language. The author did not explain the conditions or environment resulting from these particles, which the current study aims to investigate. Muhdhars writing contributes to literature in the Kisukuma language.

Baker (1988) reported on causative morph in Chichewa also known as the Nyanja language spoken in Southern, east Africa by using the theory of Incorporation: Grammatical Function Changing. In Chewa language, /its/and /ets/ morpheme is a causative in function. The choice of the morph is determined by the vowel harmony which adds to the internal argument object. Most of the speakers from Malawi (also a few in Zambia and Mozambique) use these morphs when referring to something, which is made or caused to do something. Baker’s study is on morphology despite focusing on causative, the current study analyses the phonological process in the Kisukuma language of Tanzania.

Caroline (2011), investigated morph ordering of verbal extensions and causative morph in particular in Runyankole a language spoken in south-eastern Uganda. Along with other morphemes, she found {is}, {es} and {sy} as causative particles in Runyankole language of Uganda. Caroline used the Mirror principle of Baker (1985) in her data analysis. The choice of this approach did fit in her data because the theory captures both syntactic and morphological verbal morph ordering in a fashioned order which is flexible symmetrically (Manda, 2016).

However, the current study investigates causative morph in Kisukuma but emphasises on phonological approach. In other words, the causatives to be manifested would result from the phonological phenomenon. Maganga and Schadeberg (1992) presented an outline of Kinyamwezi grammar and lexicon within 9 months from September 1986 to June 1987. Let it be noted that Kinyamwezi is a daughter language of Kisukuma; in their study, Maganga and Schadeberg (1992) used the Jidakama dialect of the Kisukuma language. Along with other things, they presented six causative morphs: y-, -ch-, -j- and -ish-. Maganga and Schadebergs 9 months presented causatives, some

of which are similar to those documented in this work. However, the current study goes further in analysing phonological processes which result to causative phonemes using generative phonology.

Kanijo (2012) studied the Jidakama dialect of Kisukuma focusing on Tense/Aspect. However, he simply outlined verb extensions in passing and causative in particular, giving the following examples:

- (a) sek-a laugh > se-ch-a cause to laugh
- (b) og-a wash > o-j-a cause to wash (Kanijo, 2012, p. 28)

The data in (4) show that {j} and {ch} are causative phonemes in the Kisukuma language. The current study discusses the phonological process that caused the formation of these causative phonemes by using the generative phonology approach.

2. METHODOLOGY

The methods of data collection included focus group discussion and documentary review. The focus group discussion was used for one group with 6 Sukuma natives selected purposely to verify the primary data. Also, documentary review was used in which 3 Sukuma written texts were selected and their phonological processes data analysed. The selected texts were: MholaNsoga (Mihayo, 1966), Scripture text reprinted from the Bible in Sukuma (Goodman, 1960) and the Edifying role of Sukuma narratives and the African concepts of idealism and realism (Masanja, 2016).

The data from these documents were analysed phonologically, in other words, some of the lexemes in these documents seemed to have some kinds of processes targeted by the current study. This was possible due to the third method of data elicitation known as the intuition method; the researcher used his intuition as a native speaker of Kisukuma to elicit data from the selected texts and analyse them, problematic data, were sent to other native speakers who are language and linguistics experts for analysis.

The use of intuition instruments as a way of conducting research is valid from a nativist perspective (Chomsky 1977; 1986). In other words, Chomsky argued that native speakers have both grammatical (syntactic, semantic and phonological) and pragmatic competencies in their language. Phonological competence, he argues, enables them to discern which structures are well or ill-formed in terms of sound sequences (phonotactics).

Within the same line of thinking, Clark, Yallop and Fletcher (2014) as it is encoded in Komenda (2013, p. 3) have also argued that any attempt to produce phonological descriptions without referring to the native speakers' intuitions or insights is inconsistent. The data were analysed by using the standard model of generative phonology which shows systematic mapping of phonological representation of sound segments onto the phonetic representations. This was done through phonological formal rules (McCaley, 1974)), which were formalized by using Brace notation, such notations show that a certain change is affected either in one or other environments.

The obtained data were analysed using Natural Generative Phonology theory. Here the data were analysed following the principles that govern the association of phonological and phonetic representations in the form of rules of algorithms after being coded. In other words, a qualitative data analysis technique in the form of descriptions was used to describe the phonological processes attested in the data, followed by phonological rules that state the environment for a certain rule step by step systematically between two levels of representation that are underlying level and surface level. Content data analysis also triggered characteristics and structure of phonological phenomena for re-analysis and interpretation that were usually observed in the texts.

3. RESULTS AND DISCUSSION

This section presents phonological processes found in the Kisukuma language of Tanzania. The data came from both Sukuma native speakers as well as technical and non-technical literature of the language under discussion.

3.1 Coalescence

The type of assimilation in which two adjacent sound segments affect one another is known as coalescence. Two things take place: first, two segments are retained but neither of them retains all or only its original features. Second, both of the segments disappear and a new segment replaces acting in some sort of compromise, this kind of assimilation is also known as bi-directional or fusional according to Lass (quoted in Massamba, 2010). Kisukuma language has the following examples in 5:

- (a) a + ma + iso > amiiso eyes
- (b) a + ma +ino > amiino teeth

The data show that a juxtaposition of the two vowels [a] and [i] results in the disappearance of the back low vowel /a/. That is to say, when we observe the inputs of [a+i] t, the result becomes a lengthened /i/. However, such a phonological process can be presented in the following formal rules of phonology.

+Low	+	+High	2.	+high
			➤	-back
				+long

The data show that the low unrounded vowel juxtaposes with a high front vowel which results in the disappearance of the low front vowel and the lengthening of the high front vowel /i/which becomes /ii/ i://. Under the level of discussion, the pattern of vowel coalescence is consistent with Kadenges (2010) observation in the Nambya language of Zimbabwe who believes that, Nambya vowel coalescence involves the merging of two basic vowels /i, a, u/ to form a single secondary vowel, that is, either [e] or [o]. However, this observation indicates that in Nambya, the sequences of /a + i/ and /a + u/ are realized as [e] and [o] respectively to resolve hiatus (Ibid, 2010, p. 248).

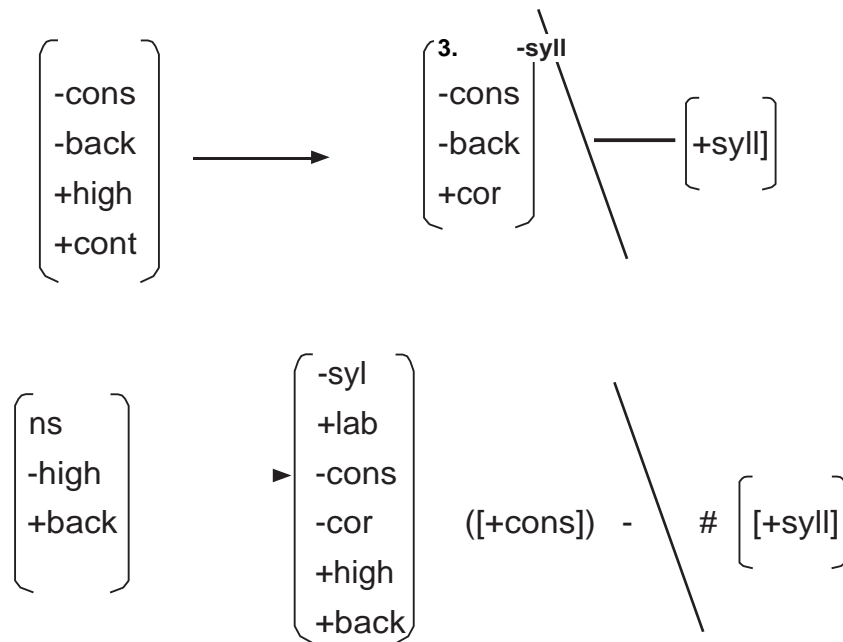
3.2 Gliding

The process by which a lengthening of a vowel/consonant occurs to compensate for the duration of the lost underlined syllable which was presented by the vowel is known as the gliding process. Kandenge (2010) added in descriptivist terms that, glide formation is the process whereby a high vowel of a class affixes or gender concord changes to become a glide when followed by a vowel commencing stem. It is from this base, that the formation of glide results after the loss or deletion of a vowel which makes the other vowel be lengthened in compensation hence compensatory lengthening. The term refers to a set of phonological phenomena wherein the disappearance of one element of a representation is accompanied by a corresponding lengthening of another element (Kavitskaya, 2001).

Therefore, in the Kisukuma language the formation of the glide is the result of the deletion of either the vowel or changing into glide /w/ or /y/.

- (a) lu+akwe > Lwa:kwe his property
- (b) mi+enda > mye:nda clothes (Adapted from, Goodman, 1969)

Having seen the data in 6 and how glide formation occurs in the Kisukuma language, the two forms of glide formation can be presented in the following rules respectively:



The data in 6 (a) show that in Kisukuma language the back high vowel /u/ changes into a back glide /w/. This is a bit different from 6 (b) whereby a high front vowel /i/ changes into a high glide /y/. Such a rule is also emphasized by Natural generative phonology (Hooper, 1975) for the fact that the glide formation rule requires phonetic information (phonetically base features) and phonetically motivated boundaries (Cf, 6a, and b).

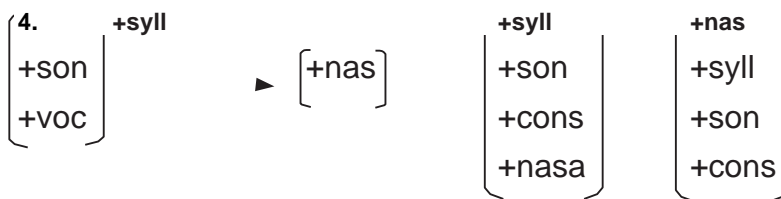
3.3 Vowel nasalization

The process in which a vowel acquires a nasal feature due to its being adjacent to the nasal sound is known as vowel assimilation. Sometimes it is the process in which a non-nasal sound is made to get the feature of a nasal one. It must be noted that vowel nasalization is sometimes referred to simply as nasalization (Cf, Massamba, 2010). Massamba pointed out that vowel assimilation is a process by which a vowel acquires some nasal features due to its being adjacent to a nasal sound.

Therefore, Kisukuma has many examples of such assimilation but few of them are shown in 7:

[māpo] _____▶ /māpo/ maize
 [kana] ▶ /kāna/ child
 [magi] ▶ /māga/ eggs

The data show that /n and /m/ have made vowels to acquire nasal features hence the nasalization process. However, such an environment which triggers nasalization can be formulated in the formal rule below



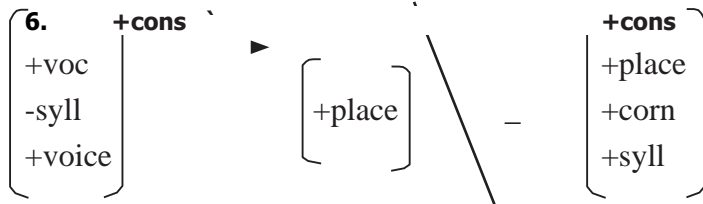
The above data prove that the vocalic syllable becomes nasalized in Kisukuma language when is either preceded or followed by a nasal consonant.

3.4 Homorganic Nasal assimilation

The process in which a nasal consonant assimilates to the position of adjacent consonants is known as homorganic nasal assimilation. The data showed that the prefix N- has been uttered at the same place of articulation as its adjacent consonant. Kisukuma data below are the evidence of the homorganic nasal assimilation process

5. Singular	Plural	Gloss
(a) Lulimi	▶ ndimi	Tongues
(b) Lugiha	▶ ngiha	muscles
(c) Ludo	▶ ndo	small
(d) Lukwi	▶ ngwi	wood

The data in (8) show how Sukuma natives use such words in forming the plural. The data can be presented in the following phonological formal rule



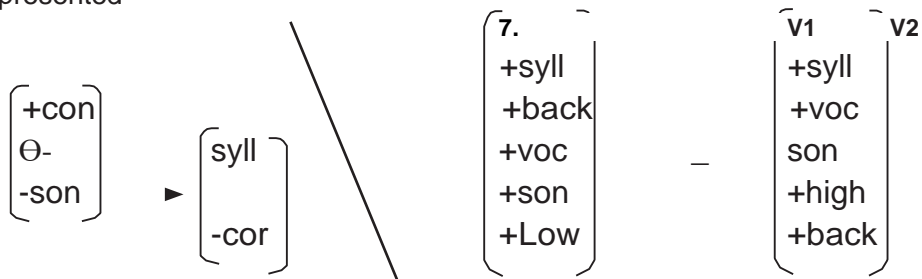
That is to say in Kisukuma language, the voiced lateral consonant is articulated at the same place of articulation as the following consonant. The rule is in convention with the surface true and transparent to the users of the language in accordance with semantic scopes they refer to (Hudson, 1975). All these are principles about Natural generative phonology whose rule is to determine phonetic and phonological representation in natural languages.

3.5 Glide insertion

This is the phonological process in which a sound (glide in the language under discussion) is inserted in the words other than either the initial or final position. Consider the following examples from Kiswahili words taken into the Kisukuma language:

- (a) Paulo pawulo Paul
- (b) Daudi ► dawudi David
- (c) Paulina ► Pawulina Pauline

The data above show that the non-coronal glide is inserted within words when taken into the Kisukuma language. Below is the rule showing how such a process can be presented



That is to say a glide non-coronal is inserted in the environment where it occurs intervocally. It must be noted that a vowel one is equal to vowel two, thus: condition V1= V2.

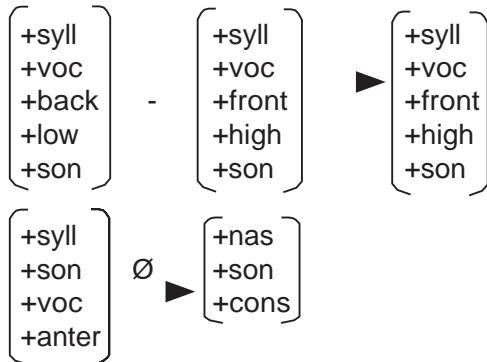
3.6 Vowel deletion

The loss of a segment in the word is known as deletion or technically syncope. The term syncope is a Greek word sunkope which means cutting away and the deleted sound is known as syncopated sound (Campbell, 2004, p. 33). In the language under discussion, this phenomenon is evidenced in the following 11-12 data where a vowel is cut away:

- | | | |
|------------------|------------|-----------------------------|
| (a) Nyama # #iyi | ▶ Nyami:yi | this meat |
| (b) Nole # #uyu | ▶ Nolu:yu | see this one |
| (a) Mugati | ▶ mgati | within |
| (b) Munumba | ▶ mnumba | in the house Masanja, 2016) |

The data above show the deletion phenomenon whereby the vowel /a/ and /e/ are deleted in 10 data. Again, the high back vowel /u/ is deleted in 11 data.

Thus, such a phonological process can be presented in the following formal rule.



The data in (a) show that a back low vowel and a front high vowel are juxtaposed and coalesce resulting in a lengthened front high vowel [i:], such kind of deletion is different from (b) following the fact that the high back rounded /u/ vowel deletes in the environment when it is preceded by the labial nasal /m/.

3.7 Vowel harmony

This is the process in which vowels assimilate with each other. In other words, the vowel of one syllable may become more like the vowel of another syllable (Massamba, 2010, p. 109- 110). This phenomenon was observed in the Kisukuma language whereby vowels of different syllables become more like vowels on another syllable. To be specific, applicative extended verbs in Kisukuma present a good example of vowel assimilation as in 12:

UR		ST (applicative)	
(a) /bisa + a/	hide	[bis + il + a]	hide for/with
(b) /bal + a/	count	[bal + il + a]	write for/with
(c) /tul + a/	beat	[tul + il + a]	beat for/with
(d) /sol + a/	take	[sol + el + a]	take for/with
(e) /lek + a/	leave	[lek + el + a]	leave for/with

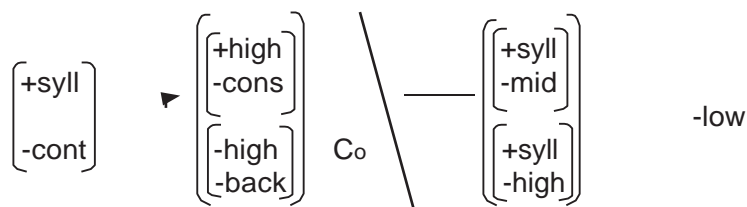
The data show that the applicative segment il- is realized as -il- with a vowel -i- when immediately preceded by either [-i-, -a- or -a-] vowel sounds. Also, it is observed that the applicative -el- is realized as -el- with vowel -e- when immediately preceded by either [-e- or

-o-]. It must be noted that such a kind of assimilation is distant assimilation or progressive assimilation and that the process of this sort is usually known as vowel harmony.

This phenomenon can be attested in the Nambya language spoken in Zimbabwe in which vowel harmony is observed. Consider the following data in 13,

- | | | | |
|-------------|----------|------------|-------------------------------------|
| (a) Shing - | work | ▶ shingis- | cause o work |
| (b) Lem - | be heavy | ▶ Lemej- | cause to be heavy |
| (c) Shamb - | wash | ▶ shambij- | cause to wash |
| (d) Bhat - | touch | ▶ bhatish- | cause to touch |
| (e) Bon - | see | ▶ bones- | cause to see (Chabata, 2007, p.206) |

The data in (13) show progressive vowel harmony is pertinent to causative allomorphs in Nambya, Such causative has three allomorphs namely, [-is-] [-s-] and [-es-]. Thus, the causative extension /-is-/ “is realized as [- is-] when the last vowel in the radical is /a/ and /i/. Also the allomorph /-es-/ occurs when the last vowel of the radical is /e/ or /o/” as well as the allophone [-s-] is realized as [-s-] when the vowel in the root is /u/. For more details, see Korekore language by Dembetembe (1987, p.62). Therefore, the process of vowel harmony found in the Kisukuma language (Cf 12) can be presented in the following rule of phonology:



The same rule can be observed in Kiswahili applicative allophones in which the suffix vowel in Kiswahili language is sometimes realized as -i- or -e-; that is to say -i- occurs only when the preceding vowel in the root or stem is either, u or a, and that e occurs when preceding the vowel is either e or o (Massamba, 2010).

3.8 Vowel lengthening

The process in which a vowel becomes lengthened in a certain environment is generally known as vowel lengthening. In linguistics literature, two forms of vowel lengthening are observed namely: penultimate and compensatory vowel lengthening. It must be noted that the latter has been treated in glide formation. Therefore, penultimate vowel lengthening refers to a lengthening of a vowel at the penultimate position (Ibid, 2010). Let us see the following examples from the Kisukuma language of Tanzania:

- | | | |
|-------------|-------------|---------|
| (a) /dima/ | ▶ [di:ma] | graze |
| (b) /dila/ | ▶ [di:a] | be late |
| (c) /gonad/ | ▶ [go:nda] | bend |
| (d) /kula/ | ▶ [ku:la] | remove |
| (e) /bheja/ | ▶ [be:ja] | create |
| (f) /lemba/ | ▶ [le:m̩ba] | cheat |

The above behaviour of lengthening can be presented in the following formal rule.

-syll ▶ long - ~~S~~CV \$#

Simon Chipanda

This is to say in the Kisukuma language a vowel becomes lengthened on the penultimate syllable of the word. However, I argue differently with Kadenge (2012) whose research data have been presented from the Nambya language spoken in Zimbabwe. The data presented are in the form of elision other than deletion. Consider the following data in 15,

Underlying Representation	Surface Representation
(a) /mu + oto/	▶ [moto] fire
(b) /mu + ojo/	▶ [mojo] heart
(c) /ʃi + oto/	▶ [ʃoto] fire place
(d) /ʃi + ulu/	▶ [ʃulu] anthill
(e) /zwi+ aŋgu/	▶ [zwaŋgu] mine
(f) /ʃi + aŋgu/	▶ [ʃaŋgu] mine
(g) /wa + aŋgu/	▶ [waŋgu] mine (Kadenge, 2012, p.247)

According to Kadenge (ibid), the above data are called Vowel elision which refer to the phonological processes that are used to eliminate hiatus. To him, this process results in the disappearance of a speech segment. However, under the level of argument, Bantu languages data of this nature adhere to the phonological process known as vowel lengthening after the deletion of one segment be it a vowel or a consonant. According to the native speaker (personal communication) the process of pronouncing words such as /wa + aŋgu/ to [waŋgu] is nothing but vowel lengthening. This is the same behaviour with Kisukuma language data of possessive as /wu+oko/ [wɔko] which means yours.

3.9 Palatalization

This is another phonological phenomenon of assimilation that involves consonant assimilation in natural languages. It is stated that a non-palatal consonant acquires some palatal features in its articulation due to the following glide or vowel (Massamba, 2010). Additionally, it is a phonological process which takes place before, i and j or before other front vowels depending on the language (Campbell, 2006). However, therefore, in the language under discussion, a voiced bilabial nasal is drawn back to use hard palate when immediately followed by a front vowel [i]. This is evidenced in the Kisukuma language as is stated below:

- | | | |
|-------------|--------|-----------|
| (a) Mi+eji | myeja | ▶ months |
| (b) Mi+enda | myenda | ▶ clothes |

The data in 16 indicate the palatalization process in Kisukuma phonology. The same behaviour can be attested in eg+i>egy child in Nupe, a Bantu West African language (Schane as quoted in (Massamba, 2010).

Therefore, the data in 16 can be represented in the following rule:

$$\left[\begin{array}{l} +\text{con} \\ +\text{nas} \\ +\text{syll} \end{array} \right] \rightarrow \left[\text{palatal} \right] \setminus - \left[\begin{array}{l} +\text{syl} \\ +\text{voc} \\ +\text{son} \\ +\text{high} \\ +\text{front} \end{array} \right]$$

That is to say, a nasal consonant is palatalized in the environment when it is followed by a front open vowel. The underlying structure and surface structure are explicitly described because phonetic features from phonological features involve more than one explanation depending on the environment in which the process appears.

3.10 Affrication

This is another phonological system in the Kisukuma language that refers to a change in which a sound, usually a stop, sometimes affricative, becomes an affricate (Campbell, 2006). In other words, affrication is nothing but a phonological process in which sounds which are not affricates are changed into affricates place of articulation. This is evidenced in velar plosives as in /k/ /g/ of the stem which changes to affricates /tʃ/ and /dʒ/.

This means that when the stem contains alveolar lateral /l/ initially, the causative phoneme /tʃ/ results into account, when the stem initially contains velar /g/, the causative /dʒ/ phoneme happens.

- (a) Seka laugh secha ► cause to laugh
- (b) Leka leave lecha ► cause to leave
- (c) Zuga cook zuja ► cause to cook
- (d) Tula beat tuja ► cause to beat

The data in (17) can be represented in the following formal rule:



The data in (17) shows affrication phenomena in Kisukuma. The rule for this process shows that the non-syllabic consonants in the Kisukuma language are changed to affricate consonants when making causative formation.

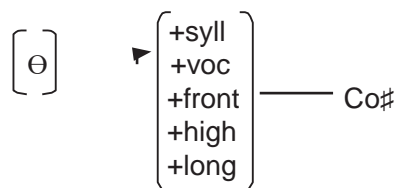
3.11 Prothesis

This word originated from Greek as in pro meaning before and thesis means placing. This is the phonological process in which a sound is inserted into the word initially.

Refer to Kiswahili words when taken into the Kisukuma language:

- 18. (a) Sahani ► isahani saucepan
- (b) Hela ► ihela money
- (c) Panga ► ipanga bush knife

The data in 9 show that in Kisukuma, loan words from the Kiswahili language especially some of the noun class, insert the front vowel in the word initially. The process can be shown in the following rule:



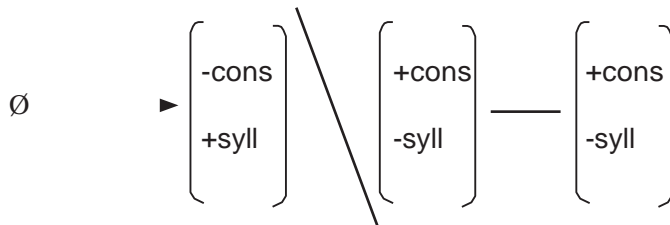
The data in (18) show that the phone -i- is inserted initially in Kisukuma loan words from the Kiswahili language of Tanzania

3.12 Parasitic vowel process

This is one among phonological insertions or epenthesis in natural languages. In this process, a vowel sound is inserted within two consonants. In the Kisukuma language, it o was observed in most Kiswahili loan words where a back vowel /u/, /i/, /a/ is inserted between two consonants from Kiswahili lexemes. See the following examples in 19:

- | | | |
|--------------------|----------------|-----------|
| 19. (a) Sakramenti | ▶ isakalamenti | Sacrament |
| (b) Mlima | ▶ imilima | rocks |
| (c) Shukrani | ▶ shukulani | thanks |

The data in 19 indicates that in the Igiha language of Tanzania and pertinent to the insertion process, a vowel is inserted within two consonants of the Kiswahili language. This is done to suit the canonical speech of the loaned lexemes by Igiha native speakers. This can be presented in the following rule below:



The rule of anaptyxis states that a syllable such as /u/, /i/, or /a/ is inserted between two consonants in the environment that the sound is followed and preceded by a consonant sound

4. CONCLUSION AND RECOMMENDATIONS

4.1 Conclusion

This article has addressed phonological processes that are found in the Kisukuma language of Tanzania F21. In the preceding sections, it has been shown that many Sukuma phonologists have investigated much on tones as far as phonological phenomena are concerned. Therefore, the current study has reported other phonological issues in Kisukuma including gliding, nasalization, homogeneity, vowel harmony, affrication, deletions, lengthening, palatalization, and coalesces.

Such processes would be useful compared to the existing linguistics phonological data in other natural languages. The rules for these processes have been explicitly described at length showing the environment for the formation of certain processes. Taking reference from the affrication process, the rule states that the non-syllabic consonants in the Kisukuma language being velars as in [k g] are being changed to affricates /tʃ/ and /dʒ/ as far as causative morph formation is concerned.

4.2 Recommendations

The recommendations pertinent to research accommodates proposal, advice and suggestion to mention just but a few. However, it is expected that the analyses done in this study will have practical pedagogical content and knowledge implications in the teaching of phonological aspects of the Kisukuma language and other related languages.

This will be tangible following the fact that phonological and phonetic aspects are key issues for undergraduate and postgraduate courses. In addition, there are evocative and theoretical gaps yet to be adequately investigated. One descriptive area not covered in this thesis is the longer noun and verb stems. To quench the satisfaction of these gaps, phonetic and phonological phenomena such as metathesis, vowel weakening and strengthening, dissimilation, aspirations and voicing need to be uncovered.

REFERENCES

- Baker, M. (1988). *Incorporation: A Theory of Grammatical Function Changing*. Chicago: University Press: 505pp
- Batibo, H.M. (1976). A New approach to Kisukuma to Kisukuma tone, in Larry Hyman (ed.), *Studies in Bantu Tonology*, SCOPIL 3:245-257. USC.
- Batibo, H.M. (1985). *Le Kesukuma : Langue Bantu de Tanzanie : Morphologie & Phonologie*. The de doctorat. Universite de la Sorbonne Nouvelle Paris III: 520pp
- Chabata, E. (2007). *The Nambya Verb with Special Emphasis on the Causative*. Oslo: University of Oslo.
- Chípanda, S. (2017). Morph ordering in Kisukuma Verbal extensions: Emerging issues, in *Africa in global development discourse*. Kenya. Centre of Democracy and Development (CEDRED), P 170-18. ISBN 978-9966-1933-3-9.
- Chomsky, N. (1977). *Essays on form and interpretation*. New York: North Holland.
- Chomsky, N. (1986). *Knowledge of language: its nature, origin and use*. New York: Praegar
- Dembetembe, N.C. (1987). *A Linguistic Study of the Verb in Korekore*. Harare: University of Zimbabwe Publications.
- Goodman, W. (1960). *Scripture text reprinted from the Bible in Sukuma*. Nairobi: World Missionary Press.
- Goldsmith, J. (1985a). On tone on Kisukuma, in, D. L. Goyvaerts (ed), *African Linguistics: Essays in Memory of M.W.K. Semikende*, studies in the science s of language series, 6:167- 187, Amsterdam: John Benjamins Publishing Company.

- Guthrie, M. (1967). *Comparative Bantu*. Farnborough Gregg International Publishers Ltd.
- Kadenge, M, (2010). Some Segmental Phonological Processes Involving Vowels in Nambya: A Preliminary Descriptive Account. In the *Journal of Pan African Studies*, 3(6), March 2010.
- Kavitskaya, D. (2001). *Compensatory lengthening: phonetics, phonology, diachrony*. Unpublished dissertation submitted in partial satisfaction of the requirements for the degree of Doctor of Philosophy in Linguistics in the graduate division of the University of California, Berkeley.
- Kanijo, P. (201). *Formatives of Tense and Aspects in the verbal construction of KiNyamwezi*. MA. Unpublished Dissertation. University of Dar es Salaam. Maganga, C.
- &Schadeberg, T. C. (1992). *Kinyamwezi: Grammar, Texts, Vocabulary*. (East African Languages and Dialects, 1.) Cologne: RüdigerKoppe.
- Matondo, M. (2003). *Tonal transfer in Kisukuma*. PhD dissertation. University of California.
- Manda, et al (2016). An Analysis of Verbal Extensions in Malawian Tonga: Towards Mirror Principle and Templatic Morphology. *International Journal of Linguistics*, 8 (4), 66-82.
- Masanja, T. (2016). *The Edifying role of Wasukuma narratives and the African concepts of idealism and realism*. MA. Unpublished dissertation. University of Dar es salaam.
- Massamba, D.B.P. (2010). *Phonological theory: History and development*. Dar es Salaam: TUKI.
- Mihayo, M. (1966). *MholaNsoga : enjiliine*. Tabora. Kipalal publisher.
- Muhdhar, R. (2006). *Verb Extensions in Kisukuma: Jinakiiya dialect*, MA dissertation, UDSM.
- McCaley, J. (1974). Review of Chomsky and Hale: *The Sound patterns of English*. In *IJAL* 40:50- 88.
- Richardson, I. (1959). *The role of tone in the structure of Sukuma*. School of oriental and African studies, university of London: London.
- Roberts, R.R. (1992). *A non-metrical theory of Sukuma tone*. Ohio State University, Working papers in linguistics 41. 135-148.
- Sietsema, B.M. (1989). *Metrical Dependencies in Tone Assignments*. PhD dissertation. MIP