

Tonal Structure of the Ideophones in Meetto-Makhuwa of Southern Tanzania

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ABSTRACT

This study investigates the tone structure of Ideophones in Meetto-Makhuwa language and the extent of which ordinary words differ with that of ideophones. The analysis of tone in ordinary words in Makhuwa has been discussed in a series of papers, see for examples: (Cheng & Kisseberth, 1979, 1980, 1981), but the study of tone in ideophones has not been investigated. Relevant facts on the tonal structure of ideophones have not been exhaustively investigated. The paper aims to analyze tone in ideophones and compare it to that of ordinary words specifically to simple infinitives in Meetto-Makhuwa and discuss tonal processes and/or rules that operate in Meetto-Makhuwa ordinary words as compared to that of ideophones. The significance of the study rests to the fact that, Meetto is one of the dialects of Makhuwa, this study will be an important source in the field of comparative studies of ideophones in Makhuwa dialects. In this descriptive account, the study employed autosegmental framework as applies by Robert (1992). It is observed that in ordinary word no H tone appears at the end of a word whereby in ideophonic form, H tone may occur. Therefore, this study contributes to our understanding of differences in tonal structure between in ordinary words as compared to that of ideophonic forms in Makhuwa as well as other closely Bantu languages.

Keywords: tone, syllable, makhuwa, ideophones, autosegmental phonology

INTRODUCTION

This study investigates the tone structure of ideophone in simple infinitives in Meetto-Makhuwa, a Bantu Language spoken in the southern part of Tanzania and also in Western parts of Mozambique. Guthrie's (1948) classification placed Makhuwa under zone P. Number 30. The study specifically sets out to describe syllable structure in ordinary words in infinitive forms and analyse tone realization in ideophonic forms in Meetto-Makhuwa and establish rules that operate in forms, ordinary and ideophonic words in Meetto-Makhuwa. Studies that have so far been conducted on tone in ideophones have investigated the role that tone plays in ideophonic system of investigated languages. It has been observed that, different tones in Bantu language convey different meanings. With regard to the findings noted in the other studies discussed above, we still need to know whether the tone behaviour of ordinary words in the languages, tonal rules and alternations that were observed in the studied languages is also found in Meetto-Makhuwa? There is also the need to know how syllable structure and tonal patterns differ from ordinary word to that of ideophonic word. This study sees these questions to be quite crucial in the understanding the tone structure of ideophones in Meetto-Makhuwa. Therefore, the study undertakes a tonological analysis of the structure of ideophones in Meetto dialect of the Makhuwa language, spoken in Southern Tanzania. The study begins by outlining the syllable structure of Meetto. Then, it carries out a systematic analysis of the tone structure of simple infinitives, before showing the tone behaviour of the ideophones in the language. Meetto dialect has been chosen because it is the author's dialect and is spoken by a relatively large population (approximately 800,000 people) in Tanzania as compared to other Makhuwa dialects in the country. It is, therefore, a better candidate for investigation.

This is the first study that deals with the description of tonal structure of ideophones in Meetto-Makhuwa tonal system. It is hoped that the study of the Meetto-Makhuwa tone system in ideophones will be a useful contribution to our understanding of the behaviour of tone at both ordinary and ideophone word in Meetto-Makhuwa and other closely related Bantu languages. Since Meetto-Makhuwa is one of the dialects of Makhuwa, this study will be an important source in the field of comparative studies of Makhuwa dialects. In short, the study will be a useful contribution to linguistic literature on the understanding the structure of tone in ideophones in Bantu languages. As far as a syllable is concern, Massamba (2012) has defined a syllable is a unit of speech claimed to be relevant for the organization of words, a grouping of consonants and vowel into a CoV1Co constituent, (Massamba, 2012).

Furthermore, we need to know what the ideophone is. The concept of ideophone has not been much widely defined in the literature. Doke, (1935) is one of the early work that defined ideophone as 'a vivid representation of an idea in sound... a word, often onomatopoeic which describes a predicate, qualificative or adverb in respect to manner, color, sound, smell, action, state or intensity' 'This definition has also used as the basis for analyzing the structure of ideophones in African and Asia language, the case of Dagaare and Cantonese, Bodomo, (2006). The essential aspects covered in Bodomo's study are the ideophonic similarities between Dangoore and Chines

ideophone, the universality of word classes as far as ideophones are concerned and the link between language, literature and culture. These topics have been discussed in a very comprehensive way, giving the reader a general understanding of the Bantu ideophones. Ideophones are often characterized as iconic or sound symbolic words meaning that there can be a resemblance between their form and their meaning.

In his study, Dingemans (2009), made a cross linguistic study of ideophones of which he defined ideophones as marked words that depict sensory imagery. His claim is that the definition can be widely acceptable as it captures much generalization to include other non Bantu languages.

Also, Newman (1986b), observed that the ideophone in Hausa is characterized by an extra high pitch. This high pitch ignores the downward drift of the rest of the utterance if it occurs in a final position, similarly the case was noted by Inkelas, Leben, and Cobler (1987, p 333), of which it was stated that "Certain emphatic particles in ideophones are always pronounced with an extra-high tone..." The observable problem here is that the ideophones are not put in any kind of context and not related to other phenomena in the language, Newman (p.765).

These studies have played a significant role in shaping the current trend of phonological theory relating to various Bantu languages especially to our understanding of tone in ideophones in the languages studied. Yet, we think, Meetto-Makhuwa has other tonal structures in ideophonic words which have not yet been investigated. Prior to this study, there has been no systematic study on tone structure of ideophones in Meetto. Thus, it provides a problem to a general understanding of the tonal structure of the ideophones. For the purpose of the discussion in this study, simple infinitive verbs have been used. By simple infinitive verbs refers to all verbs with no object markers.

Theoretical and Descriptive Perspectives

The theory that is employed in this study is autosegmental phonology (AP), as formulated by Goldsmith, (1976) but extended version of Robert (1992) that uses Melodic High. The reason for this choice is due to its descriptive power in handling tone issues. AP is a derivational approach of which phonological representation is done in nonlinear fashion. This theory is an improvement of the former standard model of generative phonology stipulated by Chomsky and Halle (1968) of which phonological representation was done linearly. According to Goldsmith, the principle that phonological representation of segments be carried out in a multilinear fashion and that the derivational of tonological phenomenon ought to encompass three major aspects, known traditionally as well-formed conditions. There are three principles of well-formed condition which states that: each tone must be associated with at least one vowel, each vowel must be associated with at least one tone; and the association lines do not cross. These requirements avoid the generation of unacceptable forms in any tonal language description. Since the formulation of well-formed condition, there has been a number of suggestions to make it more encompassing and get rid of the tedious tradition of accentual approach in tone analysis (cf. Childs, (1988); Childs, (1994); Hamano, (1986); Ismail, (2011); Mphande, (1989) and Massamba (2012), to mention but a few. This study will adhere to application of melodic high of which tone derivations begins with assigning highs to the first syllable of stem and the low tones are assigned as default low tone assignment.

Having briefly presented the contents of AP, we don't intend to extend the discussion here on the theory, because it has been well covered in phonological literature. This implies that we do not need to present a detailed description of the theory. Consequently, the study presents a short description of Meetto syllable structure, which is followed by a description of tones in simple infinitives and the tone structure of Meetto ideophones.

It also employed a standard conventions used in standard model of generative phonology, for example, C for consonants, V for vowel, + for morpheme boundary, \$ for syllable boundary, # for word boundary, ## for phrase boundary, becomes... in synchronic rule and ' above a vowel means High tone and low tone remained unmarked.

METHODOLOGY

The study was limited to Masasi District, in Tanzania. This area was selected mainly because the Meetto-Makhuwa spoken in this area has a richer tradition in terms of its oral literature and culture. Data used in this article come from two sources: through interviews with two native speakers of Meetto, by direct elicitation but incorporated Mr. Jacob Sambano, a native speaker of Meetto, for judgmental purposes. In this method, interviews were conducted in Kiswahili; with translation made generally from Kiswahili examples into Meetto-Makhuwa.

Documentary review

Other data were made available by Kisseberth, a Bantu linguist, who supplied me with most of Makhuwa lexicon, of which ideophones were inclusive. Relevant literature on Makhuwa was consulted so as to obtain more lexical items about the dialect under study. Among the lexical items that were used in this study is Kisseberth's (2009) Makhuwa-English dictionary, which provides a 10,000 (ten thousand) wordlist. This was done by randomly selecting any verb from the first page of the list to the last. Sometimes, two or more pages

were opened and no word was chosen. This was the case throughout the pages. We have had the opportunity to record and check this dictionary with our informants. Through such rechecking, we noted that some of the vocabulary is either outdated or not in the Meetto-Makhuwa dialect although the dictionary is a very valuable tool for studying Makhuwa. The data collected through the review of documents was helpful in validating some of the data collected from interviews.

RESULTS AND DISCUSSION

Meetto syllable structure

A section on syllable structure in Meetto needs a considerable weight of discussion. The reason is that any discussion on the Meetto ideophones will closely relate to a segmental make-up of a specific syllable structure. A basic syllable structure which is assumed for the Meetto data has a complex onset up to three segments in the rhyme. Representative examples of possible syllable structures are shown in the following subsection:

\$ V \$ syllable structure

In Meetto, a syllable may contain only a single vowel or can be a succession of two vowels. An occurrence of such a syllable can be word and/ or morpheme initial. Observe the following example 1:

Example 1:

- a) \$ a \$ as in # \$ a \$ sha \$ na \$ # `children'
- b) S \$ i \$ as in # \$ i \$ kho \$ ri \$ # `bed'
- c) \$ u \$ as in # \$ u \$ kho \$ kho \$ # `brain'

If a word is composed of two morphemes, the first morpheme ending in a vowel and the second morpheme beginning with a vowel, phonological rules apply, thus deleting, gliding or coalescing of the vowels can happen. Observe the following in example 2:

Example 2:

- a) # \$ a \$ sa \$ na \$ # # \$ a \$ ka \$ # # \$ a \$ sa \$ na \$ ka \$ # `my children'
- b) # \$ mu \$ + \$ alo \$ # # \$ mwa \$ lo \$ # # `knife'
- c) # \$ ma \$ + e \$ no \$ # # \$ m e \$ no \$ # # `teeth'

From these examples, therefore, an occurrence of /\$V\$/ in a word and/or morpheme can consist of a vowel only then it must occur in a word and/or morpheme initial position as in example 3 below:

Example 3:

- a) # \$ e \$ ro \$ di \$ # `two (animals)'
- b) # \$ e \$ ro \$ ri \$ # `beard'
- c) # \$ e \$ kho \$ ve \$ # `face' `fore head'

\$V V\$ syllable structure

Observe the following /\$V V\$/ syllable structure as in example 4:

Example 4:

- a) # \$ u \$ koo \$ ko \$ # `bottom food crust'
- b) # \$ u \$ nee \$ na \$ # `to itch'
- c) # \$ u \$ chii \$ va \$ # `sweet'

3.1.3 \$ CV \$ syllable structure

This is the most common syllable structure in the Meetto. In this structure, a consonant combines with a vowel to form a syllable, as in example 5 below:

Example 5:

- a) # \$ ha \$ va \$ ra \$ # `leopard'
- b) # \$ ni \$ ha \$ tha \$ # `finger'
- c) # \$ ka \$ ra \$ mu \$ # `lion'

\$ NCV \$ syllable structure

This structure can be illustrated in example 6 below:

Example 6:

- a) \$ mbi \$ as in # \$ mbi \$ ri \$ nga \$ nya \$ # `egg plant'
- b) \$ nda \$ as in # \$ nda \$ pa \$ la \$ # `hide'
- c) \$ nga \$ as in # \$ ni \$ pe \$ nga \$ # `horn'

\$ CGV \$ syllable structure

In /ccv/ syllable, the second consonant can only be a glide. This structure is exemplified by the following data in example 7:

Example 7:

- a) \$ pwe \$ as in # \$ ka \$ hu \$ pwe \$ # `animal (cat like)'
- b) \$ pwo \$ as in # \$ mu \$ pwo \$ ko \$ # `uncircumcised male'
- c) \$ dyo \$ as in # \$ u \$ dyo \$ ha \$ # `dream'
- d) \$ kwo \$ as in # \$ mi \$ kwo \$ kwo \$ # `tree (type)'

\$ NCGV \$ syllable structure

This structure can be illustrated as the examples in example 8:

Example 8:

- | | | | | |
|----|---------------|----|--------------------------|-----------------------|
| a) | \$ mbwe \$ as | in | #\$ ni \$ mbwe \$ra \$ # | 'irrigated land' (sg) |
| b) | \$ mbwi \$ as | in | #\$ m \$ tu \$ mbwi \$ # | 'ferry' (sg) |
| c) | \$ mpya \$ as | in | #\$mu\$ mpya \$ ku \$ # | 'girl' (sg) |

\$GV\$ syllable structure

This is another syllable structure permissible in the Meetto. Consider the example 9:

Example 9:

- | | | | | |
|----|-------------|----|-------------------------------|-------------------|
| a) | \$ ya \$ as | in | #\$ mwa \$ ti \$ ya \$ na\$ # | 'girl' |
| b) | \$ ye \$ as | in | #\$ u \$ ye \$ le \$ # | 'beans' (variety) |
| c) | \$ wa \$ as | in | #\$ wa \$ ta \$ # | 'beat' |
| d) | \$ wo \$ as | in | #\$ na \$ ku \$ wo \$ # | 'maize' |

It is within these structures that we get a possible definition of a Meetto syllables.

3.2 Tone analysis in simple infinitives of Meetto

This section attempts to provide a general sketch of tone in simple infinitives of ordinary words in Meetto. The reason is that, simple infinitives in ordinary language correspond with ideophones described in this work. Its purpose is to show how tone in ordinary words differs with that of the ideophones.

Tone realization in Meetto ordinary words

Before we begin discussing tonal realizations in ideophones, we found it is necessary to provide, in a very sketch way, the descriptive scheme of the tonal structure of the Meetto simple infinitives then we will show the tonal differences between the ordinary words and the ideophones. This approach is crucial in setting up the two tonal differences. Let us first consider the following data in example 10:

Example 10:

- | | | |
|----|----------------|------------------------|
| a) | uphírikítúwa | 'to wriggle about' |
| b) | uphírikítúwéla | 'to wriggle about for' |
| c) | uphyálákúla | 'to cause to slip' |
| d) | upyárákáta | 'to dispense' |

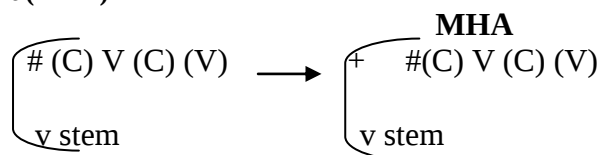
Compare with the following simple infinitives in example 11:

Example 11:

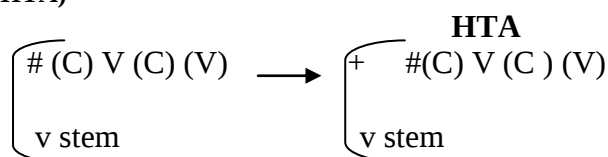
- | | | |
|----|---------------|--------------------|
| a) | *úphírikítúwa | 'to wriggle about' |
| b) | *úphírikítúwa | 'to wriggle about' |
| c) | *úphírikítúwa | 'to wriggle about' |

The example 10 show that the Meetto has two consecutive H's in three syllables form, three consecutive H's in four syllables form, and so on and so forth, except that the H cannot go beyond the penultimate syllable. In these examples, we also note that all the infinitives start with a Low tone followed by one or more H tones and ends with the L tone. The examples in 11 shows that, in Meetto you cannot have a word in its ordinary form either begins ends or begins and ends with an H as may yield with unacceptable forms in the Meetto.

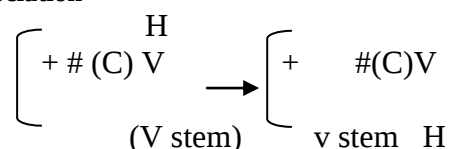
Let us now investigate the appearance of H's and where these H's come from. For the purpose of our discussion here we will first examine the appearance of these H's. In diachronic principle, Bantu verbs can be divided into two tone classes, H and L. In H toned, the H is always assumed to be associated to the first syllable of a stem, loosely, within a given word structure. It is also assumed that, from this perspective, any H tone that appears on any other syllable, apart from the first syllable or word is assumed to have moved to that position through a later rule in the process of mapping surface representation from underlying representations. Therefore, we can claim that, forms in example 10 suggest that in Meetto, as is the case to other tonal languages, at some point during the process of derivation there is an interpretive rule which assigns H on a specific syllable of stem and this H is part of the general knowledge in Autosegmental phonology particularly of which a H is part of the Melody, therefore there is Melodic High rule. We term this rule as Melodic High Assignment (MHA). The H of Melody is assigned to the first syllable of stem. Therefore; we will state the rule formally at this point as follows:

Rule 1: Melodic High Assignment (MHA)

The rule says: the first syllable of the stem is assigned a High tone. For the purpose of our discussion and tonal simplicity, we modify MHA rule to write only H as an H tone is what involves in the derivations. Therefore, a H tone is assigned to a particular syllable, as a starting point in the process of the derivations. Therefore, rule 1 is modified as the following:

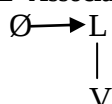
Rule 2: High Tone Assignment (HTA)

In order to get an acceptable form of the Meetto, yet another rule that associate with the H to the first syllable of stem is required. Therefore, we formulate a Melodic High Association rule in the following way:

Rule 3: High Tone Association

The rule states that, a High tone gets associated with the first syllable of the Stem.

What will happen if we apply the two rules in the derivations of the simple infinitives that involve two syllable stems? In these forms, the H appears once within the syllabic form and nothing else. In this case, once the H is assigned to a particular vowel, then L tone is associated to all toneless vowels by a default rule which can also be formulated as follows:

Rule 4: Default L- Association

In this rule, it associates a low tone to any vowel that has not yet received a tone after application of other tonal rules.

The default rule applies after the other initial tone mapping rules has applied. Let us illustrate the application of L tone default by making the following derivation to such forms u[vénda] ‘to request’ and u[kála], ‘to sit’

Example 12:

	H	High Tone Assignment
u[vend a]		
L H L		Default L- Association
u[ve nda]		Output [uvénda]

High Tone spread in Meetto

Before we begin discussing the appearance of H's on every syllable that follows the Melodic High on the stem in ordinary word, let us consider the following simple infinitives:

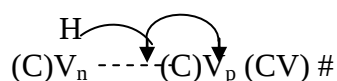
Example 13:

- | | | |
|----|--------------|--------------------|
| a) | uphírikítúwa | ‘to wriggle about’ |
| b) | uphyálákúla | ‘to cause to slip’ |
| c) | utátákúla | ‘to rummage’ |
| d) | uthárákúla | ‘to sort out’ |

The examples in 13 show that there is H tone on the first syllable of stem and another H tone on every other syllable that follows it, except the ultimate syllable. Theoretically, the H on the Melodic H spreads rightward except to the ultimate syllable thus Spreading.

Therefore, in Meetto H tone spreads rightward up to the penult. Now, in a view of what we see in example 10, we need to formulate a rule in order to account for what is revealed therein. The rule we propose here is High Tone Spread rule and the following is a formal representation of this rule:

Rule 5: High tone spread



V stem

The rule 5 assumes that the succession of the H tones in Meetto simple infinitives is motivated by High Spread rule. In order to get the surface representations we need other rules to apply such as HTA, SHTAS, HS, and Default L tone Association. Given this state of affair, let us now consider an application of these rules in the derivation of a following infinitive u [véndéla] ‘to request for;

(14) H High Tone Assignment

u[~~v~~end ela]
H

High Tone Spread

u[~~v~~end ela]
L H L

Default L – Association

u[~~v~~end el a]

Output u[véndéla]

This derivation gives us correct results.

Tone in Meetto ideophones

The question as to what exactly characterizes ideophones has been discussed widely in the literature (c.f., Awoye, 1989); (Childs, 1988&1994); (Dingemasnse, 2009); (Hamano, 1986) & (Mphande, 1989)). For this reason we do not need to carry it any further here. Instead in this section we attempt to provide a tone analysis of those ideophones. The ideophones deviate from the phonological system outlined in the previous sections. As for the scope of this study, the deviations are concerned in the syllable structure and the tone shapes of ideophonic forms. A more general fact about tones of the ideophones in Meetto is that ideophones can be articulated throughout a syllable with (a) (L-tone); (b) L-H-H; (c) L-L-L; and (d) H-H-H. Given this kind of picture, we can describe the following ideophonic tone structure in Meetto.

Tone realization in ideophones

We begin our examination of the tone realization in ideophones with /cv/ structure. Tonally, the ideophone with /cv/ form is marked by two tones pattern namely H and L. This means that, when the ideophone has only /cv/, the H tone shows up and the associated meaning is only performing the action once as in example (10). This goes for all other forms of that nature. In example (15), we note that a /cv/ is a copy of the first /cv/, four times and wonderful enough, the H that showed up on the syllable pa has now disappeared throughout and that the action now is repeated. Observe the following in example 15:

Example 15:

- a) kháyaapápéla pá ‘drink once’
b) kháyaapápéla pa pa pa pa ‘drink continuously’

In the example 15, we observe that, when the ideophone has a monosyllabic form, it has H toned as in example 15 (a) and this H does not motivate the appearance of H’s in example 15(b). Instead, the H in triplicate forms has disappears when there is /cv/ form. What happens when the ideophone has /cvv/ form/? Let us immediately proceed the discussion by considering the following data in example 16:

Example 16:

- a) kháyaamákáca vyéé ‘squeezed once’
b) kháyaamákáca vyee vyee vyee ‘squeezed intensively’

- | | | | |
|----|------------|----------------|----------------------|
| a) | kháyaárika | cháá | ‘fried once’ |
| b) | Kháyaárika | chaa chaa chaa | ‘fried continuously’ |

Once again, in these examples we see that morphologically, the vowel quality of the vowel in ideophones in example 16 /ee/ in /vyee/ and /aa/ in /chaa/ is a copy of the vowel quality realized in example 16 /éé/ in /vyéé/ and /áá/ in /cháá/ except that the tones are not associated with these vowel quality. In examining these cases we note that the mark (') may or may not appear on the given forms. Moreover, when it appears does not appear on the same syllable in all ideophonic forms. Four things are clearly noted here. Firstly, there are two sets of forms provided. Each set has two members: each member has no same syllables as the other member. Secondly, the ideophonic forms in example 16 (a), has a succession of two H's while its counterpart forms in example 16 (b) has L throughout the syllable. Thirdly, the absence of H's in example 16(b) denotes that when the ideophone form has an L tone, the resulting action is done continuously with a meaning differences. Let us expand our discussion further by considering tonal realization in ideophones with /NGV/ forms as in example 17:

Example 17:

- | | | | | |
|----|-------------|-------------------------|--|---------------------------------------|
| a) | kháyaathúka | nywíí | | ‘tied tightly’ |
| b) | kháyaathúka | nywii nywíí nywíí nywíí | | ‘intensively tied tightly’ |
| a) | kháyaakóna | nwíí | | ‘felt stabbing pains’ |
| b) | kháyaakóna | nwii nwíí nwíí nwíí | | ‘felt stabbing pains’ |
| a) | kháyaaháca | ndyáá | | ‘heard machine sounding once’ |
| b) | kháyaaháca | ndyaa ndyaa ndyáá ndyáá | | ‘heard machine sounding continuously’ |

Before we make any suggestion as to how the tonal forms in example 17 should be analyzed, it would be constructive to examine briefly, its morphological make-up. We observe, for example, the ideophones in example 17(a) case, appears once but in example 17 (b) cases there is a repetition of syllables hence multiplication process taking place, /NGVV/ is copied four times. Semantically, it seems that the ideophone in triplication form is associated with verbs denoting repetitive cases. Tonally, four things are clearly noted here. Firstly, there are three sets of forms provided. Each set has two members: each member has no same syllables as the other members. Secondly, the ideophonic forms in example 17 (a) has a succession of two H's while its counterpart examples in 17 (b) has LL tone immediately followed with HH-HH-HH tones within a copied syllable. Thirdly, the absence of H's in example (17) b cases denotes that when the ideophone has a LL, the action is done once but when there is a LL followed with the H tone throughout, it connotes that the action is done continuously with a meaning differences. Fourthly, the tonal property as examples in 17(b) cases is quite different with what we have observed so far. In example 17, we observed, that when the ideophonic syllable has H tone in example 17(a) cases and this H's does not suffice in example 17(b). This is not the case in example 17 (b) and that the tonal forms in this structure is wanting. In example 17 (b) we observe that the ideophonic form begins with Low tone on the first syllable category, but when it is immediately repeated four times, the H tone shows up, the property that deviates from our general understanding of tone in ideophones so far we have addressed. According to the analysis followed here, it can be argued that when the ideophone has copied four times, the tone on the first syllable must be H but when the ideophonic syllable is copied not more than three times, the ideophonic form throughout the syllable is L tone. Therefore, we can make a pre-mature claim that determinant factors that affect tone in the Meetto ideophones is the number of syllables repeated within the ideophonic forms.

In the /cvvv/ structure, we are also provided with the evidence showing the ideophone with L tone is attested throughout the syllable. Consider the following data in example 18:

Example 18:

- | | | | |
|----|--------------|-------|-------------------------------------|
| a) | kháyaachápa | phuuu | ‘broke wind once’ |
| b) | kháyaamóra | phuuu | ‘dropped to the ground with a thud’ |
| c) | kháyaawúlúwa | phuuu | ‘fell with a thud’ |

In all these examples, tonally, this particular structure has L tone throughout. Here, we can ask a theoretical fundamental question:- What motivates the appearance of L tone in ideophonic forms of /cvvv/? The plausible explanation that we can posit is to argue that the syllabic structure which has L tone in the ultimate position might have motivated all the /u/ in its ideophonic forms, in this case /uuu/, and this makes no tonal variations between the ultimate syllable and the forms in the ideophones. Consequently, the ideophonic meaning has a slight slower pitch level than other syllables within ideophonic structure.

Apart from the ideophonic forms discussed above, the Meetto exhibits tone in /cvcv/ structure. As it is shown in examples (19) and example (20) in this category, the ideophonic form (underlined) is a copy of antepenultimate

and penultimate syllable of the preceding subject form /khá/. For ease of the discussion we will use the following data in example 19:

Example 19:

- | | | | |
|----|---------------|------|-------------------------------|
| a) | kháyaavárela | váré | ‘held onto’ |
| b) | kháyaavátela | váté | ‘encountered in surmountable’ |
| c) | kháyaaváwúla | váwú | ‘dished out once’ |
| d) | kháwaavérúnya | vérú | ‘twinkle’ |
| e) | kháyaawákúla | wákú | ‘answered haphazardly’ |
| f) | kháyaarúpéla | rúpé | ‘lay flat on the ground’ |

Phonologically, the ideophonic syllable structure of this category has /cvcv/ and is dependent and determined with the proceeding cl.2. Two syllables except, ultimate, have copied both segment and tone and become the ideophone with an H tone. We observe that if the syllable in the cl.2 is H, then that H shows up in the ideophone. Therefore, it is logical to argue that the H that suffices in the ideophonic forms are triggered off by the Hs of the proceeding cl.2. The expression that comes out here is that the actions are done once with low intensity. We are also provided with evidence showing that the syllables in /cvcv/ can be repeated to form a total reduplication and this process yields the action that is carried out frequently and/or repeatedly. What happens when ideophones in example 19 are copied in trisyllabic forms as examples in 20?

Example 20:

- | | | | | | |
|----|---------------|------|------|------|-------------------------------|
| a) | kháyaavárela | váré | váré | váré | ‘held onto repeatedly’ |
| b) | kháyaavátela | váté | váté | váté | ‘encountered in surmountable’ |
| c) | kháyaaváwúla | váwú | váwú | váwú | ‘dished out continuously’ |
| d) | kháwaavérúnya | vérú | vérú | vérú | ‘twinkled ceaselessly’ |
| e) | kháyaawákúla | wákú | wákú | wákú | ‘answered un-seriously’ |
| f) | kháyaarúpéla | rúpé | rúpé | rúpé | ‘lay flat on the ground’ |

The data in examples in 20 has a number of things which are interesting to note here.

The two syllables are copied, except ultimate syllable. The copied syllables are then repeated to ideophonic forms. Tonally, in this structure, a non-penultimate and a penultimate display a H tone. This H tone doubles on the next syllable and thus the entire ideophonic structure is articulated in a H tone. Again, in Meetto, the repeated ideophone is often pronounced quickly with a high-pitched tone. Theoretically, the H tone in this ideophone is always H regardless its location.

We now turn to the discussion of tone in ideophone with /CVCVCV/ structure. In this structure, we find the following tonal pattern:

Example 21:

- | | | | |
|----|-----------------|---------|------------------------------|
| a) | kháyaatápálála | tápálá | ‘was drenched’ |
| b) | kháyaavévérúwa | vévér ú | ‘was just blown by the wind’ |
| c) | kháyaawéwényúla | wéwényú | ‘winked once’ |

In example 21, we observed that the ideophonic structure is marked in exactly the same way as that of /cvcv/. The ideophonic form is a kind of reduplication which is copied from cl.2 two syllables, except the ultimate on the object. Semantically, it seems that, partial reduplication is associated with it denoting ideophonic actions not done regularly. Looking at the tones on the two syllables except the ultimate again has a H tone. This H tone is then copied to the ideophonic action, violating non-final principles that prohibit the occurrence of H tone on a word-finally. As it has been stated in Ismail (2000), when /cvcvcv/ of an object copied and repeated in trisyllabic forms, ultimately, ideophone form from this copying has a semantic effect of increased intensification of the action as shown in example 22 below:

Example 22:

- | | | | | | |
|----|-----------------|---------|---------|---------|-------------------------------------|
| a) | kháyaatápála | tápálá | tápálá | tápálá | ‘was extremely drenched’ |
| b) | kháyaavévérúwa | vévérú | vévérú | vévérú | ‘was blown by the wind haphazardly’ |
| c) | kháyaawéwényúla | wéwényú | wéwényú | wéwényú | ‘winkled continuously’ |

Here again, looking tonally, the ideophone is articulated in a voicing tone throughout the ideophonic structure including the ultimate syllables. This state of affair has an impact on denoting the intensity of cl.2 in the action under considerations. The same phenomenon is observed in example 23 below:

Example 23:

- | | | | |
|----|-----------------|---------|-------------------|
| a) | kháyaanyópótóla | nyópótó | ‘strangled once’ |
| b) | kháyaapápáruwa | pápáru | ‘peeled off’ once |

- | | | | |
|----|----------------|--------|-----------------------|
| c) | kháyaapátákéla | pátáké | ‘climbed over once’ |
| d) | kháyaapítímúla | pítímú | ‘cooked a huge ugali’ |

In example 23, we observe that, morphologically, the ideophonic structure /cvcvcv/ is a total copy of an underlined infinitive syllable in cl.2, except the ultimate. We arrive to this decision by observing what happens in cases where syllabic and tonal forms are involved in ideophonic forms both morphologically and tonally. Tonally, in ideophonic forms, H tones are located in the entire underlined syllable, motivating the action being done once but with a different intensity. This argument is justified by a location of H in the ultimate syllable which violates a general rule on tone in ordinary word in Makhuwa which prohibits the location of H tone in word-finally. The same sort of thing happens in ideophonic forms where there is a total copy of three syllables, except ultimate. The copied syllables are then repeated to disyllabic function, as in the following cases:

Example 24:

- | | | | | | |
|----|-----------------|---------|---------|---------|----------------------------|
| a) | kháyaanyópótóla | nyópótó | nyópótó | nyópótó | ‘strangled severely’ |
| b) | kháyaapápárúwa | pápárú | pápárú | pápárú | ‘peeled off continuously’ |
| c) | kháyaapátákéla | pátáké | pátáké | pátáké | ‘climbed over’ |
| d) | kháyaapítímúla | pítímú | pítímú | pítímú | ‘cooked a very huge ugali’ |

The repeated ideophones are often pronounced quickly with H tone throughout indicating the state of continuity of an action. It may indicate that a subject is non-respected people and that the action was done in multiples.

The repetition of low pitched level ideophones is a possible pattern in the language and that the tonal on the subject refrain from doubling onto the ideophones particularly in the phrase-penult syllable. This is indicated through the pause between the two instances of the ideophone as indicated in example 25:

Example 25:

- | | | | |
|----|----------------------------|-----------------------------------|----------------------------|
| a) | kháyaaráphyaa | raphii...raphii...raphii... | ‘vomited continuously’ |
| b) | kháyaapepétýaa | pepetii...pepetii...pepetii... | ‘walked very majestically’ |
| c) | kháyaaphirikýaa | phirikii...phirikii...phirikii... | ‘rolled continuously’ |
| d) | kháyaataphúlýaataphulii... | taphulii...taphulii...taphuláchí. | ‘released’ |

Apart from the forms which pauses are indicated in between the ideophones, there is also a pattern where the tone bearing element in the ideophonic structure is low throughout. What is happening in this form is that the ultimate syllable of the subject which is L, is multiply repeated with a L tone. In example 26, the syllable /re/ and /che/ are copied and repeated in the ideophones as follows:

Example 26:

- | | | | |
|----|----------|----------------------------------|---------------------------------|
| a) | mweéri | wamwáryeryeryeryeryerye... | ‘the moon shined very brightly’ |
| a) | ipúla | charúpháchachachachachachacha... | ‘there was raining lightly’ |
| b) | mwaánúni | epháchechechechechechecheche... | ‘there was the sound of birds’ |

Example 26 shows that there are several morphological and tonal patterns that are sufficed. The ultimate syllable /rye/, /cha/ and /che/ on the subject are copied indefinitely and its vowel quality /a/ and /e/ has a L tone throughout.

3.4 Tonal rules

In this section, let us now formulate the rules which capture tonal generation on simple infinitives and ideophones discussed in (3.2-33) above. Before we formulate rules which motivate tones in Meetto-Makhuwa ideophones, it is important to recall that a pitch level of a H tone in ideophone is radically higher than a pitch level of the H tones of the ordinary words. In ordinary words, no H tone appears at the end of a word and for the most part a H tone does not occur word-finally. But in ideophonic structure, a H tone may be located at the final vowel as in example 24. Although at this point we do not know how the tonal rules in the ideophonic forms will look like and what triggers off, at least one point is clearly evident, that the ideophones can be H toned throughout and can be L throughout or there can be Low with the successions of H's to ultimate syllable as in example 27:

Example 27:

- | | | | | |
|----------------|--------|--------|--------|---------------------------|
| kháyaapápárúwa | pápárú | pápárú | pápárú | ‘peeled off continuously’ |
|----------------|--------|--------|--------|---------------------------|

The behavior of the tone in example 27 is wanting. The theoretical issue here is to explain the appearance of H's and where the H comes from at least in ideophonic forms in Meetto? Two explanations can be established: In one hand it can be argued that /cvcvcv/ in the ideophonic forms such as /‘pápárú’/, tone is motivated by copying part of syllabic structure in cl.2, ‘-pápárú- except ultimate. The copied ideophone then is doubled in disyllabic function along with tones associated to it. Therefore, the H tones that are observed in these ideophones are motivated by the H tones of the copied syllable of cl.2 *-pápárú-. Theoretically, this is unacceptable analysis in auto-segmental orientation to assume that supra-segmental, in this case a H tone, is part of individual segment. Therefore, this analysis remains more problematic and rather odd. On the other hand, we can take a different

approach that seems to be less problematic. It is well argued in the autosegmental framework that suprasegmentals are independent off, and not part of the segments. Tones that attested to vowels in a particular syllable within the words generally, and to the ideophones specifically, are motivated by the tonal rules which are imposed to those vowels. In this case, we can begin the discussion by making three assumptions: The first assumption is that tone in Meetto-Makhuwa ideophones, as in the case of tone in ordinary words, is underlying toneless, eg. /#\$....páparuwa\$# #páparu páparu páparu#/. The second assumption is that, the succession of H's that suffice within these words are motivated by rules and the first rule is to assign a Melodic High to a vowel of a first syllable within the ideophone, eg. pá. The third assumption is to argue that any melodic H that assigned on the first syllable motivates another High to the ultimate syllable, eg. pápárú, thus, is yielding a High tone Spread. The appearance of the tones to other words within the ideophonic structure is independent, to the sense that, each form should be derived on its own tonal rules and procedures. Therefore, in order to make a derivation for an ideophone such as /pápárú pápárú pápárú/, we need to modify rule (2) High Tone Assignment, in order not to necessarily involve the stem syllable in its application.

Rule 6: High Tone Assignment (HA)

$$\left[\begin{array}{l} \#(C)V (C)(V).. \$\# \\ \text{(ideophonic syllable)} \end{array} \right] \longrightarrow \left[\begin{array}{l} \text{H} \\ \#(C)V (C)(V).. \$\# \end{array} \right]$$

The rule states that the first syllable in ideophonic form is assigned a High tone.

Once the H tone is assigned to the first syllable, then what follows is to invoke the High Tone spread rule we have stated in rule (5). Note that, the High Spread rule takes care with non-final requirements of which the appearance of H tone on the final positions are prohibited in ordinary words. Therefore, we need to modify the rule 5 in order to take care for the tone in the ideophonic forms of which the non-final principle is violated. The reason is that, the appearance of H tone in final position of the syllable is a common phenomenon within the ideophonic structure.

Rule 7: High Tone Spread

$$\left[\begin{array}{l} \text{H} \\ \#(C)V \quad CV \quad CV \quad CV\#... \\ \text{Condition: in ideophonic form} \end{array} \right]$$

Rule 7 assumes that the succession of H tone in Meetto-Makhuwa ideophone is motivated by High Spread rule and that in order to get the surface representations we need other rules to apply such as HTA, HTA, and Default L tone Association rules. Given this state of affair, let us now consider the application of these rules in the derivation of ideophones.

The following examples will serve as an illustration of how surface forms are derived from underlying forms in /cv/ eg. pá:

Example 28:

kháyaapápéla	pá	pá	'drink twice'
	H	H	High Tone Assignment
	pa	pa	Output [pá]

Let us illustrate the process of tonal spread in /cvv/ structure with the following example in 28:

Example 28:

vyéé	vyéé	'squeezed once'
vyee	vyee	
H	H	High Tone Assignment
vyee	vyee	
H	H	High Tone Spread
vye e	vye e	Output [vyéé vyéé]

CONCLUSION

This study has mainly discussed the tonal systems of infinitives in ordinary words and how H tones are realized at the phonetic level in Meetto-Makhuwa. It has been shown that the surface realizations of tones are determined by the environments in which the H occurs. That is, if the H tone occurs on a first syllable of stem,

that H will trigger an H tone which then spreads up to a penultimate syllable. In ideophonic forms, the study shows that no systematic consideration and stability on the appearance of H tone in these words. Sometimes we find H's in initial position and in most cases ideophones violate the appearance of H tone in the final position of any given word in ordinary words.

We also noted that, in the tone structure of ideophones in Meetto-Makhuwa, exhibit a limited number of phonological shapes. This could be pointed out as a phonological indicator that differentiates ideophones from other word categories. We also note that semantic meaning of such ideophones in Meetto-Makhuwa largely depends on a context and unpredictable and not on their phonological properties as in the case of ordinary word.

RECOMMENDATIONS

Research on Bantu ideophones is not very much developed especially aspects relating to the structure of tone in ideophones. We suggest that further research should be undertaken to focus tone in ideophones in a phrase level. Descriptive study on the tone with other Makhuwa dialect needs to be undertaken. This move will facilitate a comparative analysis involving other dialects of Makhuwa.

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