

A STUDY OF THE TONE SYSTEM OF LWISUKHA NOUNS

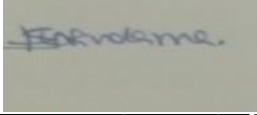
**BY
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**A THESIS SUBMITTED IN FULFILLMENT OF THE
REQUIREMENTS FOR THE AWARD OF DOCTOR OF
PHILOSOPHY DEGREE IN LINGUISTICS AT THE
UNIVERSITY OF NAIROBI**

2022

DECLARATION

This PhD thesis is my original work and has not been presented for a degree in any other university.

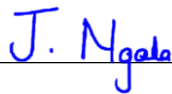


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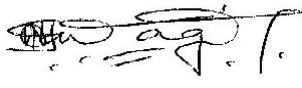
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DEDICATION

This work is dedicated to my parents, my late father Mr. Ezekiel Mudanyi Nandama and my late mother Mrs. Margaret Mwaiti Nandama who ensured that, I attained quality education. I am very grateful.

ACKNOWLEDGEMENTS

First and foremost, I want thank God Almighty who gave me strength and goodwill to pursue this course. I sincerely thank my supervisors Professor Jane Oduor and Professor Iribe Mwangi for supervising and guiding me tirelessly. May the Almighty God bless them in deed.

I also want to thank lecturers at the University of Nairobi in the Department of Linguistics and Languages: first and foremost, I want to thank the former Chairman of the Department, Professor Kithaka Mberia and the former Chairman of the Department of Kiswahili Professor Hamu Habwe. I also want to thank postgraduate coordinators, Professor Schroeder and Dr. Zaja Omboga for being very supportive. Other lecturers in the Department of Linguistics and Languages whom I wish to thank is the late Professor Jane Kaviti and Dr. Ayub Mukhwana. The following lecturers from other universities in Kenya also supported me a lot throughout my studies: Dr. Hilary Mulama, Dr Jerry Ayieko and Dr. Jacktone Onyango from Kenyatta University, Dr. Violet Nasambu Barasa of Kabarak University, Dr. Sarah Ngesu from South Eastern Kenya University, Dr Wabwire from Catholic University of Eastern Africa, Ms Jacqueline Ondimu and Furaha of Moi University. Not forgetting Dr. Ebenezer Udofia and the wife Regina Udofia of Healing Hands International.

I specifically want to thank Professor Michael Marlo of Missouri University in the United States of America for giving me great support by providing me with his recorder to use during my fieldwork and by reading my work and giving his opinion. He also gave me references to read on tone and more specifically on tone in Luyia. May our almighty God richly bless you. Christopher Ebarb of Michigan University in the United States of America also gave me a lot of support. He gave me his PhD work on tonology of Lwitakho to read. He is also the one who introduced me to Professor Michael Marlo.

In addition, I want to sincerely thank my beloved husband, the late Honourable Robert John Sumbi, my lovely children Nataly Narano Sumbi, Brown Shikwati Sumbi and Zeke Makatie Sumbi for being supportive and patient throughout my studies.

The other people who supported me are my friends and professionals in the field of tone, Agnes Savala and Isaac Odera. I had also several informants who helped me tirelessly. First and foremost, my dearest mother, the late Margaret Mudanyi, my cousins Daniel Shitambasi, Eric Nandama, Lynn Khahati and Ednah Khayesi, my house managers, Millicent and Phyllis.

The informants I would like to remember most are my Uncles Peter Muhanji and Jesse Inziani who were always with me at the University of Nairobi whenever I was marking tone with my supervisor Professor Jane Oduor. I do not want to forget to thank my research assistant Alfred Anangwe (Mulamwa) for his great support and cooperation. I want to thank Wilson Obiero, Vincent Asugo and Rachel Maina for assisting in printing and compiling this thesis.

Lastly, I would like to thank my dearest mother, the late Margaret Mudanyi Nandama for her prayers and encouragement. Unfortunately, she never lived to see me graduating. I also want to thank my siblings Dr. Wycliffe Nandama, Eunice Nandama, Ruth Nandama, and Victor Nandama and advocate Catherine Mudanyi for their prayers and support throughout the entire course. There are many others who helped me: I will not mention them by name. May God bless them in abundance.

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ABBREVIATIONS

AC	Association Conventions
APT	Autosegmental Phonology Theory
[- ATR]	Retracted Tongue Root
[+ ATR]	Advanced Tongue Root
C	Consonant
Dem	Demonstrative
FV	Final Vowel
GG	Generative Grammar
GP	Generative Phonology
H	High (used in reference to tone)
Hi	High Tone Phoneme
HL	Falling Tone
HTA	High Tone Anticipation
HTI	High Tone Insertion
hs	A high pitch on the register tier/current register
Hs	A higher pitch relative to the current register on the tonal tier
IPA	International Phonetic Association
L	Low tone (used in reference to tone)
Lo	Low Tone Phoneme
ls	A low pitch on the register tier/current register
Ls	A lower pitch relative to the current register
Mid₁	A higher tone phoneme relative to the current register
Mid₂	A lower tone phoneme relative to the current register
N	Noun
NC	Letter N and a Consonant
OCP	Obligatory Contour Principle
RTT	Register Tier Theory
SPE	Sound Pattern of English
SU	Subject
TBU	Tone Bearing Unit
TRN	Tonal Root Node
V	Vowel

WFC	Well Formedness Condition
7, 11, 18	Noun Class Numbers
3P	3 rd Person Plural
3S	3 rd Person Singular
ˊ	High Tone
ˋ	Low Tone
ˆ	Falling Tone

DEFINITION OF TERMS

Affix: - It is a morpheme added to a word to change the function or meaning. It is basically found at the beginning, middle or end of a word.

Allotone: - It is a low tone at the end of a noun in citation or phrase form that is lowered to a superlow tone.

High tone insertion: - High tone insertion is a phenomenon in which demonstratives, possessive pronouns and some quantifiers insert a high tone on the penultimate syllable or the final syllable of a preceding toneless noun.

Isukha: - It is a location where Lwisukha speakers are found in Kakamega County.

Lw-: - In the Luyia language prefix Lw/Lu is used at the beginning of a dialect or a language for example, Lwisukha, Lwitakho, Luwanga and Lumarachi (are luyia dialects), Lusungu (English language), Luswahili (Kiswahili language) and others.

Lwisukha: - It is Luyia dialect spoken in Kakamega County.

Mora: - It is a unit bearing tone, considered as the vowel in this study.

Noun tonology: - It is a linguistic study of tone that mainly addresses tonal patterns of nouns in isolation and within phrasal contexts and sentences. This study also focuses on the lexical, grammatical and pragmatic function of tone in nouns.

Stem: - The part of a word to which affixes attach. For example, the word mùù-ndù ‘person’ in Lwisukha has -ndù as the stem.

Tier: - The level of one phonological feature of which sound segments are composed, for example using APT we have the syllable tier, skeletal tier, phonemic tier and tonal tier. The word músáàxùlù ‘old man’ in Lwisukha has a [H.HL.L.L] tone pattern on the tonal tier.

Viisukha: - These are Speakers of Lwisukha dialect in Kakamega County.

SYMBOLS

σ	Syllable
	Association line
↓	Downstepped high tone (as used in Autosegmental Phonology Theory)
μ	Mora
—	Bar system (as used in the Register Tier Theory)
[— —]	Level bars - High and low tone (as used in the Register Tier Theory)
[— ↓]	Level bars - A high tone and a downstepped high tone (as used in the Register Tier Theory)
[\]	Angled bar - Falling
—	A morpheme boundary
≠	Delinking
⋮	Broken association line
∅	Toneless
.	Syllable boundary

ABSTRACT

This thesis provides a description of the tonal system of Lwisukha nouns. Lwisukha is a Luyia dialect spoken in Kakamega County in Kenya. The specific objectives of this study are to investigate and describe tone patterns of Lwisukha nouns in isolation, phrasal contexts and sentences, describe tonal rules that apply in Lwisukha nouns phrases, establish the function of tone in Lwisukha nouns and, lastly, establish whether Lwisukha falls under the conservative, predictable, reversed or a combination of these three tone systems or a new system altogether. This study used random and stratified sampling. A sample size of 12 respondents was used to ensure equal representation of the six locations that constitute Isukha area in Kakamega County. Data collection primarily involved generating nouns, eliciting nouns and extracting the same from natural conversations eventually recording the data. Data obtained from the respondents after administering interviews and questionnaires included nouns in isolation, nouns in phrasal contexts and sentences. A word list of nouns in isolation and nouns in phrasal contexts and sentences were prepared from the data. The data was analysed by listening and marking the tone patterns of the nouns in isolation, phrasal contexts and sentences. The Autosegmental Phonology Theory (APT) and, its extension, the Register Tier Theory (RTT) were used in the analysis of tone. A sample of nouns was used to reveal the tone patterns of Lwisukha nouns in isolation. Nouns in phrasal contexts were selected to investigate the tonal rules that apply to Lwisukha nouns. A sample of sentences was used to investigate the functions of tone in Lwisukha nouns. This research found out that Lwisukha dialect has a low tone, a high tone, a downstepped high tone and toneless syllables. Lwisukha nouns have thirty-nine tone patterns when uttered in isolation. The study also established that most of the tone patterns of nouns, when uttered in isolation, are different from those uttered in phrasal contexts and sentences. The high tone anticipation (HTA) and high tone insertion (HTI) rules apply in Lwisukha noun phrases. High tone anticipation is triggered by adjectives and numerals with a high tone. High tone insertion is triggered by demonstratives, possessive pronouns and some quantifiers. This study also found out that tone has a lexical, grammatical and pragmatic function in Lwisukha nouns. Lastly, Lwisukha nouns tend to have a more conservative tone system than the predictable and reversed tone system. It is advisable that studies should be done on the tone system of nouns of all Luyia dialects in order to classify them.

CHAPTER ONE

INTRODUCTION OF THE STUDY

1.1 Background to the study

Tone systems of different tone languages have intrigued tonologists. Tonologists have done tonal studies on characters of tone, tone patterns, tonal rules, classification of languages by using tone and functions of tone. Yip (2002:4) defines a tone language as one in which an indication of pitch enters into the lexical realization of at least some morphemes. This means that the pitch of the word can change the meaning of the word. Not just its nuances, but its core meaning. We can therefore use the pitch of the voice to convey meaning and also use pitch to distinguish one word from another for example; the word *lituxu* in Lwisukha has two meanings a day or a hole. *lítúxù* with a [H.H.L] tone pattern means day and *litùxù* with a [L.L.L] tone pattern means a hole. The two tone patterns could be collapsed into (HL) and (L), respectively, in autosegmental phonology theory. Therefore, the spelling of day and a hole in Lwisukha is the same, what differentiates the meaning is the pitch. Lwisukha, therefore, is a tone language.

Lwisukha is one of the dialects in Luyia, spoken in Kakamega County in Kenya. Were (1967), Itebete (1974) and Angogo (1980) all agree that Luyia has 17 dialects. Angogo groups the dialects into 3 sub-groups, namely northern, central and southern dialects. The northern dialects include Lubukusu, Lusamia, Lunyala, Lukhayo and Lumarachi. The central dialects include Luwanga, Lumarama, Lutsotso, Lukisa, Lukabras, Lunyore and Lutachoni. The southern dialects are Lwisukha, Lwitakho, Lutiriki and Lulogooli. Lwisukha therefore, falls under the southern dialects.

The Northern, Central and Southern sub-groups are further divided into two groups. Each group has dialects that are closely related in the way they are spoken. For example, the northern sub-group has one group that includes Lusamia, Lunyala K, Lunyala B, Lukhayo and Lumarachi, the other group has Lubukusu only. Lusamia, Lunyala K, Lunyala B, Lukhayo and Lumarachi are spoken in a more similar manner as compared to Lubukusu which is slightly different.

Angogo's classification is based on intelligibility tests, attitudes of the speakers of Luyia and sharable literature among the dialects. However, these are not the only methods used in the classification of dialects. A linguist can use other methods like phonological, morphological and syntactic typology to classify Luyia dialects. By using phonological typology, one can classify dialects by investigating tone and stress. Angogo's classification was able to group Luyia dialects that have similar pronunciation of words in the same group. However, it is clear that this classification is informed by other issues rather than tone.

Tone has been used in the classification of Luyia dialects. By investigating the tone system of verbs in Luyia dialects, Marlo (2008) classifies Luyia dialects into three groups: the conservative, predictable and reversionary tone system. Dialects that have predictable tone system are: Lukhayo, Lunyala-West, Lusaamia, Lusonga and Lutura. The reversionary tone system dialects are Lubukusu, Lumarachi, Lunyala East and Luwanga. The conservative are Lulogooli, Lutiriki, Lutachoni, Lukabarasi, Lumarama, Lunyore, Lwitakho and Lwisukha. The present study seeks to establish whether Lwisukha nouns fall under the conservative, predictable, reversionary tone system or a combination of these three tone system or a new system altogether. The reversionary tone system is also known as the reversionary tone system.

Lwisukha is mainly related to other Luyia dialects in terms of its basic vocabulary, for example the word sit in Lwisukha is 'ikhala', Lunyore 'ikhala', Luwanga, 'okhwikhala', Lubukusu, 'yikhala' and Lulogooli 'kwikala'. The word cook in Lwisukha is 'khutekha', Lunyore, 'okhutekha' Luwanga, 'okhutekha' Lubukusu 'tekha', and Luloogoli, 'kudeka'. The word man in Lwisukha is 'musaatsa', Lunyore 'omusaatsa', Luwanga, 'omusaatsa', Lubukusu, 'omusecha' and Luloogoli, 'musaza'. A dialect may be defined as a form of speech used by a group of people in a particular area and differs from the speech of other historically related groups of people who speak the same language. The speech differences occur especially in pronunciation and vocabulary but rarely in grammar.

Guthrie (1967) in his classification of the Bantu languages, places the Luyia language in zone E30. According to the Kenya National Bureau of Statistics (2019) the Kenyan population stands at 47,564,296 with the Luyia group consisting 14% which is 6,800,000 people. The Luyia people occupy four counties, namely Kakamega, Vihiga, Busia and Bungoma. Lwisukha is a Luyia dialect spoken in Shinyalu and Lurambi sub-counties of Kakamega County. The Viisukha (speakers of Lwisukha dialect) are approximately 403,000 according

to the Kenya National Bureau of Statistics (2019). In each of the counties mentioned we have dialects that have similar tone systems and are closely related in the way they are spoken, for example in Kakamega County we have Lwisukha and Lwitakho. In Busia County we have, Lukhayo, Lunyala-B, Lusaamia and Lusonga.

Luyia studies on tone have primarily focused on verbs and have revealed considerable differences on Luyia tonal system. These studies include Chagas (1976) on Olusamia dialect; Mutonyi (1996), Lubukusu dialect; Onyango (2006), Olunyala dialect; Marlo (2007), Lumarachi and Lunyala dialects; Ebarb (2014), Lwitakho dialect; Green & Marlo (2015), Luwanga dialect; Lowe et al (2015), Lubukusu dialect and Ebarb (2016), Lukabarasi dialect. These studies were able to define the interrelationship between verbal categories and tonal patterns. A majority of these studies used the lexical and morphology theory to investigate the verbs. Some of these studies were not able to investigate noun tonology and others paid little attention to noun tonology. The present study will use the autosegmental phonology theory and its extension the register tier theory to investigate the noun tonology of Lwisukha dialect.

It is also important to note that some of the previous studies done on tone in Luyia dialects when looked at closely can be said to have been narrow in their scope. Some have compared tonal patterns of words without considering differences in their environment, for example; it is not advisable to give tonal patterns by mixing grammatical categories for example, nouns and verbs like in the study by Savala (2005) whereby verbs, nouns and adjectives are mixed. Snider (2015) argues that one needs a database to sort words according to grammatical categories (nouns, verbs, adjectives and others). The reason for this is that in a tonal analysis, just as in other types of analysis, is that the syntactic environment for nouns is different from that of verbs. He says there is little point in comparing the surface tone melody of a noun with that of a verb. It is only when the environments are the same, that one can be sure that two different surface melodies are different underlyingly. Therefore, this study will take into consideration all database fields like grammatical category; stem type, syllable profile of the stem, noun class of nouns and other categories found useful for sorting data for tone analysis.

In view of the foregoing discussion we can conclude that it is important to know the lexical function of tone in a language. Lexical function relates to the use of tone to distinguish the lexical meanings of words. The present study seeks to investigate the lexical, grammatical

and pragmatic functions of tone in Lwisukha nouns and also to examine the tonal rules that apply in Lwisukha noun phrases.

1.2 Statement of the problem

Most studies on Lwisukha have been comparative. These studies have compared Lwisukha dialect and other Luyia dialects. The Luyia dialects that have been compared with Lwisukha are Luwanga, Lukabarasi, Lukhayo Lubukusu Lusamia, Lumarachi, Lunyala B, Lutachoni, Lunyala K, Lutsotso, Lukisa and Lunyore. These studies have focused on lexicology, syntax and translation (See Lwangle et al, 2016; Mudogo, 2017; Mudogo et al, 2018). One of the studies on Lwisukha that is not a comparative study is by Mebo (1989) on Lwisukha noun phrase. This study focuses on syntax. None of the studies focused on tone which is a phonological feature that shows major contrasts in languages and has something to contribute in all the other levels identified above. Hence, for an exhaustive comparative analysis of the levels mentioned above, including others, tone should not be left out. Therefore, a study of tone is a springboard for more detailed and insightful comparative analysis.

The studies done on noun tonology of Luyia dialects include Mutonyi (2000) on Lubukusu dialect; Savala (2005) on Lwitakho dialect; Paster & Kim (2011) on Lutiriki dialect; Odden (2011) on Lulogooli dialect; Marlo & Steimel (2015) on Luwanga dialect; and Everhart et al. (2015) on Lubukusu dialect. To date there is no systematic study on tonology of Lwisukha dialect especially on nouns yet tone, which is a phonological phenomenon, contributes greatly to the lexical and grammatical structures of tone languages. Lwisukha dialect seems to make use of tone and so, it is suspected to be a tone language just as the other Luyia dialects. For this reason, then tone must have crucial functions which this study intends to investigate. Therefore, there is a gap to be filled on noun tonology of Lwisukha dialect.

In the past, studies on the tone systems of languages did not take into consideration the emerging tone patterns of words when placed within a frame. Some of those researchers include Savala (2005). A research by Snider (2015) shows that there is a possibility that the tone pattern of words in isolation may differ significantly from that of the same word when it occurs within a frame, that is, in a phrase or sentence context. There is a possibility that Lwisukha is one of those dialects. The tone pattern of a word in Lwisukha may change when placed within a frame. The study intends not only to systematically investigate such changes

but also to explain what motivates such changes. Where applicable the motivation for the changes will be explained through phonological rules or, more specifically, tone rules.

In the study done by Marlo (2008) Luyia dialects tone systems are classified into conservative, predictable and reversionary. As stated in the introduction of this chapter, the Luyia dialects with the conservative tone systems are Lulogooli, Lutiriki, Lutachoni, Lukabarasi, Lumarama, Lunyore, Lwitakho and Lwisukha. Dialects that have predictable tone system are: Lukhayo, Lunyala-West, Lusaamia, Lusonga and Lutura. The reversionary tone system dialects are Lubukusu, Lumarachi Lunyala East and Luwanga. This study was based on the tone patterns portrayed by verbs in the said dialects. This study seeks to investigate if such a classification is possible using findings based on noun tonology.

Therefore, this study is an exploration of the tone system of Lwisukha nouns. It seeks to investigate and describe the tonal patterns of Lwisukha nouns when uttered in isolation, in phrasal contexts and sentences. It also seeks to establish the tonal rules that apply in Lwisukha noun phrases, the functions of tone and the type of tone system found in Lwisukha nouns.

The statement of the problem above could be summarised using the following research questions:

- (i) What are the tone patterns of Lwisukha nouns in isolation, within phrasal contexts and sentences?
- (ii) What tonal rules apply in Lwisukha noun phrases?
- (iii) What are the functions of tone in Lwisukha nouns?
- (iv) What type of tone system does Lwisukha nouns have?

1.3 Objectives of the study

- (i) To investigate tone patterns of Lwisukha nouns in isolation, in phrasal contexts and sentences.
- (ii) To describe tonal rules that apply to Lwisukha noun phrases.
- (iii) To establish the function of tone in Lwisukha nouns.
- (iv) To establish whether Lwisukha nouns falls under the conservative, predictable, reversionary or a combination of these 3 tone systems or a new system.

1.4 Scope and limitations of the study

This study investigated the tonal system of Lwisukha nouns. Other word categories like verbs, adjectives, adverbs, pronouns, conjunctions, prepositions and interjections are investigated in order to understand the function of tone in Lwisukha nouns. Apart from the word category, the other data base fields put into consideration in this study were the stem type, syllable profile of the stem and noun class of nouns. All these were found useful in sorting data for tone analysis.

The study was restricted to a phonological analysis. For example, it focused on phonemic inventory of the sounds of Lwisukha. This is relevant because it is important to know the sounds of a language in question and how those sounds combine to form syllables onto which tones are placed.

In this study, Lwisukha nouns have been analyzed in isolation and also in phrasal contexts and sentences. Nouns in phrasal contexts discussion includes nouns with adjectives, nouns with numerals, nouns with demonstratives, nouns with possessive pronouns and nouns with quantifiers.

1.5 Significance of the study

This study is significant in a number of ways. The most significant contribution is to the phonological and grammatical structures of Lwisukha dialect. By investigating tone systems of languages we can know the lexical, grammatical and pragmatic function of tone.

Another contribution is to the documentation of Lwisukha, whose tone system has now been studied. Having an understanding of the tonal properties of nouns goes hand-in-hand with developing a good Lwisukha dictionary, and understanding how tone works in nouns is an essential component of developing an understanding of Lwisukha grammar.

This study is also significant to tonologists because they now know which tonal rules apply in Lwisukha nouns. They can therefore compare the tonal rules in Lwisukha nouns with those of other Luyia varieties and other languages around the world. A researcher can therefore know which tonal rules in Lwisukha are similar to or different from the other Luyia dialects.

Theoretically, a study on Luyia tone system addresses two questions that tonologists ask. What is a possible tone rule? and what representations do tone rules operate on? By closely

comparing the Luyia tone systems, we can see which parameters change from dialect to dialect this helps us understand how tone rules themselves can differ from one dialect to the next. It also helps us reconstruct the tonal history of the Luyia dialects and figure out how the languages changed over time, resulting in the many tonal differences currently found among these dialects.

Itebete (1974:89) asserts that Lwisukha is a dialect that is very closely related to Lwitakho but differs in tone and vowel length. Therefore, this study can be used by researchers interested in comparative studies to carry out a comparative study of Lwisukha and Lwitakho dialects. A comparative study can also be carried out on Lwisukha and any other Luyia dialects. Such a study will contribute towards realizing the tonal similarities and differences between these dialects. More so, linguists can understand how the proto-Luyia tone system diverged into such different systems today.

A comparative study on Luyia dialects will further contribute to the improvement of orthographies for Luyia varieties and developing better pedagogical materials, including adult literacy materials, this is important for the Viisukha speakers and speakers of other Luyia dialects. Whenever a tonologist wants to study the tone system of a language, they always investigate the sounds as well as the syllables of the dialect or language. This is relevant because sounds combine to form syllables onto which tones are placed. Therefore, investigating the sounds used in a certain language contributes in knowing the orthography of that dialect or language (e.g. Lwisukha). Therefore, if one is teaching a certain dialect of Luyia, the correct sounds will be used to develop the teaching materials. This study is also significant to one learning Lwisukha as a second language. This is because the findings in our study can be used to correct pronunciation errors caused by incorrect use of tone. Such speakers may be speaking English or Kiswahili as their first language.

1.6 Literature review

The literature review undertaken in this section, seeks inter alia, to review and interrogate studies done on tone generally, on Bantu languages and Luyia dialects in particular, so as to demonstrate what has been done, how it has been done, what achievements can be discerned and what picture these studies present collectively. Such a picture of the studies is interrogated in a manner that informs our current study on the tone system on Lwisukha nouns.

1.6.1 General literature on tone

One of the most critical issues that have preoccupied tonal studies in many languages has revolved around the issue of the existence of register and contour tones, how such tones are produced, categorized and applied in the study of meaning differentiation. Such studies have been carried out in Thai (Clark and Yallop 1990), a study in which the authors established that tone languages use pitch differences phonemically either to differentiate between word meanings or to convey grammatical distinctions (Clements 2000). Tone languages fall under two categories: register (level tone languages) and contour tone languages, (Yip 2002). The existence of register and contour tone in Thai is indeed an important eye-opener to the fact that, register tone languages refer to languages where tonal contrast consists of different levels of steady pitch. Such languages use high, mid, low and downstep tones. The tone levels are relative to each other rather than have absolute values, so that a high tone, for example is perceived as high relative to any adjacent mid or low tone syllable (Clark and Yallop 1990). This is indeed what one finds in a critical analysis of Lwisukha noun tonal system.

On the other hand, it is important to note that contour tone languages use tone which is not level in their production. This means that high and low tones rise and fall in pitch height. In a contour system, the basic tonemic unit is gliding instead of level (Clark and Yallop 1990). Contour (rising and falling) tones accompany level tones in many systems. A low rising tone (marked by the wedge \sim) and the falling tone (marked by a circumflex $\hat{\ })$ clearly show that rising and falling tones can be analyzed as low + high and high+ low combinations on a single vowel or syllable respectively, (Durand, 1990; Kenstowicz, 1994).

According to Goldsmith (1990), contour tones or dynamic tones refer to low-rising and falling tones. In autosegmental phonology theory, they are treated as sequences of level tones associated with one vowel. This is one of the peculiar features that one finds in Lwisukha noun tonal system. The Thai language example in (1) illustrates the combination of register and contour tones in the same language. In this example pitch differences have been used to differentiate word meaning.

(1)

High	ná:	`aunt'
Mid	nā:	'field'
Low	nà:	'a nickname'
Low rising	nǎ:	'thick'
Falling	nâ:	'face'

Source: Kenstowicz 1994:48

The other phenomenon that has engrossed tonologists is downstepped high tone. This is a phenomenon that has been observed in tonal languages. According to Kenstowicz (1994) downstep shows a high tone that is realised at a slightly lower pitch than the preceding high tone. The second-high tone, though phonetically identical to the first high tone, is pronounced at a slightly lower pitch than the first. Downstep is usually marked by the sign⁺. This sign is placed between one high tone and the following downstepped high tone. The following Lwisukha nouns in example (2) illustrate this phenomenon.

(2)

- a) mú⁺tó 'matress'
- b) ìngó⁺rómánì 'liver'

Lastly, one feature that has been associated with tone and which has intrigued linguists in various ways is the functions of tone. Indeed, it has been demonstrated in various studies that tone has lexical, grammatical and pragmatic functions (Schuh in Fromkin 1978:251). Schuh's assertion that tone in many African languages has a heavy lexical load, is indeed, not a speculative assertion. This lexical loading is a discernible feature in Lwisukha. In the present study we shall deal with the lexical, grammatical and pragmatic function of tone in Lwisukha nouns.

In summary, various aspects of tone have been discussed in this section. These aspects include: register and contour tone languages, downstepped high tone and the functions of tone.

1.6.2 Tone in some Bantu languages

Tonologists have used different theories to investigate tone. One of the theories that have been used to study Bantu noun tonal system is the autosegmental phonology theory. Studies that have used APT include Asongwed and Hyman (1976-tone in Ngamambo nouns),

Elimelech (1976- tone in Kombe nouns), Hombert (1976-tone in Ngie nouns) and Trithart (1976- tone in Chichewa nouns). These studies used the APT to investigate the tone patterns of nouns in various Bantu languages and the morphotonemic rules required to derive the various tonal alternations. By using APT these studies found out that if a vowel is not associated with a tone, it associates with the tone of the nearest vowel on its right. This rule is known as rightward spread or phrasal level rule. The present study investigated the tonal rules that apply in Lwisukha noun phrases. Whereas these studies used APT only, the present study uses autosegmental phonology theory and its extension the register tier theory to investigate Lwisukha nouns tonal system.

One of the issues that linguists have investigated is the interdependence between morphology and tonology. Studies done by Bennett (1976-tone in Chishona language), Mtenje (1987-tone in Chichewa language) and Mutaka (1994-tone in Kinande language) have shown that morphological elements influence tonal patterns of the verbs. A study done by Bennett (1976) clearly analyses the tonal variation of regular and irregular verbs based on the data obtained from one speaker of Chishona, a Bantu language spoken in Zimbabwe and Mozambique. The study identifies five simple verb tenses in Chishona; it is revealed that each tense possesses its own tonal properties, illustrating a high degree of interdependence between morphology and tonology. This helps us to realize that morphological elements can influence tonic patterns of other word categories like nouns, verbs, adjectives, adverbs, pronouns, conjunctions, prepositions and interjections. The interdependence between morphology and tonology is what one finds in the analysis of Lwisukha noun tonal system.

Generally, this literature review discusses autosegmental phonology theory and the interdependence between morphology and tonology in Bantu languages. The present study used autosegmental phonology theory and its extension the register tier theory to investigate tonal system of Lwisukha nouns.

1.6.3 Tone in some Kenyan languages apart from Luyia

As mentioned earlier one of the theories that have been used in tonology studies is APT. This theory has been used by various researchers to describe the tone patterns, characteristic of tone, the number of tones in a language, tonal rules and the functions of tone. By using APT, Mwihaki (1998) shows that Gikuyu is mainly a register tone language with two tonal levels: high and low. Wacera (2008) also used APT to investigate tone in the Gichugu dialect of the

Gikuyu language. Unlike Mwihaki (1998), the latter researcher claims that Gikuyu is a register and contour tone language. Mutiga (2002) also uses APT to investigate the tonal patterns of verbs and also to investigate the lexical and grammatical function of tone of Mwingi dialect of Kikamba. Though these studies use APT to examine various aspects of tone, they do not use tone to classify the dialect under study. The present study on Lwisukha nouns uses tone to classify Luyia tone systems.

One aspect that has received attention from tonologists is the tonal patterns of nouns. Nouns can have different tonal patterns for example a disyllabic noun stem can have a L.L, L.H, H.L, H.H or H.HL tone pattern. A study done by Chacha (2012) investigates the surface tonal pattern of monosyllabic, bisyllabic, trisyllabic, quadrisyllabic, pentasyllabic, and other polysyllabic noun stems in Gikuria. The study concludes that the Kuria nouns have a complex tonal pattern. The study also observes that Gikuria has lost the LL pattern found in proto Bantu nouns in isolation. Since Gikuria and Lwisukha are Bantu languages researchers can do a comparative study to find out the similarities and differences between these two languages. A researcher can also find out whether Lwisukha has or lost the LL pattern found in proto Bantu nouns in isolation. Another tonologist who has studied tone patterns is Kioko (1994). This study investigates tonal patterns of nouns and verbs in Kikamba (Machakos dialect) in isolation and also in phrasal contexts. The present study on Lwisukha dialect has not dealt with verbs, as discussed earlier; it is not advisable to give tonal patterns by mixing grammatical categories, for example nouns and verbs (See section 1.1 page 3). Therefore, this study will focus on nouns only.

1.6.4 Tone in Luyia dialects

Several scholars have analyzed the Luyia language. The early studies for example by Appleby (1961) and Guthrie (1967) deal with this language in general as an entire group of dialects. Tones and tonal patterns are hardly mentioned at all other than to state that tones seem to be lexically significant. This is partly what this study has investigated.

As earlier discussed one of the most critical issues that has preoccupied tonal studies in many languages has revolved around the issue of the existence of register and contour tones. Such a study has also been done on Luyia dialects by Lidonde (1978), who argues that Lwitakho is a register tone system with two tones: high and low. However, a study done by Savala (2005) gives a different opinion, that Lwitakho has both register and contour tones. Contour tones,

high to low or falling occur mostly on the heavy syllable, low to high or rising tone is not very common in Lwitakho. Register and contour tones is without doubt what one finds in a systematic analysis of Lwisukha noun tonal system.

Another issue that has been discussed by tonologists is toneless moras. A study done by Paster & Kim (2011) shows that Lutiriki has an underlying contrast between H-toned and toneless moras and in addition there is evidence that some moras have underlying L tones since these moras behave differently from the toneless moras. L toned moras always surface with L tone, while toneless moras surface with L tone except in certain contexts where they become H. We can thus say that Lutiriki has a three-way contrast between high, toneless and low tone that reduces to a two-way surface contrast between H and L (plus downstepped H). Toneless moras are found in the study of the tone system of Lwisukha nouns.

The grammatical category that has received a lot of attention from tonologist is the verb. Tonologists have carried out studies on the tone system of verbs of different Luyia dialects. Such studies include Chagas (1976) who shows that in Olusamia, tonal distribution is influenced by tense, the phonological shape of the verb stem and vowel coalescence. Mutonyi (1986) describes the tone pattern of verbs, and surveys how tense-aspect distinctions are realized tonally on the verb in Lubukusu dialect. Onyango (2006) deals with the interrelationship between verbal categories in Olunyala dialect. Marlo (2007) dealt with verb tonology of Lumarachi and Lunyala dialects. He describes and analyzes tonal alternations that are triggered in the two dialects by tense-aspect distinctions, as well as the tonal alternations that are triggered by one or two object prefixes and by the presence of a word following the verb. Savala (2005) studies tonal patterns of verbs in isolation in Lwitakho dialect.

There are also other recent studies on tone system of verbs in Luyia dialects. Ebarb (2014) describes and analyzes the tonal properties of Lwitakho verbs. Green & Marlo (2015) deals with tonal properties of Luwanga verb phrase. Lowe et al. (2015) describes Lubukusu verb classes and tonal properties of Lubukusu verb phrases. Ebarb (2016) investigates the lexical properties of verb roots and properties of inflectional tone system on Lukabarasi dialect. All these studies focus on verb tonology and not noun tonology.

Studies that focus on noun tonology on Luyia dialect are Mutonyi (2000). This study investigates and describes Lubukusu nouns in isolation and in phrasal contexts. Savala (2005)

studies tonal patterns of nouns in isolation in Lwitakho dialect. Paster & Kim (2011) investigate high tone anticipation and low tone insertion in Lutiriki noun phrases. In this study downstep in Lutiriki nouns is discussed in details. Odden (2011) investigates Luloogori nouns in isolation specifically the minimal pairs and near minimal pairs, by investigating their vowel length.

In addition, Marlo & Steimel (2015) discuss tone classes in Luwanga nouns. In this study high tone anticipation and high tone insertion rules in Luwanga noun phrases are discussed. High tone anticipation is triggered when toneless [Ø] nouns or nouns with a high tone and a final syllable that is toneless (HØ) are followed by an adjective or a numeral that has a high tone. The high tone on the adjective or numeral spreads leftward to the toneless syllables of the noun. However, demonstratives, possessives pronouns, and quantifiers trigger a different rule known as high tone insertion, in which a high tone is inserted to a toneless syllable on the noun.

Ebarb (2015) describes tone classes in Lutiriki nouns. This study also describes the high tone anticipation and high tone insertion rules in Lutiriki noun phrases. Everhart et al (2015) investigates and describe nouns in isolation and within phrasal contexts in Lubukusu dialect. The high tone anticipation and high tone insertion rules are also discussed. The issue of tonal rules is important to this study of Lwisukha since this study seeks to investigate the tonal rules that apply in Lwisukha noun phrases.

Another element that has attracted the attention of Linguists is the classification of dialects using tone. Such classification has been done on Luyia dialects by investigating verbs. The study by Marlo (2008) shows that there are three types of tone system in Luyia dialects: the conservative, predictable and reversive. As already stated earlier, Lwisukha verbs have been classified in the conservative dialects. Conservative dialects maintain the historical distinction between two lexical classes of verbs. The first lexical class is the ‘H toned verbs’. ‘H toned verbs’ have an underlying H on the stem initial vowel or mora of the root. The second class is that of toneless [Ø] verbs. This class has a root that is underlyingly toneless roots. Dialects with the predictable tone system have lost the lexical tonal contrast in verb roots, therefore there is only one tonal class of verbs because the H verbs have a toneless [Ø] root. Therefore, the ‘H toned verbs’ and the the toneless verbs have a toneless root. The reversed tone system dialects have reanalyzed the H verbs as L maintaining toneless verbs. In this tone system, the ‘H toned verbs’ and the toneless verbs have an underlying H on the stem

initial vowel or mora of the root. (See the examples of the conservative, predictable and reversed tone system in section 1.1 of this chapter). The present study seeks to find whether Lwisukha nouns falls into the conservative, predictable, reversed or a combination of these three tone systems or a new system altogether.

In summary, it is clear from this literature review that no study has been done on Lwisukha nouns tone system. This is what the current study seeks to do.

1.7 Theoretical framework

Generative Phonology (GP) is a branch of general theory that includes those generative models that address phonological issues. GP recognizes two levels of phonological representations: The phonemic and phonetic levels. It stresses the fact that phonological representation has to be formalized by rules that express the competence of a native speaker of a language. GP was first expounded by Chomsky and Halle and reached its definitive form with the publication of “The Sound Pattern of English” (SPE) in 1968. However, GP has been criticized because it leads to abstractness in phonological representations, to the problem of rule ordering and it misleadingly represents phonological structure as a linear string of discrete phonemic units. In order to remedy these SPE weaknesses, linguists have proposed non-linear (hierarchical) approaches to speech representation as demonstrated by models such as autosegmental phonology theory and its extension the register tier theory. Autosegmental phonology theory and its extension the register tier theory has been used in this study.

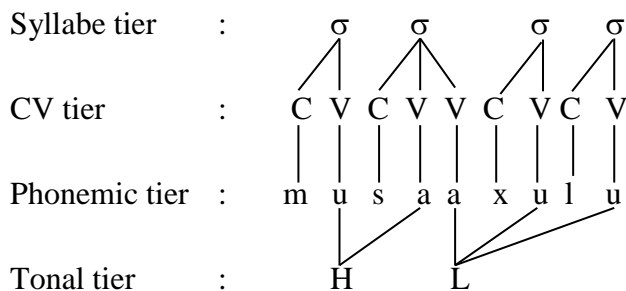
Autosegmental phonology theory as presented by Goldsmith (1976) and which he later developed into a more comprehensive theory of tone in 1990 represents two or more parallel tiers of phonological segments. A segment refers to an indivisible unit. For example, a high tone is an indivisible unit and for this reason a high tone is a segment (Oduor 2002). Autosegment is a term used to highlight the fact, in this theory, the independence of the various parameters is crucial. According to Snider (1999), the various articulatory parameters for example aspiration, nasalization, voicing and tone are autonomous and the articulations that result from them are, in principle, independent.

A tier generally refers to any of the parts of the structure placed one above the other. In this case, it is a level of one phonological feature of which sound segments are composed. Each

tier has a string of segments but the segments on each tier differ depending on what features are specified in them, for example on a tonal tier, each segment is specified for a tone only (Durand 1986 and Goldsmith 1990). The basic tier in the entire phonological representation is the skeletal tier also known as the CV tier. This comprises the phonematic unit of a language. It regularly alternates syllabic (V) and non-syllabic (C) slots. This tier forms the anchor points for elements on the other tiers. Each pair of tiers is mediated by a set of association lines, which indicate that the various parameters are co-articulated simultaneously in time. Four basic tiers are represented: syllable, CV, phonemic and tonal tiers, for example in (3) the Lwisukha noun, *músáàxùlù* ‘oldman’ has four basic tiers.

(3)

músáàxùlù ‘oldman’



The syllable tier shows that the word *músáàxùlù* ‘oldman’ in (3) has four syllables. The syllable tier depicts the phonotactic patterns of the phonemes of a given language (Goldsmith 1990). The CV tier or skeletal tier shows an open syllable system of CV-CVV-CV-CV that represents the noun. The phonemic tier also known as the segmental tier represents the specific sounds of the words of the particular language. The term phoneme is used as a convenient label for signaling the level of a minimal perceptible unit of the phonetic structure. In the example above {mu} is a morpheme, which means singular that is one old man. The tonal tier represents the perceptual correlates of pitch variation during phonation. A register tone, for instance is specified for each syllable rhyme as either (H) or (L) in the Lwisukha noun as shown in example (3). The association of H and L of the tonal tier to a: of the phonemic tier shows the existence of a contour tone.

The APT theory is able to represent tone phoneme in any given language. It is able to distinguish phoneme high, from tone phonemes mid and low. It is also able to show

phonemes that share common feature for example if mid tone and low tones cause high tones to be downstep this behavior should be reflected in their phonological representation (Goldsmith 1990). APT is also able to account for the different tonal alternations found in natural language. This involves phenomena such as underlyingly toneless morphemes and floating tones. This theory is able to adequately characterize the different contour tones found in a language. The APT theory has been used to represent contour tones and floating tones in Lwisukha as illustrated in example (10) and (11).

1.7.1 Principles of autosegmental phonology theory

Leben (1973) proposed that tone is governed by a principle called the obligatory contour principle, usually referred to as the OCP. The OCP forbids two adjacent autosegments to follow one another. It merges such cases. Merging is also known as collapsing. This means that words with sequences of low toned syllables must be represented as in (a) not as in (b) as seen in example (4).

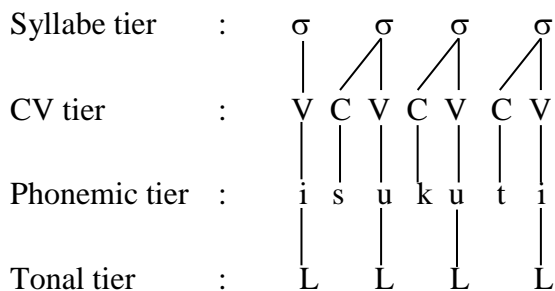
(4)



This reduces the complexity of the representation. Example (5) shows the low tones on the noun *isùkùtì* ‘type of drum or dance’ in Lwisukha dialect before merging.

(5)

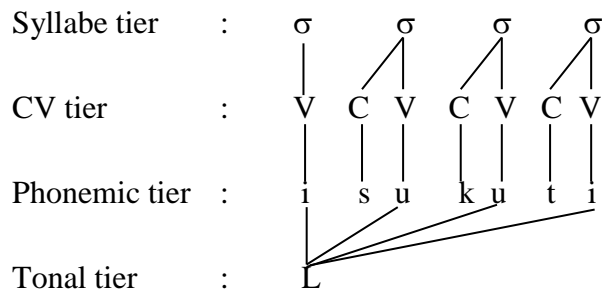
isùkùtì ‘type of drum or dance’



OCP merges the four low tones into one as shown in example 6.

(6)

isùkùtì 'type of drum or dance'



To ensure that there is a well-formed association between the tonal tier and tone bearing units (TBU'S) (i.e. vowels), Goldsmith (1976:48), formulated a condition he called the well-formedness condition (WFC) stated as follows:

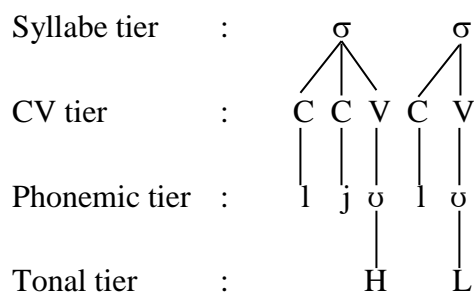
- (a) Each vowel must be associated with (at least) one tone.
- (b) Each tone must be associated with (at least) one vowel.
- (c) Association proceeds one-to-one, left to right.
- (d) Association lines must not cross.

Pulleyblank (1986), Durand (1990) and Goldsmith (1990) then proposed four association conventions (AC'S) which are also referred to as principles of association as follows:

Mapping is the first principle of association it states that: Associate TBU'S with tones in a one-to-one fashion from left to right until we run out of tones or TBU'S (or vowels). Example (7) shows mapping in Lwisukha noun ljólò 'nose'.

(7)

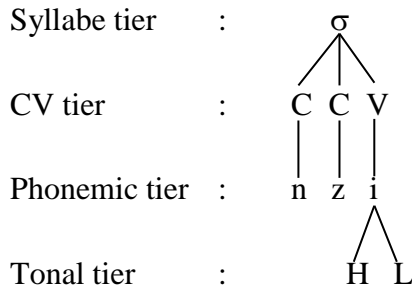
ljólò 'nose'



Dumping is the second principle of association. If after applying mapping (a) some tones are still un-associated, link them to the last vowel to the right. Example (8) shows dumping.

(8)

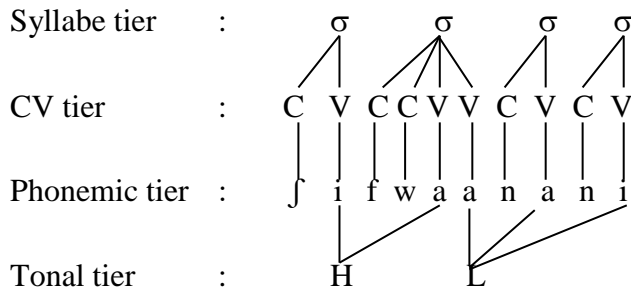
nzî ‘should I go’



Spreading is the third principle of association. If after applying mapping some vowels are still free link them to the last tone on the right. Example (9) shows spreading of a high tone and a low tone in the noun ʃifwáànàni ‘dolly’.

(9)

ʃifwáànàni ‘dolly’



The fourth principle of association states that association lines are not allowed to cross. Hence, the principle is no X-ing. In all the examples so far, the association lines have not crossed.

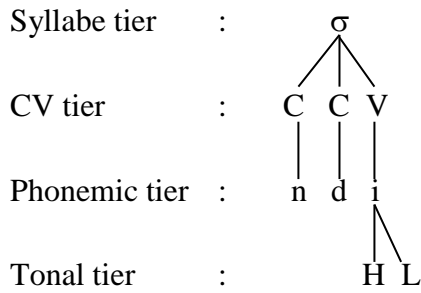
1.7.2 Some phenomena of autosegmental phonology theory

The first phenomenon is contour tones (or dynamic tones). This refers to the rising and falling tones (Pike 1948, Hyman 1975, Goldsmith 1990, Kenstowicz 1994 and Yip 2002). Falling and rising tones are best treated as sequences of high-low and low-high tones, respectively.

The possibility of many-to-one associations in the theory of APT allows one to treat rising and falling tones as sequences of level tones associated with one vowel. Example (10) shows a contour (falling) tone that is found on the mora \hat{i} .

(10)

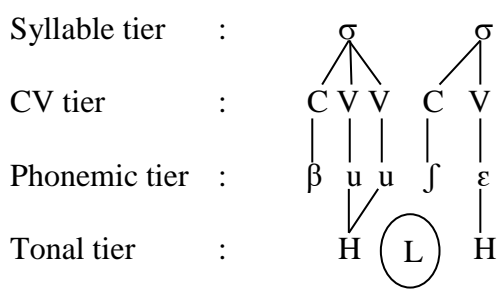
ndî ‘should I eat’



The second one is floating tones. Floating tones are tones not linked to a vowel, Odden (2013: 294). This phenomenon could be used in the analysis of downstepped high tone as explained by Kenstowicz (1994). In example (11) the floating tone is encircled. It is not associated to any vowel in the noun $\beta\acute{u}\acute{u}\text{-}^{\downarrow}\text{f}\acute{\epsilon}$ which means honey.

(11)

$\beta\acute{u}\acute{u}\text{-}^{\downarrow}\text{f}\acute{\epsilon}$ ‘honey’



The third one is tone stability. This is the survival of a tone after the deletion of a segment. The tone remains stable because it is not affected by the processes taking place in the other tiers. Example (12) shows stability.

(12)

mù + ísúkùlù → músúkùlù 'in the school'
in school
mù – is a locative marker for class 18

Due to morphophonological processes (in Lwisukha), the vowel of the locative marker {mù} coalesces with the vowel {í} of the noun ísúkùlù as the locative marker {mù} is prefixed to the noun, deleting the initial vowel {í} in the noun. The high tone that was placed on that vowel {í} is not deleted but instead it appears on the vowel of the locative marker mú.

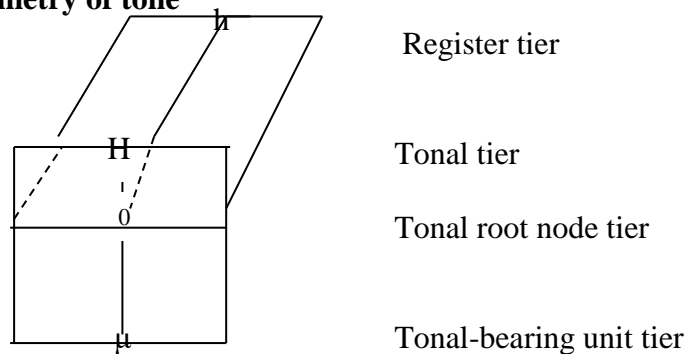
In this study, it is also important to discuss the register tier theory (RTT). RTT is an application or extension of autosegmental phonology theory to tonal phenomena. Snider (1999:1) states that:

Register tier theory is an application of autosegmental phonology theory to tonal phenomena; and so it will perhaps be helpful to begin with an overview of autosegmental phonology.

RTT recognizes the following autosegmental tiers: the register features h and l on a register tier, the tonal feature H and L on a tonal tier, Tonal root node (TRN) tier and tone bearing unit (TBU) tier. These tiers are geometrically arranged as shown in example (13).

(13)

Figure 1: Geometry of tone



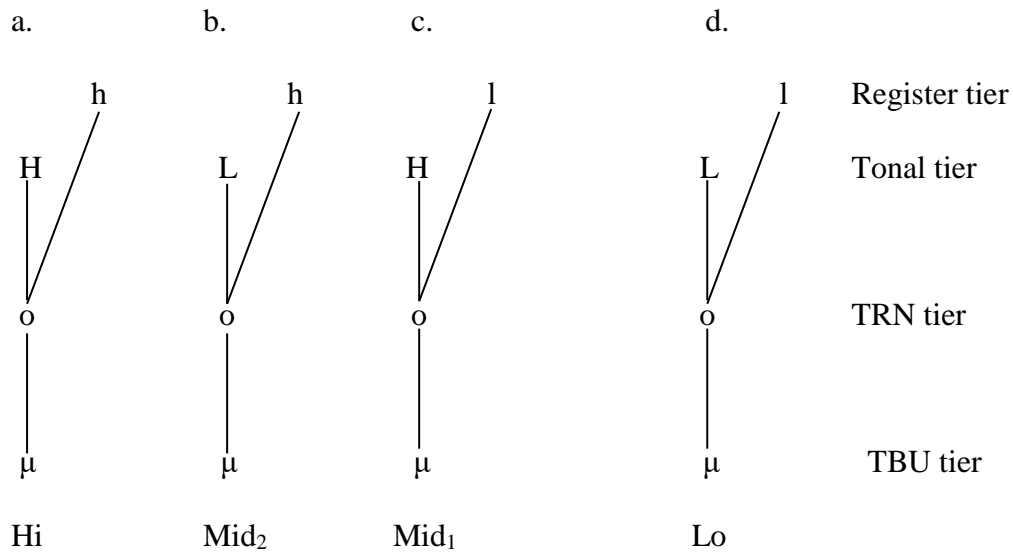
Source: Snider, K. (1999). The geometry and features of tone

Features on the register tier and the tonal tier are linked to the structural nodes on the tonal root node (TRN) tier. Geometrically, these tiers form separate planes with respect to the TRN tier. Nodes on the TRN tier are in turn linked to moras (μ) on the TBU tier.

The features discussed in example (14) logically allow one to fully specify up to four level tone phonemes: Hi, Mid₂, Mid₁ and Lo. Phonological representations for each morpheme appear in (14) and phonetic representation appears in (15a) and (15b).

(14)

Figure 2 Phonological representation of each phoneme

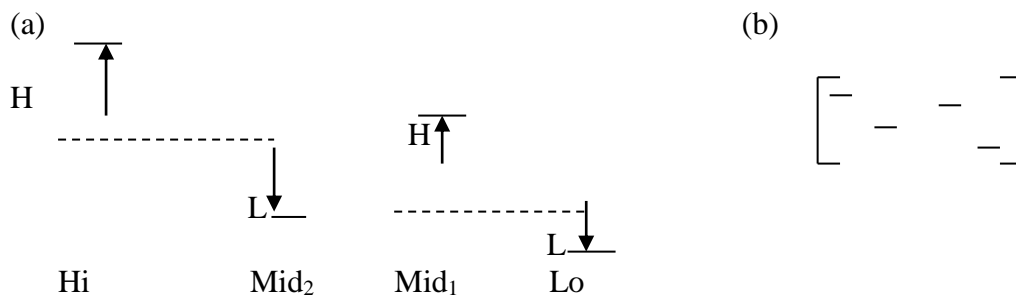


Source: Snider, K. (1999). The Geometry and features of tone

The lower case hs and ls on the register tier in (14), respectively denote higher and lower registers, and these are represented in (15) (a) by the higher and lower dotted lines. Similarly, the upper case Hs and Ls on the tonal tier in (14), respectively, denote higher and lower pitch relative to the current register, and these are represented in (15) (a) by the solid lines above and below the dotted register lines. Figure 15 (b) shows the final representation of the four level phonemes in 15 (a). Therefore, this means that one high tone in a word can be higher in pitch than the other and one low tone can also be lower in pitch than the other.

(15)

Figure 3 Phonetic representation of four level tone phonemes

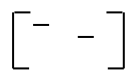


Source: Snider, K. (1999). The Geometry and features of tone

The advantage of using RTT is that one is able to differentiate the pitch of each TBU. For example, if you have two high tones (H^+H) with different pitches, RTT is able to explain which high tone is higher in pitch than the other. This phenomenon is known as downstep. Examples (16) show the tone pattern of the noun $m\acute{u}^+t\acute{o}$ using RTT. This noun has morpheme { $m\acute{u}$ } that has a high tone and morpheme { $t\acute{o}$ } that has a downstepped high tone.

(16)

$m\acute{u}^+t\acute{o}$ ‘matress’



1.8 Research methodology

The primary data used in this study were composed of questionnaires and interviews. Data obtained from the respondents after administering the interviews and questionnaires included nouns in isolation, nouns in phrasal contexts and sentences. Nouns in isolation are examined in singular and plural forms. Nouns in phrasal contexts are discussed in the environments of other word categories such as adjectives, numerals, demonstratives, possessive pronouns and quantifiers because they occur together in such contexts. Sentences and minimal pairs are also discussed. The section below deals with how the primary data were collected, sampled, analyzed and presented.

1.8.1 Sample

This study adopted random and stratified sampling. A sample size of 12 respondents was used. The respondents were sampled using the following criteria:

- i) The respondents should have been speaking Lwisukha dialect from childhood and still speak it today or at present.
- ii) The Lwisukha speakers should not be those who border Itakho, Vutsotso, Tiriki and Kabras areas. This is because their pronunciation was likely to be influenced by Lwitakho, Lutsotso, Lutiriki and Lukabras dialects of Luyia. Therefore, the respondents were from Ilesi location (Imukomari area), Ishivuye (Ishivuye area), Ileho location (Imukulusu), Ikambiri location (Ivochio) and Ishirere location (Ilutoni area)
- iii) To ensure equal representation of all the six locations that constitute Isukha area in Kakamega County, two respondents were selected from each one of them. The men were six and the women, six because the voice quality of men and women is different for example, what is perceived as low tone for a woman could be perceived as a high tone for a man.
- iv) The respondents' age ranged between 18 to 65 years. Therefore, the sample was composed of four youth (age 18-35), four middle-aged individuals (age 36-59) and four old aged individuals (age 60-65). This age range was suitable because they have a stable and strong voice that is not shaky. If the voice of a respondent is shaky, it may affect tone production.

A sample of 508 nouns in isolation was selected because this big number allowed all the tone patterns in Lwisukha nouns in isolation to be revealed. Within an interview of 45-60 minutes, the respondents were expected to pronounce each of the 508 nouns on the word list three times for recording. The respondents also pronounced 221 noun phrases and 10 sentences within 1 hour 30 minutes each. The respondents pronounced the nouns phrases and sentences twice for recording. Twenty-nine minimal pairs of nouns and other word categories, e.g., verbs, adjectives, adverbs and interjections were also pronounced three times for recording in an interview of 20 minutes. Each of the 12 respondents was interviewed and recorded in a room where there was minimal interference.

It is important to note that in this study, the questionnaire was used to collect raw data (data without tone markings) that were audio recorded. Thereafter, the researcher listened to the

utterances (data without tone markings) and marked tone therefore resulting into data with tone markings. The data is found appendices 1 to 7.

1.8.2 Data collection

Apart from secondary sources, data collection primarily involved generating nouns and other word categories, elicitation and natural conversations and eventually recording the data. Snider (2016:26) says that linguists should use natural conversations and elicited data when collecting data. This is because when linguists restrict themselves to analyzing only natural speech there are likely to be serious holes in the paradigms constructed, as some critical data may never occur in natural speech. On the other hand, if linguists restrict themselves to analyzing only elicited data, they are likely to be unaware of certain words and constructions in the language. Both methods of collecting data were therefore used in this study.

First and foremost, the researcher, who is a competent native speaker of Lwisukha, generated data. Secondly, the researcher prepared a screening tool (the questionnaire in Appendix 1, Question One). Question one of the questionnaire was used to collect background information about the speakers to ensure that only native Lwisukha speakers who fulfilled the sampling criteria participated in the interview. Questions such as the following: Which dialect of Luyia do you speak? Which dialect of Luyia have you been speaking since your childhood? Which other Luyia dialects do you speak? These were the questions asked in question one of the questionnaire. The questionnaire was given to a population of 24 respondents from six locations. The respondents selected was composed of 12 men and 12 women. Therefore, each location had 4 respondents made up of 2 women and 2 men.

Out of a population of 24 respondents only 12 respondents fulfilled the sampling criteria. The 12 respondents made the final sampling size comprising 6 men and 6 women. Each location had two respondents, a male and a female one. Each of the 12 respondents was interviewed for 2 hours. In order to ensure that data required in this study was collected, the researcher formulated questions (See the questionnaire in Appendix 1) that guided the interviewees so as to increase the probability of eliciting nouns in isolation, nouns with adjectives, numerals, demonstratives, possessive pronouns and quantifiers, sentences and minimal pairs.

A word list with a sample of 508 nouns in isolation (in singular and plural forms) was formed from the generated data and elicited nouns. A second word list with a sample of 221 noun

phrases was formed from the generated data, elicited noun phrases and natural conversations. From the noun phrases a third word list with a sample of 20 adjectives, 11 numerals, 26 demonstratives, 6 possessive pronouns and 3 quantifiers in isolation was prepared. This word list had data collected through generated data, elicitation and natural conversations. The fourth wordlist with a sample of 10 sentences was formed through elicitation and natural conversations. Finally, the last word list with 29 minimal pairs was formed from generated data.

Respondents were asked to pronounce the utterances on the word lists. Each respondent pronounced each utterance (i.e. nouns in isolation and minimal pairs) thrice and (noun phrases and sentences) twice. Marlo (2016) says that after three to four pronunciations, speakers usually do not improve their performance of the word. The respondents pronounced the utterances in the normal way. However, there are some utterances that I asked one of the respondents to pronounce slowly, in a deliberate fashion. Deliberate speech is slower than rapid speech and is easier to transcribe. Thereafter, the researcher listened to the audio-recorded data several times and transcribed the utterances.

1.8.3 Data analysis

This section presents how data were analyzed. Data analysis was done by listening to and marking the tone patterns of the nouns in isolation, in phrasal contexts and in sentences. The data was transcribed using phonetic symbols of the International Phonetic Alphabet (IPA) and tone was also marked.

From the wordlists a database was formed. The database was used to analyze tone. It had the following fields:

- (i) Grammatical word category.
- (ii) Stem type (simple, complex and compound). A simple stem consists of a single root morpheme, for example, [xo-tsa] ‘uncle’. A compound stem consists two or more roots for example, [sepjeixune] ‘nightingale’. A complex stem consists of a root or more derivational affixes, for example [kusatsa] manliness.
- (iii) Borrowed words. Borrowed words are words from another language.
- (iv) Syllable profile of the stem (e.g. CV and CVCV).
- (v) Noun class of nouns.

- (vi) Surface tone melodies of the word in isolation and in different contexts. Each context had a separate field in the database. This means that the researcher expanded as much as possible the number of tonally different phrasal environments, for example nouns were categorized in phrasal contexts as follows:
 - (a) Nouns with adjectives
 - (b) Nouns with numerals
 - (c) Nouns with demonstratives
 - (d) Nouns with possessive pronouns
 - (e) Nouns with quantifiers
- (vii) Underlying tone patterns. A noun can have a low tone pattern on all the syllables or some of the syllables on the surface but underlyingly have a different tone pattern. For example, you can have a noun with a high tone on all the syllables on the surface but underlyingly find that the same is toneless (See chapter four).

The 508 nouns (in isolation) with similar tone patterns were grouped together. For example, there is a group of nouns with low tone on all the syllables, nouns with a high tone on the prefix and the stem initial syllable while the rest of the syllables have a low tone (H.H.L), nouns with a high tone on the prefix and a falling tone on the stem initial syllable followed by low tones on the rest of the syllables (H.HL.L), among other groups (See Appendix 2 for the other groups). The nouns in each group were analyzed by considering the syllable profile of the stem (e.g., CV, CVCV, CVCVCV, among others). Therefore, the analysis of the tone patterns for majority of the nouns categorised included monosyllabic, disyllabic, trisyllabic and other polysyllabic stems (i.e. stems with more-than-three-syllables). Those with a low tone on the prefix were categorized first followed by those with a high tone on the prefix. The analysis done showed contrastive tone melodies of nouns in isolation of different stem types in both singular and plural forms. However, there are cases where some nouns analyzed had no singular or plural forms. Some nouns also had the plural form only.

Before marking tone of the noun phrases, the researcher listened to and marked tone for each noun, adjective, numeral, demonstrative, possessive pronoun and some quantifiers in isolation (See Appendix 1 and Appendix 5). Thereafter, the researcher marked tone of each noun phrase. The nouns were analyzed in phrasal context as follows: nouns followed by adjectives and numerals, nouns followed by demonstratives, nouns followed by possessive pronouns and nouns followed by some quantifiers (See Appendix 3 and 4).

The sentences were categorized into those showing affirmative sentences, questions and pragmatic distinctions. The researcher listened to and marked tone for each sentence in all the mentioned categories. Minimal pairs were also analyzed. The minimal pairs were analyzed as follows: those with nouns only, deverbal nouns and imperative verbs, nouns and adjectives and, finally, a noun and an interjection. The researcher also listened to and marked tone for each minimal pair.

Part of the data analyzed was presented by use of tables and diagrams because it made the explanations clearer and also provided information in summary form. Tables were used to represent nouns in isolation, phrasal contexts and sentences. Diagrams consisted of autosegmental tiers that were linked by association lines. These are the formal apparatus for the presentation of tonal data according autosegmental phonology theory. Using RTT, the bar system was used to represent different tones.

1.9 Conclusion

In conclusion, this chapter has provided information about the Lwisukha dialect of Luyia, for example where the speakers are found and their population. Other dialects in the Luyia language have also been discussed briefly. Objectives of the study, research questions, scope and limitations of the study, significance of the study and the literature review have been discussed. The autosegmental phonology theory and, its extension, the register tier theory is discussed. This is the theory that guided this study. Finally, the sample size and data collection methods have also been discussed. The data analyzed provided information about the surface and underlying tone patterns of Lwisukha nouns when uttered in isolation, in different phrasal environments and also the tone patterns of sentences.

CHAPTER TWO

A PHONEMIC INVENTORY OF SOUNDS AND NOUN CLASSES IN LWISUKHA

2.1 Introduction

This chapter introduces the phonology and morphology of Lwisukha dialect. The phonological system of Lwisukha is made up of segmental and suprasegmental units. The segmental units are classified into two major groups, namely, vowels and consonants. The suprasegments include tone, intonation, stress, vowel length and pitch among others. The suprasegment that we shall discuss in this study is tone. This chapter looks at the basic phonology of Lwisukha that is vowels and consonants as well as the syllable. The noun class system of Lwisukha, which falls within morphology, is also dealt with here. This is relevant because it is important to know the sounds of the language in question and how these sounds combine to form syllables onto which tones are placed. Nouns are significant given that tone plays lexical, grammatical and pragmatic functions that involve nouns. Phonemic transcription will be used in this study.

2.2 Lwisukha vowels

Schwartz, J. (1997) says that there are two types of vowel systems: the primary system that has three to nine vowels and the secondary system that has one to seven vowels. He further says that most Bantu languages have a secondary system that has seven vowels. Bennett (1976) says that a large number of Bantu languages most of them spoken in the north eastern and north western areas, show a system of seven contrasting vowels, examples of such languages are Sotho spoken in Lesotho, Kikuyu spoken in Kenya, Mongo spoken in Democratic republic of Congo, Lingala also spoken in Democratic republic of Congo and Duala spoken in Cameroon. Ebarb (2014) study on tone and variation in Lwitakho shows that this Luyia dialect has a seven vowel system. The seven vowels are /i, ɪ, ε, a, u, ʊ, o/. From the data collected in this study, Lwisukha has a nine vowel system, with a length contrast between short vowels (V) and long vowels (V:). The nine vowels are /i, ɪ, e, ε, a, u, ʊ, ɔ, o/. Therefore, Lwisukha has a primary system.

Guthrie (1967) while classifying Bantu languages shows that Luyia, Kinyarwanda, Kikuyu, Sukuma among others have a seven vowel system. Although Guthrie (1967) says that Luyia language has a seven vowel system, it is important to note that not all Luyia dialects have

seven vowels. Lwisukha for example has nine vowels and therefore it has a primary system. Lulogooli dialect of Luyia also has nine vowels, Odden (2011). Using the three features namely height, backness and roundness that are applied to the description of vowels, Lwisukha nouns showing short vowels are discussed in the next section.

2.2.1 Short vowels

In languages that distinguish vowel length, a short vowel is normally pronounced shorter than a long vowel. A short vowel has a single vowel on a syllable. The short vowels of Lwisukha are presented in example (17) in bold type.

(17)

/i/ unrounded close front vowel as in **murwi** ‘head’

/ɪ/ unrounded near-close near front vowel as in **muhɪndɪla** ‘an elderly person’

/e/ unrounded close mid front vowel as in **luseje** ‘chick’

/ɛ/ unrounded open mid front vowel as in **ʃitɛri** ‘bed’

/a/ unrounded open central vowel as in **mukari** ‘inside’

/u/ rounded closeback vowel as in **mukati** ‘bread’

/ʊ/ rounded near close near back vowel as in **rʊβili** ‘small bodies’

/ɔ/ rounded open mid back vowel as in **mukɔko** ‘wife’

/o/ close rounded close mid back vowel as in **ikofya** ‘cap’

Vowel /i/ is unrounded close front vowels. Vowel /i/ is pronounced with the corners of the lips moved away from each other, as for a smile. Vowel /ɪ/ unrounded near-close near front vowel. This vowel is more open and nearer to the center and is pronounced when the lips are slightly spread. /e/ is unrounded close mid front vowel. /ɛ/ is unrounded open mid front vowel. It is also pronounced when the lips are slightly spread. /a/ is a fully open unrounded front vowel. It is nearly universal for a language to have at least one open vowel (Roach 2009). Vowel /u/ is rounded close back and vowel /ʊ/ rounded near close near back vowel. These sounds are produced when the corners of the lips are brought towards each other and the lips pushed forward but /ʊ/ is more open and nearer to central. Vowel /ɔ/ is open mid rounded back vowel. When pronouncing this vowel, the lips are round. Vowel /o/ is rounded close mid back vowel. It has quite a strong lip rounding.

The [+ATR] vowels include /i/, /e/, /o/ and /u/. These are tense vowels that are realized when the root of the tongue is projected forward to create a greater pharyngeal opening (Roach 2009). [-ATR] vowels are /ɛ/, /ɪ/, /ɔ/, /ʊ/ and /a/. These are vowels realized when the tongue root is retracted. The functional load of /i/ and /u/ is high in Luyia dialects (Lwisukha), (Angogo 1980). The orthographic representation of Lwisukha and the IPA symbols that represent each one of them is as shown in table 1.

Table 1: Orthographic representation (Vowels)

Orthographic Representation		IPA symbols	
Upper case	Lower case	[+ATR]	[-ATR]
A	a		a
E	e	e	ɛ
I	i	i	ɪ
O	o	o	ɔ
U	u	u	ʊ

2.2.2 Long vowels

A long vowel could be twice the length of a short one. The following Lwisukha nouns have long vowels as shown in bold type in example (18).

(18)

Lwisukha	Gloss
muxaana	‘girl’
ikeeki	‘cake’
murɛɛnde	‘neighbour’
muhiinziri	‘worker’
lisi	‘wall’
fikoombe	‘cup’
mukɔɔko	‘wife’
muundu	‘person’
roundu	‘a small person’

Many languages have vowels whose quality changes during their production (Roach 2009). Such sounds are called diphthongs. They could be a sequence of vowels or a sequence of semi-vowel (glide) and a vowel. Those sequences occupy one syllable. Lwisukha is one of these languages.

From our data, speakers were unable to differentiate in their production a high vowel-vowel sequence and a glide-vowel sequence implying that the two sequences are in free variation. In example (19), the sequence of vowels is in bold type and the sequence of semi vowels and a vowel are underlined.

(19)

Sequence of high vowels		Sequence of a semi vowel and a vowel	
lu imbo	-	lw <u>imbo</u>	‘song’
lu ana	-	lw <u>aana</u>	‘childishness’
ʃitʃ enua	-	ʃitʃ <u>ɛnwa</u>	‘comb’
itaj ua	-	itaj <u>wa</u>	‘cock’
ʃixul ia	-	ʃixul <u>ja</u>	‘food’
mutal akua	-	mutal <u>akwa</u>	‘cyprus tree’
mu ana	-	mwa <u>ana</u>	‘child’
lɛŋ gu	-	lj <u>ɛŋgu</u>	‘ripe banana’

The examples above show that when the high front vowels (/i/, /i/) and the two high back vowels (/ɔ/, /u/) are found in the initial or final position of a vowel-vowel sequence, they are easily replaced by the semi vowels /j/ and /w/ respectively. The glides /j/ and /w/ are consonants which correspond closely in terms of place of articulation to the vowels /i/ and /u/, respectively.

2.3 Lwisukha consonants

Lwisukha has 25 consonants distributed as follows:

Stops/plosives	3
Nasals	4
Fricatives	6
Affricates	2
Lateral	1
Flap	1
Trill	1
Glides	2
Prenasalised stops	5

Source: Researcher

Table 2 shows the list of consonants and their corresponding IPA symbols. All these consonants can be found in the word initial and middle positions of Lwisukha words.

Table 2: Orthographic representation (Consonants) and IPA symbols

Orthographic representation		IPA symbols
Upper case	Lower case	
P	p	p
T	t	t
K	k	k
M	m	m
N	n	n
NY	ny	ɲ
NG'	ng'	ŋ
B	b	β
F	f	f
S	s	s
KH	kh	x
H	h	h
TS	ts	ts
SH	sh	ʃ
CH	ch	tʃ
R	r	r
L	l	l
L	l	r
W	w	w
Y	y	j
MB	mb	mb
ND	nd	nd
NZ	nz	nz
NG	ng	ŋg
NJ	nj	ɲj

Source: Researcher

Consonants are also presented in table 3. They are classified according to the manner and place of articulation. In each cell the voiced sound is on the right hand side while the voiceless sound is on the left.

Table 3: Lwisukha consonants

Place of articulation / Manner of articulation	Bilabial	Labial Dental	Alveolar	Palato Alveolar	Palatal	Labial Velar	Velar	Glottal
PLOSIVES	p		t				k	
NASALS	m		n		ɲ		ŋ	
FRICATIVES	β	f	s	ʃ			x	h
AFRICATES			ts	tʃ				
LATERALS			l					
FLAP			r					
TRILLS			r					
GLIDES					j	w		
PRENASALISED STOPS	mb		nd				ŋg	
			nz	ɲʃ				

Source: Reseacher

2.3.1 Lwisukha plosives

Lwisukha has three plosive consonants: /p/, /t/, /k/. The three plosives have different places of articulation. Plosive /p/ is bilabial since the lips are pressed together; /t/ is alveolar since the tongue blade is pressed against the alveolar ridge. Plosive /k/ is velar; the back of the tongue is pressed against the soft palate. The plosives /p/, /t/ and /k/ are voiceless. The release of these plosives is followed by an audible explosion that is, a burst of noise.

2.3.2 Lwisukha nasals

The basic characteristic of nasal consonants is that air escapes through the nose and not the mouth. Lwisukha has four nasal consonants /m/, /n/, /ɲ/, /ŋ/. The four nasals have different places of articulation. Nasal /m/ is bilabial since the lips are pressed together; /n/ is alveolar since the tongue blade is pressed against the alveolar ridge. Nasal /ɲ/ is palatal. In its articulation the front of the tongue is pressed against the gum. Nasal /ŋ/ is velar; the back of the tongue is pressed against the soft palate.

2.3.3 Lwisukha fricatives

Lwisukha has six fricative consonants: /β/, /f/, /s/, /ʃ/, /x/ and /h/. These fricatives have different places of articulation. Fricative /β/ is bilabial since the lips are pressed together. /f/ is labio dental since the lower lip is in contact with the upper teeth. /s/ is alveolar since the tongue blade is pressed against the alveolar ridge. Fricative /ʃ/ is an alveolar sound. Fricative /ʃ/ is a palato alveolar sound. Palato alveolar is also known as post-alveolar, which can be taken to mean that the tongue is in contact with an area slightly further back than that of /s/. When pronouncing /ʃ/ the air escapes through a passage along the centre of the tongue, the passage is a little wider than that of /s/. Fricative /x/ is a velar sound. The back of the tongue is pressed against the area where the hard palate ends and the soft palate begins. Lastly, is fricative /h/, the place of articulation for this sound is the glottal region. This means that the narrowing that produces the friction noise is between the vocal folds. When one breathes silently and then produces /h/, one moves the vocal folds from wide apart to close together.

2.3.4 Lwisukha affricates

Lwisukha has two affricates (/ts/ and /tʃ/). The place of articulation /ts/ is alveolar since the tongue blade is in contact initially with the alveolar ridge. The place of articulation for affricate /tʃ/ is the palato alveolar region.

2.3.5 Lwisukha lateral

Lwisukha has one lateral which is /l/. In the production of this sound there is complete closure between the center of the tongue and the part of the roof of the mouth where contact is made that is the alveolar ridge. This complete closure along the center line of the oral track makes air to escape along the sides of the tongue.

2.3.6 Lwisukha flap

Lwisukha has one flap which is /ɾ/. Its place of articulation is the alveolar. Which means it is articulated with either the tip or the blade of the tongue of the alveolar ridge termed respectively as apicallaminal.

2.3.7 Lwisukha trill

Lwisukha has only one trill which is /r/. The important thing about the articulation of /r/ is that the tip of the tongue hits the alveolar ridge several times.

2.3.8 Lwisukha glides

Lwisukha has two glides /w/ and /j/. As in other languages, the articulation of these two consonants has semblance to that of vowels. Though /w/ and /j/ have consonantal features, they lack the phonetic characteristics normally associated with consonants such as friction and closure. /w/ is a labio-velar sound. Apart from the rounding of lips, there is some mild friction at the velar region when articulating /w/. This mild friction denotes consonantal features. /j/ is voiced palatal sound. The minor friction evident at the hard palate is caused by the movement of the tongue upwards towards the hard palate.

2.3.9 Prenasalised stops

Lwisukha has five prenasalised stops which are /mb/, /nd/, /nz/, /ɲʃ/ and /ŋg/. These prenasalised consonants have different places of articulation. Prenasalised stop /mb/ is bilabial since the lips are involved; /nd/ and /nz/ are alveolars since the tongue blade is pressed against the alveolar ridge. Prenasalised stop /ɲʃ/ is articulated at palato alveolar region and prenasalised stop /ŋg/ is articulated at the velum.

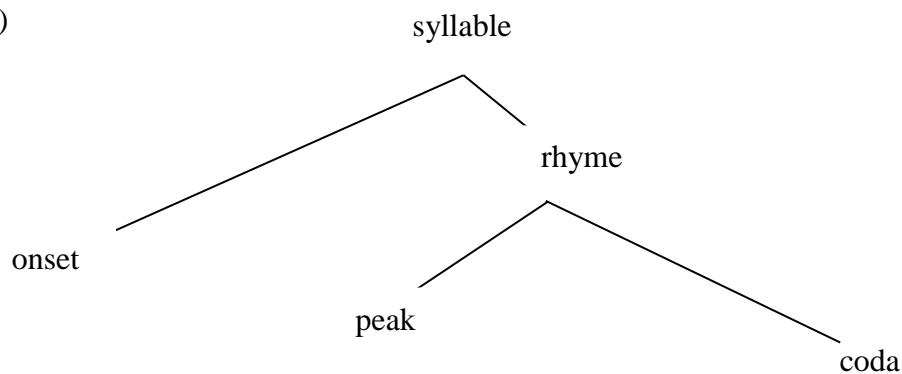
The Lwisukha sounds that have been discussed, namely vowels and consonants, will feature in the discussions that are in the rest of the thesis. The next section looks at the Lwisukha syllable structure.

2.4 General syllable structure

After discussing the sound segments found in Lwisukha, it is important to discuss how these sounds combine to form syllables. This section looks at the Lwisukha syllable structure. A syllable is a component of a word that has one peak of prominence occupied by a vowel or a syllabic consonant. A syllable structure consists of an onset (O) and a Rhyme (R). The Rhyme has an obligatory peak (P) and a coda (Co). The peak is the nucleus of the syllable and is the most prominent part. According to Kenstowicz (1994:52), the nucleus has a special status as the obligatory constituent of a syllable. This is shown by the fact that the nucleus vowel (V) is the only constant factor among the four primitive syllables (CV, VC, V and CVC). The special status of the nucleus is also seen in its role as the optimal tone or stress bearing unit. Kenstowicz adds that loss of syllable's vocalic nucleus typically relocates the tone or stress, but loss of consonantal onset or coda does not disturb the syllable count, thus the location of accent or tone. Therefore, the nucleus is the syllable's essential core. In Lwisukha, it is the vowel that occupies the peak and never a syllabic consonant.

The onset consists of one or more consonants preceding the peak. In Lwisukha we have the following syllables (**β**a, x**a**, **ŋ**ga, m**b**a, e.tc) with their onsets in bold type. All consonant sounds occur in this position. In Lwisukha the onset is not obligatory. The coda consists of one or more consonants following the peak. Lwisukha syllables do not have a coda. However, some languages like Dholuo have syllables that have both onset and coda (Oduor 2002). The onset, peak and coda are the three phonetic parts of a syllable (Roach 2009). This is illustrated diagrammatically in example (20).

(20)

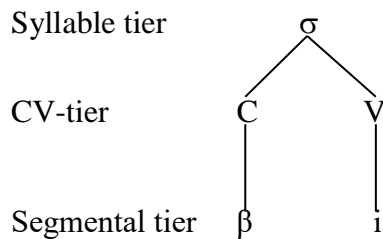


Taken from/Roach, P. (2009:60)

A syllable can be open, closed, heavy or light. An open syllable ends in a vowel while a closed syllable ends in a consonant. All closed syllables may be composed of an onset, peak, and coda or peak and coda. Lwisukha syllables are all open. This means that Lwisukha syllables have no coda. To illustrate the structure of syllables in Lwisukha, this study adopts a model propounded by Clements and Keyser (1983). In CV phonology, the syllable is assumed to have a tiered structure consisting of the syllable node, the CV-tier and segmental tier. The syllable nodes of the syllable tier dominate the elements of the CV-tier while those on the CV-tier dominate those of the segmental tier. The CV tier defines syllable peaks or non-peaks, that is the functional positions within the syllable. The vowel element is associated with the syllable peak. Any element dominated by the C element of the CV tier is non-syllabic whereas any element dominated by V element is syllabic. Thus a monosyllabic word represented in this model is shown in example (21).

(21)

βi 'who'



In example (21) the vowel /i/ is immediately dominated by the V slot on the CV tier while consonant /β/ is immediately dominated by the C slot in the CV tier.

To relate the CV tier to the segmental tier, the association lines are drawn following certain universal rules (Katamba 1989:173). These rules link V elements to [-cons] segments, i.e. vowels and C elements to [+cons] segments as shown in example (21). C elements in Lwisukha are non-syllabic while V elements are syllabic.

Clements and Keyser (1983:38) have outlined a formal step by step procedure for building syllables as indicated below.

- a) Underlyingly every V of the CV tier is linked to a syllable (σ). This means that no syllable exists without a V element except in the case of syllabic consonants.
- b) Link each C element to the nearest V element to its left provided the resulting sequence of segments does not violate any language specific rules. This procedure creates the syllable onsets.
- c) Linking C elements to the nearest V to its right. This procedure creates syllable margins.

In example (21) the vowel /i/ is pre-linked to the syllable (σ) node. /β/ is the only C element on the left of /i/. When linked to the σ node it forms an acceptable onset in Lwisukha. As discussed earlier, Lwisukha does not permit any consonant element in the coda. The major syllable types in Lwisukha are CV and V types. As mentioned earlier these are open syllables. In section 2.5 Lwisukha syllable types have been discussed.

2.5 Lwisukha syllables

Lwisukha syllables are open. Open syllables end in a vowel. The following open syllable types are found in Lwisukha - CV, V, CV:, V:, CCV and CCV:. Each type will be identified by a capital letter. Thus we have types A, B, C, D, E and F. The symbol ‘.’ has been used to show syllable boundary in words.

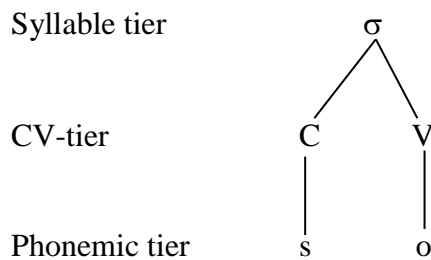
2.5.1 Type A (CV syllables)

Type A syllables consists of a consonant followed by a vowel. A majority of words in Lwisukha have a type A syllables. This kind of syllable is found in both monosyllabic and polysyllabic words. It is also found in any position in a word. In other words, such syllables can be found in the initial, medial and final positions. According to Clements and Keyser (1983) all languages have a CV type syllable. Other syllable types are seen as modifications of this prototypical syllable. All type A syllables are shown in example (22) in bold type.

(a) CV syllable in bisyllabic words

(22)

(i) **so** ‘father’



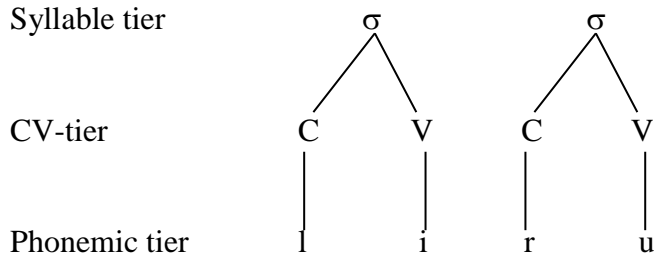
(ii) **xu** ‘to, on’

(iii) **βi** ‘who’

(iv) **ndi** ‘how’

(b) CV syllable in bisyllabic words

(i) **li.ru** 'banana leaf'



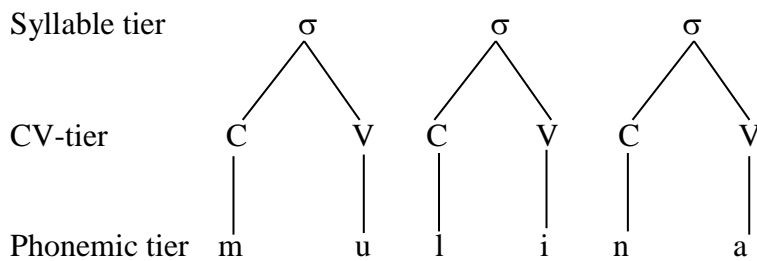
(ii) **ni.na** 'mother'

(iii) **mu.to** 'matress'

(iv) **βu.le** 'sorghum'

(c) CV syllable in trisyllabic words

(i) **mu.li.na** 'friend'



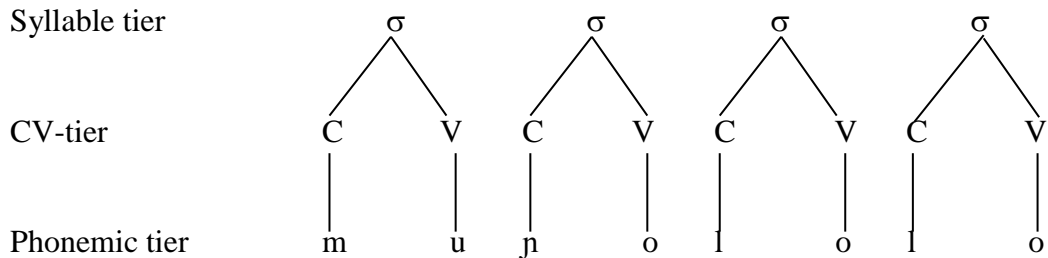
(ii) **mu.hi.ka** 'year'

(iii) **fi.te.re** 'finger/toe nail'

(iv) **lu.βa.lu** 'rib'

(d) CV syllable in polysyllabic words

(i) **mu.po.lo.lo** ‘chain’



(ii) **na.ku.xo.lo** ‘mother in law’

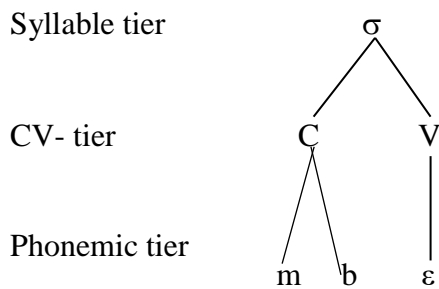
(iii) **lu.xu.βa.mbo** ‘type of tree’

(iv) **mu.tʃε.ru.ma.ni** ‘A German person’

In the phonetic chart in table 2, prenasalised stops are presented as single units as illustrated diagrammatically, for example in the word [mbe] ‘give me’ in example (23).

(23)

(i) **mbε** ‘give me’



The following are examples of prenasalised stops presented as single units (CV syllables) in monosyllabic and polysyllabic words.

(a) Monosyllabic words

(i) **mbi** ‘feaces’

(ii) **ndi** ‘how’

(iii) **nzi** ‘do I go’

(b) Bisyllabic words

(i) **βi.mba** ‘cover’

(ii) **ʃi.ndu** ‘thing’

(iii) **βwo.ŋgo** ‘brain’

- (c) Trisyllabic words
- (i) li.ko.**ndi** 'sheep'
 - (ii) ʃi.tʃi.**pʃi** 'mite (which develops into jigger)'
- (d) Other polysyllabic words
- (i) i.**ŋgu**.lu\$me 'pig'
 - (ii) i.**nde**.ke\$je 'heel'

From the examples shown in (22) and (23), CV type syllables are found in initial, middle or the final syllable of a word.

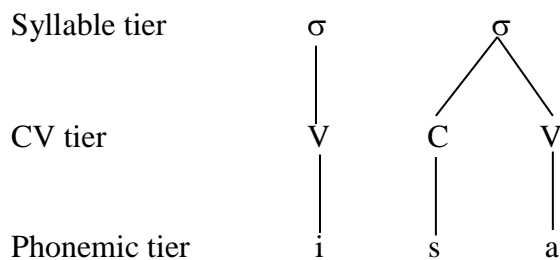
2.5.2 Type B (V syllables)

V syllables are short vowels that form syllables on their own. These syllables can be found in bisyllabic, trisyllabic and other polysyllabic words in Lwisukha. In a chart, only a single V of the CV tier dominates the terminal element of the phonemic tier. Such syllables neither have an onset nor a coda. All the V syllables are in bold type as illustrated in example (24).

(24)

(a) V syllables in bisyllabic words.

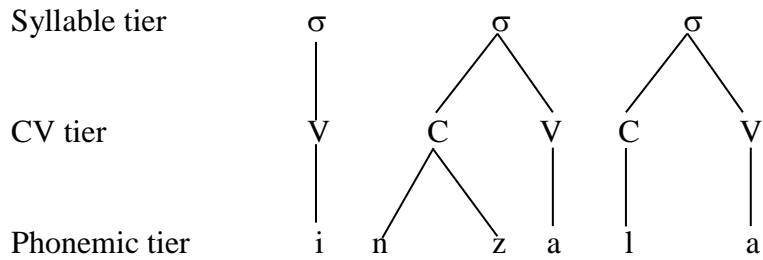
- (i) **i**.sa 'time, hour, watch'



- (ii) **i**.nzu 'house'
- (iii) **i**.pʃi 'housefly'
- (iv) **i**.nu 'this place'

(b) V syllable in trisyllabic words

(i) **i.nza.la** 'hunger'



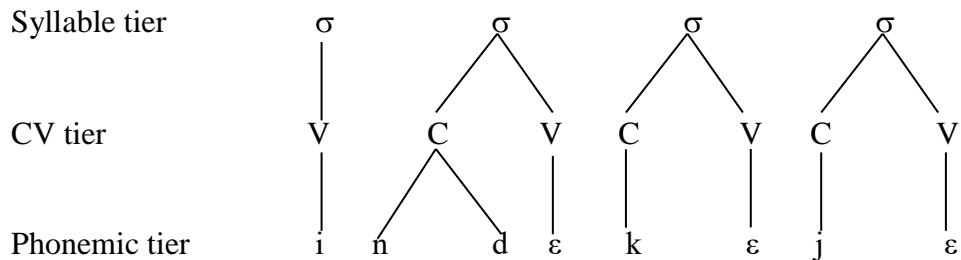
(ii) **i.mbi.ko** 'kidney'

(iii) **i.ndu.la** 'gall bladder'

(iv) **i.ndi.ka** 'bicycle'

(c) V syllable in other polysyllabic words

(i) **i.ndε.kε.jε** 'heel'



(ii) **i.ŋgu.ru.ma.ni** 'liver'

(iii) **i.ŋga.na.ka.ni** 'thought'

(iv) **i.mbo.to.xa** 'jealous, envy'

From the examples shown in (24), V syllables are found in word-initial positions. Vowel /i/ is the one found in the initial position of this syllable type.

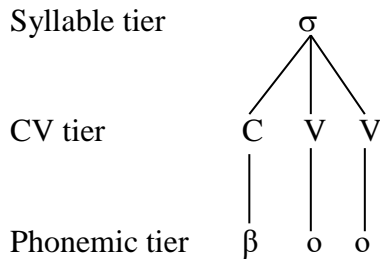
2.5.3 Type C (CV: syllables)

These are syllables that consist of a consonant followed by a long vowel. They are found in words of any number of syllables. A long vowel is immediately dominated by two elements on the CV tier, and therefore it is doubled. The examples of CV: syllables are shown in example (25).

(25)

(a) CV: syllable in monosyllabic words

(i) **βo:** 'them'



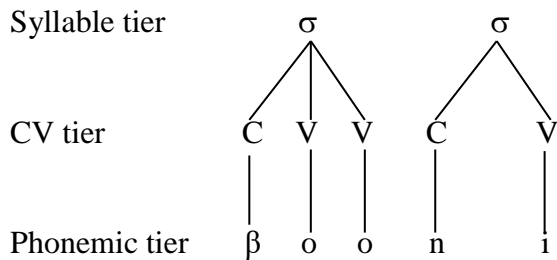
(ii) **tsi:** 'intensity of coldness'

(iii) **tu:** 'full to the brim'

(iv) **pa:** 'intensity of hotness/ a sudden fall'

(b) CV: syllable in bisyllabic words

(i) **βo:.ni** 'sinners'



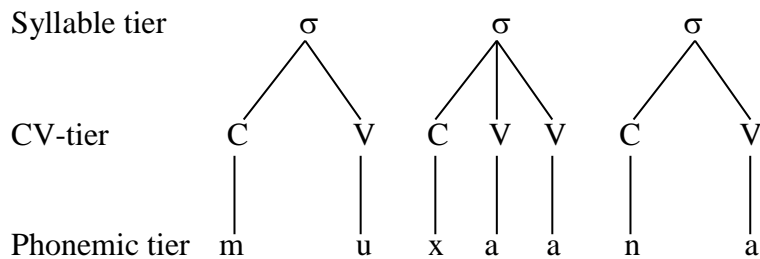
(ii) **mu:.ndu** 'person'

(iii) **ma:.ma** 'mother'

(iv) **xa:.ta** 'a small stomach'

(c) CV: syllable in trisyllabic words

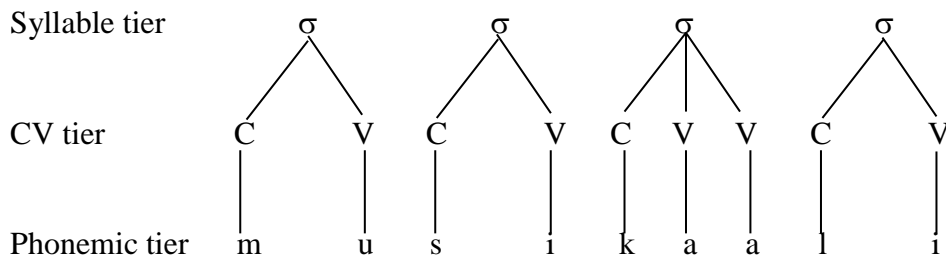
- (i) mu.**xa**:.na ‘girl’



- (ii) mu.**sa**:.tsa ‘husband’
 (iii) lu.**pa**:.ŋga ‘matchet’
 (iv) ma.**βɛ**:.rɛ ‘milk’

(d) CV: syllable in other polysyllabic words

- (i) mu.si.**ka**.li ‘soilder’



- (ii) mu.su.**mɛ**:.no ‘saw’
 (iii) mu.ta.**la**:.kwa ‘cyprus tree’
 (iv) ʃi.**na**:.jɛ.nzo ‘demons, ghost, spirit of a dead person’

From the examples in (25), type C syllables (CV:) are mostly found in any part of a word except the final position.

2.5.4 Type D (V: syllables)

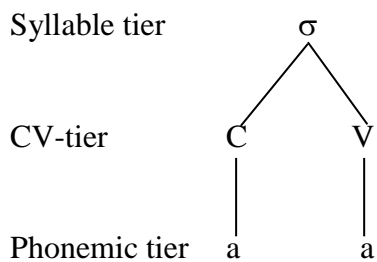
V: syllables are long vowels indicated as a sequence of two identical vowels. In Lwisukha such syllables are interjections. For example the interjection aa!, is an exclamation used to show surprise or dissatisfaction. Interjection ee! is an exclamation used to show a surprise. Oo!, is an exclamation used to show a surprise, regret or disappointment. It also means quite

unfortunate. Interjection *ii!* and *uu!*, are exclamations used after a sudden incident that could be fatal, greacely or painful. Example (26) shows V: syllable *aa!* an exclamation used to show surprise or dissatisfaction.

(26)

(a) V: syllable

Aa! ‘an exclamation used to show surprise or dissatisfaction’



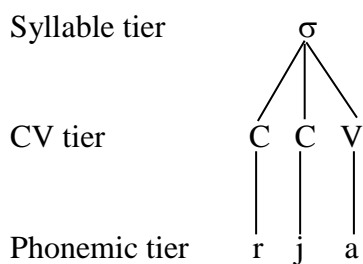
2.5.5 Type E (CCV syllables)

In CCV syllables the nucleus is preceded by two consonants as shown in example (27). Such syllables are evident in monosyllabic and polysyllabic words.

(27)

(a) CCV syllable in monosyllabic words

(i) **rja** ‘fear’



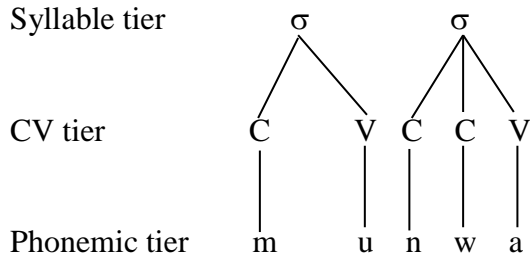
(ii) **βja** ‘for’

(iii) **xwa** ‘pay dowry’

(iv) **kwa** ‘fall down’

(b) CCV syllable in bisyllabic words

(i) **mu.nwa** 'mouth'



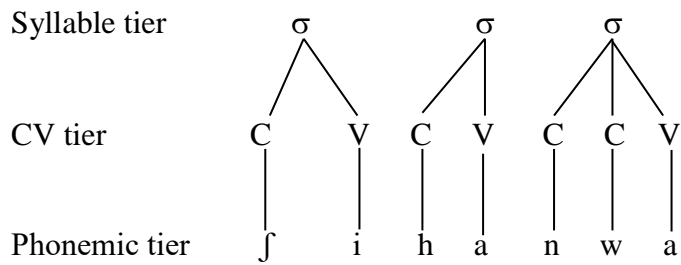
(ii) **li.swi** 'hair'

(iii) **ɸjo.le** 'baldness'

(iv) **mwo.ɸi** 'smoke'

(c) CCV syllable in trisyllabic words

(i) **ɸi.ha.nwa** 'gift'



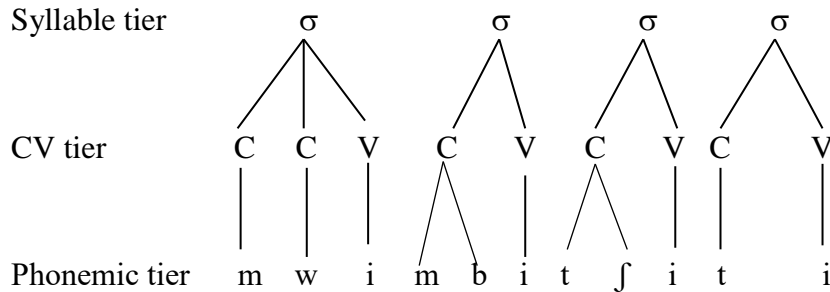
(ii) **ɸi.li.lwa** 'food'

(iii) **i.pa.rwa** 'letter'

(iv) **i.ha.jwa** 'axe'

(d) **CCV syllable in other polysyllabic words**

(i) **mwi\$mbi\$tfi\$ti** 'short e.g. person'



(ii) i.**kwa**.ndia.ŋgu 'area behind the house'

(iii) i.**βwi**.si.ra.he.li 'in israel'

(iv) li.ta.la.nda.**lwa** 'tent'

From the examples in (27) CCV syllables can be found in word initial position, penultimate and final position.

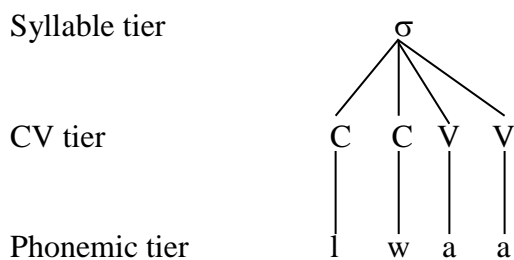
2.5.6 Type F (CCV: syllables)

In a CCV: syllable there are two consonants followed by a long vowel as shown in example (28). Such syllables are evident in monosyllabic and polysyllabic words.

(28)

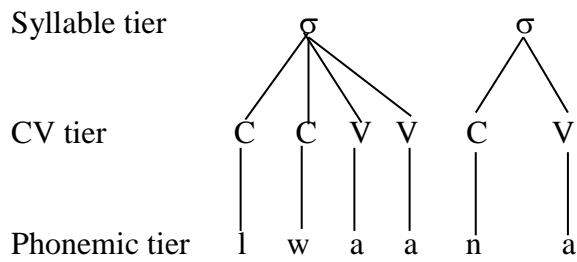
(a) **CCV: syllable in monosyllabic words**

(i) **lwa:** 'when'



(b) CCV: syllable in bisyllabic words

(i) **lwa:na** 'childishness'



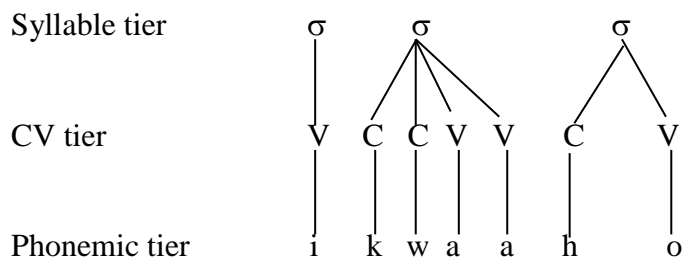
(ii) **mwi:xo** 'cooking stick'

(iii) **mwo:jo** 'heart'

(iv) **βwa:mi** 'chieftaincy'

(c) CCV: syllable in trisyllabic word

(i) **i.kwa:ho** 'armpit'



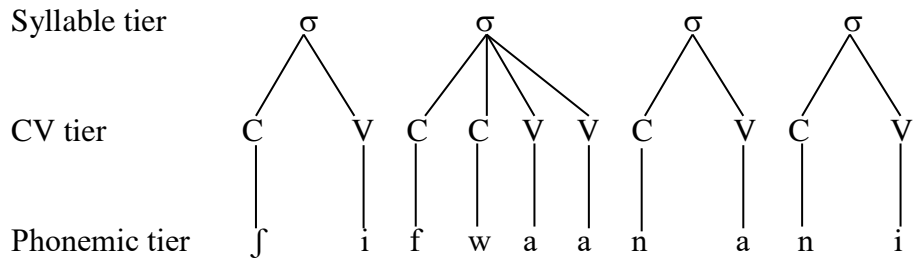
(ii) **mwi:..su.xa** 'Mwiisukha person'

(iii) **mwi:..ta.xo** 'Mwiitakho person'

(iv) **βumwa:mu** 'blackness'

(d) **CCV: syllable in other polysyllabic words**

(i) **f**i.**fwa**:.na.ni ‘toy’



(ii) mu.tsi.**kwa**:.ho ‘under the armpit’

(iii) **βwi**:.xu.tsi.li ‘patience’

(iv) **mwi**:.tsu.xu.lu ‘grandchild’

It is evident in example (28), type E syllables (CCV:) are mostly found in word initial position. This syllable is also found in middle and penultimate position. According to Clements and Keyser (1983), languages may have any one of the following canonical syllable types:

Type 1: CV (ta)

Type 2: CV, V (ta, a)

Type 3: CV, CVC (ta, tat)

Type 4: CV, V, CVC, VC (ta, a, tat, at)

Lwisukha belongs to type 2 languages. This is because the structures that have been discussed are basically CV and V.

2.6 Syllable Weight

Syllables can also be classified as either light or heavy depending on the rhyme association to skeletal positions. A light syllable is one that ends in a short vowel (Kenstowicz, 1984). In other words, it does not have a branching rhyme. A heavy syllable consists of a long vowel (V:), a VV or VC sequence or a combination of these. The onset never seems to play any role in the computation of syllable weight. Consequently, its internal structure is irrelevant to syllable weight (Katamba, 1989:176). Lwisukha has open type syllable and therefore does

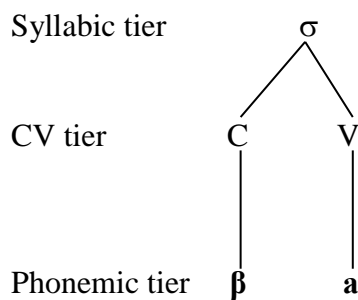
not have the CVC or VC syllables. In section 2.6.1 and 2.6.2 light and heavy syllables in Lwisukha dialect are discussed.

2.6.1 Light syllables

Light syllables are open syllables that have a short vowel. There are various ways of representing light syllables. One way is where the rhyme associates directly to the positions on the phonemic tier in a one-to-one fashion. The monosyllabic word βa ‘of’ in example (29) has been used to show this phenomenon. The light syllables in the diagrams are shown in bold type.

(29)

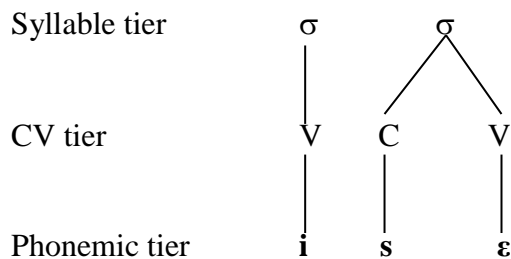
βa ‘of’



The V syllables discussed in section 2.5.2 are also light syllables. The V syllables do not have an onset or a coda. The V syllable is evident in the bisyllabic word $i.s\epsilon$ ‘father’. This word has two light syllables that is /i/ and /sɛ/ as shown in example (30).

(30)

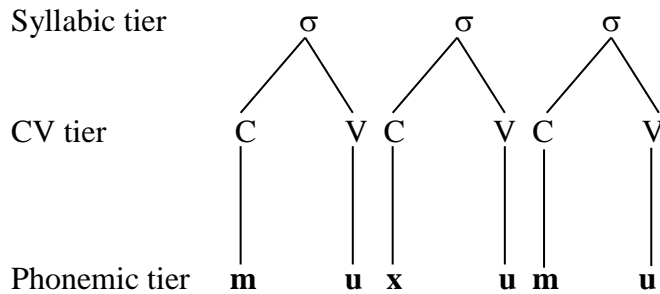
$i.s\epsilon$ ‘father’



Example (31) shows a trisyllabic noun mu.xu.mu ‘soothsayer, magician’ with light syllables.

(31)

mu.xu.mu ‘soothsayer, magician’

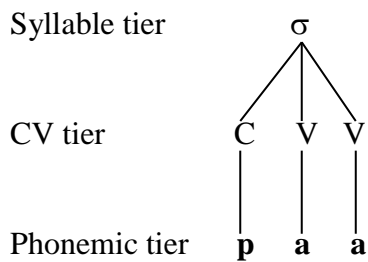


2.6.2 Heavy syllables

A heavy syllable is a syllable that has a branching rhyme which signifies phonetic weight (Katamba 1989: 176). Branching occurs in the nucleus. A branching nucleus means that the syllable has a long vowel. Heavy syllables in Lwisukha have a long vowel as shown in example (32). The monosyllabic word **pa:** ‘intensity of hotness/a sudden fall’ in example 32 shows a heavy syllable. The heavy syllables in this section are shown in bold type.

(32)

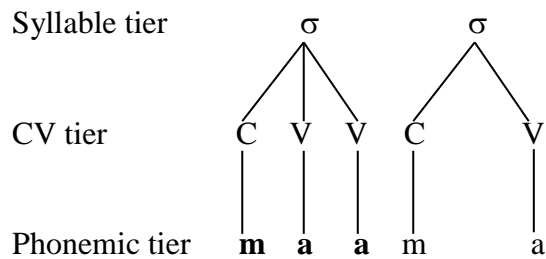
pa: ‘intensity of hotness/a sudden fall’



The disyllabic noun **ma:ma** ‘mother’ in example (33) has a heavy syllable.

(33)

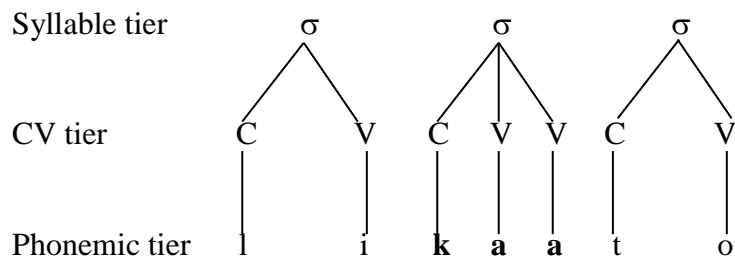
ma:ma ‘mother’



The trisyllabic noun **li.ka:.to** ‘avocado’ in example (34) also has a heavy syllable.

(34)

(i) **li.ka:.to** ‘avocado’



A more detailed and systematic study needs to be carried out on Lwisukha syllable weight. After discussing the syllable structure of Lwisukha, the next section looks at the morphology of the dialect. Noun classes are discussed in the next section.

2.7 Lwisukha morphology

In this section, we shall show the noun classes of Lwisukha, the prefix for each class and examples of nouns in each class.

2.7.1 Lwisukha noun classes

Like in other Bantu languages, noun class system can be used to classify nouns in Lwisukha. The noun class system uses affixes to indicate singularity or plurality of nouns. From the data collected in this study as shown in table 4, most of the Luyia dialects like Luwanga, Lutsotso, Lunyore, Lukisa and others still maintain pre-prefixes in the nouns. Lwisukha does not maintain pre-prefixes on its nouns. Majority of Lwisukha nouns consist of a stem and a class prefix. The examples in table 4 show the prefixes in Lwisukha and the pre-prefixes in Luwanga, Lutsotso, Lunyore and Lukisa. The prefixes are shown in bold type and the pre-prefixes are underlined.

Table 4: Pre-prefixes and prefix

Lwisukha	Lunyore	Luwanga	Lutsotso	Lukisa	Gloss
mu-xono	<u>o</u> - mu -xono	<u>o</u> - mu -xono	<u>o</u> - mu -xono	<u>o</u> - mu -xono	Hand
f̄i-laro	<u>ε</u> - f̄i -laro	<u>ε</u> - f̄i -laro	<u>ε</u> - f̄i -laro	<u>ε</u> - f̄i -laro	Shoe

In table 4 the nouns ‘hand’ and ‘shoe’ have class prefixes {mu} and {f̄i} representing singular and -xono and -laro are the stems in the five Luyia dialects discussed. Pre-prefixes are found in Lunyore, Luwanga, Lutsotso and Lukisa dialects. The pre-prefixes in the four dialects in table 4 are ‘o’ attached to the noun o-mu-xono ‘hand’ and ‘ε’ attached to the noun ε-f̄i-laro ‘shoe’. The same nouns, that is, mu-xono ‘hand’ and f̄i-laro ‘shoe’ in Lwisukha do not have pre-prefixes. Lwisukha dialect has only prefixes.

This study has adopted the prefix class system by Demuth (2000), whereby numbers are used to refer to the noun classes. In most cases odd numbers denote the singular form and even numbers the plural form. Though this is different in some cases, for example class 12 represents singular and is not an odd number. It is also unclear if class 14 forms are singular or plural. Class 15 is neither singular nor plural. Out of the twenty-three proto-Bantu noun classes indicated by Demuth (2000), this study identifies twenty noun classes in Lwisukha dialect as shown in table 5.

Table 5: Noun classes in Lwisukha dialect

Class	Nominal prefixes	Example	Gloss
1.	mu	mu-lina	‘friend’
2.	βa	βa-lina	‘friends’
3.	mu-	mu-xono	‘hand’
4.	mi-	mi-xono	‘hands’
5.	li-	li-rɛmwa	‘banana’
6.	ma-	ma-rɛmwa	‘bananas’
7.	ʃi-	ʃi-laro	‘shoe’
8.	βi-	βi-laro	‘shoes’
9.	i-n	i-ɲjila	‘road’
10.	tsi-	tsi-ɲjila	‘roads’
11/10	lu	lu-saala/tsi-saala	‘sticks’
12.	xa-	xa-lina	‘a small friend’
13.	ru-	rɔ-lina	‘small friends’
14.	βu	βu-sii	‘flour’
15.	xu-	xu-tɛxa	‘to cook’
16.	ha-	ha-ʃitɛli	‘locative at the bed’
17.	xu-	xu-ʃitɛli	‘locative on the bed’
18.	mu-	mɔ-ʃitɛli	‘locative in the bed’
19.	20/4 ku-	ku-jaji/mi-jaji	‘boy (huge)’
20.	i-	i-lukulu	‘city, urban area’

It is important to note that classes 11/10 have more than one number as compared to the rest of the classes in table 5, that have one number, because classes eleven singular form is marked by the prefix {lu} and the plural form is marked by the prefix {tsi}, that is used in class ten in the plural form. Class twenty also has more than one number (i.e. 20/4) because in the singular form, the class is marked by the prefix {ku} and the plural form is marked by prefix {mi}, a prefix that is used in class four in the plural form.

Classes 1-2 nouns

Class one singulars are marked by the prefix {mu} and class two plural have the prefix {βa}. The words in these classes mostly name humans for example kinship terms (people who have blood relation or are related through marriage), ethnonyms, professions and people who have different types of disabilities.

In example (35) allomorph {mu} representing singular and {βa} representing plural are found before the stem starting with a consonant (e.g. mu-jaji ‘boy’, βajaji ‘boys’). Allomorph {muu} representing singular and {βaa} representing plural are found before the stem starting with sound N and a consonant (NC) (e.g. muu-ndu ‘person’, βaa-ndu ‘people’).

(35) **Nouns referring to kinship terms**

Class 1		Class 2	
Singular	Plural	Singular	Plural
(Lwisukha)	(Lwisukha)	(English)	(English)
muu-ndu	βaa-ndu	‘person’	‘people’
mu-jaji	βa-jaji	‘boy’	‘boys’
mu-xali	βa-xali	‘woman/wife’	‘women/wives’

In example (36) allomorph {mwi} represents the singular form. As earlier discussed in example 19, when the high back vowel /u/ and the high front vowel /i/ are found in the initial position of a vowel-vowel sequence, it is replaced by the semi vowel /w/as seen in the nouns (e.g. mu+isukha →mwi-isuxa ‘Mwiisukha person’ and mu+itaxo →mwi-taxo).

(36) **Nouns referring to ethnonyms**

Class 1		Class 2	
Singular	Plural	Singular	Plural
(Lwisukha)	(Lwisukha)	(English)	(English)
mwi-isuxa	βi-isuxa	‘Mwiisukha person’	‘βiisuxa people’
mwi-itaxo	βi-itaxo	‘Mwiitakho person’	‘βiitaxo people’
mu-kanda	βa-kanda	‘Baganda person’	‘Baganda people’

Example (37) has people with physical or mental handicaps.

(37) **People with physical or mental handicaps**

Class 1		Class 2	
Singular	Plural	Singular	Plural
(Lwisukha)	(Lwisukha)	(English)	(English)
mu-βexu	βa-βexu	‘blind person’	‘blind people’
mu-silu	βa-silu	‘deaf people’	‘deaf person’
mu-lalu	βa-lalu	‘mad person’	‘mad people’

(38) **Agentive human nouns derived from verbs (positive characteristics)**

Class 1		Class 2	
Singular	Plural	Singular	plural
(Lwisukha)	(Lwisukha)	(English)	(English)
mwe-tʃitsi	βe-tʃitsi	‘teacher’	‘teachers’
mu-hinziri	βa-hinziri	‘worker’	‘workers’
mu-mbafi	βu-mbafi	‘builder’	‘builders’

A number of class 1-2 nouns are derived from verbs as seen in example (38) and (39). Some examples of this type are given in example (39), along with the corresponding verbs in their infinitival form. In these examples, the verb stem is set off with brackets { }. Most of these deverbal nouns end with nominalizing suffix {i} as shown in example 39. A deverbal noun (e.g. mokajanu which means a disorganized person) ends in {u} as shown in (40) while infinitives always take the final suffix {a} as shown in (39) in bold type.

(39)	Singular	Singular	Verb	Verb
	(Lwisukha)	(English)	(Lwisukha)	(English)
	mwε-tʃitsi	‘teacher’	xw{ɛtʃitsa}	‘to teach’
	mu-hinziri	‘worker’	xu{hinzira}	‘to work’
	m-umbaʃi	‘builder’	xu{mbaxa}	‘to build’

(40) **Agentive human nouns derived from verbs (negative characteristic)**

Class 1	Class 2		
Singular	Plural	Singular	Plural
(Lwisukha)	(Lwisukha)	(English)	(English)
mu-kojanu	βa-kojanu	‘disorganized person’	‘disorganized people’
mwi-iri	βi-iri	‘killer/murderer’	‘killers/murderers’
mwo-oni	βo-oni	‘evil doer’	‘evil doers’

Examples (40) and (41) have same nouns that are derived from verbs. Some examples of this type are given along with corresponding verbs in their infinitival form as shown in example (41). The infinitive {xu} occurs before consonant initial stems (e.g. xu{kojana} ‘to be disorganised’) and {xw} occurs before a vowel initial stem (e.g. xw{ira} ‘to kill’). The nouns derived from verbs end with suffix {i} in both singular form and plural form, for example (mw-iri - βi-iri, mw-oni - βo-oni) except for the noun ‘mukojanu-βakojanu’ which ends with suffix {u} in both singular form and plural form.

(41)	Singular	Singular	Verb	Verb
	(Lwisukha)	(English)	(Lwisukha)	(English)
	mu-kojanu	‘disorganized’	xu{kojana}	‘be disorganized’
	mwi-iri	‘killer/murderer’	xw{ira}	‘to kill’
	mwo-oni	‘evil doer’	xu-βa-mw-{oni}	‘to be an evil doer’

There is a sub-pattern of Class 1-2 nouns involving certain kinship terms as shown in example (42). In these forms, the singular, which is referred to as Class 1a, takes no noun class prefix. However, the plural takes the regular Class 2 prefix {βa}.

(42) **Class 1a: Kinship terms with no noun class prefix in singular**

Class 1		Class 2	
Singular	Plural	Singular	Plural
(Lwisukha)	(Lwisukha)	(English)	(English)
kuuka	βa-kuuka	‘grandfather’	‘grandfathers’
taata	βa-taata	‘father’	‘fathers’
ɲina	βa-ɲina	‘mother’	‘mothers’

In summary, Class 1-2 nouns have two sub-classes which are Class 1 and Class 1a. The Class 1 prefix has several allomorphs {mu}, {muu} and {mw} representing the singular form. Class 2 prefix has allomorphs, {βa}, {βaa} and {βε} representing the plural form.

Classes 3-4 nouns

Class three is marked by prefix {mu} representing singular while class four is marked by prefix {mi} representing plural. In some of the nouns we have allomorph {mw} representing singular. These classes denote different concepts like body parts, plants, trees, parts of plants or trees, objects, time reference nouns and natural phenomenon like moon.

Example (43) has body parts. It is important to note that apart from class three and four that have nouns that name body parts, there are other classes that have body parts. These are classes five and six, seven and eight, nine and ten, eleven/ten.

(43) **Nouns referring to body parts**

Class 3		Class 4	
Singular	Plural	Singular	Plural
(Lwisukha)	(Lwisukha)	(English)	(English)
mu-rwi	mi-rwi	‘head’	‘heads’
mu-nwa	mi-nwa	‘mouth’	‘mouths’
mu-xono	mi-xono	‘hand’	‘hands’

In example (44) we have trees. However, apart from classes three and four that have trees there are also classes ten and eleven with names of trees.

(44) **Nouns referring to trees**

Class 3		Class 4	
Singular	Plural	Singular	Plural
(Lwisukha)	(Lwisukha)	(English)	(English)
mu-p̄era	mi-p̄era	‘guava tree’	‘guava trees’
mu-kaato	mi-kaato	‘avocado tree’	‘avocado trees’
mu-talakwa	mi-talakwa	‘cyprus tree’	‘cyprus trees’

(45) **Nouns referring to object with length/height**

Class 3		Class 4	
Singular	Plural	Singular	Plural
(Lwisukha)	(Lwisukha)	(English)	(English)
mu-hini	mi-hini	‘jembe stick’	‘jembe sticks’
mwii-xo	mii-xo	‘cooking stick’	‘cooking sticks’
mu-haanda	mi-haanda	‘road, path’	‘roads, paths’

Flat objects in example (46) are borrowed words, for example mut̄ʃeka ‘mat’ and muliango ‘door’ are borrowed from the Kiswahili words ‘mukeka’ and ‘mulango’. muliip̄eti ‘blanket’ is borrowed from the English word ‘blanket’.

(46) **Nouns referring to flat objects**

Class 3		Class 4	
Singular	Plural	Singular	Plural
(Lwisukha)	(Lwisukha)	(English)	(English)
mu-t̄ʃeka	mi-t̄ʃeka	‘mat’	‘mats’
mu-liango	mi-liango	‘door’	‘doors’
mu-liip̄eti	mi-liip̄eti	‘blanket’	‘blankets’

(47) **Nouns referring to round objects**

Class 3		Class 4	
Singular	Plural	Singular	Plural
(Lwisukha)	(Lwisukha)	(English)	(English)
mu-kupo	mi-kopo	‘tin’	‘tins’
mu-piira	mi-piira	‘ball’	‘balls’
mu-tup̄ji	mi-tup̄ji	‘jerry can’	‘jerry cans’

Round objects mupira and mutup̄ji in example (47) are borrowed words from Kiswahili language as shown in example (48).

(48)	(Lwisukha)	(Kiswahili)	(English)
	mu-piira	m-pira	‘ball’
	mu-tunji	m-tunji	‘jerrycan’

Apart from classes three and four that have abstract nouns as shown in example (49), classes five, six and class fourteen too have abstract nouns.

(49) **Nouns referring to abstract nouns**

Class 3	Class 4		
Singular	Plural	Singular	Plural
(Lwisukha)	(Lwisukha)	(English)	(English)
mu-paanjo	mi-paanjo	‘plan’	‘plans’
mu-tjiro	mi-tjiro	‘taboo’	‘taboos’

The nouns mwaka ‘year’, miaka ‘years’ highlighted in example (50) are borrowed from Kiswahili. The spelling of these words in Kiswahili is exactly the same as that of Lwisukha in both singular and plural forms.

(50) **Time reference nouns**

Class 3	Class 4		
Singular	Plural	Singular	Plural
(Lwisukha)	(Lwisukha)	(English)	(English)
mwa-ka	mia-ka	‘year’	‘years’
mu-hika	mi-hika	‘year’	‘years’
mwe-li	mje-li	‘month, moon date, daylight, menstrual period’	‘months, moons dates, daylight, menstrual periods’

(51) **Nouns borrowed from Kiswahili**

Class 3	Class 4		
Singular	Plural	Singular	Plural
(Lwisukha)	(Lwisukha)	(English)	(English)
mu-siko	mi-siko	‘bag’	‘bags’
mu-fuuko	mi-fuuko	‘bag’	‘bags’
mw-ofi	mi-ofi	‘smoke’	‘smoke’

Most of the words in example (51) are borrowed from Kiswahili as shown in example (52).

(52)	(Lwisukha)	(Kiswahili)	(English)
	mu-siko	m-zigo	‘bag’
	mu-fuuko	mi-fuko	‘bag’
	mwo-ji	mo-ji	‘smoke’

Class 5-6 nouns

Most of the nouns in class five have prefix {li} representing singular forms while in class six there is prefix {ma} that represents the plural form. This class consists of names of animals, body parts, fruits, vegetables, foods, ‘cover’ nouns, abstract nouns and mass nouns.

Example (53) has animal names. Other classes that have animal names apart from classes five and six are classes seven and eight and classes nine and ten.

(53) **Nouns referring to animal names**

Class 5	Class 6		
Singular	Plural	Singular	Plural
(Lwisukha)	(Lwisukha)	(English)	(English)
li-xutu	ma-xutu	‘tortoise’	‘tortoises’
li-koondi	ma-koondi	‘sheep’	‘sheep’
li-jele	ma-jele	‘frog’	‘frogs’

Example (54) has body parts. Apart from classes three and four, five and six that have body parts, the other classes with body parts are seven and eight, nine and ten and eleven and ten.

(54) **Nouns referring to body parts**

Class 5	Class 6		
Singular	Plural	Singular	Plural
(Lwisukha)	(Lwisukha)	(English)	(English)
li-raango	ma-raango	‘thigh’	‘thighs’
li-inu	mi-inu	‘tooth’	‘teeth’
li-roji	ma-roji	‘ear’	‘ears’
li-ulu	mu-ulu	‘nose’	‘noses’

In example (54) allomorph {mi} and {mu} representing plural forms are found before vowel initial stems (e.g. mi-inu ‘tooth’ and mu-ulu ‘noses’). It is also important to note that the noun ‘miinu’ in example (54), starts with the prefix {mi} because assimilation has taken place. This is a phonological process whereby when the first vowel is deleted (vowel a); the second

vowel (vowel i) seems to get lengthening to make up for the deleted vowel that is why the noun miinu ‘teeth’ has a long vowel as shown in example (55).

(55)

|a| + |i| /ii/ as in ma + inu → miinu (teeth)
 (singular) (stem)
 (teeth)

In example (55) and (56) allomorph {mi} and {mu} representing plural forms are found before vowel initial stems (e.g mi-inu ‘tooth’ and mu-ulu ‘nose’). In the noun muulu ‘noses’ assimilation has also taken place as shown in example (56).

(56)

a| + |u| /uu/ as in ma + ulu → muulu (noses)
 (singular) (stem)
 (noses)

In example (57) allomorph {mε} representing plural form is found before vowel initial stems (e.g. mε-εηgu ‘ripe bananas’).

(57) **Nouns referring to fruits, vegetables and other foods**

Class 5		Class 6	
Singular	Plural	Singular	Plural
(Lwisukha)	(Lwisukha)	(English)	(English)
li-hoondo	ma-hoondo	‘pumpkin’	‘pumpkins’
li-tuma	ma-tuma	‘cob of maize’	‘cobs of maize’
li-εηgu	mε-εηgu	‘ripe banana’	‘ripe bananas’

In the noun ‘mεεηgu’ assimilation has also taken place as shown in example (58).

(58)

|a| + |ε| /εε/ as in ma + εηgu → mεεηgu ‘bananas’
 (singular) (stem)
 (bananas)

In example (59) the word *lisanduku* ‘suitcase’ and *likunia* ‘sack’ are borrowed from Kiswahili. The equivalent words to suitcase and sack in Kiswahili are ‘sanduku’ and ‘gunia’, respectively.

(59) **Nouns referring to inanimate objects**

Class 5		Class 6	
Singular	Plural	Singular	Plural
(Lwisukha)	(Lwisukha)	(English)	(English)
li-sero	ma-sero	‘hide/skin’	‘hides/skins’
li-sanduku	ma-sanduku	‘storage box/suitcase’	‘storage boxes/suitcases’
li-kunia	ma-kunia	‘sack’	‘sacks’

(60) **Abstract nouns ending in -a derived from verbs**

Class 5		Class 6	
Singular	Plural	Singular	Plural
(Lwisukha)	(Lwisukha)	(English)	(English)
li-saala	ma-saala	‘prayer’	‘prayers’
li-tsuxitsa	mi-tsuxitsa	‘anniversary’	‘anniversaries’

A number of class 5-6 nouns are derived from verbs. Some examples of this type are given in example (60), (61), (62), (63) and (64) along with corresponding verbs in their infinitival form. In these examples, the verb stem is set off with brackets {}. Most of these deverbal nouns end with final suffix {a}. The noun *li-βaambwa* ‘cruxifixion’ is used in both singular and plural forms.

(61) Singular	Singular	Verb	Verb
(Lwisukha)	(English)	(Lwisukha)	(English)
li-saala	‘prayer’	xu{saala}	‘to pray’
li-tsuxitsa	‘anniversary’	xwi{tsuxitsa}	‘to remember’
li-βaambwa	‘cruxifixion’	xu{βaamba}	‘to crucify’

The noun *lihaᅇgali* ‘argument’ is derived from a verb *xu{haᅇgala}* as shown in example (62). {-haᅇgala} is the verb stem and it ends with suffix {a}.

(62) **Abstract nouns ending in -i derived from verbs**

Singular	Singular	Verb	Verb
(Lwisukha)	(English)	(Lwisukha)	(English)
li-haᅇgali	‘argument’	xu{haᅇgala}	‘to argue’

There are also abstract nouns ending in -o derived from verbs. All these nouns end with suffix {o} in both singular and plural.

(63) **Abstract nouns ending in -o derived from verbs**

Class 5		Class 6	
Singular	Plural	Singular	Plural
Lwisukha	Lwisukha	English	English
li-koso	makoso	‘mistake’	‘mistakes’
li-loro	ma-loro	‘dream’	‘dreams’
li-joko	majoko	‘noise’	‘a lot of noise’

The nouns in example (63) are derived from verbs as shown in example (64). The verb stems kos-a, ‘to make a mistake’, loor-a, ‘to dream’ jok-a ‘to make noise’ end in vowel ‘a’.

(64)

Singular	Singular	Verb	Verb
(Lwisukha)	(English)	(Lwisukha)	(English)
li-koso	‘mistake’	xu{kos-a}	‘to make a mistake’
li-loro	‘dream’	xu{loor-a}	‘to dream’
li-joko	‘noise’	xu{jok-a}	‘to make noise’

Example (65) has mass nouns. Apart from classes five and six that have mass nouns, class 14 also has mass nouns. These nouns have no singular or plural form.

(65) **Nouns referring to mass nouns**

Class 5	English
Lwisukha	
milika	‘tears’
matsi	‘water’
maβεεε	‘milk’

In conclusion, Class 5 prefix has several allomorphs {li} representing singular and {ma}, {m}, {mi} and {mu} representing the plural form.

Class 7-8 nouns

Class seven prefix representing singular is {fi} while that of class eight is {βi} representing plural. Most of the nouns in this class include non-human or inanimate objects (for example

instruments and utensils). Other nouns in this class include animals and insects, body parts, humans and places of specific functions. In example 66 we have inanimate objects.

(66) **Nouns referring to inanimate objects**

Class 7		Class 8	
Singular	Plural	Singular	Plural
(Lwisukha)	(Lwisukha)	(English)	(English)
fī-saala	βi-saala	‘stick’	‘sticks’
fī-βuji	βi-βuji	‘jery can’	‘jery cans’
fī-koombe	βi-koombe	‘cup’	‘cups’
fī-βoko	βi-βoko	‘whip’	‘whips’

The following nouns in (66) are borrowed from Kiswahili as shown in example (67).

(67) Singular	Singular	Singular
(Lwisukha)	(Kiswahili)	(English)
fī-βuji	ki-buyu	‘jery can’
fī-koombe	ki-koombe	‘cup’
fī-βoko	ki-boko	‘whip’

Example (68) has animal names and insects. Apart from classes seven and eight that has insect names, the other classes with insect names are classes nine and ten.

(68) **Nouns referring to animal names and insects**

Class 7		Class 8	
Singular	Plural	Singular	Plural
(Lwisukha)	(Lwisukha)	(English)	(English)
fī-hunwa	βi-hunwa	‘bullock’	‘bullocks’
fī-chionɲionɲio	βi-chionɲionɲio	‘wag tail’	‘wag tails’
fī-tɲɲi	βi-tɲɲi	‘mite’	‘mites’(which develops into (which jiggers) develops into a jigger)’

Example (69) has body parts. Class seven and eight are not the only classes with body parts. As mentioned earlier, we have classes three and four, seven and eight, nine and ten, eleven/ten with body parts.

(69) **Nouns referring to body parts**

Class 7		Class 8	
Singular	Plural	Singular	Plural
(Lwisukha)	(Lwisukha)	(English)	(English)
ʃi-leŋʃɛ	βi-leŋʃɛ	‘leg’	‘legs’
ʃi-liru	βi-liru	‘chest’	‘chests’
ʃi-kuumba	βi-kuumba	‘bone’	‘bones’

In example (70), we have nouns referring to human beings. Most of the nouns in classes seven and eight refer to people with negative attributes.

(70) **Nouns referring to human beings**

Class 7		Class 8	
Singular	Plural	Singular	Plural
(Lwisukha)	(Lwisukha)	(English)	(English)
ʃi-tsuxulu	βi-tsuxulu	‘grandchild’	‘grandchildren’
ʃi-kwɛkwɛ	βi-kwɛkwɛ	‘gossiper’	‘gossipers’
ʃi-twɛtwɛ	βi-twɛtwɛ	‘a person who gives birth to many children without plan.’	‘people who give birth to many children without plan’

We also have nouns derived from verbs in classes seven and eight as shown in example (71).

(71) **Nouns derived from verbs**

Class 7		Class 8	
Singular	Plural	Singular	Plural
(Lwisukha)	(Lwisukha)	(English)	(English)
ʃi-xunuxu	βi-xunuxu	‘lid’	‘lids’
ʃi-ɛjo	βi-ɛjo	‘broom’	‘brooms’
ʃi-hanwa	βi-hanwa	‘gift’	‘gifts’

In example (72) we have nouns derived from verbs and the verb stem is set off with brackets { } for example the noun ʃi-xunuxu ‘lid’ is derived from the verb xu{nixa} ‘to cover with a lid’ ʃi-ɛjo ‘broom’ is derived from the verb xw{eeja} ‘to sweep’ and ʃi-hanwa ‘gift’ is derived from the verb xu{hana} ‘to give’. The infinitive {xu} occurs before consonant initial stem (e.g. xu{nixa} ‘to cover with a lid’) and {xw} before vowel initial stem (e.g. xw{eeja} ‘to sweep’).

(72) **Nouns derived from verbs**

ʃi-xunuxu	‘lid’	xu{nixa}	‘to cover with a lid’
ʃi-εjo	‘broom’	xw{eja}	‘to sweep’
ʃi-hanwa	‘gift’	xu{hana}	‘to give’

Class 9-10 nouns

These classes contain both animate and inanimate objects. Nouns in class nine are marked by prefix {i} that represents the singular form while class ten is marked by prefix {tsi} that represents the plural form. These classes contain nouns, most of which denote animals, small creatures and insects, body parts and objects. Loan words are also found in this class. Example (73) has animal names. Apart from classes nine and ten that have animal names, classes five and six and classes seven and eight also have animal names.

(73) **Nouns referring to animals**

Class 9	Class 10		
Singular	Plural	Singular	Plural
(Lwisukha)	(Lwisukha)	(English)	(English)
i-ηguβu	tsi-ηguβu	‘hippopotamus’	‘many hippopotamus’
i-ηgoxo	tsi-ηgoxo	‘chicken’	‘chickens’
i-ηgulume	tsi-ηgulume	‘pig’	‘pigs’

Classes nine and ten have insect names as shown in example (74). The other classes that also have insect names are classes seven and eight.

(74) **Nouns referring to small creatures and insects**

Class 9	Class 10		
Singular	Plural	Singular	Plural
(Lwisukha)	(Lwisukha)	(English)	(English)
i-suna	tsi-suna	‘mosquito’	‘mosquitoes’
i-nzufi	tsi-nzufi	‘bee’	‘bees’
i-ηεende	tsi-ηεende	‘jigger’	‘jiggers’

Example (75) has body parts.

(75) **Nouns referring to body parts**

Class 9		Class 10	
Singular	Plural	Singular	Plural
(Lwisukha)	(Lwisukha)	(English)	(English)
i-ŋgurumani	tsi-ŋgurumani	‘liver’	‘livers’
i-moni	tsi-moni	‘eye’	‘eyes’
i-kwaaho	tsi-kwaaho	‘armpit’	‘armpits’

Many languages have words borrowed from other languages. Borrowing is one of the methods used to create vocabulary. Lwisukha has borrowings from English and Kiswahili as seen in example (76) and (77).

(76) **Nouns borrowed from English**

Class 9		Class 10	
Singular	Plural	Singular	Plural
(Lwisukha)	(Lwisukha)	(English)	(English)
i-piicha	tsi-piicha	‘picture’	‘pictures’
i-tifaati	tsi-tifaati	‘t-shirt’	‘t-shirts’
i-kæeki	tsi-kæeki	‘cake’	‘cakes’

(77) **Nouns borrowed from Kiswahili**

Class 9		Class 10		
Singular	Plural	Singular	Singular	Plural
(Lwisukha)	(Lwisukha)	(Kiswahili)	(English)	(English)
i-kanisa	tsi-kanisa	kanisa	‘church’	‘churches’
i-parua	tsi-parua	barua	‘letter’	‘letters’
i-taratfa	tsi-taratfa	daraja	‘bridge’	‘bridges’

Most of the loan nouns in class nine and ten have been borrowed from Kiswahili. Example (78) has nouns without prefixes that are borrowed from Kiswahili.

(78) **Nouns without class prefixes borrowed from Kiswahili**

Class 9	Class 10	English
Lwisukha	Kiswahili	English
asubuji	asubuhi	‘morning’
hatari	hatari	‘danger’

Class 11/10 nouns

Class ten includes nouns which are marked by prefix {tsi} in plural. These nouns have their singular forms in class eleven which are marked by prefix {lu}. These classes contain words naming long thin objects, body parts, languages, plants and trees and behaviour related nouns.

It is important to note that some nouns in example (79) have a stem in singular form that is different from the plural form (e.g. lu-βusi-tsi-mbusi ‘thread’ lu-paanga-tsi-mbaanga ‘machet’). Sound /β/ and /p/ found in the singular form change to sound /mb/. These three sounds /β/, /p/ and /mb/ are bilabial. Bilabial are consonants whose flow of air is stopped or restricted by the two lips when the sounds are pronounced.

(79) Nouns referring to long, thin objects

Class 11	Class 10		
Singular	Plural	Singular	Plural
(Lwisukha)	(Lwisukha)	(English)	(English)
lu-xuyi	tsi-xuji	‘firewood’	‘pieces of firewood’
lu-βusi	tsi-mbusi	‘thread’	‘pieces of thread’
lu-paanga	tsi-mbaanga	‘machet’	‘machets’

In example (80) allomorph {lw} representing singular form is found on vowel initial stems (e.g. lwi-ika ‘horn’).

(80) Nouns referring to body parts

Class 11	Class 10		
Singular	Plural	Singular	Plural
(Lwisukha)	(Lwisukha)	(English)	(English)
lu-seje	tsi-seje	‘cheek’	‘cheeks’
lu-βεεε	tsim-bεεε	‘breast’	‘breasts’
lwi-ika	tsinzi-ika	‘horn’	‘horns’

(81) Nouns referring to languages

Class 11	
(Lwisukha)	(English)
Lu-swahili	‘Kiswahili language’
Lwi-suxa	‘Lwisukha language’
Lu-βukusu	‘Luβukusu language’

The nouns in example (82) whose stem in singular form is different from the plural form is (e.g. lu-tʃɛndo-tsi-nʃɛndo ‘distance’). Sound /tʃ/ found in the singular noun, changes to sound /nʃ/ in the plural noun. These two sounds /tʃ/ and /nʃ/ are palato alveolar consonants.

Allomorph {lw} representing singular is found before vowel initial stem (e.g. lwi-imbo ‘song’) and {lu} representing singular is found before consonant initial stem (e.g. lu-tʃɛndo ‘distance’) as shown in example (82).

(82) **Behaviour related nouns with plural form**

Class 11		Class 10	
Singular	Plural	Singular	Plural
(Lwisukha)	(Lwisukha)	(English)	(English)
lwi-imbo	tsɪn-imbo	‘song’	‘songs’
lu-tʃɛndo	tsi-nʃɛndo	‘distance’	‘distances’

Example (83) has behaviour related nouns without the singular or plural form. Allomorph {lw} representing singular is found before vowel initial stems (e.g. lwa-ana ‘childishness’) and {lu} representing singular is found before consonant initial stems (e.g. lu-toro ‘infantile behaviour’).

(83) **Behaviour related nouns without plural form**

Class 10	
Lwisukha	English
lwa-ana	‘childishness’
lu-toro	‘infantile behavior’
lu-swa	‘taboo sexual act (e.g. adultery, incest)’

Trees and plants are found in classes ten and eleven as shown in example (84), however it is important to note that trees and plants are also found in classes three and four.

(84) **Nouns referring to trees and plants**

Class 10		Class 11	
Singular	Plural	Singular	Plural
(Lwisukha)	(Lwisukha)	(English)	(English)
lu-βinu	tsi-mbinu	‘plant’	‘plants’
lu-lundu	tsi-lundu	‘plant’	‘plants’
lu-siola	tsi-siola	‘nile trumpet tree’	‘nile trumpet trees’

Example (85) has several nouns whose stem in singular form is different from the plural form (e.g. lu-tʃina-tsi-ɲɪna ‘grinding mill’). Sound /tʃ/ found in the singular noun lu-tʃina ‘grinding mill’ changes to sound {ɲɪ} as seen in the plural noun tsi-ɲɪna. These two sounds are palato alveolar. The other nouns are (e.g. lu-kalaji-tsi-ŋgalaji ‘basin’). Sound /k/ found in the singular noun lu-kalaji ‘basin’ changes to sound /ŋg/ as seen in the plural noun tsi-ŋgalaji ‘basins’. The place of articulation for these two sounds is the same that is the velum. Lastly, the nouns, (e.g. lu-βuβi-tsi-mbuβi ‘spider’), have sound {β} found in the singular form that changes to sound {mb}. The place of articulation for these two sounds is the same that is bilabial.

(85) **Nouns referring to inanimate objects**

Class 10		Class 11	
Singular	Plural	Singular	Plural
(Lwisukha)	(Lwisukha)	(English)	(English)
lu-tʃina	tsi-ɲɪna	‘grinding mill’	‘grinding mills’
lu-kalaji	tsi-ŋgalaji	‘basin’	‘basins’
lu-βuβi	tsi-mbuβi	‘spider’	‘spiders’

Class 12- 13 nouns

Class twelve is marked by prefix {xa} representing singular and class thirteen by prefix {rɔ}. These nouns denote diminutives or are derogatory. The result of diminutivization is to refer to the small size, tiny or little form of the human beings, inanimate objects, plants, trees, body parts nouns and others.

(86) **Nouns referring to diminutives**

Class 12		Class 13	
Singular	Plural	Singular	Plural
(Lwisukha)	(Lwisukha)	(English)	(English)
xaa-na	rwaa-na	‘a small child’	‘small children’
xaa-ndu	rɔɔ-ndɔ	‘a small person’	‘small people’
xɛ-tʃitsi	rwɛ-tʃitsi	‘a small teacher’	‘small teachers’
xii-ra	rwii-ra	‘a small name’	‘small names’
xɔ-mbafi	rɔ-mbafi	‘a small builder’	‘small builders’
xa-teri	rɔ-teri	‘a small bed’	‘small beds’

Class 14

This class does not have corresponding plurals. The nouns start with prefix {βu}. Class 14 has nouns denoting abstract notions or ideas, colour terms, mass nouns, liquid and sticky substances. Example (87) shows abstract nouns.

(87) Abstract nouns

Lwisukha	English
βu-silu	‘stupidity’
βu-tʃeli	‘knowledge’
βu-luhu	‘thirst’

In example (88) colour terms -laβu ‘white’ -mwaamu ‘black’ -mutʃi ‘red’ are used with class 14 noun prefix {βu}.

(88) Nouns referring to colour terms

Lwisukha	English
βu-laβu	‘lightness of color, whiteness, light’
βu-mwaamu	‘blackness, darkness, dirtiness’
βu-mutʃi	‘redness’

As stated earlier in example 65, class five and six have mass nouns. Class fourteen also has mass nouns as shown in example (89).

(89) Nouns referring to mass nouns

Lwisukha	English
βu-si	‘flour’
βu-ŋaasi	‘grass’
βu-le	‘sorghum’

Allomorph {βwi} is found before vowel initial stem (e.g. βwi-ino) and allomorph {βu} is found before vowel initial consonants (e.g. βuʃuma) as shown in example (90) and (91).

(90) Nouns referring to liquid and sticky substances

Lwisukha	English
βwi-ino	‘ink’
βu-ʃuma	‘ugali’
βu-tsiβa	‘venom (of snake, spider, insect)’

(91) **Abstract nouns derived from verbs**

Noun (Lwisukha)	Noun (English)	Verb (Lwisukha)	Verb (English)
βu-jaanzi	‘happiness’	xu{jaanza}	‘to be happy’
βu-limi	‘farm’	xu{lima}	‘to farm’
βwε-tʃitsi	‘teaching profession’	xwε{tʃitsa}	‘to teach’

Class 15

Class 15 nouns have prefix {xu} in singular form. This class consists of verbal infinitives which function as nouns as shown in example (92). It does not have corresponding plurals. Allomorph {xwi} is found on vowel initial stems (e.g. xwi-ira ‘kill’) while {xu} is found on consonant initial stems as shown in example (92).

(92) **Verbal infinitive nouns**

Class 15

Singular (Lwisukha)	Singular (English)
xu-soma	‘read’
xu-seβa	‘borrow’
xwo-tʃitsa	‘wash’
xw-ira	‘kill’

Class 16, 17, 18 and 23

Classes 16, 17, 18 and 23 represent locative noun classes. They denote different places. For example, class sixteen whose marker is {ha} or {haa} denotes ‘near’ or ‘at’ a certain place. Class seventeen whose marker is {xu} denotes ‘on’ a place, class 18 whose marker is {mu} indicates among or inside a place and class 23 whose marker is {i} are place names. Example 93 shows class sixteen which comprises locative nouns with the prefix {ha} or {haa}.

(93) **Locative nouns**

Class 16

Lwisukha	English
ha-ŋo	‘at home’
ha-kanisa	‘at the church’
ha-nzu	‘near the house’
haa-ilitwa	‘near the knife’

Allomorph {haa} is found on Class 16 + Class 9 nouns as shown in example (94).

(94)	Class 16 + Class 9	Class 16 + Class 10	Class 9	Class 10	
	Singular	Plural	Singular	Plural	‘Gloss’
	(Lwisukha)	(Lwisukha)	(Lwisukha)	(Lwisukha)	
	haa-nzu	hatsi-nzu	i-nzu	tsi-nzu	‘house’
	haa-iliitwa	hatsi-litwa	i-litwa	tsi-litwa	‘knife’
	haa-indika	hatsi-ndika	i-ndika	tsi-ndika	‘bicycle’

Example 95 shows class seventeen locative nouns whose marker is {xu}.

(95) **Locative nouns**

Class 17

Lwisukha

English

xu-nzu	‘on top of the house’
xu-ʃiteli	‘on the bed’
xu-mesa	‘on the table’

Allomorph {xwi} is found on Class 17 xwi + Class 9 nouns as shown in example (96).

(96) **Class 17 xu + Class 9 nouns ‘English’**

xwi-isiimbwa	‘on top of the dog’
xwi-ingoxo	‘on top of the chicken’
xwi-imbuxu	‘on top of the mole’

The locative form mumoni in example (97) does not only have expected meaning in the eye(s) but also the less predictable meaning ‘face’. It is also important to note that where prefix {mu} is used with class two nouns as seen in some of the nouns in example (97) the meaning of {mu} is ‘among’ (e.g. mu-βatʃeni ‘among the visitors’).

(97) **Locative nouns**

Class 18

Lwisukha

English

mu-matsi	‘inside the water’
mu-moni	‘in the eye, face’
mu-βatʃeni	‘among the visitors’

mu-βaandu ‘among the people’

In class 23 whose marker is {i} are place names for example countries, cities, market places, village names as seen in example (98).

(98) **Locative nouns**

Class 23

Lwisukha English

i-βumeereka ‘to, at, in America’

i-βukaanda ‘to, at, in Uganda’

i-loβi ‘to, at, in Nairobi’

Class 20/4

The last class discussed is 20/4. These are usually augmentative nouns. Class 20 singular takes the prefix {ku} while the plural form takes prefix {mi} as found in class 4 as shown in example (99).

(99) **Nouns referring to augmentative nouns**

Class 20	Class 4		
Singular	Plural	Singular	Plural
(Lwisukha)	(Lwisukha)	(English)	(English)
ku-xaana	mi-xaana	‘a big girl’	‘big girls’
ku-soko	mi-soko	‘a big chair’	‘big chairs’
ku-lina	mi-lina	‘a big friend’	‘big friends’

2.8 Conclusion

In this chapter, the discussion has been on Lwisukha vowels and consonants. Lwisukha has a nine vowel system with short and long vowels. The nine vowels are /i, ɪ, e, ɛ, a, u, ʊ, ə, o/. A language or dialect with nine vowels has a primary system. Lwisukha has 25 consonants. These consonants are classified according to manner and place of articulation as follows: three plosives /p/, /t/, /k/; four nasals /m/, /n/, /ɲ/, /ŋ/; six fricatives /β/, /f/, /s/, /ʃ/, /x/, /h/; two affricates /ts/, /tʃ/; one lateral /l/, one flap /ɾ/; one trill /r/; two glides /w/ and /j/ and five prenasalised stops /mb/, /nd/, /nz/, /ɲʃ/, /ŋg/. The Lwisukha sounds that have been discussed, namely vowels and consonants, will feature in the discussions that are in the rest of the thesis.

The syllable structure of Lwisukha words has also been discussed. An open syllable ends in a vowel while a closed syllable ends in a consonant. All closed syllables may be composed of an onset, peak, and coda or peak and coda. Lwisukha syllables are all open. This means that Lwisukha syllables have no coda. These syllables can be light or heavy. A light syllable is one that ends in a short vowel while a heavy syllable consists of a long vowel. In addition, Lwisukha has six types of syllables as follows: CV, V, CV:, V:, CCV and CCV:. These syllable types can be found in any position of a word whether a word is monosyllabic or polysyllabic except for V: syllables.

The noun class system has also been discussed. Lwisukha has 20 noun classes. These nouns are marked by a class prefix and a concord system as in the case with Bantu languages. In most classes we have one prefix representing singular and another prefix representing plural. However, in some classes we have allomorphs for example in classes 1-2 nouns, class one singular nouns are marked by prefix {mu} and class two plural have prefix {βa}. However, we have allomorph {muu}, {mw}, {m}, representing class one and allomorph {βaa}, {β} representing plural. Some of the nouns discussed in this chapter have no noun class prefix in singular for example class 1a which has kinship terms. Most of the nouns classes discussed are in both singular and plural however some nouns have no corresponding plurals. It is also important to note that some of the nouns are derived from verbs and some are borrowed from Kiswahili and English languages. Lastly, most of the nouns have the same stem in singular and plural except for a few of the nouns that have a stem in singular that is different from the one in plural. The next chapter looks at the tone patterns of Lwisukha nouns in isolation.

CHAPTER THREE

THE TONAL PATTERNS OF LWISUKHA NOUNS IN ISOLATION

3.1 Introduction

This chapter describes the tonal patterns of Lwisukha nouns in isolation. This means that the nouns will not be in phrasal or sentences contexts. The tonal pattern for most of the nouns discussed therefore is for single nouns that have been pronounced in singular form or plural form. Some of the nouns have no singular form or plural form. Most of the nouns discussed in this chapter have a prefix and a stem. A prefix is a morpheme that is added at the beginning of a stem while a stem is the main part of a noun to which a prefix is added. The prefixes and the stems are enclosed in brace brackets {}. In this chapter everything enclosed within brace brackets {} is a morpheme. Some of the nouns have no prefix nor stem. The analysis of the tone patterns for majority of the nouns done includes monosyllabic, disyllabic, trisyllabic and other polysyllabic stems (i.e. stems with more-than-three-syllables). This study therefore shows contrastive tone melodies of nouns in different stem types in both singular form and plural form. However as mentioned earlier, there are cases where some nouns analyzed have no singular or plural forms. Some nouns also have only the plural form.

APT is used in this discussion. Two principles of APT are used to present the tone patterns. These are the Obligatory Contour Principle (OCP) and the principle of Association Convention (AC) (see Chapter One). The OCP forbids any two adjacent identical autosegments to follow each other. Such identical tones are collapsed or merged. According to the principle of association, tones and the TBU'S are joined by association lines in one-to-one fashion from left to right. The WFC, formulated by Goldsmith (1976, 1990) ensures that there is a well formed relation between the tonal tier and the TBU'S. According to WFC, association lines do not cross. WFC also ensures that all TBU'S are linked to at least one tone and that all tones are linked to at least one TBU.

The register tier theory, which is an extension of APT, is also used in this discussion. By using the bar system, this theory is able to show clearly the level and contour tones, for example if there are two high tones on a noun or more, RTT is able to help us differentiate which high tone is higher in pitch than the other. The section that follows discusses tone placement on nouns and the tonal patterns that result. The nouns are discussed in two major categories. The first category has nouns with a low tone on the prefix and the second category

has nouns with a high tone on the prefix. Nouns with a low tone on the prefix are further discussed as follows: nouns with a low tone on the prefix with monosyllabic stems, nouns with a low tone on the prefix with disyllabic stems, nouns with a low tone on the prefix with trisyllabic stems and nouns with a low tone on the prefix with other polysyllabic stems. Nouns with a high tone on the prefix are further discussed as follows: nouns with a high tone on the prefix with monosyllabic stems, nouns with a high tone on the prefix with disyllabic stems, nouns with a high tone on the prefix with trisyllabic stems and lastly nouns with a high tone on the prefix with other polysyllabic stems. In the next section the discussion is on nouns with a low tone on the prefix.

3.2 Nouns with a low tone on the prefix

In this section all the nouns have a low tone on the prefix but the stems have different tone patterns. The stems of the nouns have been discussed as monosyllabic, disyllabic, trisyllabic and other polysyllabic stems.

3.2.1 Nouns with a low tone on the prefix with monosyllabic stems

In this section all the nouns have a low tone on the prefixes. The monosyllabic stems have different tone patterns. This group is further divided into two groups. The first group has nouns that have a low tone on the prefix and a low tone on the monosyllabic stems. The second group has nouns that have a low tone on the prefix with a high tone on the monosyllabic stems.

(a) Nouns with a low tone on the prefix and a low tone on the monosyllabic stems

Nouns in this group have a low tone on the prefix and a low tone on the monosyllabic stems. These nouns are further divided into two. The first group has nouns with a short vowel on the noun prefix in the singular form but have a long vowel in the plural form. The second group has nouns that have a long vowel on the noun prefix in the singular form and the plural form.

(i) Nouns with monosyllabic stems that have a short vowel on the prefix in the singular form but have a long vowel in the plural form

The nouns in table 6 have a low tone on the prefixes and a low tone on the monosyllabic stems. The prefixes have a short vowel in the singular form but have a long vowel in the plural form. The prefix {ì} represents the singular form and the prefix {tsì} represents the plural while -sà, -ɲɛ̀ and -ndà are the stems in both singular and plural forms. There are low

tones on the prefixes and the monosyllabic stems. These nouns have a [L.L] tone pattern. (See more examples of nouns with this tone pattern in Appendix 2, group 1a).

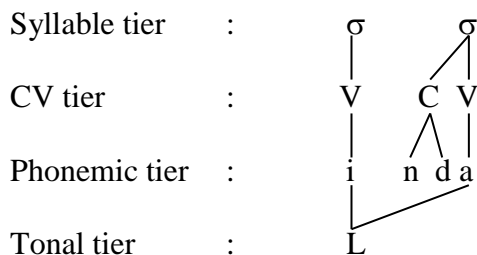
Table 6: Monosyllabic stems with a low tone and have a short vowel on the prefix in the singular form and a long vowel in the plural form

Singular		Plural	
Lwisukha	Gloss	Lwisukha	Gloss
ì-sà	‘watch, clock, time’	tsìì-sà	‘watches, clocks, times ’
ì-ɲɪ	‘housefly’	tsìì-ɲɪ	‘houseflies’
ì-ndà	‘stomach, belly, womb’	tsìì-ndà	‘stomachs, bellys, wombs’

The diagram in example (100) shows the autosegmental representation of the tone of the noun ì-ndà ‘stomach, belly, womb’ in table 6.

(100)

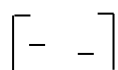
ì-ndà ‘stomach, belly, womb’



The left to right mapping principle is used in matching the TBUs and tone in example (100). Association lines join the TBUs and tones in a one-to-one fashion from left to right. In this example, the OCP has been applied whereby adjacent identical autosegments are not allowed to follow one another. The low tone on the first syllable also appears on the second syllable. Therefore, the low tones on the first and second syllables have been collapsed or merged into one. Example (101) shows the tone pattern of the noun ì-ndà using the register tier theory formalisms.

(101)

ì-ndà ‘stomach, belly, womb’



In example (101) the first and second bar have a low tone representing the mora or vowel /i/ and /à/. The low tone on the mora /à/ is lower than that on the mora /i/.

(ii) Nouns with monosyllabic stems and have a long vowel on the prefix in the singular and plural forms

The nouns in table 7 have a low tone on the prefixes and the monosyllabic stems. The prefixes have a long vowel in the singular form and the plural form. The prefixes {mùù}, {fjèè} and {xàà} represent singular forms and the prefixes {βàà}, {βjèè} and {ròò} represent plural forms while -ndù, -jò and -tà are the stems in both singular and plural forms. There are low tones on the prefixes and the monosyllabic stems. Thus, these nouns have a [LL.L] tone pattern. (See more examples of nouns with this tone pattern in Appendix 2, group 1a).

Table 7: Monosyllabic stems with a low tone and a long vowel on the prefix

Singular		Plural	
Lwisukha	Gloss	Lwisukha	Gloss
mùù-ndù	‘person’	βàà-ndù	‘people’
fjèè-jò	‘broom’	βjèè-jò	‘brooms’
xàà-tà	‘a small stomach’	ròò-tà	‘a small stomach’

(b) Nouns with a low tone on the prefix with monosyllabic stems that have a falling tone

The nouns in table 8 have a low tone on the prefixes and the monosyllabic stems have a falling tone. There are low tones on the prefixes {ì} and {mù} in the singular form and also on the prefixes {tsì} and {mì} in the plural form. The monosyllabic stems -swâ and -rî have a falling tone. This falling tone is on a short vowel. A falling tone is a tone that shifts from a high pitch to a low pitch on a syllable. This means that the nouns in Table 8 have a [L.HL] tone pattern. (See more examples of nouns with this tone pattern in Appendix 2, group 8.)

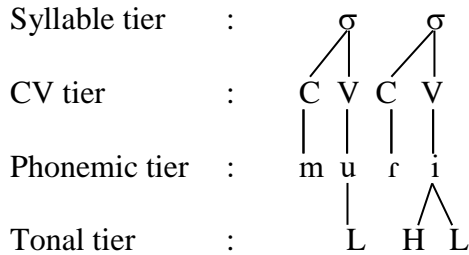
Table 8: Monosyllabic stems with a falling tone

Singular		Plural	
Lwisukha	Gloss	Lwisukha	Gloss
ì-swâ	‘termite’	tsì-swâ	‘termites’
mù-rî	‘root’	mì-rî	‘roots’

The diagram in example (102) shows the autosegmental representation of the tone of the noun *mù-rî* ‘root’ in table 8.

(102)

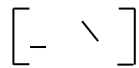
mù-rî ‘root’



In example (102) there is a low tone on the prefix and the final syllable has a falling tone that is associated to one vowel. Example (103) shows the tone pattern of the noun *mù-rî* ‘root’ using the register tier theory formalisms.

(103)

mù-rî root’



In example (103) the first bar has a low tone representing the mora /ù/ and the second bar has a falling tone representing the mora /î/.

3.2.2 Nouns with a low tone on the prefix with disyllabic stems

In this section all the nouns have a low tone on the prefixes and have disyllabic stems that have different tone patterns. This group is further divided into four groups. The first group has nouns with a low tone on the prefix and the disyllabic stems have a low tone.

(a) Nouns with a low tone on the prefix with disyllabic stems that have a low tone on all the syllables

The first group has nouns that have a low tone on the prefixes and a low tone on the disyllabic stems. Table 9 shows nouns with this tone pattern. There are low tones on the prefix {mù} in the singular form and {βà} in the plural form. The disyllabic stems -hèjì, -lòtjì

and -lìmì have a low tone. Thus, these nouns have a [L.L.L] tone pattern. (See more examples of nouns with this tone pattern in Appendix 2, group 1a).

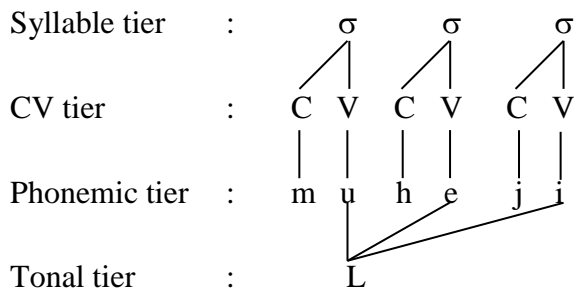
Table 9: Disyllabic stems with a low tone on all the syllables

Singular		Plural	
Lwisukha	Gloss	Lwisukha	Gloss
mù-hèjì	‘adulterous person’	βà-hèjì	‘adulterous people’
mù-lòtʃì	‘witch’	βà-lòtʃì	‘witches’
mù-lìmì	‘farmer’	βà-lìmì	‘farmers’

The diagram in example (104) shows the autosegmental representation of the tone of the noun mù-hèjì ‘adulterous person’ in table 9.

(104)

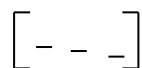
mù-hèjì ‘adulterous person’



The left to right mapping principle is used in matching the TBUs and tone. Association lines join the TBUs and tones in a one-to-one fashion from left to right. In example (104), the OCP has been applied because adjacent identical autosegments are not allowed to follow one another. The low tone on the prefix also appears on the stem initial syllable and the final syllable. Therefore, the low tones on the prefix, the stem initial syllable and the final syllable have been merged into one. The left to right mapping principle is applied in this example. Example (105) shows the tone pattern of the noun mù-hèjì ‘adulterous person’ using the register tier theory formalisms.

(105)

mù-hèjì ‘adulterous person’



Example (105) has a low tone on the first, second and third bars representing the vowels /ù/, /è/ and /ì/. The low tone on the vowel /ì/ is lower compared to the low tone on the vowels /è/ and /ù/.

(b) Nouns with a low tone on the prefix with disyllabic stems that have a high and a low tone

The second group in table 10 has nouns that have a low tone on the prefixes {mù} and {lì} in the singular form and {mì} and {mà} in the plural form. The disyllabic stems -híkà, -kátì and -xútù have a high tone on stem initial syllable and a low tone on the final syllable. These nouns have a [L.H.L] tone pattern. (See more examples of nouns with this tone pattern in Appendix 2, group 6a).

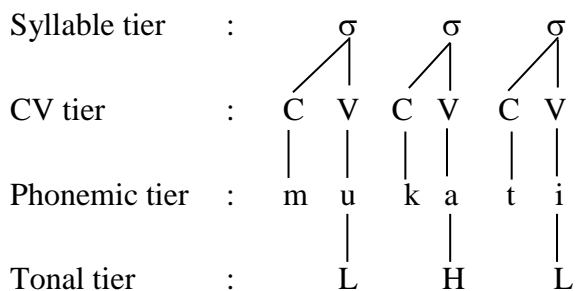
Table 10: Disyllabic stems with a high and low tone

Singular		Plural	
Lwisukha	Gloss	Lwisukha	Gloss
mù-híkà	‘year’	mì-híkà	‘years’
mù-kátì	‘bread’	mì-kátì	‘loaves of bread’
lì-xútù	‘tortoise’	mà-xútù	‘tortoises’

The diagram in example (106) shows the autosegmental representation of the tone of the noun mù-kátì ‘bread’ in table 10.

(106)

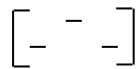
mù-kátì ‘bread’



In example (106) the noun prefix has a low tone, the stem initial syllable has a high tone and the final syllable has a low tone. Example (107) shows the tone pattern of the noun mù-kátì ‘bread’ using the RTT formalisms.

(107)

mù-kàtì ‘bread’



In example (107) the first bar has a low tone on the mora /ù/, the second bar has a high tone on the mora /á/ while the third bar has a low tone on the mora /î/.

(c) Nouns with a low tone on the prefix with disyllabic stems that have a low and a falling tone

The third group has nouns that have a low tone on the prefix and the disyllabic stem have a low tone on the stem initial syllable and a falling tone on the final syllable. The nouns in table 11 have a low tone on the prefix {mù} in singular form and {βà} in the plural form. The disyllabic stem -xwààtsî has a low tone on stem initial syllable and a falling tone on the final syllable that has a short vowel. The other nouns with this tone pattern are found in table 53 in the plural form. These nouns are discussed in section 3.5 of this chapter because the nouns in the singular form have no noun prefix but the plural form has a noun prefix. We are thus dealing with a [L.LL.HL] tone pattern.

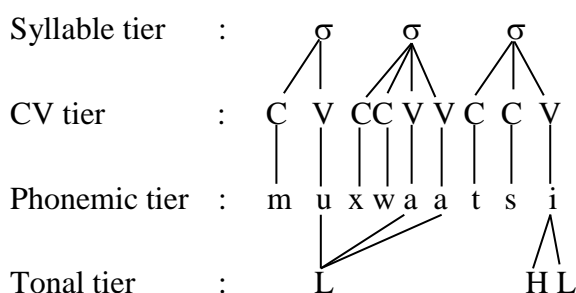
Table 11: Disyllabic stems with a low tone and a falling tone

Singular		Plural	
Lwisukha	Gloss	Lwisukha	Gloss
mù-xwààtsî	‘in law’	βà-xwààtsî	‘in laws’

The diagram in example (108) shows the autosegmental representation of the tone of the noun mù-xwààtsî ‘in law’ in table 11.

(108)

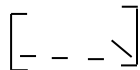
mù-xwààtsî ‘in law’



In example (108) the OCP has been applied whereby adjacent identical autosegments are not allowed to follow one another. Therefore, the low tone on the noun prefix and the stem initial syllables have been collapsed or merged into one. The left to right mapping principle has been applied. Example (109) shows the tone pattern of the noun *mù-xwààtsî* ‘in law’ using the RTT formalisms.

(109)

mù-xwààtsî ‘in law’



Example (109) has the first, second and third bars with a low tone on the vowels /ù/ and /àà/ while the fourth bar has a falling tone on the vowel /î/.

(d) Nouns with a low tone on the prefix with disyllabic stems that have a high tone and a downstepped high tone

The fourth group has nouns that have a low tone on the prefixes and the disyllabic stems have a high tone and a downstepped high tone. In table 12, there is a low tone on the prefix {*mù*} in the singular form and {*βà*} in the plural form. The disyllabic stem *-kí⁺sí* has a high tone on the stem initial syllable and a downstepped high tone on the final syllable. The downstepped high tone is motivated by the unlinked low tone between two high tones that is the high tones on the syllable {*kí*} and {*sí*}. So, the noun *mù-kí⁺sí* ‘a member of the Abagusii tribe’ has a [L.H.⁺H] tone pattern. From the data in this study, this is the only noun with this tone pattern. (This noun is found in Appendix 2, group 22).

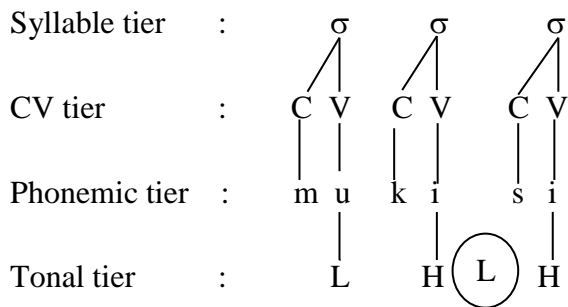
Table 12: Disyllabic stems with a high tone and a downstepped high tone

Singular		Plural	
Lwisukha	Gloss	Lwisukha	Gloss
<i>mù-kí⁺sí</i>	‘a member of the Abagusii tribe’	<i>βà-kí⁺sí</i>	‘members of the Abagusii tribe’

The diagram in example (110) shows the autosegmental representation of the tone of the noun *mù-kí⁺sí* ‘A member of the Abagusii tribe’ in table 12.

(110)

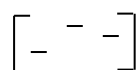
mù-kí⁺sí ‘a member of the Abagusii tribe’



There is a low tone on the noun prefix, the stem initial syllable has a high tone and the final syllable has a downstepped high tone. The tonal tier has a floating low tone as seen in (110). The pitch of the high tone on the final syllable of the noun is slightly lower than that of the high tone on the stem initial syllable. The tone of the final syllable is affected by the floating tone preceding the high tone. Example (111) shows the tone pattern of *mù-kí⁺sí* ‘a member of the Abagusii tribe’ using the RTT formalisms.

(111)

mù-kí⁺sí ‘a member of the Abagusii tribe’



In example (111) the first bar has a low tone representing the vowel /ù/, the second bar has a high tone representing the vowel /i/ while the third bar has a downstepped high tone representing the vowel /i/.

According to Kenstowicz (1994:31), downstep indicates a situation in which a high tone has a downdrifted phonetic value but there is, at least on the surface, no preceding low tone to mark the division from the preceding high, which is articulated at the ‘normal’ value. Downstep is usually marked by the sign⁺ placed between one high and the following downstepped high tone.

Downstep therefore shows a high tone that is realized at a lower pitch than the preceding high tone. Kenstowicz (1994) observes that the analysis of downstep and downdrift is controversial. He adopts the interpretation of downdrift as a left to right parsing of the tonal tier into LH (c.f. Clements (1979) and Huang (1985)). (LH) forms tonal feet. The tonal feet is realised or pitched at a slightly lower level than the preceding one.

The downstepped high tone could therefore be analysed as a sequence of LH tone. This tone is different from low-rising (LH) tone because the low tone of the downstepped high is not realised on the surface. It is underlying and could therefore be analysed as floating tone that precedes a high tone. It has the effect of transforming the high tone it precedes into a downstepped high tone.

Hyman (1985) is of the view that a downstepped high tone [⁺H] should be analyzed as a linked high tone (H) preceded by an unlinked low tone (L). The unlinked low tone does not prevent the high tone from spreading for example leftwards. The unlinked low tone is not connected to any vowel segment on the phonemic tier. It is also known as a floating tone. A downstepped high tone is always preceded by a surface high tone and not a low tone. A downstepped high tone is found in Lwisukha as seen in table 12 and other nouns in this chapter. The floating tone is encircled in all the examples that have a downstepped high tone in the rest of this chapter. In the next section the discussion is on nouns with a low tone on the prefix with trisyllabic stems.

3.2.3 Nouns with a low tone on the prefix with trisyllabic stems

In this section all the nouns have a low tone on the prefix and have trisyllabic stems that have different tone patterns. This section is further divided into five groups. The first group has nouns with a low tone on the prefix with trisyllabic stems that have a low tone.

(a) Nouns with a low tone on the prefix with trisyllabic stems that have a low tone on all the syllables

The first group shown in table 13 has nouns that have a low tone on the prefixes {i}, {mù} and {ji} in the singular form and {tsi}, {βà} and {βi} in the plural form. The trisyllabic stems -tʃɛ̃nʃɛ̃lè, -tʃìlìʃì, -kùlìtsì and -βàkàjà also have a low tone. Hence, these nouns have a [L.L.L.L] tone pattern. (See more examples of nouns with this tone pattern in Appendix 2, group 1a).

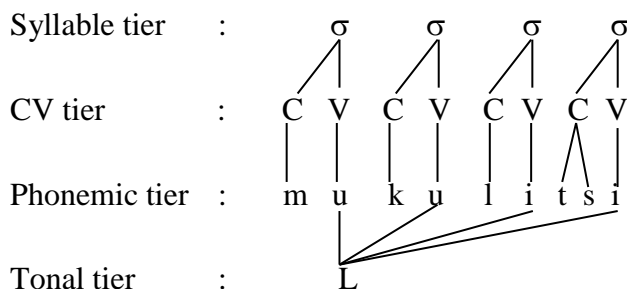
Table 13: Trisyllabic stems with a low tone on all the syllables

Singular		Plural	
Lwisukha	Gloss	Lwisukha	Gloss
ì-tʃɛɲɛ̀lè	‘bell’	tsì-tʃɛɲɛ̀lè	‘bells’
ì-tʃìlìfì	‘bull’	tsì-tʃìlìfì	‘bulls’
mù-kùlìtsì	‘seller’	βà-kùlìtsì	‘sellers’
ʃì-βàkàjà	‘fish bone, snake bone’	βì-βàkàjà	‘fish bones, snake bones’

The diagram in example (112) shows the autosegmental representation of the tone of the noun mù-kùlìtsì ‘seller’ in table 13.

(112)

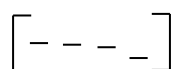
mù-kùlìtsì ‘seller’



The diagram in (112) has the noun mù-kùlìtsì ‘seller’ that has a low tone on the prefix, which also appears on the stem initial syllable, penultimate and the final syllables. Therefore, the low tones on these syllables have been collapsed into one. In this regard, the left to right mapping principle is applied. This principle states that if after applying mapping some vowels are still free link them to the last tone on the right. Example (113) shows the tone pattern of mù-kùlìtsì ‘seller’ using the register tier theory.

(113)

mù-kùlìtsì ‘seller’



It has been that observed that nouns that have a low tone on the noun prefix with trisyllabic and other polysyllabic stems that have a low tone on all the syllables, have the last syllable of the noun with an extra low tone. Welmers (1973:80) observes that in most African tone

languages a low tone especially in isolation or final position is often characterized by a progressive relaxation accompanied by a slight downward glide of pitch. In this way, the extra low tone is an allotone of the low tone. Another example of such a noun is found in table 20.

(b) Nouns with a low tone on the prefix with trisyllabic stems that have a high tone a low tone on two syllables

The second group has nouns that have a low tone on the prefixes and trisyllabic stems that have a high tone and a low tone on two syllables. This group is further divided into two. The first group has trisyllabic stems with a short vowel on the stem initial syllable while the second group has trisyllabic stems that have a long vowel on the stem initial syllable.

(i) Trisyllabic stems with a short vowel on the stem initial syllable

These nouns have a low tone on the prefixes and the trisyllabic stems have a high and a low tone on two syllables. The high tone is found on a short vowel on the stem initial syllable. Nouns in table 14 have this tone pattern. There are low tones on the prefixes {mù} and {ì} in the singular form and prefixes {mì}, {tsì} and {βà} in the plural form. The trisyllabic stems -*ɲólòlò*, -*súkùlù* and -*mìlòɲɛ̀* have a high tone on the stem initial syllable and a low tone on the penultimate and final syllables. We are thus dealing with a [L.H.L.L] tone pattern. (See more examples of nouns with this tone pattern in Appendix 2, group 6a).

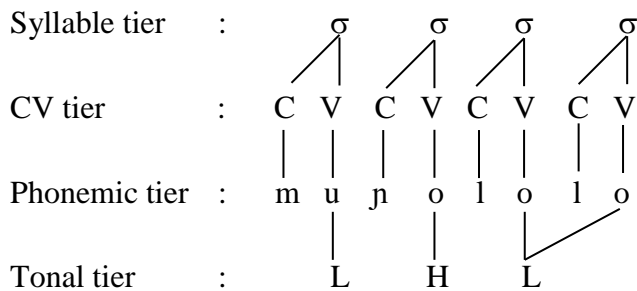
Table 14: Trisyllabic stems with a high tone on a short vowel and a low tone on two syllables

Singular		Plural	
Lwisukha	Gloss	Lwisukha	Gloss
mù- <i>ɲólòlò</i>	‘chain’	mì- <i>ɲólòlò</i>	‘chains’
ì- <i>súkùlù</i>	‘school’	tsì- <i>súkùlù</i>	‘schools’
mù- <i>mìlòɲɛ̀</i>	‘a person who belongs to Vamilonje clan’	βà- <i>mìlòɲɛ̀</i>	‘people who belongs to Vamilonje clan’

The diagram in example (114) shows the autosegmental representation of the tone of the noun *mù-ńólòlò* ‘chain’ in table 14.

(114)

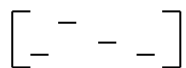
mù-ńólòlò ‘chain’



There is a low tone on the prefix, the stem initial syllable has a high tone and a low tone on the penultimate and final syllables. The left to right mapping principle is used in matching the TBUs and tone. Association lines join the TBUs and tones in a one-to-one fashion from left to right. In this example, the OCP has been applied whereby adjacent identical autosegments are not allowed to follow one another. The low tone on the penultimate syllable also appears on the final syllable. Therefore, the low tones on the penultimate and the final syllables in example (114) have been merged into one. Example (115) shows the tone pattern of the noun *mù-ńólòlò* ‘chain’ using the register tier theory.

(115)

mù-ńólòlò ‘chain’



Example (115) has the first bar with a low tone representing the vowel /ù/, the second bar has a high tone representing the vowel /ó/ while the third and fourth bars have a low tone representing the penultimate vowel /ò/ and the final vowel /ò/. The low tone on the final vowel is lower than that on the penultimate vowel.

(ii) Trisyllabic stems with a high tone on a long vowel and a low tone on two syllables

These nouns have a low tone on the prefixes and the trisyllabic stems have a high tone and a low tone on two syllables. Nouns in table 15 have this tone pattern. There are low tones on the prefixes {ʃi} and {mù} in the singular form and prefixes {βi} and {βà} in the plural form. The trisyllabic stems -xúúnìxù and -hííndilà have a high tone on the stem initial syllable that has a long vowel and a low tone on the penultimate and the final syllables. This means that these nouns have a [L.HH.L.L] tone pattern. (See more examples of nouns with this tone pattern in Appendix 2, group 6b).

Table 15: Trisyllabic stems with a high tone on a long vowel and a low tone on two syllables

Singular		Plural	
Lwisukha	Gloss	Lwisukha	Gloss
ʃi-xúúnìxù	‘lid’	βi-xúúnìxù	‘lids’
mù-hííndilà	‘elderly person, the elder one’	βà-hííndilà	‘elderly people, the elder ones’

(c) Nouns with a low tone on the prefix with trisyllabic stems with a falling tone and a high tone followed by a low tone

The third group has nouns that have a low tone on the prefix and the trisyllabic stems have a falling tone on the stem initial syllable and a high tone on the penultimate syllable followed by a low tone on the final syllable. In table 16, there are low tones on the prefixes {i} and {ʃi} in the singular form and {tsì} and {βi} in the plural form. The trisyllabic stems -sôkóónì, -rîpóótì and -βîlíítì which have a falling tone on the stem initial syllable, a high tone on the penultimate syllable and a low tone on the final syllable. The falling tone is found on a short vowel. All these nouns are loan nouns. So, the nouns in table 16 illustrate a [L.H.LL.L] tone pattern. (See more examples of nouns with this tone pattern in Appendix 2, group 9.)

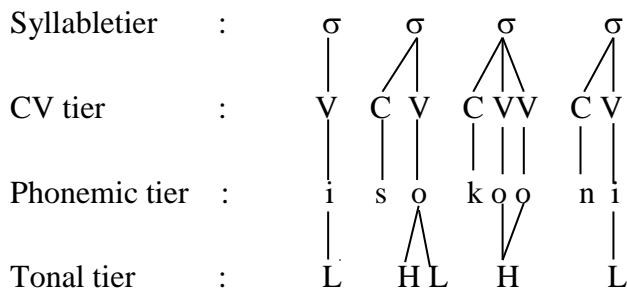
Table 16: Trisyllabic stems with a falling tone and a high tone followed by a low tone

Singular		Plural	
Lwisukha	Gloss	Lwisukha	Gloss
ì-sôkóónì	‘market’	tsì-sôkóónì	‘markets’
ì-rîpóótì	‘report’	tsì-rîpóótì	‘reports’
ʃi-βîlíítì	‘match box’	βi-βîlíítì	‘match boxes’

The diagram in example (116) shows the autosegmental representation of the tone of the noun ì-sôkóónì ‘market’ in table 16.

(116)

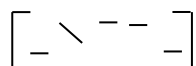
ì-sôkóónì ‘market’



In example (116) there is a low tone on the prefix and a falling tone on the stem initial syllable that has a short vowel followed by a high tone on the penultimate syllable and a low tone on the final syllable. Example (117) shows the tone pattern of the noun ì-sôkóónì ‘market’ using the RTT.

(117)

ì-sôkóónì ‘market’



In example (117) the first bar has a low tone representing the vowel /î/, the second bar has a falling tone representing the vowel /ô/, the third and fourth bars have a high tone representing a long vowel /óó/ and the final bar has a low tone representing the final vowel /î/.

(d) Nouns with a low tone on the prefix with a trisyllabic stem with a high tone and a low tone on the penultimate syllable followed by a falling tone on the final syllable

The fourth group has nouns that have a low tone on the prefix {mù} in the singular form and {βà} in the plural form. The trisyllabic stem -βísààndû has a high tone on the stem initial syllable, a low tone on the penultimate syllable and a falling tone on the final syllable as shown in table 17. The falling tone is found on a short vowel. Thus, table 17 illustrates a

[L.H.LL.HL] tone pattern. However, only one noun was found to have it. (This noun is found in Appendix 2, group 14).

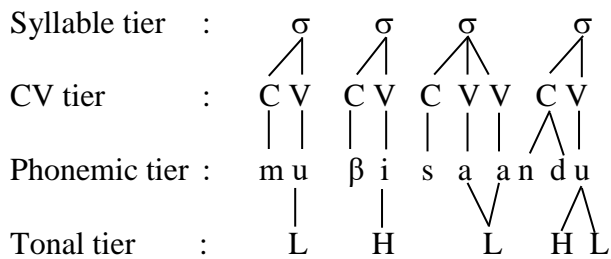
Table 17: Trisyllabic stems with a high tone and a low tone followed by a falling tone

Singular		Plural	
Lwisukha	Gloss	Lwisukha	Gloss
mù-βísààndû	‘orphan’	βà-βísààndû	‘orphans’

The diagram in example (118) shows the autosegmental representation of the tone pattern of the noun mù-βísààndû ‘orphan’ in table 17.

(118)

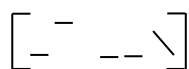
mù-βísààndû ‘orphan’



In example (118) there is a low tone on the prefix and a high tone on the stem initial syllable, followed by a low tone on the penultimate syllable and a falling tone on the final syllable. The falling tone is found on a short vowel. Example (119) shows the tone pattern of the noun mù-βísààndû ‘orphan’ using the RTT.

(119)

mù-βísààndû ‘orphan’



Example (119) has the first bar with a low tone representing the vowel /ù/, the second bar has a high tone representing the vowel /i/, the third and fourth bars have a low tone representing the long vowel /àà/ and the final bar has a falling tone representing the vowel /û/.

(e) Nouns with a low tone on the prefix with trisyllabic stems that have a high tone and a downstepped high tone followed by a low tone

The fifth group has nouns that have a low tone on the prefixes and the trisyllabic stems have a high tone on the stem initial syllable and a downstepped high tone on the penultimate syllable followed by a low tone on the final syllable. In table 18, there is a low tone on the prefixes {mù} and {ì} in the singular form and {βà} {mì} and {tsì} in the plural form. The trisyllabic stems -xú⁺lúúndù, -tá⁺láákwà and -kí⁺láásì have a high tone on the stem initial syllable, a downstepped high tone on the penultimate syllable that has a long vowel and a low tone on the final syllable. The downstepped high tone is motivated by unlinked low tone between two high tones. We are thus dealing with a [L.H.⁺HH.L] tone pattern. (See more examples of nouns with this tone pattern in Appendix 2, group 17.)

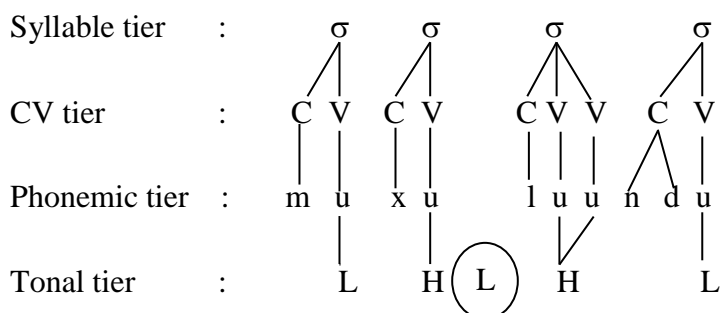
Table 18: Trisyllabic stems with a high tone and a downstepped high tone followed by a low tone

Singular		Plural	
Lwisukha	Gloss	Lwisukha	Gloss
mù-xú ⁺ lúúndù	‘priest, leader, first born’	βà-xú ⁺ lúúndù	‘priests, leaders, first borns’
mù-tá ⁺ láákwà	‘cyprus tree’	mì-tá ⁺ láákwà	‘cyprus trees’
ì-kí ⁺ láásì	‘glass’	tsì-kí ⁺ láásì	‘glasses’

The diagram in example (120) shows the autosegmental representation of the tone of the noun mù-xú⁺lúúndù ‘priest, leader, first born’ in table 18.

(120)

mù-xú⁺lúúndù ‘priest, leader, first born’

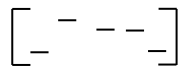


There is a low tone on the prefix and a high tone on the stem initial syllable followed by a downstepped high tone on the penultimate syllable and as a low tone on the final syllable.

The downstepped high tone on the penultimate syllable has a slightly lower pitch than that of the stem initial syllable which has a high tone. The tone of the penultimate syllable is affected by the floating tone preceding it. The tonal tier has a floating low tone as seen in diagram (120). Example (121) shows the tone pattern of the noun *mù-xú⁺lúúndù* ‘priest, leader, first born’ using the RTT.

(121)

mù-xú⁺lúúndù ‘priest, leader, first born’



Example (121) has the first bar with a low tone representing the vowel /ù/, the second bar has a high tone representing the vowel /ú/, the third and fourth bars have a downstepped high tone representing the long vowel /úú/ and the fifth bar has a low tone representing the final vowel /ù/.

The nouns in table 19 have the same tone pattern as the nouns in table 18. These nouns are borrowed from Kiswahili language. The prefixes {ì} and {mù} have a low tone and represent the singular form and {tsì}, {βà} and {mì} have a low tone and represent the plural form. The trisyllabic stems -*tá⁺ráátǎ*, -*sí⁺kááli* and -*sú⁺méénò* have a high tone on the stem initial syllable, a downstepped high tone on the penultimate syllable that has a long vowel and a low tone on the final syllable. These nouns have a [L.H⁺HH.L] tone pattern. (See more examples of nouns with this tone pattern in Appendix 2, group 17).

Table 19: Nouns that are borrowed from Kiswahili language with trisyllabic stems

Singular			Plural	
Lwisukha	Gloss	Lwisukha	Gloss	Kiswahili
ì-tá ⁺ ráátǎ	‘bridge’	tsì-tá ⁺ ráátǎ	‘bridges’	Daraja
mù-sí ⁺ kááli	‘policeman’	βà-sí ⁺ kááli	‘policemen’	Askari
mù-sú ⁺ méénò	‘saw’	mì-sú ⁺ méénò	‘saws’	Musumeno

3.2.4 Nouns with a low tone on the prefix with other polysyllabic stems

The nouns in this section have a low tone on the prefix and the polysyllabic stems (i.e. stems with more-than-three-syllables) also have a low tone on all the syllables. In table 20, there are low tones on the prefixes {ì}, {fì} and {mù} in the singular form and {tsì}, {βì} and {βà} in the plural form. The polysyllabic stems -ngànakàni, -pìtìfìpìtìfì and -tʃèndìtʃèndì which have four syllables each have a low tone on all the syllables. The stems -pìtìfìpìtìfì and -tʃèndìtʃèndì have reduplication. The stem -pìtìfìpìtìfì has the syllable {pì} and {tʃì} reduplicated and the stem -tʃèndìtʃèndì has the syllable {tʃè} and {ndì} reduplicated. Hence, table 20 illustrates an [L.L.L.L.L] noun tone pattern. (See more examples of nouns with this tone pattern in Appendix 2, group 1a).

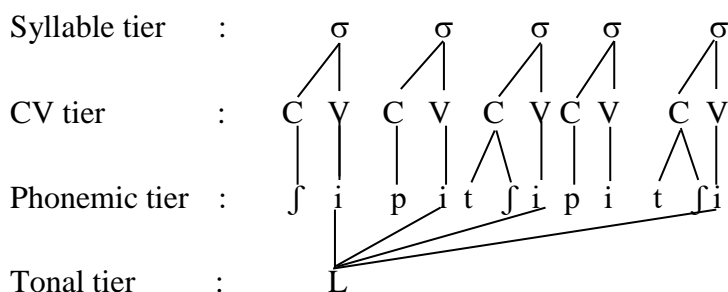
Table 20: Polysyllabic stems with a low tone on all the syllables

Singular		Plural	
Lwisukha	Gloss	Lwisukha	Gloss
ì-ngànakàni	‘thought’	tsì-ngànakàni	‘thoughts’
fì-pìtìfìpìtìfì	‘motorcycle’	βì-pìtìfìpìtìfì	‘motorcycles’
mù-tʃèndìtʃèndì	‘one who walks aimlessly’, ‘traveller’, ‘harlot’	βà-tʃèndìtʃèndì	‘people who walk aimlessly’, ‘travellers’, ‘harlots’

The diagram in example (122) shows autosegmental representation of the tone of the noun fì-pìtìfìpìtìfì ‘motorbike’ in table 20.

(122)

fì-pìtìfìpìtìfì ‘motorbike’



As discussed earlier in section 3.2.3 part (a) of this chapter, nouns with a low tone on the prefix and polysyllabic nouns that have a low tone on all the syllables have the last syllable of

the noun with an extra low tone. Example (123) shows the tone pattern of the noun ʃi-pitʃi-pitʃi ‘motorbike’ using the RTT.

(123)

ʃi-pitʃi-pitʃi ‘motorbike’
 $\left[\text{---} \text{---} \text{---} \text{---} \right]$

All the bars in example (123) have a low tone. The last bar representing the final vowel /i/ has an extra low tone as compared to the rest of the bars.

In section 3.2 the discussion has been on nouns with a low tone on the noun prefix with monosyllabic stems, disyllabic stems, trisyllabic stems and other polysyllabic stems that have different tone patterns. In the next section the discussion is on nouns with a high tone on the prefix.

3.3 Nouns with a high tone on the prefix

In this section all the nouns have a high tone on the prefix but the stems have different tone patterns. These nouns have monosyllabic, disyllabic, trisyllabic and other polysyllabic stems.

3.3.1 Nouns with a high tone on the prefix with monosyllabic stems

In this section all the nouns have a high tone on the prefix and have monosyllabic stems. The monosyllabic stems have different tone patterns. These nouns are further divided into three groups. Nouns with a high tone on the prefix with monosyllabic stems that have a low tone [HH.L], nouns with a high tone on the prefix with monosyllabic stems that have a falling tone on the final syllable [H.HL] and nouns with a high tone on the prefix with monosyllabic stems that have a downstepped high tone [H.⁺H]. In the next section the discussion is on nouns that have a high tone on the prefix with monosyllabic stems that have a low tone.

(a) Nouns with a high tone on the prefix with monosyllabic stems that have a low tone

Table 21 shows nouns that have high tone on the prefix and have monosyllabic stems that have a low tone. There are high tones on the prefixes {líí}, {mwáá} and {xáá} in the singular form {míí}, {mjáá} and {rwáá} in the plural form. These prefixes have a long vowel. The monosyllabic stems -nù, -kà and -nà have a low tone. Thus, the nouns have a [HH.L] tone pattern. (See more examples of nouns with this tone pattern in Appendix 2, group 4b).

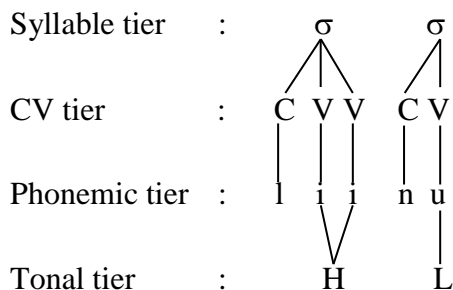
Table 21: Monosyllabic stems with a low tone

Singular		Plural	
Lwisukha	Gloss	Lwisukha	Gloss
líí-nù	‘tooth’	míí-nù	‘teeth’
mwáá-kà	‘year’	mjáá-kà	‘years’
xáá-nà	‘a small child’	rwáá-nà	‘small children’

The diagram in example (124) shows the autosegmental representation of the tone of the noun líí-nù ‘tooth’ in table 21.

(124)

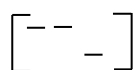
líí-nù ‘tooth’



In example (124) the noun líí-nù ‘tooth’ has a high tone on the noun prefix and a low tone on the final syllable. Example (125) shows the tone pattern of the noun líí-nù ‘tooth’ using the RTT.

(125)

líí-nù ‘tooth’



Example (125) has the first and second bars with a high tone representing the long vowel /íí/ and the third bar has a low tone representing the vowel /ù/.

(b) Nouns with a high tone on the prefix with monosyllabic stems that have a falling tone

Table 22 shows nouns that have a high tone on the prefix followed by monosyllabic stems that have a falling tone on the final syllable. The prefixes {í}, {lí} and {mú} in the singular form and {tsí}, {má} and {mí} in the plural form have a high tone. The monosyllabic stems -nzû, -swî, -rû and -rwî have a falling tone. The falling tone is found on a short vowel. So, the tone pattern in the nouns in the table is [H.HL]. (See more examples of nouns with this tone pattern in Appendix 2, group 5a).

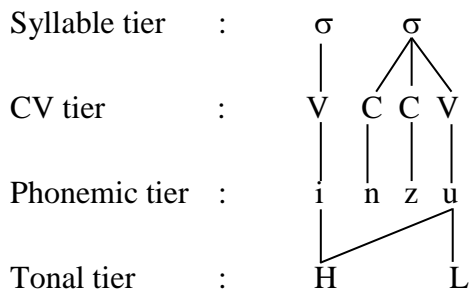
Table 22: Monosyllabic stems with a falling tone

Singular		Plural	
Lwisukha	Gloss	Lwisukha	Gloss
í-nzû	'house'	tsí-nzû	'houses'
lí-swî	'hair'	má-swî	'hair'
lí-rû	'banana leaf'	má-rû	'banana leaves'
mú-rwî	'head'	mí-rwî	'heads'

The diagram in example (126) shows the autosegmental representation of the tone of the noun í-nzû 'house' in table 22.

(126)

í-nzû 'house'

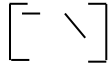


The left to right mapping principle is used in matching the TBUs and tone. Association lines join the TBUs and tones in a one-to-one fashion from left to right. In example (126), the high tone on the first syllable also appears on the second syllable. Therefore, the high tones on the prefix and the final syllables have been collapsed into one. AC indicates that all tones must be associated and when a TBU is associated with two tones like in the final syllable, then you associate the remaining L tone to the final syllable thus creating a (HL) tone. The left to right

mapping principle has been applied. Example (127) shows the tone pattern of the noun í-nzû ‘house’ using the RTT.

(127)

í-nzû ‘house’



Example (127) has the first bar with a high tone representing the mora /í/ and the second bar has a falling tone representing the mora /û/.

(c) Nouns with a high tone on the prefix with monosyllabic stems that have a downstepped high tone

Table 23 shows nouns that have a high tone on the prefix followed by monosyllabic stems that have a downstepped high tone. The prefix {mú} in the singular form and {mí} in the plural form have a high tone. The monosyllabic stem -[↓]tó has a downstepped high tone. The downstepped high tone is motivated by unlinked low tone between two high tones. We are thus dealing with a [H.[↓]H] tone pattern. (See more examples of nouns with this tone pattern in Appendix 2, group 19a).

Table 23: Monosyllabic stems with a downstepped high tone

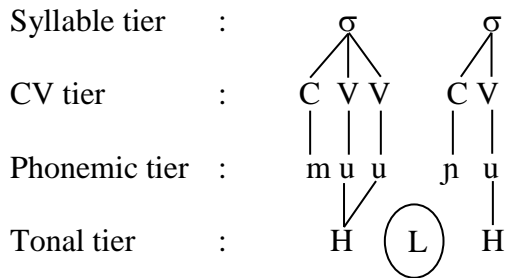
Singular		Plural	
Lwisukha	Gloss	Lwisukha	Gloss
mú- [↓] tó	‘mattress’	mí- [↓] tó	‘mattresses’

The nouns múú-[↓]ɲú ‘salt’ and βúú-[↓]ʃé ‘honey’ have the same tone pattern with the nouns in table 23, [H.[↓]H] tone pattern. These nouns have no singular form or plural form. (See more examples of nouns with this tone pattern in Appendix 2, group 19b).

The diagram in example (128) shows the autosegmental representation of the tone of the noun múú⁺ɲú ‘salt’.

(128)

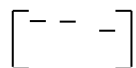
múú-⁺ɲú ‘salt’



The noun múú⁺ɲú ‘salt’ has a [H.⁺H] tone pattern. This noun has a high tone on the prefix which has a long vowel. The final syllable has a downstepped high tone on a short vowel. The downstepped high tone is preceded by a high tone. The tonal tier has a floating low tone that is encircled as seen in example (128). The floating tone has the effect of making the high tone a downstepped high tone. It is floating because it is not linked to any vowel segment on the phonemic tier. Example (129) shows the tone pattern of the noun múú⁺ɲú ‘salt’ using the register tier theory.

(129)

múú-⁺ɲú ‘salt’



In example (129) the first and second bars have a high tone representing the long vowel /úú/ and the third bar has a downstepped high tone representing the vowel /ú/.

3.3.2 Nouns with a high tone on the prefix with disyllabic stems

In this section all the nouns have a high tone on the prefix followed by disyllabic stems. The disyllabic stems have different tone patterns. These nouns are further divided into nine groups. The first group has nouns with a high tone on the prefix and the disyllabic stems have a low tone as discussed in the next section.

(a) Nouns with a high tone on the prefix with disyllabic stems that have a low tone

The nouns with a high tone on the prefix with disyllabic stems that have a low tone are further divided into two. Nouns that have a short vowel on the noun class prefix and those that have a long vowel on the nouns class prefix. Nouns with a short vowel on the noun prefix are discussed in the next section.

(i) Nouns with a short vowel on the noun class prefix

The nouns in table 24 have a high tone on the prefix that has a short vowel and the disyllabic stems have a low tone on two syllables. There is a high tone on the prefixes {í}, {mú} and {xá} in the singular form and {tsí}, {mí} and {rú} in the plural form. The disyllabic stems, -ndàβù -sàjì and -tùkà have a low tone on the stem initial syllable and the final syllable. So, the tone pattern displayed in the table 24 is [H.L.L]. (See more examples of nouns with this tone pattern in Appendix 2, group 4a).

Table 24: Disyllabic stems with a low tone on two syllables and a short vowel on the prefix

Singular		Plural	
Lwisukha	Gloss	Lwisukha	Gloss
í-ndàβù	‘white’ (one)	tsí- ndàβù	‘white’ (many)
mú-sàjì	‘blood’	mí-sàjì	‘blood’
xá-tùkà	‘a small car’	rú-tùkà	‘small cars’

(ii) Nouns with a long vowel on the prefix

The nouns in table 25 have a high tone on the prefix that has a long vowel and the disyllabic stems have a low tone on two syllables. There are high tones on the prefixes {mwí} and {jǒó} that represent the singular form and {βíí} and {βjǒó} that represent the plural form. The disyllabic stems -βùlì, -sùxà and -rèrò have a low tone. These nouns have a [HH.L.L] tone pattern. (See more examples of nouns with this tone pattern in Appendix 2, group 4b).

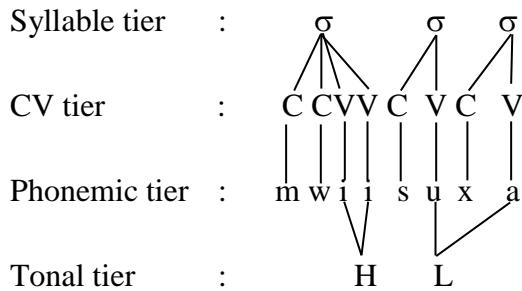
Table 25: Disyllabic stems with a low tone on two syllables and a long vowel on the prefix

Singular		Plural	
Lwisukha	Gloss	Lwisukha	Gloss
mwí-βùlì	‘parent’	βíí-βùlì	‘parents’
mwí-sùxà	‘A member of the βíí-sùxà people’	βíí-sùxà	‘Members of the βíí-sùxà people’
jǒó-rèrò	‘fire for warming during funeral’	βjǒó-rèrò	‘fire for warming during funerals’

The diagram in example (130) shows the autosegmental representation of the tone of the noun mwíí-sùxà ‘A member of the βíí-sùxà people’ in table 25.

(130)

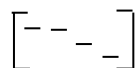
mwíí-sùxà ‘A member of the βíí-sùxà people’



According to the OCP, the low tones on the stem initial syllable and the final syllable have been collapsed into one low tone. The tone pattern of the noun is therefore (HL). Example (131) shows the tone pattern of the noun mwíí-sùxà ‘A member of the βíí-sùxà people’ using the RTT.

(131)

mwíí-sùxà ‘A member of the βíí-sùxà people’



In example (131) the first and second bars have a high tone representing the long vowel /íí/ and the third and fourth bars have a low tone on the vowels /ù/ and /à/. The low tone on the vowel /à/ is lower than that on the vowel /ù/.

(b) Nouns with a high tone on the prefix with disyllabic stems that have a high and low tone

The nouns in this group have a high tone on the prefix and the disyllabic stems have a high tone on the stem initial syllable and a low tone on the final syllable. These nouns are further divided into two. First and foremost, nouns that have a high tone on the prefix and the stem initial syllable has a high tone on a short vowel and a low tone on the final syllable. The second category has nouns that have a high tone on the prefix and the stem initial syllable has

a high tone on a long vowel and a low tone on the final syllable. This second category has also nouns that are borrowed from the English language.

(i) Nouns that have a high tone on the prefix and the stem initial syllable has a high tone on a short vowel and a low tone on the final syllable

The first category has nouns with a high tone on the prefixes and the disyllabic stems have a high tone on stem initial syllable that has a short vowel and a low tone on the final syllable. The prefixes {í}, {mú}, {rú} and {ǰí} in the singular form and {tsí}, {βá} and {βí} in the plural form have a high tone. The disyllabic stems -mbúrí, -xáǎlì, -rímì, -nímì and -tápù have a high tone on the stem initial syllable and a low tone on the final syllable. So, the nouns in table 26 have a [H.H.L] tone pattern. (See more examples of nouns with this tone pattern in Appendix 2, group 2a).

Table 26: Disyllabic stems with a high tone on a short vowel and a low tone

Singular		Plural	
Lwisukha	Gloss	Lwisukha	Gloss
í-mbúrí	‘goat’	tsí-mbúrí	‘goats’
mú-xáǎlì	‘wife, woman’	βá-xáǎlì	‘wives, women’
rú-rímì	‘tongue’	tsí-nímì	‘tongues’
ǰí-tápù	‘book’	βí-tápù	‘books’

(ii) Nouns that have a high tone on the prefix and the stem initial syllable has a high tone on a long vowel and a low tone on the final syllable

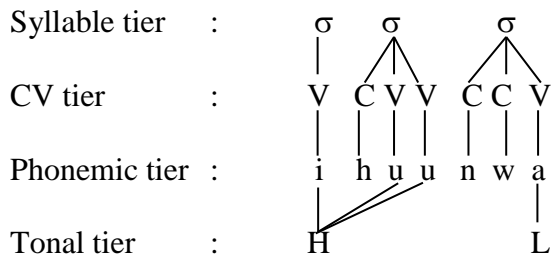
The second category of nouns in table 27 have nouns with a high tone on the prefix and the disyllabic stems have a stem initial syllable that has a high tone on a long vowel and a low tone on the final syllable. The prefix {í} in the singular form and {tsí} in the plural form have a high tone. The disyllabic stems -pááǎnzà, -ndúúmbà, -kwááǎhò and -húúnwà have a high tone on the stem initial syllable and a low tone on the final syllable. These nouns have a [H.HH.L] tone pattern. (See more examples of nouns with this tone pattern in Appendix 2, group 2b).

Table 27: Disyllabic stems with a high tone on a long vowel and a low tone

Singular		Plural	
Lwisukha	Gloss	Lwisukha	Gloss
í-pááǎnzà	‘lake’	tsí-pááǎnzà	‘lakes’
í-ndúúmbà	‘drum’	tsí-ndúúmbà	‘drums’
í-húúnwà	‘calf’	tsí-húúnwà	‘calves’
í-kwááǎhò	‘armpit’	tsí-kwááǎhò	‘armpits’

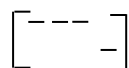
Example (132) shows the autosegmental representation of the tone of the noun í-húúnwà ‘calf’ in table 27.

(132)
í-húúnwà ‘calf’



The left to right mapping principle is used in matching the TBUs and tone. Association lines join the TBUs and tones in a one-to-one fashion from left to right. In this example, the OCP has been applied whereby adjacent identical autosegments are not allowed to follow one another. The high tone on the prefix also appears on the stem initial syllable. The left to right mapping principle is applied in example (132). Example (133) shows the tone pattern of the noun í-húúnwà ‘calf’ using the RTT.

(133)
í-húúnwà ‘calf’



In example (133) the first, second and third bars have a high tone representing the moras /í/ and /úú/ and the fourth bar has a low tone on the mora /à/.

Nouns that are borrowed from the English language

The second category has also nouns that are borrowed from the English language. The nouns in table 28 have a high tone on the prefix {í} in the singular form and {tsí} in the plural form. The disyllabic stems -tʃíítà, -kéékì, -píítʃà and -trááktà have a high tone on the stem initial syllable and a low tone on the final syllable. They belong to class nine and ten nouns in Lwisukha dialect that consists of objects and animals. These nouns have a [H.HH.L] tone pattern. (See more examples of nouns with this tone pattern in Appendix 2, group 2b).

Table 28: Nouns that are borrowed from the English language with disyllabic stems

Singular		Plural	
Lwisukha	Gloss	Lwisukha	Gloss
í-tʃíítà	‘cheetah’	tsí-tʃíítà	‘cheetahs’
í-kéékì	‘cake’	tsí-kéékì	‘cakes’
í-píítʃà	‘picture’	tsí-píítʃà	‘pictures’
í-trááktà	‘tractor’	tsí-trááktà	‘tractors’

The nouns in table 28 also have a high tone on the noun prefix and the stem initial syllable and a low tone on the final syllable as the nouns in table 27. The nouns are borrowed from the English language.

(c) Nouns with a high tone on the prefix with disyllabic stems that have a low and a falling tone

The nouns in table 29 have a high tone on the prefix and the disyllabic stems have a low tone and a falling tone. The prefix {mwé} in the singular form and {βé} in the plural form have a high tone. The disyllabic stem -tʃítsî has a low tone on the stem initial syllable and a falling tone on the final syllable. These nouns are found in Appendix 2, group 12a). The nouns βwé-tʃítsî ‘teaching profession’ and βwí-lòlî ‘pride’ have a similar tone pattern to the nouns in table 29. These nouns have no singular form or plural form. Hence, these nouns have a [H.L.HL] tone pattern. (These nouns are found in Appendix 2, group 12b).

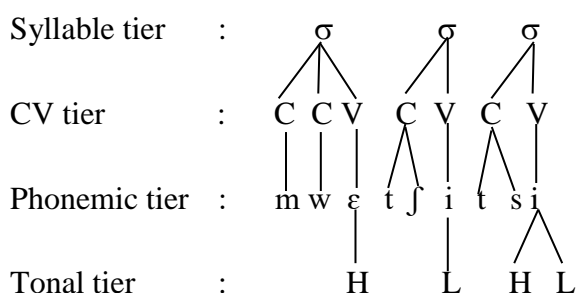
Table 29: Disyllabic stems with a low tone and a falling tone

Singular		Plural	
Lwisukha	Gloss	Lwisukha	Gloss
mwé-tʃítsî	‘teacher’	βé-tʃítsî	‘teachers’

Example (134) shows the autosegmental representation of the tone of the noun mwé-tʃítsî ‘teacher’ in table 29.

(134)

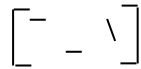
mwé-tʃítsî ‘teacher’



The diagram in (134) has a high tone on the noun prefix and a low tone on the stem initial syllable followed by a falling tone on the final syllable. Example (135) shows the tone pattern of the noun mwé-tʃítsî ‘teacher’ using the RTT.

(135)

mwé-tʃítsî ‘teacher’



In example (135) the first bar has a high tone representing the mora /é/, the second bar has a low tone representing the mora /i/ while the third bar has a falling tone representing the mora /î/.

(d) Nouns with a high tone on the prefix with disyllabic stems that have a high tone and a falling tone

The nouns in table 30 have a high tone on the prefix followed by disyllabic stems have a high tone on the stem initial syllable and a falling tone on the final syllable. The prefixes {í} and {mú} in the singular form and {tsí}, {mí} and {mú} in the plural form have a high tone. The disyllabic stems -hájwâ, -lásê and -múrwî have a high tone on the stem initial syllable and a falling tone on the final syllable. The falling tone is found on a short vowel. We are thus dealing with a [H.H.HL] tone pattern. (See more examples of nouns with this tone pattern in Appendix 2, group 5a).

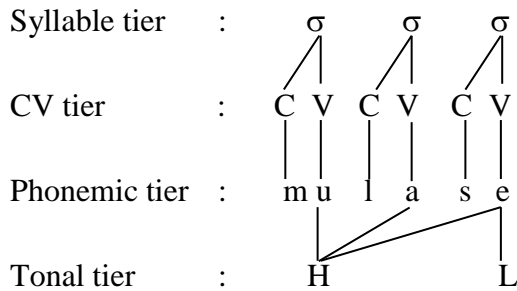
Table 30: Disyllabic stems with a high tone and a falling tone

Singular		Plural	
Lwisukha	Gloss	Lwisukha	Gloss
í-hájwâ	‘axe’	tsí-hájwâ	‘axes’
mú-lásê	‘molasses’	mí-lásê	‘molasses’
mú-múrwî	‘inside the head’	mú-mírwî	‘inside the heads’

The diagram in example (136) shows the autosegmental representation of the tone of the noun *mú-lásê* ‘mollasses’ in table 30.

(136)

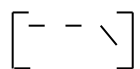
mú-lásê ‘mollasses’



The left to right mapping principle is used in matching the TBUs and tone. Association lines join the TBUs and tones in a one-to-one fashion from left to right. In example (136), adjacent identical autosegments are not allowed to follow one another. The high tone on the prefix also appears on the stem initial syllable and the final syllable. AC indicates that all tones must be associated and when a TBU is associated with two tones like in the final syllable then the remaining L tone is attached to the final syllable thus creating a (HL) tone. The left to right mapping principle has been applied. Example (137) shows the tone pattern of the noun *mú-lásê* ‘mollasses’ using the RTT.

(137)

mú-lásê ‘mollasses’



Example (137) has the first and second bars with a high tone representing the moras /ú/ and /á/ while the third bar has a falling tone representing the mora /ê/.

(e) Nouns with a high tone on the prefix and the disyllabic stems have a falling tone and a low tone

The nouns in this group have a high tone on the prefix and the disyllabic stems have a falling tone on the stem initial syllable and a low tone on the final syllable. In table 31, the prefixes {*mú*} and {*ǰí*} in the singular form and {*mí*}, {*βá*} and {*βí*} in the plural form have a high

tone. The disyllabic stems -háàndà, -káàndà, -xààna and -húùβì have a falling tone on the stem initial syllable and a low tone on the final syllable. Unlike the nouns discussed earlier in section 3.3.2 part (c) and (d) that have a falling tone on a short vowel, the nouns in this section 3.3.2 part (e) have a falling tone on a long vowel. These nouns have a [H.HL.L] tone pattern. Bantu languages often have a contrast between H and L on the stem initial vowel Kisseberth & Odden (2003) and Marlo & Odden (2019). Therefore the [H.HL.L] tone pattern is often found in Bantu Languages. (See more examples of nouns with this tone pattern in Appendix 2, group 3a).

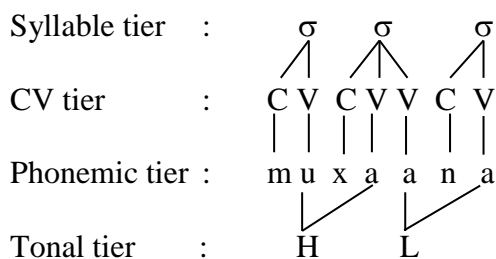
Table 31: Disyllabic stems with a falling tone and a low tone

Singular		Plural	
Lwisukha	Gloss	Lwisukha	Gloss
mú-háàndà	‘road, street’	mí-háàndà	‘roads, streets’
mú-káàndà	‘a person from Uganda’	βá-káàndà	‘people from Uganda’
mú-xààna	‘girl’	βá-xààna	‘girls’
ʃí-húùβì	‘thief’	βí-húùβì	‘thieves’

The diagram in example (138) shows the autosegmental representation of the tone of the noun mú-xààna ‘girl’ in table 31.

(138)

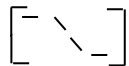
mú-xààna ‘girl’



The OCP leads to the merging of the high tone on the prefix and the stem initial syllables. The stem initial syllable which has a long vowel has a falling tone [HL]. The low tone on the stem initial syllable has merged with the low tone of the final syllable. The tone pattern of the noun is (HL) when collapsed. Example (139) shows the tone pattern of the noun mú-xààna ‘girl’ using the RTT.

(139)

mú-xáànà ‘girl’



Example (139) has the first bar with a high tone representing the vowels /ú/. The second and third bars have a falling tone representing the long vowel /áà/, while the fourth bar has a low tone representing the vowel /à/.

(f) Nouns with a high tone on the prefix with disyllabic stems that have a downstepped high tone and a low tone.

Table 32 has nouns with a high tone on the prefixes {lí}, {mú} and {ʃí} in the singular form and {má}, {mí} and {βí} in the plural form. The disyllabic stems -kúnìà and -xùlìà have a downstepped high tone on the stem initial syllable and a low tone on the final syllable. The downstepped high tone is motivated by an unlinked low tone that is found between two high tones that is the high tone on the prefix and the stem initial syllables. Thus, table 32 illustrates a [H.⁺H.LL] tone pattern. (See more examples of nouns with this tone pattern in Appendix 2, group 18a).

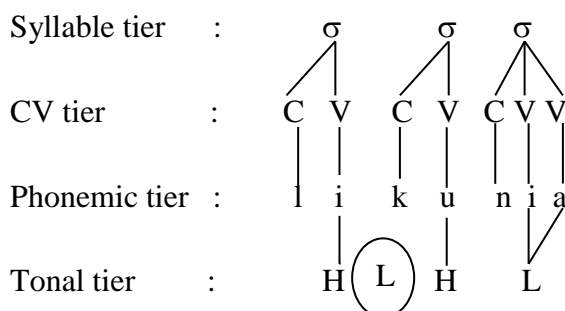
Table 32: Disyllabic stems with a downstepped high tone and a low tone

Singular		Plural	
Lwisukha	Gloss	Lwisukha	Gloss
lí- ⁺ kúnìà	‘sack’	má- ⁺ kúnìà	‘sacks’
ʃí- ⁺ xùlìà	‘food’	βí- ⁺ xùlìà	‘food’

The diagram in example (140) shows the autosegmental representation of the tone of the noun lí-⁺kúnìà ‘sack’ in table 32.

(140)

lí-⁺kúnìà ‘sack’



There is a high tone on the prefix and a downstepped high tone on the stem initial syllable followed by a low tone on the final syllable. The tonal tier has a floating low tone as seen in (140). The pitch of the stem initial syllable of the noun is slightly lower than that of the prefix which has a high tone. The tone of the stem initial syllable is affected by the floating low tone preceding the high tone. Example (141) shows the tone pattern of the noun lí-[↓]kúnìà ‘sack’ using the RTT.

(141)

lí-[↓]kúnìà ‘sack’
[- - -]

In example (141) the first bar has a high tone representing the vowel /í/, the second bar has a downstepped high tone representing the vowel /ú/ while the third and fourth bars have a low tone representing the long vowel /ìà/.

(g) Nouns with a high tone on the prefix with disyllabic stems that have a downstepped high tone and a high tone.

In table 33 the nouns have a high tone on the prefix and the disyllabic stems have a downstepped high tone on the stem initial syllable and a high tone on the final syllable. The prefixes {í} and {múú} in the singular form and {tsí} and {βúú} in the plural form have high tones. The disyllabic stems -xúβú and -mbáǰĩ have a downstepped high tone on the stem initial syllable and a high tone on the final syllable. The downstepped high tone is motivated by an unlinked low tone that is found between two high tones that is the high tone on the prefix and the stem initial syllables. These nouns have a [H.[↓]H.H] tone pattern. (See more examples of nouns with this tone pattern in Appendix 2, group 19a).

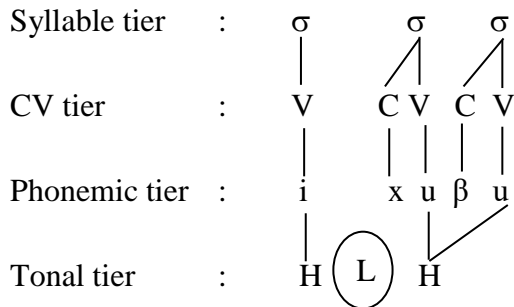
Table 33: Disyllabic stems with a downstepped high tone and a high tone

Singular		Plural	
Lwisukha	Gloss	Lwisukha	Gloss
í- [↓] xúβú	‘squirrel’	tsí- [↓] xúβú	‘squirrels’
mú- [↓] mbáǰĩ	‘builder’	βú- [↓] mbáǰĩ	‘builders’

The diagram in example (142) shows the autosegmental representation of the tone of the noun í-⁺xúβú ‘squirrel’ in table 33.

(142)

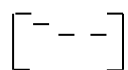
í-⁺xúβú ‘squirrel’



The prefix has a high tone, the stem initial syllable has a downstepped high tone and the final syllable has a high tone. The tonal tier has a floating low tone as seen in (142). The floating tone has the effect of making the high tone a downstepped high tone. According to the OCP, the high tone on the stem initial and the final syllables have been merged into one high tone. The tone pattern of the noun is (H.⁺H). Example (143) shows the tone pattern of the noun í-⁺xúβú ‘squirrel’ using the RTT.

(143)

í-⁺xúβú ‘squirrel’



In example (143) there are three tone bearing units. The first bar has a high tone representing the vowel /i/, the second has a downstepped high tone representing the vowel /ú/ and the third bar has a high tone representing the vowel /ú/.

(h) Nouns with a high tone on the prefix with disyllabic stems that have a downstepped high tone and a falling tone.

The nouns in this group have a high tone on the prefix with disyllabic stems that have a downstepped high tone on the stem initial syllable and a falling tone on the final syllable. These nouns are further divided into two. The first group has nouns that have a high tone on the prefix with disyllabic stems that have a downstepped high tone on the stem initial syllable

that has a short vowel and a falling tone on the final syllable. The second group has nouns that have a high tone on the prefix with disyllabic stems that have a downstepped high tone on the stem initial syllable that has a long vowel and a falling tone on the final syllable.

(i) Nouns that have a high tone on the prefix with disyllabic stems that have a downstepped high tone on a short vowel and a falling tone on the final syllable

The first group in table 34, has a high tone on the prefix {í} in the singular form and {tsí} in the plural form. The disyllabic stems -ngúβû, -ngóxô and -súnâ have a downstepped high tone on the stem initial syllable and a falling tone on the final syllable. The falling tone is on a short vowel. The downstepped high tone is motivated by an unlinked low tone that is found between two high tones. This means that the nouns in table 34 have a [H.⁺H.HL] tone pattern. (See more examples of nouns with this tone pattern in Appendix 2, group 15a).

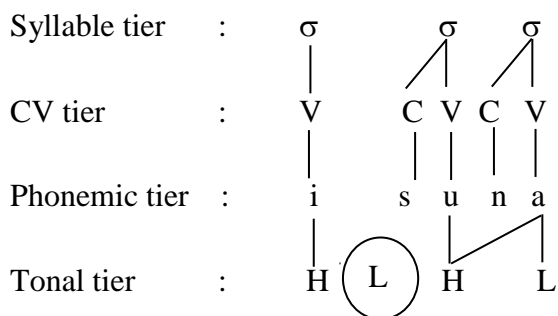
Table 34: Disyllabic stems with a downstepped high tone on a short vowel and a falling tone

Singular		Plural	
Lwisukha	Gloss	Lwisukha	Gloss
í- ⁺ ngúβû	‘hippopotamus’	tsí- ⁺ ngúβû	‘hippopotamuses’
í- ⁺ ngóxô	‘chicken’	tsí- ⁺ ngóxô	‘chickens’
í- ⁺ súnâ	‘mosquito’	tsí- ⁺ súnâ	‘mosquitoes’

Example (144) shows the autosegmental representation of the tone of the noun í-⁺súnâ ‘mosquito’ in table 34.

(144)

í-⁺súnâ ‘mosquito’

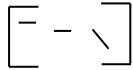


There is a high tone on the prefix and a downstepped high tone on the stem initial syllable on a short vowel and a falling tone on the final syllable. The tonal tier has a floating low tone

that is circled as seen in (144). The floating tone has the effect of making the high tone a downstepped high tone. The high tones on the stem initial and final syllables have been collapsed into one. The tone pattern of this noun is (H. ⁺HL) when collapsed. Example (145) shows the tone pattern of the noun í-⁺súnâ ‘mosquito’ using the RTT.

(145)

í-⁺súnâ ‘mosquito’



In example (145) the first bar has a high tone representing the vowel /í/, the second has a downstepped high tone representing the vowel /ú/ and the third bar is a falling tone representing the vowel /â/. The next section has nouns with a high tone on the prefix followed by disyllabic stems that have a downstepped high tone on a long vowel and a falling tone on the final syllable.

(ii) Nouns that have a high tone on the prefix with disyllabic stems that have a downstepped high tone on a long vowel and a falling tone on the final syllable

Table 35 has the second group with the prefixes {ǰí} and {rí} in the singular form and {bí} and {má} in the plural form. These prefixes have a high tone. The disyllabic stems -túúngû, -háánwâ and -lóórô have a downstepped high tone on the stem initial syllable on a long vowel and a falling tone on the final syllable. The falling tone is found on a short vowel. The downstepped high tone is motivated by an unlinked low tone that is found between two high tones. These nouns have a [H. ⁺HH.HL] tone pattern. (See more examples of nouns with this tone pattern in Appendix 2, group 15b).

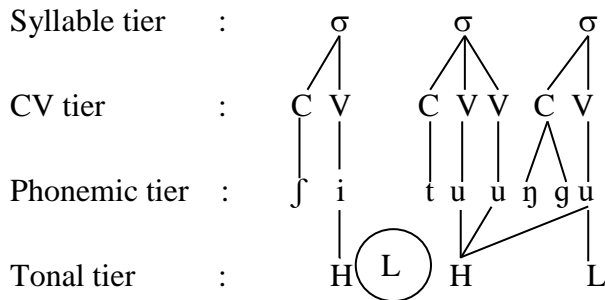
Table 35: Disyllabic stems with a downstepped high tone on a long vowel and a falling tone

Singular		Plural	
Lwisukha	Gloss	Lwisukha	Gloss
ǰí- ⁺ túúngû	‘onion’	βí- ⁺ túúngû	‘onions’
ǰí- ⁺ háánwâ	‘gift’	βí- ⁺ háánwâ	‘gifts’
rí- ⁺ lóórô	‘dream’	má- ⁺ lóórô	‘dreams’

The diagram in example (146) shows the autosegmental representation of the tone of the noun $\text{ʃi-}^{\downarrow}\text{túúŋgû}$ ‘onion’ in table 35.

(146)

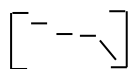
$\text{ʃi-}^{\downarrow}\text{túúŋgû}$ ‘onion’



There is a high tone on the prefix and a downstepped high tone on the stem initial syllable on a long vowel followed by a falling tone on the final syllable. The tonal tier has a floating low tone as seen in (146). The floating tone has the effect of making the high tone a downstepped high tone. It is floating because it is not linked to any segment on the phonemic tier. The high tones on the stem initial syllable and the final syllable have been merged into one high tone. The tone pattern of this noun is $(\text{H}^{\downarrow}\text{HL})$ when merged. Example (147) shows the tone pattern of the noun $\text{ʃi-}^{\downarrow}\text{túúŋgû}$ ‘onion’ using the RTT.

(147)

$\text{ʃi-}^{\downarrow}\text{túúŋgû}$ ‘onion’



In example (147) the first bar has a high tone representing the vowel /i/, the second and third bars have a downstepped high tone representing the long vowel /úú/ while the fourth bar has a falling tone representing the vowel /û/.

(i) Nouns with a high tone on the prefix with disyllabic stems that have two downstepped high tones

The last group in this section has nouns that have a high tone on the prefix and the disyllabic stems have two downstepped high tones. In table 36 the nouns have a high tone on the prefixes {lí}, {xá} and {mú} in the singular form and {má}, {rú} and {mí} in the plural

form. The disyllabic stems $-pwóó^{\downarrow}ní$, $-jáá^{\downarrow}jí$ and $-péé^{\downarrow}rá$ have two downstepped high tones. A downstepped high tone is on the stem initial syllable and the final syllable. The unlinked low tones have the effect of making the high tone, a downstepped high tone. The first unlinked low tone is before the stem initial syllables { $pwóó$ }, { $jáá$ } and { $péé$ } that have a long vowel and the second is on the final syllables { $ní$ }, { $jí$ } and { $rá$ } that have a short vowel. Hence, these nouns have a $[H.^{\downarrow}HH.^{\downarrow}H]$ tone pattern. (See more examples of nouns with this tone pattern in Appendix 2, group16a).

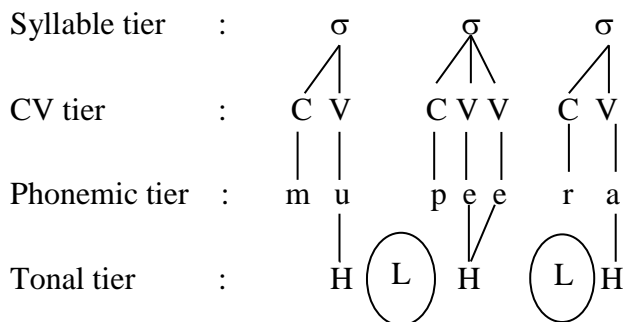
Table 36: Disyllabic stems with two downstepped high tones

Singular		Plural	
Lwisukha	Gloss	Lwisukha	Gloss
$lí-^{\downarrow}pwóó^{\downarrow}ní$	‘sweet potato’	$má-^{\downarrow}pwóó^{\downarrow}ní$	‘sweet potatoes’
$xá-^{\downarrow}jáá^{\downarrow}jí$	‘a small boy’	$rú-^{\downarrow}jáá^{\downarrow}jí$	‘small boys’
$mú-^{\downarrow}péé^{\downarrow}rá$	‘a guava tree’	$mí-^{\downarrow}péé^{\downarrow}rá$	‘guava trees’

Example (148) shows the autosegmental representation of the tone of the noun $mú-^{\downarrow}péé^{\downarrow}rá$ ‘a guava tree’ in table 36.

(148)

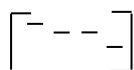
$mú-^{\downarrow}péé^{\downarrow}rá$ ‘a guava tree’



In example (148), there is a high tone on the prefix, a downstepped high tone on the stem initial syllable and the final syllable. The tonal tier has two floating low tones. The floating tones have the effect of making the high tone on the stem initial and the final syllables to be downstepped high tones. The two tones that are encircled in example (148) are floating because they are not linked to any vowel segment on the phonemic tier. Example (149) shows the tone pattern of the noun $mú-^{\downarrow}péé^{\downarrow}rá$ ‘a guava tree’ using the RTT.

(149)

mú-⁺péé⁺rá ‘a guava tree’



Example (149) has the first bar with a high tone representing the vowel /ú/, the second, third and fourth bars have a downstepped high tone representing the long vowel /éé/ and the final vowel /á/.

The nouns in table 37 have the same tone pattern as the nouns in table 36. These nouns are borrowed from the Kiswahili language. The prefix {mú} represents the singular form and the prefix {mí} represents the plural form. These prefixes have a high tone. The disyllabic stems -fúú⁺kó, -páá⁺ngó and -píí⁺rá has two downstepped high tones on the stem initial syllable and the final syllable. All these nouns belong to class three and four nouns. These nouns have a [H.⁺HH.⁺H] tone pattern. (See more examples of nouns with this tone pattern in Appendix 2, group 16a).

Table 37: Nouns that are borrowed from the Kiswahili language with disyllabic stems

Singular		Plural		Kiswahili
Lwisukha	Gloss	Lwisukha	Gloss	
mú- ⁺ fúú ⁺ kó	‘bag’	mí- ⁺ fúú ⁺ kó	‘bags’	mfuko
mú- ⁺ páá ⁺ ngó	‘plan’	mí- ⁺ páá ⁺ ngó	‘plans’	mpango
mú- ⁺ píí ⁺ rá	‘ball’	mí- ⁺ píí ⁺ ra	‘balls’	mpira

3.3.3 Nouns with a high tone on the prefix with trisyllabic stems

All the nouns in this section have a high tone on the prefix and have trisyllabic stems that have different tone patterns. These nouns are further divided into nine groups. The first group has nouns with a high tone on the prefix and the trisyllabic stems have a low tone.

(a) Nouns with a high tone on the prefix with trisyllabic stems that have a low tone on all the syllables

The nouns in table 38 have a high tone on the prefixes {mwí}, {ǰí} and {kwí} in the singular form and {bí}, {rwí} and {mí} in the plural form. The trisyllabic stem -tsùxùlù has a low

tone on all the syllables. So, the nouns in table 38 illustrate a [H.L.L.L] tone pattern. (See more examples of nouns with this tone pattern in Appendix 2, group 4b).

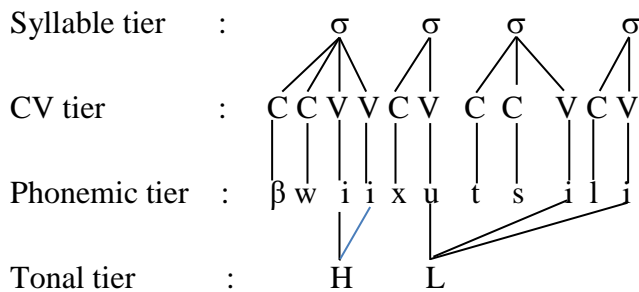
Table 38: Trisyllabic stems with a low tone on all the syllables

Singular		Plural	
Lwisukha	Gloss	Lwisukha	Gloss
mwí-tsùxùlù	‘grandchild’	βí-tsùxùlù	‘grandchildren’
ǰí-tsùxùlù	‘a small grandchild’	rwí-tsùxùlù	‘small grandchildren’
kwí-tsùxùlù	‘a big grandchild’	mí-tsùxùlù	‘big grandchildren’

The noun βwíí-xùtsìlì ‘patience’ has the same tone pattern with the nouns in table 38. The only difference being that this noun has no singular or plural form. This noun has a high tone on the prefix {βwíí}. The trisyllabic -stem xùtsìlì has a low tone on all the syllables. (This noun is found in Appendix 2, group 4d). The diagram in example (150) shows the autosegmental representation of the tone of the noun βwíí-xùtsìlì ‘patience’.

(150)

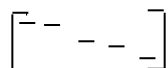
βwíí-xùtsìlì ‘patience’



According to the OCP, the low tone on the stem initial, the penultimate and the final syllables of the stem have been collapsed into one low tone. The tone pattern of the noun is (HL) when collapsed. Example (151) shows the tone pattern of the noun βwíí-xùtsìlì ‘patience’ using the RTT.

(151)

βwíí-xùtsìlì ‘patience’



Example (151) has the first and second bars have a high tone representing the long vowel /íí/, the third, fourth and last bars have a low tone representing the vowels /ù/, /i/ and /i/. The low tone on the final vowel is lower than that on the stem initial vowel and the penultimate vowel.

(b) Nouns with a high tone on the prefix with trisyllabic stems that have a high tone and a low tone on two syllables

The nouns in table 39 have a high tone on the prefixes {í}, {lí} and {mú} in the singular form and {tsí}, {má} and {βá} in the plural form. The trisyllabic stems -káràtʃì, -kánìsà and -tírìtʃì have a high tone on the stem initial syllable and a low tone on the penultimate syllable and the final syllable. We are thus dealing with a [H.H.L.L] tone pattern. (See more examples of nouns with this tone pattern in Appendix 2, group 2a).

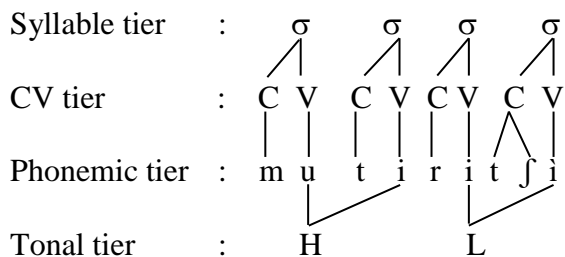
Table 39: Trisyllabic stems with a high tone and a low tone on two syllables

Singular		Plural	
Lwisukha	‘Gloss’	Lwisukha	‘Gloss’
í-káràtʃì	‘garage’	tsí-káràtʃì	‘garages’
lí-kánìsà	‘church’	má-kánìsà	‘churches’
mú-tírìtʃì	‘a member of the Tiriki tribe’	βá-tírìtʃì	‘members of the Tiriki tribe’

The diagram in example (152) shows the autosegmental representation of the tone of the noun mú-tírìtʃì ‘a member of the Tiriki tribe’ in table 39.

(152)

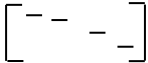
mú-tírìtʃì ‘a member of the Tiriki tribe’



According to the OCP, the high tones in the prefix and the stem initial syllables have been collapsed into one high tone, the penultimate and final syllables have also been collapsed into one low tone. The AC has led to the association of the left most tone to the left most TBU.

The tone pattern of this noun is (HL) when merged. Example (153) shows the tone pattern of the noun mú-tírìtʃì ‘a member of the Tiriki tribe’ using the RTT.

(153)

mú-tírìtʃì ‘a member of the Tiriki tribe’


In example (153) the first and second bars have a high tone representing the moras /ú/ and /í/. The high tone on the first bar is higher than that on the second bar. The third and fourth bars have a low tone representing the moras /ì/ and /ʃ/. The low tone on the final mora is lower than that on the penultimate mora.

(c) Nouns with a high tone on the prefix with trisyllabic stems that have a falling tone and a high tone followed by a low tone

In table 40, the nouns have a high tone on the prefixes {í}, {lí} and {mú} in the singular form and {tsí}, {má} and {mí} in the plural form. The trisyllabic stems -káàsúkù, -séeèβééβè and -líŋjéétì have a falling tone on the stem initial syllable and a high tone on the penultimate syllable followed by a low tone on the final syllable. The falling tone is found on a long vowel of the stem initial syllable. Therefore, these nouns have a [H.HL.H.L] tone pattern. (See more examples of nouns with this tone pattern in Appendix 2, group 13).

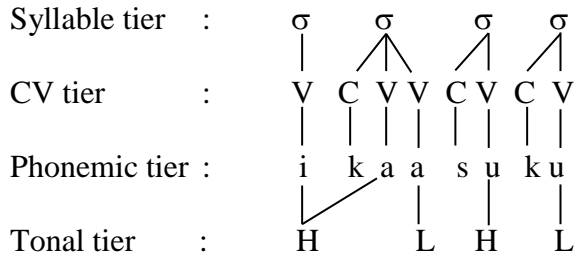
Table 40: Trisyllabic stems with a falling tone and a high tone followed by a low tone

Singular		Plural	
Lwisukha	Gloss	Lwisukha	Gloss
í-káàsúkù	‘parrot’	tsí-káàsúkù	‘parrots’
lí-séeèβééβè	‘pumpkin leaf’	má-séeèβééβè	‘pumpkin leaves’
mú-líŋjéétì	‘blanket’	mí-líŋjéétì	‘blankets’

Example (154) shows the autosegmental representation of the tone of the noun í-káàsúkù ‘parrot’ in table 40.

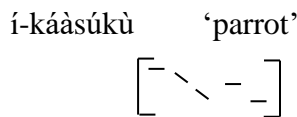
(154)

í-káàsúkù ‘parrot’



According to the OCP, the high tones on the prefix and the stem initial syllables have been collapsed into one high tone. The tone pattern of the noun when collapsed is (HLHL). Example (155) shows the tone pattern of the noun í-káàsúkù ‘parrot’ using the RTT.

(155)



In example (155) the first bar has a high tone representing the vowel /í/, the second and third bars have a falling tone on the long vowel [áà], the fourth bar has a high tone representing the vowel /ú/ and the final bar has a low tone representing the vowel /ù/. The high tone on the fourth bar representing the vowel /ú/ is lower than the high tone on the first bar representing the vowel /í/.

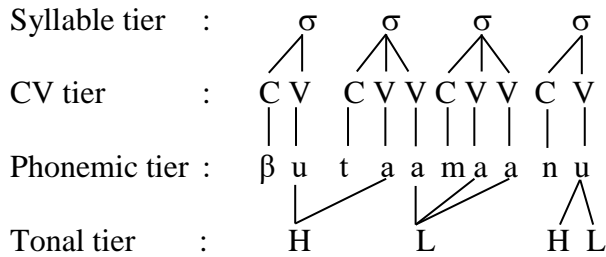
(d) A noun with a high tone on the prefix with a trisyllabic stem that has two falling tones

The noun βú-táàmàànù ‘problem’ has a high tone on the prefix {βú}. The trisyllabic stem -táàmàànù has a falling tone on the stem initial syllable and a low tone on the penultimate syllable followed by a falling tone on the final syllable. The falling tone on the stem initial syllable is found on a long vowel while the falling tone on the final syllable is found on a short vowel. From the data in this study this is the only noun with this tone pattern. This noun has a [H.HL.L.HL] tone pattern. (This noun is found in Appendix 2, group 10). The diagram

in example (156) shows the autosegmental representation of the tone of the noun βú-táàmàànû ‘problem’.

(156)

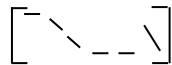
βú-táàmàànû ‘problem’



When OCP is applied in example (156) the high tone on the prefix merges with the high tone on the stem initial syllable, the low tone on the penultimate syllable also merges with the low tone on the final syllable. The tone pattern of the noun when collapsed is (HLHL). Example (157) shows the tone pattern of the noun βú-táàmàànû ‘problem’ using the RTT.

(157)

βú-táàmàànû ‘problem, bad thing’



Example (157) has the first bar with a high tone representing the vowel /ú/, the second and third bars have a falling tone representing the vowel /áà/, the penultimate syllable has a low tone representing the long vowel /àà/ and the final bar has a falling tone representing the vowel /û/.

(e) Nouns with a high tone on the prefix with trisyllabic stems that have a downstepped high tone and a high tone followed by a low tone

The nouns in table 41 have a high tone on the prefixes and the trisyllabic stems have a downstepped high tone on the stem initial syllable and a high tone on the penultimate syllable followed by a low tone on the final syllable. The prefixes {mú} and {mwí} in the singular form and {mí} and {βá} in the plural form have a high tone. The trisyllabic stems -sókótò and -ɲJéréesà have a downstepped high tone on the stem initial syllable, a high tone on the penultimate syllable and a low tone on the final syllable. The downstepped high tone is

motivated by an unlinked low tone between two high tones. Hence, these nouns have a [H.⁺H.H.L] tone pattern. (See more examples of nouns with this tone pattern in Appendix 2, group 18a).

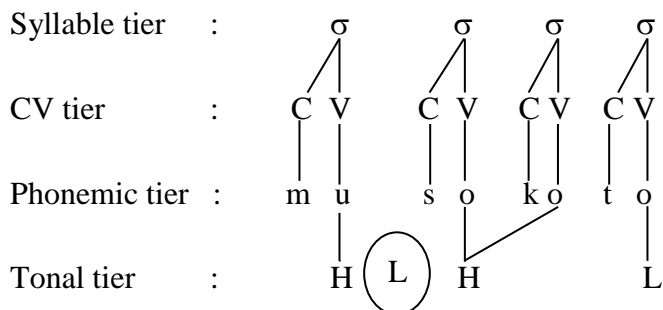
Table 41: Trisyllabic stems with a downstepped high tone and a high tone followed by a low tone

Singular		Plural	
Lwisukha	Gloss	Lwisukha	Gloss
mú- ⁺ sókótò	‘cigarette (may be filled with tobacco or leaves from the broad leaved croton tree)’	mí- ⁺ sókótò	‘cigarettes (may be filled with tobacco or leaves from the broad leaved croton trees)’
mwí- ⁺ ɲJérésà	‘a European person’	βá- ⁺ ɲJérésà	‘European people’

The diagram in example (158) shows the autosegmental representation of the tone of the noun mú-⁺sókótò ‘cigarette’ in table 41.

(158)

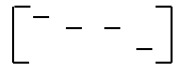
mú-⁺sókótò ‘cigarette’



The stem initial syllable of the noun mú-⁺sókótò has a downstepped high tone. The tonal tier has a floating low tone as seen in (158). The pitch of the stem initial syllable of the noun is slightly lower than that of the prefix which has a high tone. The tone of the stem initial syllable is affected by the floating tone preceding the high tone. According to the OCP, the downstepped high tone on the stem initial syllable and the high tone on the penultimate syllable have been collapsed into one high tone. The tone pattern of the noun in (158) is (H⁺HL) when merged. Example (159) shows the tone pattern of the noun mú-⁺sókótò ‘cigarette’ as illustrated using the RTT.

(159)

mú-⁺sókótò ‘cigarette’



In example (159) the first bar has a high tone representing the mora /ú/, the second bar has a downstepped high tone representing the mora /ó/, the penultimate mora has a high tone representing the vowel /ó/ and the fourth bar has a low tone representing the mora /ò/. The high tone on the first mora is higher than that on the penultimate mora.

The noun Lú-⁺swáhìlì ‘Kiswahili language’ has a similar tone pattern to the nouns in table 41. This noun has high tone on the prefix and the trisyllabic stem has a downstepped high tone on the stem initial syllable, a high tone on the penultimate syllable and low tone on the final syllable. This noun has no singular or plural form. (This noun is found in Appendix 2, group 18b).

(f) Nouns with a high tone on the prefix with trisyllabic stems that have a high tone and a downstepped high tone followed by a low tone

In table 42, the nouns have a high tone on the prefixes while the trisyllabic stems have a high tone on the stem initial syllable and a downstepped high tone on the penultimate syllable followed by a low tone on the final syllable. The prefixes {í} and {mú} in the singular form and {tsíí} and {βá} in the plural form have a high tone. The trisyllabic stems -ká⁺níísà and -ká⁺lááni have a high tone on the stem initial syllable, a downstepped high tone on the penultimate syllable that has a long vowel and a low tone on the final syllable. The downstepped high tone is motivated by an unlinked low tone between two high tones. Thus, table 42 illustrates a [H.H.⁺HH.L] tone pattern. (See more examples of nouns with this tone pattern in Appendix 2, group 20a).

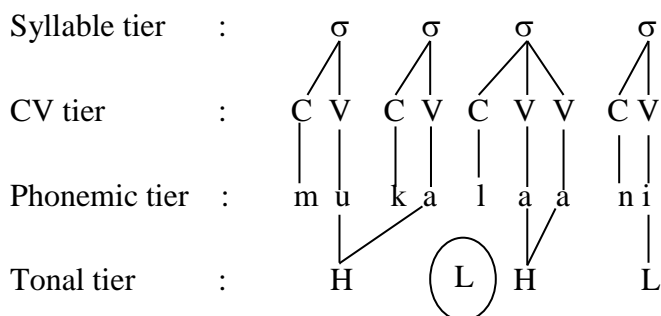
Table 42: Trisyllabic stems with a high tone and a downstepped high tone followed by a low tone

Singular		Plural	
Lwisukha	Gloss	Lwisukha	Gloss
í-ká ⁺ níísà	‘church’	tsí-ká ⁺ níísà	‘churches’
mú-ká ⁺ lááni	‘clerk’	βá-ká ⁺ lááni	‘clerks’

Example (160) shows the autosegmental representation of the tone of the noun *mú-ká⁺lááni* ‘clerk’ in table 42.

(160)

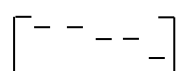
mú-ká⁺lááni ‘clerk’



In example (160) the penultimate syllable that has a long vowel has a downstepped high tone. The pitch of the penultimate syllable of the noun is slightly lower than that of the stem initial syllable which has a high tone. The tone of the penultimate syllable is affected by the floating tone preceding the high tone. The tone of the penultimate syllable is affected by the floating tone preceding the high tone. The tonal tier has a floating low tone. The tone pattern of the noun is collapsed into (H⁺HL). Example (161) shows the tone pattern of the noun *mú-ká⁺lááni* ‘clerk’ as illustrated using the RTT.

(161)

mú-ká⁺lááni ‘clerk’



In example (161) the first and second bars have a high tone representing the vowels /ú/ and /á/, the third and fourth bar have a downstepped high tone representing the long vowel /áá/ and the final bar has a low tone representing the vowel /i/.

(g) Nouns with a high tone on the prefix with trisyllabic stems that have a downstepped high tone and a high tone followed by a falling tone

In table 43, the prefixes {ʃi} in the singular form and {βi} in the plural form have a high tone. The trisyllabic stem -táámbájâ has a downstepped high tone on the stem initial syllable that has a long vowel and a high tone on the penultimate syllable and a falling tone on the final syllable that has a short vowel. The downstepped high tone is motivated by an unlinked low

tone between two high tones. The noun kí-[↓]líikálí ‘truth’ has a similar tone pattern to the noun jí-[↓]táámbájâ ‘cloth, handkerchief’. This noun has no singular form or plural form. So, these nouns have a [H.[↓]HH.H.HL] tone pattern. (The noun jí-[↓]táámbájâ ‘cloth, handkerchief’ is found in Appendix 2, group 15b) while (The noun kí-[↓]líikálí ‘truth’ is found in Appendix 2, group 15d).

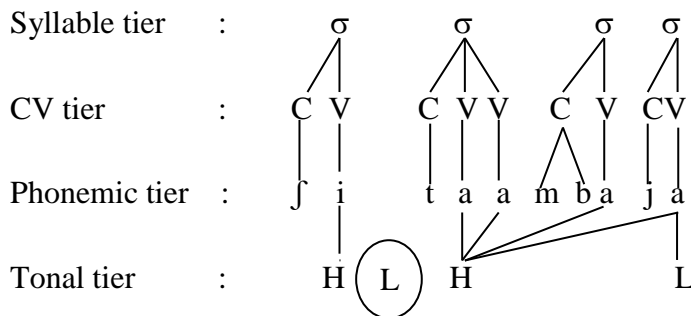
Table 43: Trisyllabic stems with a downstepped high tone and a high tone followed by a falling tone

Singular		Plural	
Lwisukha	Gloss	Lwisukha	Gloss
jí- [↓] táámbájâ	‘cloth, handkerchief’	βí- [↓] táámbájâ	‘clothes, handkerchiefs’

The diagram in example (162) shows the autosegmental representation of the tone of the noun jí-[↓]táámbájâ ‘cloth, handkerchief’ in table 43.

(162)

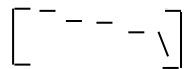
jí-[↓]táámbájâ ‘cloth, handkerchief’



The stem initial syllable of the noun jí-[↓]táámbájâ ‘cloth, handkerchief’ has a downstepped high tone. The tonal tier has a floating low tone as seen in (162). The floating tone has the effect of making the high tone a downstepped high tone. According to the OCP, the high tone on the stem initial syllable, the penultimate and the final syllables of the noun have been collapsed into one high tone. The tone pattern of the noun is collapsed into (H[↓]HL). Example (163) shows the tone pattern of the noun jí-[↓]táámbájâ ‘cloth, handkerchief’ using the RTT.

(163)

ʃĩ-⁺táámbájâ ‘cloth, handkerchief’



In example (163) the first bar has a high tone representing the vowel /í/, the second and third bars have a downstepped high tone representing the long vowel /áá/, the fourth bar has a high tone representing the penultimate vowel /á/ and the final bar has a falling tone representing the vowel /â/. The high tone on the first vowel /í/ is higher than that on the penultimate vowel /á/.

(h) Nouns with high tone on the prefix and trisyllabic stems that have a high tone and a downstepped high tone followed by a falling tone

In table 44, the prefix {mú} in the singular form and {βá} in the plural form have a high tone. The trisyllabic stem -kó⁺jáánû has a high tone on the stem initial syllable, a downstepped high tone on the penultimate syllable that has a long vowel and a falling tone on the final syllable. The falling tone is found on a short vowel. The downstepped high tone is motivated by an unlinked low tone between two high tones. From the data in this study, this is the only noun found to have this tone pattern, [H.H.⁺HH.HL]. (This noun is found in Appendix 2, group 21).

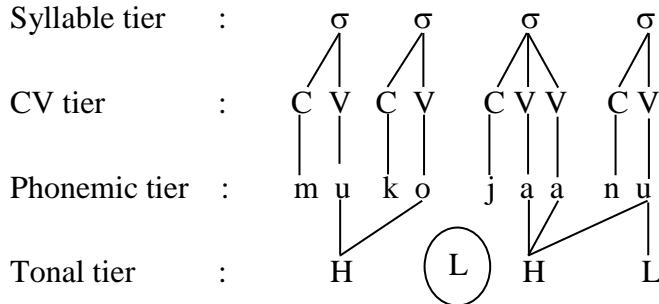
Table 44: Trisyllabic stems with a high tone and a downstepped high tone followed by a falling tone

Singular		Plural	
Lwisukha	Gloss	Lwisukha	Gloss
mú-kó ⁺ jáánû	‘a disorganized person’	βá-kó ⁺ jáánû	‘disorganized people’

Example (164) shows the autosegmental representation of the tone of the noun *mú-kó⁺jáánû* ‘a disorganized person’ in table 44.

(164)

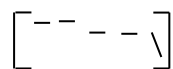
mú-kó⁺jáánû ‘a disorganized person’



The penultimate syllable of the noun *mú-kó⁺jáánû* ‘a disorganized person’ has a downstepped high tone on a long vowel. The pitch of the penultimate syllable of the noun is slightly lower than that of the stem initial syllable which has a high tone. The tone of the penultimate syllable is affected by the floating tone preceding the high tone. The tonal tier has a floating low tone as seen in diagram (164). The tone pattern of the nouns is collapsed into (H⁺HL). Example (165) shows the tone pattern of the noun *mú-kó⁺jáánû* ‘a disorganized person’ using the RTT.

(165)

mú-kó⁺jáánû ‘a disorganized person’



Example (165) has the first and second bars with a high tone representing the vowels /ú/ and /ó/, the third and fourth bars have a downstepped high tone representing the long vowel /áá/ and the final bar has a falling tone representing the vowel /û/. The high tone on the second bar representing the vowel /ó/ is higher than that of the first bar representing the vowel /ú/.

(i) Nouns with a high tone on the prefixes with trisyllabic stems that have a high tone and two downstepped high tones

The nouns in table 45 have a high tone on the the prefixes {i} in the singular form and {tsí} in the plural form. The trisyllabic stems -ká⁺laa⁺mú and -pá⁺ráá⁺fú have a high tone on the

stem initial syllable and two downstepped high tones. There is a downstepped high tone on the penultimate syllable and the final syllable. The downstepped high tones are motivated by two unlinked low tone between two high tones. The unlinked low tones have the effect of making the high tone a downstepped high tone. The first unlinked low tone is before the syllables {láá} and {ráá} that have long vowels and the second is between syllables {mú} and {fú} that has a short vowel. These nouns belong to class nine and ten that consist of loan nouns. These nouns are borrowed from the Kiswahili language. We are thus dealing with a [H. H. ⁺HH. ⁺H] tone pattern. (See more examples of nouns with this tone pattern in Appendix 2, group 16a).

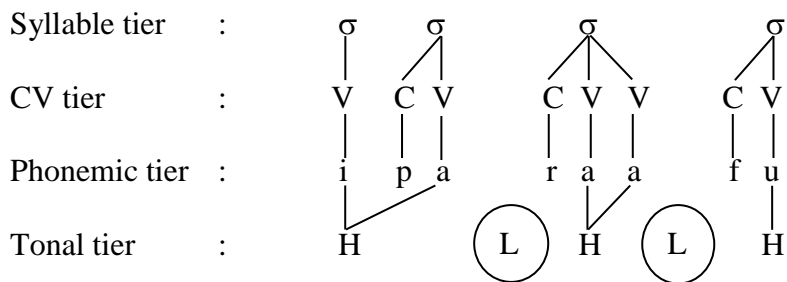
Table 45: Trisyllabic stems with a high tone and two downstepped high tones

Singular		Plural	
Lwisukha	Gloss	Lwisukha	Gloss
í-ká ⁺ láá ⁺ mú	‘pencil’	tsí-ká ⁺ laa ⁺ mú	‘pencils’
í-pá ⁺ ráá ⁺ fú	‘ice’	tsí-pá ⁺ ráá ⁺ fú	‘ice’

The diagram in (166) shows the autosegmental representation of the tone of the noun í-pá⁺ráá⁺fú ‘ice’ in table 45.

(166)

í-pá⁺ráá⁺fú ‘ice’

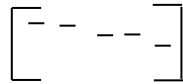


There is a high tone on the prefix and the stem initial syllables that have been merged. The penultimate and final syllables have a downstepped high tone. The tonal tier has two floating low tones. The floating tones have the effect of making the high tone on the penultimate and final syllables to be downstepped high tones. The two tones that are encircled in example

(166) are floating because they are not linked to any vowel segment on the phonemic tier. Example (167) shows the tone pattern of the noun í-pá⁺ráá⁺fú ‘ice’ using the RTT.

(167)

í-pá⁺ráá⁺fú ‘ice’



Example (167) has the first and second bars with a high tone represent the vowels /í/ and /á/, the third, fourth and final bars have a downstepped high tone representing the long vowel /áá/ and /ú/.

3.3.4 Nouns with a high tone on the prefix with other polysyllabic stems

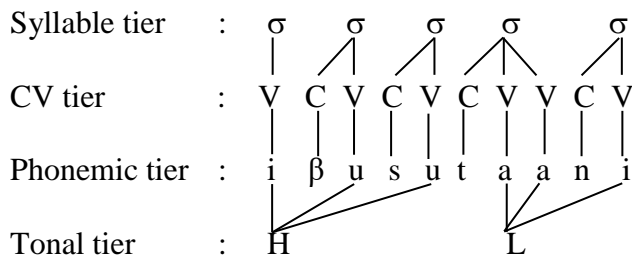
All the nouns in this section have a high tone on the prefix and are followed by other polysyllabic stems (i.e. stems with more-than-three-syllables). The polysyllabic stems have different tone patterns. These nouns are further divided into six groups. The first group has nouns with a high tone on the prefix with a polysyllabic stem that has a high tone and a low tone on two syllables as discussed in the next section.

(a) Nouns with a high tone on the prefix with a polysyllabic stem that has a high tone on two syllables and a low tone on two syllables

The noun í-βúsútààni ‘in Sudan’ has prefix {í} in the singular form that has a high tone. The polysyllabic stem -βúsútààni has a high tone on the stem initial syllable and the second syllable of the stem followed by a low tone on the penultimate and the final syllables. This noun has a [H.H.H.LL.L] tone pattern. From the data in this study, only one noun was found to have this tone pattern. This noun has no singular or plural form. (This noun is found in Appendix 2, group 14). Example (168) shows the autosegmental representation of the tone of the noun í-βúsútààni ‘in Sudan’.

(168)

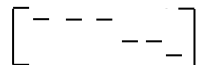
í-βúsútààni ‘in Sudan’



When OCP is applied in example (168) the high tone on the prefix merges or is collapsed with the high tone on the stem initial and the third syllables. The low tone on the penultimate syllable also merges with the low tone on the final syllable. The tone pattern of the noun when collapsed is (HL). Example (169) shows the tone pattern of the noun í-βúsútààni ‘in Sudan’ using the RTT.

(169)

í-βúsútààni ‘in Sudan’



In example (169) has the first, second and third bars have a high tone representing the vowels /í/, /ú/ and /ú/, the fourth and fifth bars have low tone representing the long vowel /àà/. The low tone on the final vowel /i/ is lower than that of the long vowel /àà/.

(b) Nouns with a high tone on the prefix with polysyllabic stems that have a high tone and a low tone on three syllables

In table 46, the prefixes {mú} in the singular form and {βá} in the plural form have a high tone. The polysyllabic stem -tʃérùmàni has a high tone on the stem initial syllable and a low tone on the second syllable of the stem, the penultimate and final syllables. Thus, this noun has a [H.H.L.L.L] tone pattern. (This noun is found in Appendix 2, group 2a).

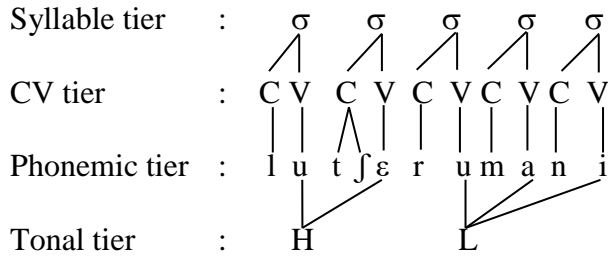
Table 46: Polysyllabic stems with a high tone and a low tone on three syllables

Singular		Plural	
Lwisukha	Gloss	Lwisukha	Gloss
mú-tʃérùmàni	‘a German’	βá-tʃérùmàni	‘ German people’

The noun *lú-tʃérùmàni* ‘German language’ has the same tone pattern as the nouns in table 46. This noun has no singular form or plural form. (This noun is found in Appendix 2, group 2c). Example (170) shows the autosegmental representation of the tone of the noun *lú-tʃérùmàni* ‘German language’.

(170)

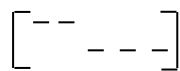
lú-tʃérùmàni ‘German language’



According to the OCP, the tone pattern of the noun *lú-tʃérùmàni* ‘German language’ is (HL). The prefix {*lú*} in the noun *lú-tʃérùmàni* in example (170) is used in the Luyia language to mean a language or a dialect, other examples of languages having prefix {*lu*} include *lú-⁺sùungù* ‘English language’, *lú-⁺swáhíli* ‘Kiswahili language’, *lúhíndi* ‘Indian language’, *lúwángà* ‘Luwanga dialect of Luyia’ and *lúβúkùsù* ‘Lubukusu dialect of Luyia’ among others. Example (171) shows the tone pattern of the noun *lú-tʃérùmàni* ‘German language’ using the RTT.

(171)

lú-tʃérùmàni ‘German language’



In example (171) the first and second bars have a high tone representing the vowel /*ú*/ and /*é*/ while the third, fourth and fifth bars have a low tone representing vowels /*ù*/, /*à*/ and /*i*/.

(c) Nouns with a high tone on the prefix with polysyllabic stems that have a high and a falling tone followed by a low tone on two syllables

The nouns in table 47 have prefix {*i*} that has a high tone. The polysyllabic stems -*βúmèèrèkà* and -*βútânzànià* have a high tone on the stem initial syllable and a falling tone on the second syllable followed by a low tone on the penultimate and the final syllables. Hence,

these nouns have a [H.H.HL.L.L] tone pattern. (See more nouns with this tone pattern in Appendix 2, group 7b).

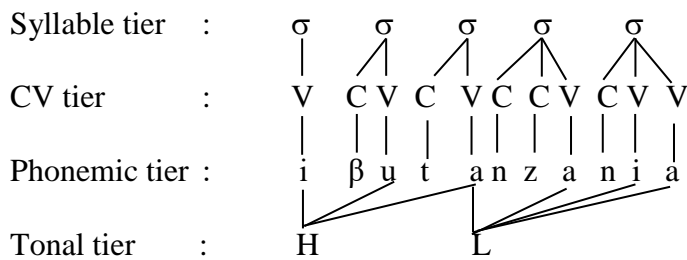
Table 47: Polysyllabic stems with a high tone and a falling tone followed by a low tone on two syllables

Lwisukha	Gloss
í-βúmèèrèkà	‘in America’
í-βútânzànià	‘in Tanzania’

The diagram in example (172) shows the autosegmental representation of the tone of the noun í-βútânzànià ‘in Tanzania’ in table 47.

(172)

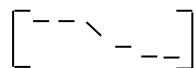
í-βútânzànià ‘in Tanzania’



When OCP is applied the high tone on the prefix, the stem initial syllable and the third syllables collapse into one high tone, the low tone on the third, the penultimate and the final syllables also collapse into one low tone. The tone pattern of the noun is (HL) when collapsed. Example (173) shows the tone pattern of the noun í-βútânzànià ‘in Tanzania’ using the RTT.

(173)

í-βútânzànià ‘in Tanzania’



In example (173) the first and second bars have a high tone representing the moras /í/ and /ú/, the third bar has a falling tone representing the mora /â/, the fourth, fifth and sixth bars have

low tone representing the penultimate vowel /à/ and the long vowel {ìà}. The low tone on the long vowel /ìà/ is lower than that of the penultimate vowel /à/.

(d) Nouns with a high tone on the prefix with polysyllabic stems that have a high tone and a downstepped high tone followed by a high tone and a low tone

The nouns in table 48 have a high tone on the prefixes {ì} in the singular form and {tsí} in the plural form. The polysyllabic stem -ngó⁺rómánì has a high tone on the stem initial syllable and a downstepped high tone on the second syllable that has a short vowel followed by a high tone on the penultimate syllable and a low tone on the final syllable. The downstepped high tone is motivated by an unlinked low tone between two high tones that is on the stem initial syllable and the second syllable of the stem. So, these nouns have a [H.H.⁺H.H.L] tone pattern. (This noun is found in Appendix 2, group 20a).

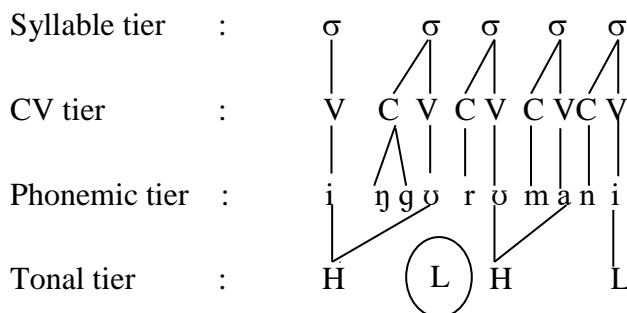
Table 48: Polysyllabic stems with a high tone and downstepped high tone followed by a high tone and a low tone

Singular		Plural	
Lwisukha	Gloss'	Lwisukha	Gloss
í-ngó ⁺ rómánì	'liver'	tsí-ngó ⁺ rómánì	'livers'

Example (174) shows the autosegmental representation of the tone of the noun í-ngó⁺rómánì 'liver' in table 48.

(174)

í-ngó⁺rómánì 'liver'

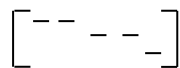


There is a high tone on the prefix and the stem initial syllables. There is a downstepped high tone on the the third syllable. The pitch of the third syllable of is slightly lower than that of the stem initial syllable which has a high tone. The tone of the third syllable is affected by the

floating tone preceding the high tone. The tonal tier has a floating low tone as seen in diagram (174). According to the OCP, the high tones on the prefix and the stem initial syllables have been merged into one high tone. The high tones on the the third syllable and the penultimate syllable have also been merged into one high tone. The tone pattern of the noun is (H⁺HL) when collapsed. Example (175) shows the tone pattern of the noun í-ŋgó⁺rómání ‘liver’ using the RTT.

(175)

í-ŋgó⁺rómání ‘liver’



Example (175) has the first and second bars with a high tone representing the vowels /í/ and /ó/, the third bar has a downstepped high tone representing the vowel /ó/, the fourth bar has a high tone representing the penultimate vowel /á/ and the fifth bar has a low tone representing the final vowel /î/.

The noun í-βú⁺ŋJéréésà ‘in Europe’ has a [H.H.⁺H.H.L] tone pattern that is similar to the nouns in table 48. The difference is that the noun í-βú⁺ŋJéréésà has no singular or plural form. The prefix {í} has a high tone. The polysyllabic stem -βú⁺ŋJéréésà has a high tone on the stem initial syllable and a downstepped high tone on the second syllable of the stem followed by a high tone on the penultimate syllable and a low tone on the final syllable. The downstepped high tone is motivated by an unlinked low tone between two high tones that is on the stem initial syllable and the second syllable of the stem. (This noun is found in Appendix 2, group 20b).

(e) Nouns with a high tone on the prefix with polysyllabic stems that have a a high tone and a downstepped high tone followed by a high tone and a falling tone

These nouns in table 49, have a high tone on the prefixes {í} and {lí} in the singular form and {tsí} and {má} in the plural form. The polysyllabic stems -ŋí⁺nínínî and -kú⁺jákújî have a high tone on the stem initial syllable and a downstepped high tone on the second syllable of the stem followed by a high tone on the penultimate syllable and a falling tone on the final syllable. The falling tone is on a short vowel. The downstepped high tone is motivated by an unlinked low tone between two high tones that is on the stem initial syllable and second

syllable of the stem. Therefore, the nouns in table 49 have a [H.H.⁺H.H.HL] tone pattern. (These nouns are found in Appendix 2, group 21).

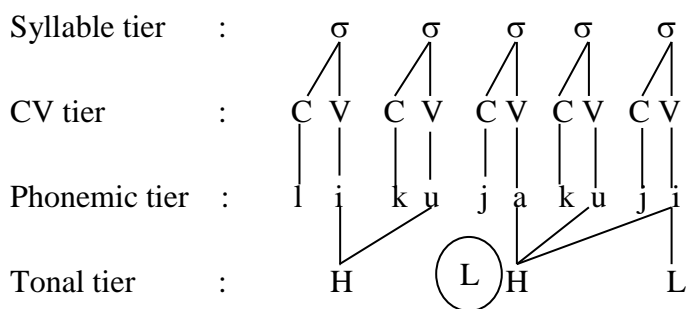
Table 49: Polysyllabic stems with a high tone and a downstepped high tone followed by a high tone and a falling tone

Singular		Plural	
Lwisukha	Gloss	Lwisukha	Gloss
í-pí ⁺ nípínî	‘star’	tsí-pí ⁺ nípínî	‘stars’
lí-kú ⁺ jákújî	‘butterfly’	má-kú ⁺ jákújî	‘butterflies’

Diagram (176) shows the autosegmental representation of the tone of the noun lí-kú⁺ jákújî ‘butterfly’ in table 49.

(176)

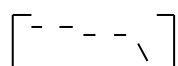
lí-kú⁺ jákújî ‘butterfly’



There is a high tone on the prefix and the stem initial syllables and a downstepped high tone on the second syllable of the stem followed by a high tone on the penultimate syllable and a falling tone on the final syllable. The tonal tier has a floating low tone as seen in (176). According to the OCP, the high tone on the prefix and the stem initial syllable of the stem have been merged into one high tone. The high tones on the second syllable of the stem, the penultimate syllable and the final syllable have also been merged into one high tone. The tone pattern of this noun when merged is (H⁺HL). Example (177) shows the tone pattern of the noun lí-kú⁺ jákújî ‘butterfly’ using the RTT.

(177)

lí-kú⁺ jákújî ‘butterfly’



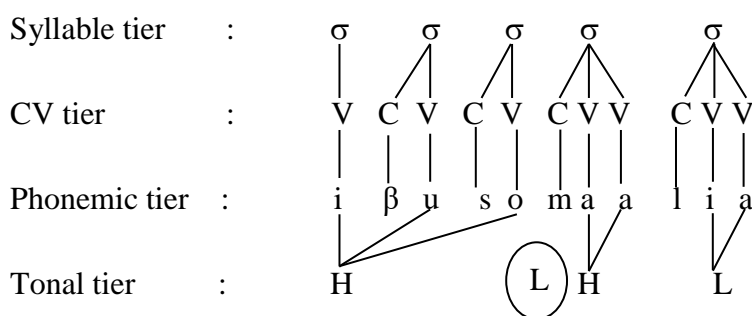
In example (177) the first and second bars have a high tone representing the vowels /í/ and /ú/, the third bar has a downstepped high tone representing the vowel /á/, the fourth bar has a high tone representing the vowel /ú/ and the fifth bar has a falling tone representing the final vowel /î/. The high tone on the penultimate vowel is lower than that on the prefix and the stem initial vowel.

(f) Nouns with a high tone on the prefix with polysyllabic stems that have a high tone on two syllables followed by a downstepped high tone and a low tone

The noun í-βúsó⁺mááli ‘in Somalia’ has a high tone on the prefix {í} and the polysyllabic stem -βúsó⁺mááli has a high tone on the stem initial syllable and the second syllable of the stem followed by a downstepped high tone on the penultimate syllable and a low tone on the final syllable. The downstepped high tone is motivated by an unlinked low tone between two high tones that is the low tone between the second syllable of the stem and the penultimate syllable. This noun has a [H.H.H.⁺HH.L] tone pattern and has no singular or plural form. From the data in this study, only one noun has this tone pattern. (This noun is found in Appendix 2, group 23.) Example (178) shows the autosegmental representation of the tone of the noun í-βúsó⁺mááli ‘in Somalia’.

(178)

í-βúsó⁺mááli ‘in Somalia’

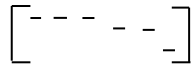


There is a high tone on the prefix, the stem initial syllable and the third syllables followed by a downstepped high tone on the penultimate syllable which has a long vowel and a low tone on the final syllable. The pitch of the penultimate syllable of the noun is slightly lower than that of the third syllable which has a high tone. The tone of the penultimate syllable is affected by the floating tone preceding it. The tonal tier has a floating low tone as seen in diagram (178). According to the OCP, the high tone on the prefix, stem initial syllable and

third syllables have been collapsed into one high tone. The tone pattern of the noun í-βúsó[†]mááli ‘in Somalia’ is collapsed into (H[†]HL). Example (179) shows the tone pattern of the noun í-βúsó[†]mááli ‘in somalia’ using the RTT.

(179)

í-βúsó[†]mááli ‘in somalia’



In example (179) the first, second and third bars have a high tone representing the vowels /í/ /ú/ and /ó/, the fourth and fifth bars have a downstepped high tone representing the long vowel /áá/ and the last bar has a low tone representing the vowel /î/.

In view of the foregoing discussion it is clear that Lwisukha nouns have thirty-nine tone patterns when uttered in isolation. In the next section the discussion is on tone patterns of nouns whose tone pattern in singular form is different from that of the plural form.

3.4 Nouns whose tone pattern in singular form is different from that of the plural form

In table 50, the noun mbòòtsò ‘opposite-sex sibling’ and à-mwàβò ‘same sex sibling’ have a low tone on all the syllables in the singular form (L). The noun à-mwàβò ‘same sex sibling’ has a similar tone pattern to the nouns in table 8 of this chapter in the singular form. In the plural form the nouns βá-βóótsò and βá-mwááβò have a different tone pattern from the singular form. These nouns have a high tone on the prefix and the stem initial syllables and a low tone on the final syllable [HL). These nouns have a similar tone pattern to nouns discussed in table 27 and 28. (These nouns are shown in bold type in Appendix 2, group 1.)

Table 50: Nouns whose tone pattern is (L) in the singular form but (HL) in the plural form

Singular		Plural	
Lwisukha	Gloss	Lwisukha	Gloss
mbòòtsò	‘opposite-sex sibling’	βá-βóótsò	‘opposite-sex siblings’
à-mwàβò	‘same sex sibling’	βá-mwááβò	‘same sex siblings’

The nouns in the singular form in table 51 have the same tone pattern with nouns in table 30 in the singular form in this chapter. However, these nouns are discussed in this section because the tone pattern of these nouns changes in the plural form. Nouns in the singular

form have a high tone on the prefix, a falling tone on the stem initial syllable and a low tone on the final syllable [H.HL.L]. The plural form nouns have a high tone on the prefix and the stem initial syllable and the final syllable has a low tone [H.HH.L]. These nouns have the same tone pattern as nouns in table 9 of this chapter and they belong to class eleven/ten as discussed in chapter 2, example 34. (These nouns are shown in bold type in Appendix 2, group 3a).

Table 51: Nouns whose tone pattern is [H.HL.L] in the singular form but changes to [H.HH.L] in the plural form

Singular		Plural	
Lwisukha	Gloss	Lwisukha	Gloss
lú-βúùsì	‘thread’	tsí-mbúúsi	‘threads’
lú-sáàlà	‘stick’	tsí-sáàlà	‘sticks’
lú-páàṅgà	‘machete’	tsí-mbááṅgà	‘machetes’
lú-xáàndà	‘belt’	tsí-xáàndà	‘belts’

The nouns in table 52 have a high tone on the prefix and the stem initial syllables and the final syllable has a falling tone pattern [H.HH.HL] in the singular form. The tone pattern changes in the plural form whereby the nouns have a high tone on the prefix, a dowstepped high tone on the stem initial syllable and a falling tone on the final syllable [H.⁺HH.HL]. Therefore, the nouns in the singular form have a similar tone pattern to the nouns in table 30. The nouns in the plural form have a similar tone pattern to nouns in table 34. (These nouns are shown in bold type in Appendix 2, group 15b).

Table 52: Nouns whose tone pattern is [H.HH.HL] in the singular form but [H.⁺HH.HL] in the plural form

Singular		Plural	
Lwisukha	Gloss	Lwisukha	Gloss
mú-fjáálâ	‘cousin’	βá- ⁺ fjáálâ	‘cousins’
mú-sjáálâ	‘cousin’ (male or female, maternal or paternal)’	βá- ⁺ sjáálâ	‘cousins’ (males or females, maternal or paternal)’

3.5 Nouns without a prefix in the singular form

In table 53, the nouns are also kinship terms that have no noun prefix in the singular form but have a noun prefix in the plural form. These nouns have a low tone on all the syllables in the singular form. The plural form has the prefix {βá} that has a high tone and the disyllabic

stems -mààmà and -tààtà have a low tone. (These nouns are shown in bold type in Appendix 2, group 1a).

Table 53: Nouns with a [LL.L] tone pattern in the singular form but have a [H.LL.L] tone pattern in the plural form

Singular		Plural	
Lwisukha	‘Gloss’	Lwisukha	‘Gloss’
mààmà	‘mother’	βá-mààmà	‘mothers’
tààtà	‘father’	βá-tààtà	‘fathers’

The nouns in table 54 are kinship terms with no noun class prefix in the singular form but have a noun class prefix {βà} in the plural form. The nouns kùùxû ‘grandmother’ and kùùkâ ‘grandfather’ in the singular form have a low tone on the first syllable and a falling tone on the final syllable. The nouns βà-kùùxû ‘grandmothers’ and βà-kùùkâ ‘grandfathers’ in the plural form have a low tone on the noun prefix, the disyllabic stems -kùùxû, and -kùùkâ have a low tone on the stem initial syllable and a falling tone on the final syllable. The nouns in the plural form have the same tone pattern with the nouns in table 11 of this chapter. (These nouns are shown in bold type in Appendix 2, group 8).

Table 54: Nouns whose tone pattern is [LL.HL] in the singular form but [L.LL.HL] in the plural form

Singular		Plural	
Lwisukha	Gloss	Lwisukha	Gloss
kùùxû	‘grandmother’	βà-kùùxû	‘grandmothers’
kùùkâ	‘grandfather’	βà-kùùkâ	‘grandfathers’

3.6 Nouns with one syllable on the prefix in the singular form but changes in the plural form

In table 55, the prefixes {lwí} and {lwá} have one syllable and represent the singular form. The prefixes {tsínz}, {tsín} and {tsínz} represent the plural form. These prefixes have a high tone. The disyllabic stems -íkà, -ímbò and -áxò have a high tone on the stem initial syllable and a low tone on the final syllable. (These nouns are found in Appendix 2, group 4b).

Table 55: Noun prefixes with one syllable in the singular but changes in the plural

Singular		Plural	
Lwisukha	Gloss	Lwisukha	Gloss
lwí-íkà	‘horn’	tsínz-íkà	‘horns’
lwí-ímbò	‘song’	tsín-ímbò	‘songs’
lwá-áxò	‘boundary, fence’	tsínz-áxò	‘boundaries, fences’

In table 55 there is a change in the phonemes in the noun prefixes tsínz and tsín in the plural form because there is an insertion of j (i.e. n+j → nj), when there's a nasal following (meinhof's law), and also n+j → nz.

3.7 Tone patterns of nouns naming people and their professions

It is important to note that most of the nouns naming people and the professions the people do have the same tone patterns. Examples of such nouns are discussed in a tabular form in this section. In the next section, the discussion is on nouns with monosyllabic and disyllabic stems.

3.7.1 Nouns with monosyllabic stem -mì that has a low tone

The nouns mwáá-mì, βáá-mì and βwáá-mì in table 56 have the same tone pattern. These nouns have a high tone on the prefixes {mwáá}, {βáá} and {βwáá}. The monosyllabic stem -mì has a low tone on the final syllable.

Table 56: Monosyllabic stem -mì with a low tone

Singular		Plural		Profession	
Lwisukha	Gloss	Lwisukha	Gloss	Lwisukha	Gloss
mwáá-mì	‘chief, leader’	βáá-mì	‘chiefs, leaders’	βwáá-mì	‘chieftaincy’

3.7.2 Nouns with a low tone on the prefix with disyllabic stem -lìmì that has a low tone

In table 57 the nouns mù-lìmì, βà-lìmì and βù-lìmì have the same tone pattern. These nouns have a low tone on the prefixes {mò}, {βà} and {βù}. The disyllabic stem -lìmì has a low tone on the stem initial syllable and the final syllable.

Table 57: Disyllabic stem -lìmì with a low tone

Singular		Plural		Profession	
Lwisukha	Gloss	Lwisukha	‘Gloss’	Lwisukha	Gloss
mù-lìmì	‘farmer’	βà-lìmì	‘farmers’	βù-lìmì	‘farming’

3.7.3 Nouns with a high tone on the prefix and the disyllabic stem -náàsì that has a falling tone and a low tone

The nouns mú-náàsì, βá-náàsì and βú-náàsì in table 58 have the same tone patterns. These nouns have a high tone on the prefixes {mú}, {βá} and {βú}. The disyllabic stem -náàsì has a falling tone on the stem initial syllable and a low tone on the final syllable.

Table 58: Disyllabic stem -náàsì with a falling tone and a low tone

Singular		Plural		Profession	
Lwisukha	Gloss	Lwisukha	Gloss	Lwisukha	Gloss
mú-náàsì	‘nurse’	βá-náàsì	‘nurses’	βú-náàsì	‘nursing profession’

The nouns mwé-tʃìtsî, βé-tʃìtsî, and βwé-tʃìtsî in table 59 have the same tone pattern. These nouns have a high tone on the prefixes {mwé}, {βé} and {βwé}. The disyllabic stem -tʃìtsî has a low tone on the stem initial syllable and a falling tone on the final syllable.

Table 59: Disyllabic stem -tʃìtsî with a low tone and a falling tone

Singular		Plural		Profession	
Lwisukha	Gloss	Lwisukha	Gloss	Lwisukha	Gloss
mwé-tʃìtsî	‘teacher’	βé-tʃìtsî	teachers’	βwé-tʃìtsî	‘teaching’

In the next section the discussion is on nouns with normal, diminutive, augmentative size, nouns that are related to each other and locative nouns in class 18 and 23. These nouns have the same tone pattern in the singular form and the plural form as discussed in the next section.

3.8 Nouns in normal, diminutive and augmentative size, nouns that are related to each other and locative nouns in class 18 and 23

The nouns discussed in this section are in normal, diminutive and augmentative size. In addition, nouns that are related to each other and locative nouns in class eighteen and twenty-three discussed. These nouns have the same tone pattern in the singular form and the plural

form when uttered in isolation. It is important to note that all the nouns discussed in section 3.8.1 to 3.8.3 are found in (Appendix 2, group 1a and 1b).

3.8.1 Nouns with a low tone on the prefix with monosyllabic stem -ndù that has a low tone

The nouns in table 60 have the same tone pattern in the normal, diminutive and augmentative size. These nouns have a low tone on the prefixes {mùù}, {xàà} and {kùù} that represent the singular form and the prefixes {βàà}, {ròò} and {mìì} that represent the plural form. The monosyllabic stem -ndù has a low tone.

Table 60: Monosyllabic stem -ndù with a low tone

Singular			Plural	
Size	Lwisukha	Gloss	Lwisukha	Gloss
Normal	mùù-ndù	‘person’	βàà-ndù	‘people’
Diminutive	xàà-ndù	‘a small person’	ròò-ndù	‘small people’
Augmentative	kòò-ndù	‘a huge person’	mìì-ndù	‘huge people’

3.8.2 Nouns with a low tone on the prefix with disyllabic stems that have a low tone

The nouns in this group have a low tone on the prefix and the disyllabic stems have a low tone on the stem initial syllable and the final syllable. In the next section the discussion is on nouns with disyllabic stem -βànù that has a low tone. All the nouns discussed in this section are found in (Appendix 2, group 1a).

(i) Nouns with disyllabic stem -βànù with a low tone

In table 61 the nouns have the same tone pattern in the normal, diminutive and augmentative size. These nouns have a low tone on the prefix and the disyllabic stem -βànù has a low tone. The prefixes {mù}, {xà} and {kù} represent the singular form and the prefixes {βà}, {rò} and {mì} represent the plural form. The disyllabic stem -βànù also has a low tone.

Table 61: Disyllabic stem -βànú with a low tone

Singular			Plural	
Size	Lwisukha	Gloss	Lwisukha	Gloss
Normal	mù-βànú	‘knife’	mì-βànú	‘knives’
Diminutive	xà-βànú	‘a small knife’	rò-βànú	‘small knives’
Augmentative	kù-βànú	‘a big knife’	mì-βànú	‘big knives’

(ii) Nouns with disyllabic stem -lòt̥f̥i that has a low tone

The nouns in table 62 have a low tone on the prefixes {mò}, {xà} and {kù} that represent the singular form and the prefixes {βà}, {rò} and {mì} that represent the plural form. The disyllabic stem -lòt̥f̥i has a low tone on the stem initial syllable and the final syllable.

Table 62: Disyllabic stem -lòt̥f̥i with a low tone

Singular			Plural	
Size	Lwisukha	Gloss	Lwisukha	Gloss
Normal	mù-lòt̥f̥i	‘witch’	βà-lòt̥f̥i	‘witches’
Diminutive	xà-lòt̥f̥i	‘a small witch’	rò-lòt̥f̥i	‘small witches’
Augmentative	kù-lòt̥f̥i	‘a big witch’	mì-lòt̥f̥i	‘big witches’

(iii) Nouns with disyllabic stem -hòòndò that has a low tone

The nouns in table 63 have a low tone on the prefixes {lì}, {xà} and {kù} that represent the singular form and the prefixes {mà}, {rò} and {mì} that represent the plural form. The disyllabic stem -hòòndò has a low tone on the stem initial syllable and the final syllable.

Table 63: Disyllabic stem -hòòndò with a low tone

Singular			Plural	
Size	Lwisukha	Gloss	Lwisukha	Gloss
Normal	lì-hòòndò	‘pumpkin’	mà-hòòndò	‘pumpkins’
Diminutive	xà-hòòndò	‘a small pumpkin’	rò-hòòndò	‘small pumpkins’
Augmentative	kù-hòòndò	‘a big pumpkin’	mì-hòòndò	‘big pumpkins’

(iv) Nouns with disyllabic stem -fùljà that has a low tone

The nouns in table 64 have a low tone the prefixes {fì}, {xà} and {kù} that represent the singular form and the prefixes {βì}, {rò} and {mì} that represent the plural form. The disyllabic stem -fùljà has a low tone on the stem initial syllable and a low tone on the final syllable.

Table 64: Disyllabic stem -fùljà with a low tone

Singular			Plural	
Size	Lwisukha	Gloss	Lwisukha	Gloss
Normal	fì-fùljà	‘cooking pan’	βì-fùljà	‘cooking pans’
Diminutive	xà-fùljà	‘a small cooking pan’	rò-fùljà	‘small cooking pans’
Augmentative	kù-fùljà	‘a big cooking pan’	mì-fùljà	‘big cooking pans’

(v) Nouns with disyllabic stem -tʃinà that has a low tone

In table 65 the nouns have a low tone on the prefixes {lì}, {xà} and {kù} that represent the singular form and the prefixes {mà}, {rò} and {mì} that represent the plural form. The disyllabic stem -tʃinà also has a low tone on the stem initial syllable and the final syllable.

Table 65: Disyllabic stem -tʃinà with a low tone

Singular			Plural	
Size	Lwisukha	Gloss	Lwisukha	Gloss
Normal	lì-tʃinà	‘stone’	mà-tʃinà	‘stones’
Diminutive	xà-tʃinà	‘a small stone’	rò-tʃinà	‘small stones’
Augmentative	kù-tʃinà	‘a big stone’	mì-tʃinà	‘big stones’

(vi) Nouns with disyllabic stem -βìrì that has a low tone

In table 66, the nouns have a low tone on the prefixes {mù}, {xà} and {kù} that represent the singular form and the prefixes {mì}, {rò} and {kù} that represent the plural form. The disyllabic stem -βìrì also has a low tone on the stem initial syllable and the final syllable.

Table 66: Disyllabic stem -βìrì with a low tone

Singular			Plural	
Size	Lwisukha	Gloss	Lwisukha	Gloss
Normal	mù-βìrì	‘body’	mì-βìrì	‘bodies’
Diminutive	xà-βìrì	‘a small body’	rò-βìrì	‘small bodies’
Augmentative	kù-βìrì	‘a big body’	mì-βìrì	‘big bodies’

(vii) Nouns with disyllabic stem -ηòrì with a low tone

The nouns in table 67 have a low tone on the prefixes {lì}, {xà}, {kù} and {mwì} that represent the singular form and the prefixes {ma}, {rò}, {mì} and {mùmà} that represent the plural form. The disyllabic stem -ηòrì has a low tone on the stem initial syllable and a low tone on the final syllable.

Table 67: Disyllabic stem -ηòrì with a low tone

Singular			Plural	
	Lwisukha	Gloss	Lwisukha	Gloss
Normal	lì-ηòrì	‘neck’	mà-ηòrì	‘necks’
Diminutive	xà-ηòrì	‘a small neck’	rò-ηòrì	‘small necks’
Augmentative	kù-ηòrì	‘a big neck’	mì-ηòrì	‘big necks’
Location	mwì-ηòrì	‘inside the neck’	mùmà-ηòrì	‘inside the necks’

(viii) Nouns with disyllabic stem -híkà that has a high and low tone

In table 68, the nouns have a low tone on the prefixes {lì}, {xà} and {kù} that represent the singular form and the prefixes {ma}, {rò} and {mì} that represent the plural form. The disyllabic stem -híkà has a high tone on the stem initial syllable and a low tone on the final syllable.

Table 68: Disyllabic stem -híkà with a high and low tone

Singular			Plural	
Size	Lwisukha	Gloss	Lwisukha	Gloss
Normal	lì-híkà	‘cooking stone’	mà-híkà	‘cooking stones’
Diminutive	xà-híkà	‘a small cooking stone’	rò-híkà	‘small cooking stones’
Augmentative	kù-híkà	‘a big cooking stone’	mì-híkà	‘big cooking stones’

3.8.3 Nouns with a low tone on the prefix with trisyllabic stem -lùkùlò that has a low tone

In table 69, the nouns ì-lùkùlò and mù-lùkùlò have a low tone on all the syllables. The prefixes {ì} and {mù} have a low tone. The trisyllabic stem -lùkùlò has a low tone on all the syllables.

Table 69: Trisyllabic stem -lùkùlò with a low tone on all the syllables

Lwisukha	Gloss
ì-lùkùlò	‘in/ at/ to the city’
mù-lùkùlò	‘in the city’

The noun lùkùlò ‘city’ is related to the nouns in table 69 but has no noun class prefix. This noun has also a low tone on all the syllables.

3.8.4 Nouns with a high tone on the prefix with disyllabic stems that have a high and low tone

The nouns in this section have a high tone on the prefix and the disyllabic stems have a high tone on the stem initial syllable and a low tone on the final syllable.

(i) Nouns with monosyllabic stem -nà that has a low tone

In table 70, the nouns have a high tone on the prefixes {mwáá}, {xáá} and {kwáá} that represent the singular form and the prefixes {βáá}, {rwáá} and {mjáá} that represent the plural form. The monosyllabic stem -nà has a low tone on the final syllable.

Table 70: Monosyllabic stem -nà with a low tone

Singular			Plural	
Size	Lwisukha	Gloss	Lwisukha	Gloss
Normal	mwáá-nà	‘child’	βáá-nà	‘children’
Diminutive	xáá-ná	‘a small child’	rwáá-nà	‘small children’
Augmentative	kwáá-nà	‘a big child’	mjáá-nà	‘big children’

The noun lwáá-nà ‘childishness’ has a high tone on the prefix {lwáá}. The monosyllabic stem -nà has a low tone on the final syllable. This noun has no singular or plural form. This noun is related to the nouns in table 70 and also has a similar tone pattern with the nouns.

(ii) Nouns with monosyllabic stem -nì that has a low tone

In table 71 the nouns mwóó-nì ‘sinner’ and βóó-nì ‘sinners’ have the the prefix {mwóó} that represents the singular form while the prefix {βóó} represents the plural form. These prefixes have a high tone. These nouns have the monosyllabic stem -nì that has a low tone on the final syllable.

Table 71: Disyllabic stem -nì with a low tone

Singular		Plural	
Lwisukha	Gloss	Lwisukha	Gloss
mwóó-nì	‘sinner’	βóó-nì	‘sinners’

The noun βwóó-nì ‘sin’ is related to the nouns in table 71. This noun has a similar tone pattern to the nouns mwóó-nì ‘sinner’ and βóó-nì ‘sinners’. This noun βwóó-nì has prefix {βwóó} that has a high tone. The monosyllabic stem -nì has a low tone on the final yllable. This noun is used in the singular form and the plural form.

(iii) Nouns with disyllabic stem -xónò that has a high and a low tone

Nouns in table 72 have a high tone on the prefixes {mù}, {xà} and {kù} that represent the singular form while the prefixes {mí}, {ró} and {mí} represent the plural form. The disyllabic stem -xónò has a high tone on the stem initial syllable and a low tone on the final syllable.

Table 72: Disyllabic stem -xónò with a high and a low tone

Singular			Plural	
Size	Lwisukha	Gloss	Lwisukha	Gloss
Normal	mú-xónò	‘hand’	mí-xónò	‘hands’
Diminutive	xá-xónò	‘a small hand’	ró-xónò	‘small hands’
Augmentative	kú-xónò	‘a big hand’	mí-xónò	‘big hands’

(iv) Nouns with disyllabic stem -térì that has a high and low tone

Nouns in table 73 have prefixes {fí}, {xá} and {kú} that represent the singular form while the prefixes {bí}, {ró} and {mí} represent the plural form. The prefixes have a high tone. The disyllabic stem -térì has a high tone on the stem initial syllable and a low tone on the final syllable.

Table 73: Disyllabic stem -térì with a high and low tone

Singular			Plural	
Size	Lwisukha	Gloss	Lwisukha	Gloss
Normal	fí-térì	‘bed’	bí-térì	‘beds’
Diminutive	xá-térì	‘a small bed’	ró-térì	‘small beds’
Augmentative	kú-térì	‘a big bed’	mí-térì	‘big beds’

(v) Nouns with disyllabic stem -xáli that has a high and low tone

Nouns in table 74 have a high tone on the prefixes {mú}, {xá}, {kú} and {βú} that represent the singular form and the prefix {βá}, {ró}, {mí} and {tsí} represent the plural form. The disyllabic stem -xáli has a high tone on the stem initial syllable and low tone on the final syllable.

Table 74: Disyllabic stem -xáli with a high and low tone

Singular			Plural	
Size	Lwisukha	Gloss	Lwisukha	Gloss
Normal	mú-xáli	‘wife, woman’	βá-xáli	‘wives, women’
Diminutive	xá-xáli	‘a small wife, woman’	ró-xáli	‘small wives, women’
Augmentative	kú-xáli	‘a big wife, woman’	mí-xáli	‘big wives, women’

The noun *lú-xáli* ‘marriage’ and *tsí-xáli* ‘marriages’ are related to the nouns in table 74 and have a similar tone pattern. The other noun, related to the nouns in table 74 is *βú-xáli* ‘marriage’. This noun has a high tone on the prefix {βú} and the disyllabic stem -xáli has a high tone on the stem initial syllable and a low tone on the final syllable. This noun has no singular form or plural form.

3.8.5 Nouns with a high tone on the prefix with disyllabic stems that have a falling tone and a low tone

Nouns in this section have a high tone on the prefix and the disyllabic stems have a falling tone on the stem initial syllable and low tone on the final syllable. In the next section the discussion is on nouns with a high tone on the prefix and the disyllabic stem -βéèrè. The nouns in this section are found in (Appendix 2 group 3a and 3b).

(i) Nouns with a high tone on the prefix and the disyllabic stem -βéèrè has a falling tone and low tone

Nouns in table 75 have prefixes {lú}, {xá} and {kú} that represent the singular form while the prefixes {tsí}, {ró} and {mí} represent the plural form. The disyllabic stem -βéèrè has a falling tone on the stem initial syllable and a low tone on the final syllable.

Table 75: Disyllabic stem -βéèrè with a falling tone and a low tone

Singular			Plural	
Size	Lwisukha	Gloss	Lwisukha	Gloss
Normal	<i>lú-βéèrè</i>	‘breast’	<i>tsí-mbéèrè</i>	‘breasts’
Diminutive	<i>xá-βéèrè</i>	‘a small breast’	<i>ró-βéèrè</i>	‘small breasts’
Augmentative	<i>kú-βéèrè</i>	‘a big breast’	<i>mí-βéèrè</i>	‘big breasts’

The noun *má-βéèrè* is related to the nouns in table 75 and also has a similar tone pattern, [H.HL.L] to these nouns. This noun has a high tone on the prefix {má} and the disyllabic stem -βéèrè has a falling tone on the stem initial syllable and a low tone on the final syllable.

(ii) Nouns with a high tone on the prefix and disyllabic stem -sáàlà that has a falling tone and a low tone

The nouns in table 76 have a high tone the prefixes {mu}, {xá} and {kú} that represent the singular form and the prefix {mí} and {ró} that represent the plural form. The disyllabic stem -sáàlà has a falling tone on the stem initial syllable and a low tone on the final syllable.

Table 76: Disyllabic stem -sáàlà with a falling tone and a low tone

Singular			Plural	
Size	Lwisukha	Gloss	Lwisukha	Gloss
Normal	mú-sáàlà	‘tree, stick’	mí-sáàlà	‘trees’
Diminutive	xá-sáàlà	‘a small tree’	rú-sáàlà	‘small trees’
Augmentative	kú-sáàla	‘a big tree’	mí-sáàlà	‘big trees’

3.8.6 Nouns with a high tone on the prefix with trisyllabic stem -tsùxùlù that has a low tone on all the syllables

Nouns in table 77 have a high tone on the prefixes {mwí}, {ǰí} and {kwí} that represent the singular form and the prefixes {βí}, {rwí} and {mí} that represent the plural form. The trisyllabic stem -tsùxùlù has a low tone on all the syllables. (These nouns are found in Appendix 2, group 4b).

Table 77: Trisyllabic stem -tsùxùlù with a low tone on all the syllables

Singular			Plural	
Size	Lwisukha	Gloss	Lwisukha	Gloss
Normal	mwí-tsùxùlù	‘grandchild’	βí-tsùxùlù	‘grandchildren’
Diminutive	ǰí-tsùxùlù	‘a small grandchild’	rwí-tsùxùlù	‘small grandchildren’
Augmentative	kwí-tsùxùlù	‘a big grandchild’	mí-tsùxùlù	‘big grandchildren’

3.9 Conclusion

This chapter set out to identify tonal patterns displayed by Lwisukha nouns uttered in isolation. In total thirty-nine tone patterns have been identified. In section 3.2, the common core of which is a low tone on the prefix, fourteen tone patterns have been identified: three of them, namely L.L, L.L.L (L) and L.HL (LHL), are associated with monosyllabic stems; four, namely L.L.L (L), L.H.L, L.LL.HL (LHL), and L.H.⁺H (LH⁺H), are associated with disyllabic stems; six, namely L.L.L.L (L), L.H.L.L, L.HH.L.L, L.H.LL.L (LHL), L.H.LL.HL (LHLHL), and L.H.⁺HH.L (LH⁺HL), are associated with trisyllabic stems; while only one, L.L.L.L.L (L), is associated with other polysyllabic stems. The tone patterns of nouns when OCP is applied are indicated in brackets. Using the OCP application, the tone patterns of Lwisukha nouns that start with a low tone on the prefix are summarized into five tone patterns as follows: L, LHL, LH⁺H, LHLHL, and LH⁺HL.

In section 3.3, the common basis of which is a high tone on the prefix, thirty tone patterns of Lwisukha nouns have been identified: three of them, HH.L, H.HL (HL) and H.⁺H (H⁺H), are associated with monosyllabic stems; twelve, H.L.L, HH.L.L, H.H.L, H.HH.L, H.H.HL, H.HL.L (HL), H.L.HL (HLHL), H⁺.H.LL (H⁺HL), H⁺.H.H (H⁺H), H.⁺H.HL, H.⁺HH.HL (H⁺HL) and H.⁺HH.⁺H (H⁺H⁺H), are associated with disyllabic stems; nine, H.L.L.L, H.H.L.L (HL), H.HL.L.HL, H.HL.H.L (HLHL), H.⁺H.H.L, H.H.⁺HH.L, H.⁺HH.H.HL, H.H.⁺HH.HL (H⁺HL) and H.H.⁺HH.⁺H (H⁺H⁺H), are associated with trisyllabic stems; six, H.H.H.LL.L, H.H.L.L.L, H.H.HL.L.L (HL), H.H.⁺H.H.L, H.H⁺H.H.HL and H.H.H.⁺HH.L (H⁺HL), are associated with other polysyllabic stems. The tone patterns of nouns when the OCP is applied are indicated in brackets. Using OCP application, the tone patterns of Lwisukha nouns that start with a high tone on the prefix are summarized into five tone patterns as follows: HL, HLHL, H⁺H, H⁺HL and H⁺H⁺H.

Table 78 summarizes the collapsed tone patterns of nouns uttered in isolation discussed in this chapter. The collapsed tone patterns for the nouns that start with a low tone pattern on the prefix are discussed on the left hand side of the table (i.e. five tone patterns) and the collapsed tone patterns for the nouns that start with a high tone on the prefix are discussed on the right hand side (i.e. five tone patterns). Therefore, the collapsed tone patterns of nouns uttered in isolation are ten.

Table 78: Collapsed tone patterns of nouns in isolation

Nouns with a low tone on the prefix	Nouns with a high tone on the prefix
L	HL
LHL	HLHL
LH ⁺ H	H ⁺ H
LHLHL	H ⁺ HL
LH ⁺ HL	H ⁺ H ⁺ H

It was observed that majority of Lwisukha nouns start with a high tone on the prefix and end with a low tone. Majority of the nouns (30 out of the 44) were found to have a high tone on the prefix and (14 out of the 44) have a low tone on the prefix. On the other hand, (27 of the 44) end in a low tone, 11 in a falling tone, 4 in a downstepped high tone, and only 2 end in a high tone. Therefore, a majority of Lwisukha nouns end with a low tone uttered in isolation. Further, both level and contour tones were identified. The level tones consist of low, high and downstepped high tones. In most cases the downstepped high tone occurs on the first syllable of the stem. Some nouns were found to have two downstepped high tones, both on the penultimate syllable and the final syllable of the stem. Regarding contour tones, only the falling tone was found.

The falling tone is mostly found on the stem initial syllable of the nouns. There are 76 nouns from the data in this study with a falling tone on the stem initial syllable. The falling tone is also found on the final syllable. There are 27 nouns, from the data in this study with a falling tone on the final syllable. (See examples in Appendix 2). There were only 2 nouns í-βúmèèrèkà ‘in Europe’ and í-βútânzànà ‘in Tanzania’ where the falling tone is found on the second syllable of the stem.

In this study, it was also found out that the falling tone is mostly found on a short vowel rather than a long vowel. There are 77 nouns, from the data in this study, with a falling tone on a short vowel and there are 70 nouns, with a falling tone on a long vowel. It was also observed that the falling tone on short vowels is mostly found on the final syllable rather than the stem initial syllable. There are 70 nouns with the falling tone, on the final syllable, on a short vowel. (See examples in Appendix 2, group five, six, eight, eleven, twelve, sixteen and seventeen). There are six nouns with the falling tone, on the stem initial syllable, on a short vowel. (These nouns are found in Appendix 2, group nine.) There was only one noun, βútààmàànù ‘problem’ with two falling tones. (This noun is found in Appendix 2, group 10.)

As already mentioned the downstepped high tone is also found in Lwisukha. The downstepped high tone is mostly found on the stem initial syllable of the stem rather than the second syllable of the stem. However, we have some nouns that have two downstepped high tones that is on the stem initial syllable and on the second syllable of the stem. The downstepped high tone is mostly found on nouns with disyllabic stems, trisyllabic stems and other polysyllabic stems rather than on nouns with monosyllabic stems.

It was also observed that most of the nouns have the same tone pattern both in the singular and plural forms except for a few nouns like nouns in table 60, 61 and 62 in section 3.4 that have a different tone pattern in the singular form and the plural form. Nouns without a noun prefix in the singular form but have a noun prefix in the plural form also have a tone pattern in the singular form that is different from the plural form. These nouns are found in section 3.5 in table 63 and 64.

Some tones were found to occur only in one noun for example group fourteen, twenty-two and twenty-three in (Appendix 2). They were still said to form a pattern, which, on the face of it, may seem surprising, because there is possibility that there are more such words in Lwisukha, which happened not to be part of the sample of 508 nouns collected for the present patterns of study. This means that further research into the tone patterns of Lwisukha is necessary. This could be part of a comparative research that would involve other, neighbouring Luyia dialects, starting with Lwitakho, which, going by Itebete's (1974:89) observation (as mentioned earlier in chapter one), differs from Lwisukha in tone and vowel length.

It is important to note that most of the nouns naming people and their professions have the same tone patterns in both singular and plural forms uttered in isolation. Nouns in normal, diminutive and augmentative size, nouns that are related to each other and locative nouns in class eighteen also have similar tone patterns in the singular form and the plural form uttered in isolation.

From the data in our study, it is clear that the largest group is that of nouns with a low tone on all the syllables. This group has 158 nouns. (See Appendix 2, group one). The second largest group is that of nouns with a high tone on the noun class prefix and the stem initial syllable and the rest of the syllables with a low tone. This group has 122 nouns. (See Appendix 2, group two). The third largest group is that of nouns with a high tone on the prefix and a

falling tone on the stem initial syllable and a low tone on the rest of the syllables. This group has 61 nouns. (See Appendix 2, group three). All the groups in this study are twenty-three and are found in Appendix 2. Appendix 2 has the 508 nouns that were uttered in isolation. These are the nouns analyzed in this study that revealed the forty-four tone patterns discussed in this chapter.

CHAPTER FOUR

TONAL RULES AND TONAL PATTERNS OF LWISUKHA NOUNS IN PHRASAL CONTEXTS

4.1 Introduction

In the previous chapter, the tonal patterns of nouns when uttered in isolation were discussed. Nouns were analyzed by investigating their syllable profile, that is, nouns with monosyllabic, disyllabic, trisyllabic and other polysyllabic stems. In this chapter, tonal patterns of Lwisukha nouns in phrasal contexts are discussed by analyzing nouns in different phrasal environments that is nouns and adjectives, numerals, possessive pronouns, demonstratives and quantifiers. Nouns and adjectives that have a high tone are discussed first followed by nouns and adjectives that are toneless. Nouns and numerals that have a high tone and nouns and numerals that are toneless have also been discussed. In addition, nouns with proximal, distal and remote demonstratives are discussed and nouns with possessive pronouns mine, ours, yours, his/hers and theirs. Lastly nouns with quantifiers any, some, few or little are discussed. When these nouns are analyzed in different phrasal environments two rules are applied, the high tone anticipation rule, (HTA) and the high tone insertion rule, (HTI). However, in some noun phrases the high tone anticipation and high tone insertion rules are not triggered. The autosegmental phonology theory and its extension the register tier theory guided this study.

4.2 High tone anticipation rule

Marlo & Odden (2019:155) say that the high tone in Bantu (hence Lwisukha) is quite mobile, meaning that it frequently shifts or spreads. The high tone can either move to the left or the right. The leftward spread of a high tone is known as the high tone anticipation. High tone anticipation means the right to left spread of a high tone to toneless syllables. Modifiers that trigger high tone anticipation include adjectives and numerals with a high tone. The high tone on the adjective or numeral spreads left to the toneless syllables (Marlo & Steimel 2015:9). According to Kissberth and Odden (2003) and Marlo and Odden in Van de Veld et al (2019), the leftward spreading of a high tone is rare in Bantu languages. Most Bantu languages have the rightward spreading of a high tone rather than the leftward spreading.

The explanation for the fact that rightward spreading is more common and leftward spreading is less common is that phonetic considerations generally favour rightward spreading. Doubling is really common because of the phonetic pattern of "peak delay", where the pitch

peak of a high tone is reached toward the end of a syllable and often tends to spill into the next syllable. Those are the phonetic seeds for phonological doubling, that is rightward spreading. Leftward spreading sometimes has to do with a high tone avoiding the final position, or spreading into the penult from the final position. Sometimes leftward spread sounds like "peak delay" in the sense that there is a crescendo (gradual rise in pitch up to the pitch peak), Yip (2002).

In this study the discussion is on leftward spreading of a high tone that is high tone anticipation in Lwisukha noun phrases. In this chapter, the part with high tone spreading is underlined. In section 4.3 high tone anticipation is discussed in toneless nouns with an adjective that has a high tone.

4.3 High tone anticipation in toneless nouns with an adjective that has a high tone

All the examples discussed in this section show high tone anticipation in toneless nouns with descriptive adjectives that have a high tone. The adjectives discussed have the stems -lèji 'good', -káli/ŋgáli 'big', -sílò 'stupid', -áβù 'light skinned person, white, clean', -tǒfèli 'clever', -tǒjǐngà 'foolish', -mwáámû 'dark skinned, black', -rààm̀bì 'tall, long', -táámáánû 'bad' and -tǒfáá⁺fú 'dirty'. All the adjectives discussed in this section have a high tone on the stem initial syllable that spreads leftwards to the toneless syllables. The nouns discussed have a low tone on all the syllables uttered in isolation. In the phrase context form, the same nouns have a high tone on all the syllables. This means that all the nouns discussed in this section are underlyingly toneless.

When an adjective with a high tone follows a noun with a low tone, it may or may not spread its high tone leftwards to the noun. This means that some low tones seem to be displaced while others remain stable. Tone has been found to be stable since, in most cases when a segment is deleted, the tone associated with it is not deleted. This is known as tone stability (Yip 2002:67). This phenomenon seems to apply to some Lwisukha nouns with low tones and not other ones with similar tones. When HTA applies and displaces low tones in one noun and does not apply to another one with a similar tone, there must be some level at which there are low tones. To differentiate the two sets of nouns with a low tone in the citation form, the nouns or syllables that accommodate HTA rule are analysed as being toneless underlyingly and having a low tone on the surface; while the nouns or syllables that do not allow HTA to apply are analysed as having a low tone on the surface and

underlyingly. It is as a result of this analysis that some Lwisukha nouns are referred to as being toneless. The next section discusses high tone anticipation in toneless nouns with the descriptive adjective -léjì which means good.

4.3.1 High tone anticipation in toneless nouns with adjective -léjì ‘good’

In this section the nouns in isolation surface with a low tone on all the syllables but in the phrase context form the same nouns have a high tone on all the syllables. As discussed above in section 4.3, this means that on the surface these nouns have a low tone on all the syllables but underlyingly these nouns are toneless. The symbol Ø means toneless. The descriptive adjectives mú-léjì, lí-léjì and má-léjì ‘good’ have a [H.H.L] tone pattern when uttered in isolation and in the phrase context form. All the adjective prefixes have a low tone uttered in isolation. In the noun phrases in example (180) the high tone on the stem initial syllable of the adjective spreads leftwards to the toneless syllable of the adjective prefix up to the toneless syllables of the nouns. Example (180) shows high tone anticipation in toneless nouns and the adjective -léjì which means good.

(180) High tone anticipation in Ø nouns with adjective -léjì ‘good’

Ø nouns	Gloss	N + /H/ adjective	Gloss
nìnà	‘mother’	<u>níná</u> mú-léjì	‘a good mother’
mù-lìmì	‘farmer’	<u>mú-límí</u> mú-léjì	‘a good farmer’
lì-hòòndò	‘pumpkin’	<u>lí-hóóndó</u> lí-léjì	‘a good pumpkin’
mà-hàngàrí	‘arguments’	<u>má-hàngárí</u> má-léjì	‘good arguments’

The diagram in (181) (a) shows the autosegmental representation of the tone pattern of lì-hòòndò ‘pumpkin’ as shown in example (180). This noun has a low tone on all the syllables when uttered in isolation but is underlyingly toneless. The adjective lí-léjì ‘good’ surfaces with a high tone on the prefix and the stem initial syllable and a low tone on the final syllable [H.H.L] when uttered in isolation and in the phrase context as shown in diagram (181) (b).

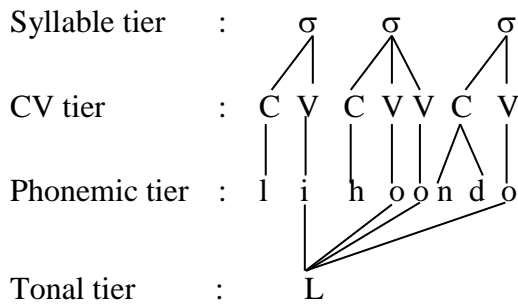
The diagram in (181) (c) (i) shows delinking of a low tone on the noun lì-hòòndò ‘pumpkin’ and on the adjective prefix lì. The symbol \neq is used to show delinking. The diagram in (181) (c) (ii) shows reassociation. The broken lines \dagger mean reassociation. The broken lines are used to show that the low tone on the noun lì-hòòndò ‘pumpkin’ and the adjective prefix lì do not remain stable. The low tones on the noun and the adjective prefix are therefore replaced with

a high tone on all the syllables as shown in diagram (181) (c) (iii). The low tone remains floating in (181) (c) (ii) and does not get anchored to any vowel hence it is deleted as shown in (181) (c) (iii).

The diagram in (181) (c) (iii) shows high tone anticipation. The high tone on the stem initial syllable on the adjective lí-léjì ‘good’ spreads leftwards to the adjective prefix lí and up to the noun lí-hóóndó ‘pumpkin’. In this diagram OCP has been applied. Consecutive high tones exist because of the word boundary between the two words (i.e. lí-hóóndó and lí-léjì). Therefore, the diagram in (181) (c) (iii) is the final autosegmental representation and not the diagram in (181) (c) (ii).

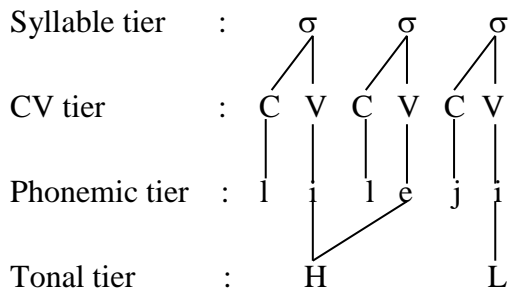
(181) (a)

lí-hòóndò ‘pumpkin’



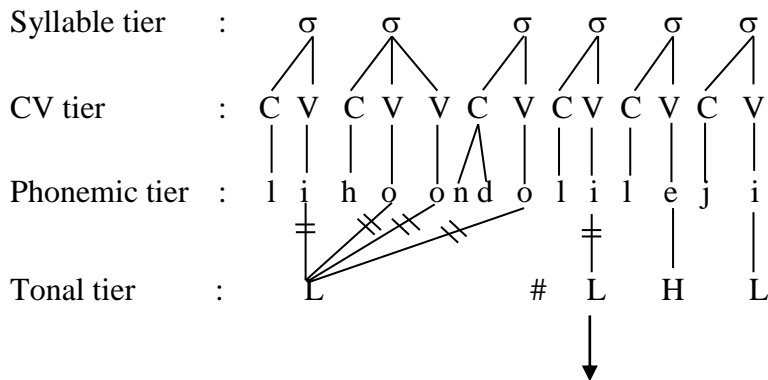
(181) (b)

lí-léjì ‘good’



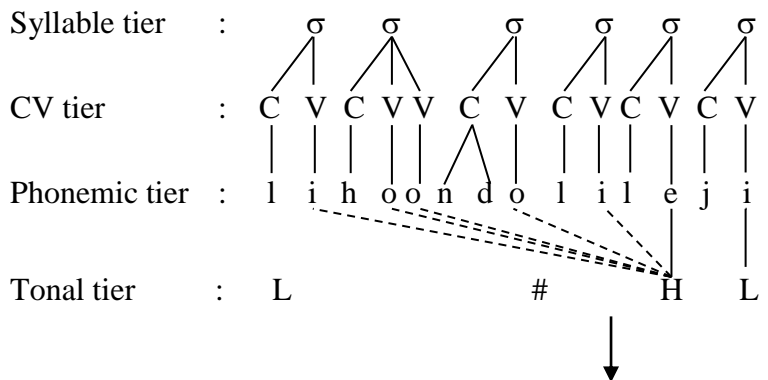
(181) (c) (i)

lí-hóondó lí-léjì ‘a good pumpkin’



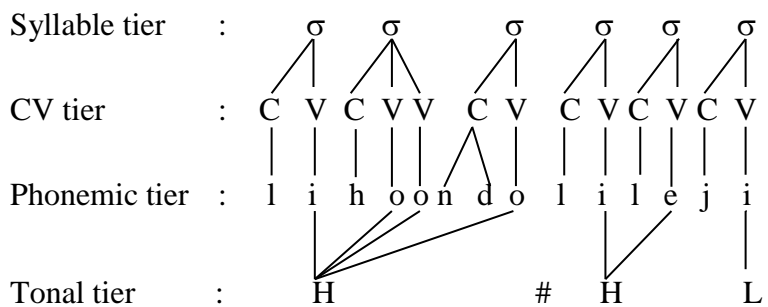
(181) (c) (ii)

lí-hóondó lí-léjì ‘a good pumpkin’



(181) (c) (iii)

lí-hóondó lí-léjì ‘a good pumpkin’



Example (182) (i) shows the tone pattern of lí-hòondò ‘pumpkin’. This noun has a low tone on all the syllables when uttered in isolation while in the phrase context form this noun has a high tone on all the syllables as shown in example (182) (iii). Diagram (182) (ii) shows the tone pattern of the descriptive adjective lí-léjì ‘good’. This adjective has a high tone on the prefix and the stem initial syllable and a low tone on the final syllable when uttered in

isolation and in the phrase context form as shown in example (182) (ii) and (182) (iii). Finally, example (182) (iii) shows the tone pattern of the noun phrase lí-hóóndó lí-léjì ‘a good pumpkin’. In this noun phrase, the high tone on the stem initial syllable on the adjective lí-léjì ‘good’ spreads leftwards to the adjective prefix lí then up to the noun lí-hóóndó ‘pumpkin’. The tone patterns of the noun lí-hóóndó ‘pumpkin’, the adjective lí-léjì ‘good’ and the noun phrase lí-hóóndó lí-léjì ‘a good pumpkin’ are illustrated in (182) (i), (ii), (iii) using RTT formalisms.

(182) (i) lí-hóóndó ‘pumpkin’

[— — —]

(182) (ii) lí-léjì ‘good’

[— —]

(182) (iii) lí-hóóndó lí-léjì ‘a good pumpkin’

[— — — — —]

From the noun phrases discussed in this section, it is seen that the high tone on the adjectives has influenced the low tone hence dislodging it from the adjectives prefix and the noun. In this set of examples, it is not clear where the low tone goes to because it is completely replaced by the high tone. The low tone does not remain stable when it is delinked from the elements on the CV and phonemic tiers. It gets deleted. That is why it is suspected that the nouns in example (180) are underlyingly toneless.

4.3.2 High tone anticipation in toneless nouns with adjective -ngáli/-káli ‘big’

In example (183), the nouns in isolation surface with a low tone on all the syllables. In the phrasal form the noun is modified by the agreeing form of the adjective -ngáli/-káli ‘big’. In each of these phrasal forms the noun surfaces with a high tone on all the syllables, followed by the adjective, which has a high tone on the adjective prefix and the stem initial syllable and a low tone on the word-final syllable [H.H.L]. In the phrasal forms, the nouns surface with a high tone because the high tone on the stem initial syllable of the adjective spreads left

across toneless syllable on the adjective prefix and the nouns. Example (183) shows high tone anticipation in toneless nouns and the adjective -*ngáli/-káli* which means big.

(183) High tone anticipation in Ø nouns with adjective -*ngáli/-káli* ‘big’

Ø nouns	Gloss	N + /H/ adjective	Gloss
<i>ì-ndà</i>	‘stomach’	<u><i>í-ndá í-ngáli</i></u>	‘a big stomach’
<i>tsìi-njì</i>	‘flies’	<u><i>tsíi-njí tsí-ngáli</i></u>	‘big flies’
<i>mù-kòòngò</i>	‘back’	<u><i>mú-kóóngó mú-káli</i></u>	‘a big back’
<i>ǰì-ròrèrò</i>	‘mirror’	<u><i>ǰì-róréró ǰì-káli</i></u>	‘a big mirror’

4.3.3 High tone anticipation in toneless nouns with adjective -*sílò* ‘stupid’

The nouns in example (184), surface with a low tone on all the syllables in isolation. Alongside each noun in isolation is the noun modified by the agreeing form of the adjective -*sílò* ‘stupid’. In each of these phrasal forms, the noun surfaces with a high tone on all the syllables, followed by an adjective that has a high tone on the adjective prefix and the stem initial syllable and a low tone on the final syllable [H.H.L]. In the phrasal form the nouns surface with a high tone on all the syllables because the high tone on the stem initial syllable of the adjective spreads across the toneless syllable on the adjective prefix and the nouns. Example (184) shows high tone anticipation in toneless nouns and the adjective -*sílò* which means stupid.

(184) High tone anticipation in Ø nouns with adjective -*sílò* ‘stupid’

Ø nouns	Gloss	N + /H/ adjective	Gloss
<i>ì-njì</i>	‘fly’	<u><i>í-njí í-sílò</i></u>	‘a stupid fly’
<i>mù-ndù</i>	‘person’	<u><i>mú-ndú mú-sílò</i></u>	‘a stupid person’
<i>mù-sòòmì</i>	‘student’	<u><i>mú-sóómí mú-sílò</i></u>	‘a stupid student’

4.3.4 High tone anticipation in toneless nouns with adjective -*láβù/-dáβù* ‘a light skinned person, white, clean’

In example (185), the nouns in isolation surface with a low tone on all the syllables. These nouns are in the phrasal form with the adjective *láβù/-dáβù* ‘a light skinned person, white or clean’. The nouns surface with a high tone on all the syllables, followed by the adjective which has a high tone on the adjective prefix and the stem initial syllable and a low tone on the final syllable [H.H.L]. The nouns surface with a high tone on all the syllables in the

phrasal form because the high tone on the stem initial syllable of the adjective spreads across the toneless syllable of the adjective prefix and the nouns.

(185) HTA in Ø nouns with adjective -láβù/-dáβù ‘a light skinned, white, clean’

Ø nouns	Gloss	N + /H/ adjective	Gloss
mùù-ndù	‘person’	<u>múú-ndú</u> mú-láβù	‘a light skinned person’
ì-ηγùβù	‘cloth’	<u>í-ηγùβú</u> ín-dáβù	‘a white, clean cloth’
ì-ròòηò	‘trouser’	<u>í-róóηó</u> ín-dáβù	‘white, clean trousers’

4.3.5 High tone anticipation in toneless nouns with adjective -tǿlí ‘clever’

The nouns in isolation in example (186) surface with a low tone on all the syllables. Alongside each noun in isolation is the adjective -tǿlí ‘clever’. In each of these phrasal forms, the noun surfaces with a high tone on all the syllables, followed by the adjective which has a high tone on the adjective prefix and the stem initial syllable and a low tone on the final syllable [H.H.L]. In the phrasal form the nouns surface with a high tone on all the syllables because the high tone on the stem initial syllable of the adjective spreads across the toneless syllable of the adjective prefix and the nouns. In example (186) high tone anticipation is shown in toneless nouns and the adjective -tǿlí which means clever.

(186) High tone anticipation in Ø nouns with adjective -tǿlí ‘clever’

Ø nouns	Gloss	N + /H/ adjective	Gloss
mùù-ndù	‘person’	<u>múú-ndú</u> mú-tǿlí	‘a clever person’
mù-sòòmì	‘student’	<u>mú-sóómí</u> mú-tǿlí	‘a clever student’
mù-tsikù	‘enemy’	<u>mú-tsíkú</u> mú-tǿlí	‘a clever enemy’

4.3.6 High tone anticipation in toneless nouns with adjective -tǿíngà ‘foolish’

In example (187), the nouns in isolation surface with a low tone on all the syllables. In the phrasal form the nouns in isolation are with the adjective -tǿíngà ‘foolish’. These nouns surface with a high tone on all the syllables, followed by the adjective which has a high tone on the adjective prefix and the stem initial syllable and a low tone on the final syllable [H.H.L]. The nouns surface with a high tone on all the syllables because the high tone on the stem initial syllable of the adjective spreads across the toneless syllable of the adjective prefix and the nouns. The adjective mú-tǿíngà ‘foolish’ has a [H.H.L] tone pattern when uttered in

isolation and in the phrase context form. In example (187) high tone anticipation is shown in toneless nouns and the adjective stem -tʃííngà which means foolish.

(187) High tone anticipation in Ø nouns with adjective -tʃííngà ‘foolish’

Ø nouns	Gloss	N + /H/ adjective	Gloss
mùù-ndù	‘person’	<u>múú-ndú</u> mú-tʃííngà	‘a foolish person’
mù-sòòmì	‘student’	<u>mú-sóómí</u> mú-tʃííngà	‘a foolish student’
mù-tsìkù	‘enemy’	<u>mú-tsìkú</u> mú-tʃííngà	‘a foolish enemy’

The adjectives -ngáli/-káli ‘big’, -sílò ‘stupid’ -láβù ‘light skinned person, white or clean’-tʃéì ‘clever’, -tʃííngà ‘foolish’ that are discussed in section 4.3.2 to 4.3.6 have a high tone on the stem initial syllable and a low tone on the final syllable [H.L]. This is the same tone pattern the adjective -léjì ‘good’ has as seen in section 4.3.1. As discussed earlier in section 4.3.1 the high tone on the stem initial syllable of the adjectives has influenced the low tone hence dislodging it from the toneless syllable of the adjective prefix and the toneless syllables of the nouns discussed in section 4.3.2 to 4.3.6. In this set of examples, it is not clear where the low tone goes to because it is completely replaced by a high tone. The low tone does not remain stable when it is delinked from the elements on the CV and phonemic tiers. It gets deleted. That is why as earlier mentioned, it is suspected that all the nouns in these sections are underlyingly toneless.

4.3.7 High tone anticipation in toneless nouns with an adjective -mwáámú ‘a dark skinned person, black’

The nouns in example (188), surface with a low tone on all the syllables uttered in isolation. Alongside each noun in isolation is the adjective -mwáámú ‘a dark skinned person, black’. The adjectives have a high tone on the prefix and the stem initial syllable and a falling tone on the final syllable [H.H.HL] uttered in isolation. This tone pattern changes to a high tone on all the syllables [H.H.H] in the phrase context form. Therefore, in each of these phrasal forms, the noun surfaces with a high tone on all the syllables, followed by the adjective which has a high tone on all the syllables [H.H.H]. In the phrasal form the nouns surface with a high tone on all the syllables because the high tone on the final syllable of the adjective spreads across the toneless syllables on the adjective and the nouns.

(188) HTA in Ø nouns with adjective -mwáámû ‘a dark skinned person, black’

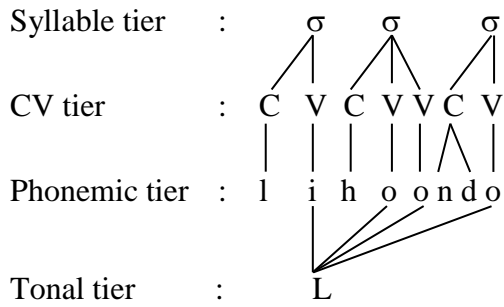
Ø nouns	Gloss	N + /H/ adjective	Gloss
mùù-ndù	‘person’	<u>múú-ndú mú-mwáámú</u>	‘a dark skinned person’
ì-ṅòòmbè	‘cow’	<u>í-ṅóómbé í-mwáámú</u>	‘a black cow’
lí-hòòndò	‘pumpkin’	<u>lí-hóóndó lí-mwáámú</u>	‘a black pumpkin’
ḡì-nààpènzò	‘ghost’	<u>ḡì-náápénzó ḡì-mwáámú</u>	‘a black ghost’

The diagram in (189) (a) shows the autosegmental representation of the tone pattern of lí-hòòndò ‘pumpkin’ as shown in example (188). This noun has a low tone on all the syllables when uttered in isolation but is underlyingly toneless. The adjective lí-mwáámû ‘black’ surfaces with a high tone on the prefix and the stem initial syllable followed by a falling tone on the final syllable when uttered in isolation as shown in diagram (189) (b).

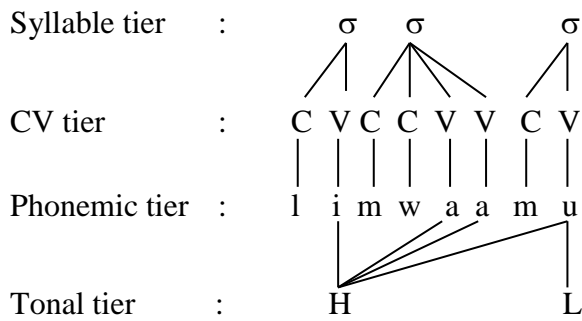
The diagram in (189) (c) (i) shows delinking of a low tone on the noun lí-hòòndò ‘pumpkin’ and the adjective prefix lí and the final syllable mù of the adjective. The diagram in (189) (c) (ii) shows reassociation. The broken lines are used to show that the low tone on the noun lí-hòòndò ‘pumpkin’ and the adjective prefix lí and the final syllable mù of the adjective do not remain stable. The low tone on all the syllables on the noun, the adjective prefix and the final syllable is therefore replaced with a high tone on all the syllables as shown in diagram (189) (c) (iii). The low tone remains floating in (189) (c) (ii) and does not get anchored to any vowel hence it is deleted as shown in (189) (c) (iii). This means that the low tone on the nouns, the adjective prefix and the final syllable of the adjective are deleted.

The diagram in (189) (c) (iii) shows a high tone spreading leftwards. The high tone on the final syllable on the adjective lí-mwáámú ‘black’ spreads across to the adjective prefix lí to the noun lí-hóóndó ‘pumpkin’. In this diagram OCP has been applied. Consecutive high tones exist because of the word boundary between the two words (i.e. lí-hóóndó and lí-mwáámú). Therefore, the diagram in (189) (c) (iii) is the final autosegmental representation and not the diagram in (189) (c) (ii).

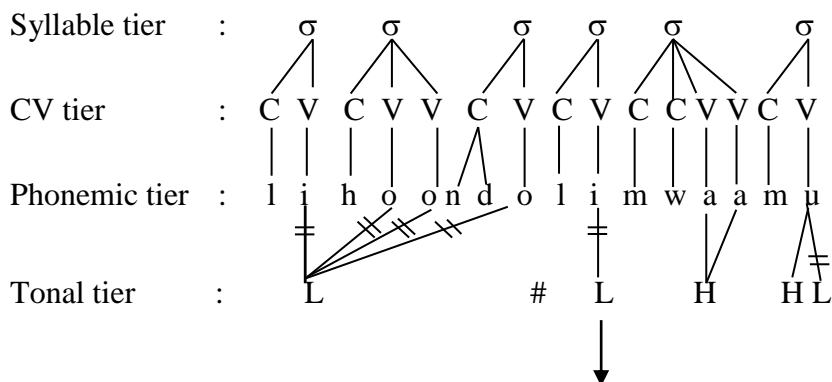
(189) (a)
 lí-hòòndò 'pumpkin'



(189) (b)
 lí-mwáámû 'black'

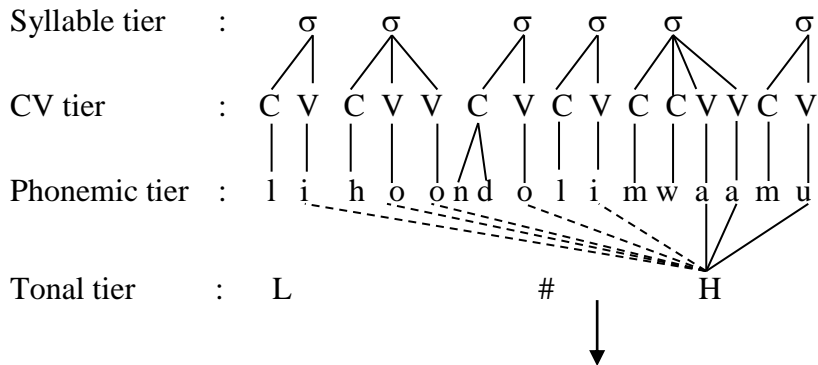


(189) (c) (i) lí-hóóndó lí-mwáámú 'a black pumpkin'



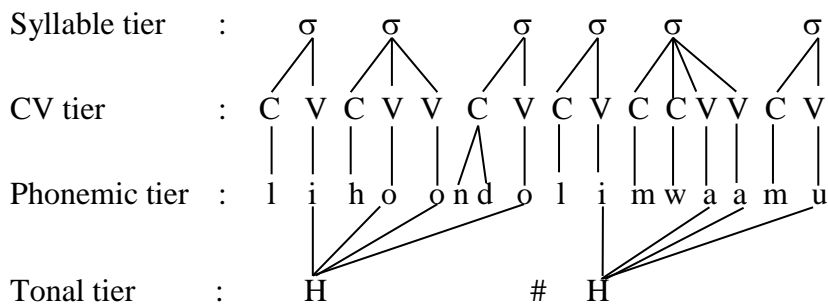
(189) (c) (ii)

lí-hóóndó lí-mwáámú 'a black pumpkin'



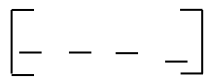
(189) (c) (iii)

lí -hóóndó lí-mwáámú 'a black pumpkin'

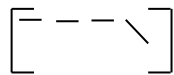


The tone pattern of lí-hòòndò 'pumpkin' is shown in (190) (i). This noun has a low tone on all the syllables when uttered in isolation while in the phrase context form this noun has a high tone on all the syllables as shown in example (190) (iii). Diagram (190) (ii) shows the tone pattern of the adjective lí-mwáámú 'black'. This adjective has a high tone on the prefix and the stem initial syllable followed by a falling tone on the final syllable uttered in isolation. Finally, example (190) (iii) shows the tone pattern of the noun phrase lí-hóóndó lí-mwáámú 'a black pumpkin'. In this example, the high tone on the final syllable on the adjective lí-mwáámú 'black' spreads leftwards to the adjective prefix lí to the noun lí-hóóndó 'pumpkin'. The tone patterns of the noun lí-hòòndò 'pumpkin', the adjective lí-mwáámú 'black' and the noun phrase lí-hóóndó lí-mwáámú 'a black pumpkin' are illustrated in (190) (i), (ii), (iii) using RTT formalisms.

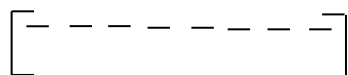
(190) (i) lì-hòòndò ‘pumpkin’



(190) (ii) lí-mwáámû ‘black’



(190) (iii) lí-hóóndó lí-mwáámú ‘a black pumpkin’



4.3.8 High tone anticipation in toneless nouns with adjective -ráàmbì ‘tall, long’

The nouns in (191), surface with a low tone on all the syllables in isolation. In the phrasal form the nouns have the adjective -ráàmbì ‘tall, long’. The high tone on the adjective spreads leftwards to the adjective prefix to the nouns. In these phrasal forms only one part of the falling tone on the syllable ráà has an effect that is the part with the high tone. Therefore, the effect is from the stem initial syllable of the adjective to the adjective prefix up to the nouns. Example (191) shows high tone anticipation in toneless nouns and the adjective -ráàmbì which means tall or long.

(191) High tone anticipation in Ø nouns with adjective -ráàmbì ‘tall, long’

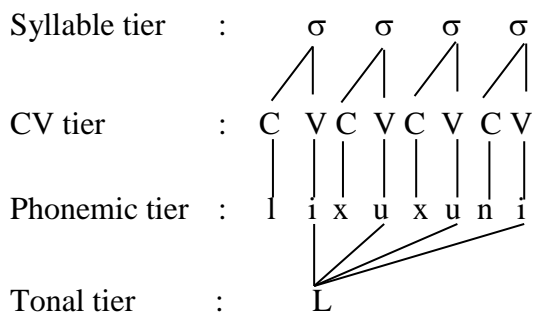
Ø nouns	Gloss	N + /H/ adjective	Gloss
mù-ndù	‘person’	<u>mú-ndú</u> mú- ráàmbì	‘a tall person’
mù-sòòmì	‘student’	<u>mú-sóómí</u> mú-ráàmbì	‘a tall student’
mù-kòjè	‘rope’	<u>mú-kójé</u> mú-ráàmbì	‘a long rope’
lì-xùxùnì	‘amoeba’	<u>lí-xúxúní</u> lí-ráàmbì	‘a long amoeba’

The diagram in (192) (a) shows the autosegmental representation of the tone pattern of lì-xùxùnì ‘amoeba’ as shown in example (191). This noun has a low tone on all the syllables when uttered in isolation. The adjective lí-ráàmbì ‘long’ has a high tone on the prefix, a falling tone on the stem initial syllable and a low tone on the final syllable when uttered in isolation as shown in diagram (192) (b).

The diagram in (192) (c) (i) shows delinking of a low tone on the noun *lì-xùxùnì* ‘amoeba’ and the adjective prefix *lí* followed by reassociation in diagram (192) (c) (ii). The broken lines are used to show that the low tone on the noun *lì-xùxùnì* ‘amoeba’ and the adjective prefix *lí* do not remain stable. The low tone on all the syllables of the noun and the adjective prefix is therefore replaced with a high tone on all the syllables as shown in diagram (192) (c) (ii). The low tone remains floating in (192) (c) (ii) and does not get anchored to any vowel hence it is deleted as shown in (192) (c) (iii). The diagram in (192) (c) (iii) shows high tone anticipation. The high tone on the stem initial syllable of the adjective *lí-ráàmbì* spreads leftwards to the adjective prefix *lí* up to the noun *lí-xùxùnì* ‘amoeba’. In this diagram OCP has been applied. Consecutive high tones exist because of the word boundary between the two words (i.e. *lí-xùxùnì* and *lí-ráàmbì*). Therefore, diagram (192) (c) (iii) is the final autosegmental representation and not the diagram in (192) (c) (ii).

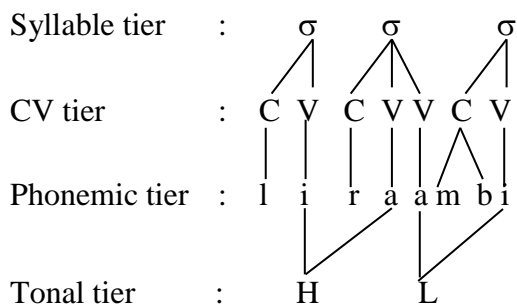
(192) (a)

lì-xùxùnì ‘amoeba’



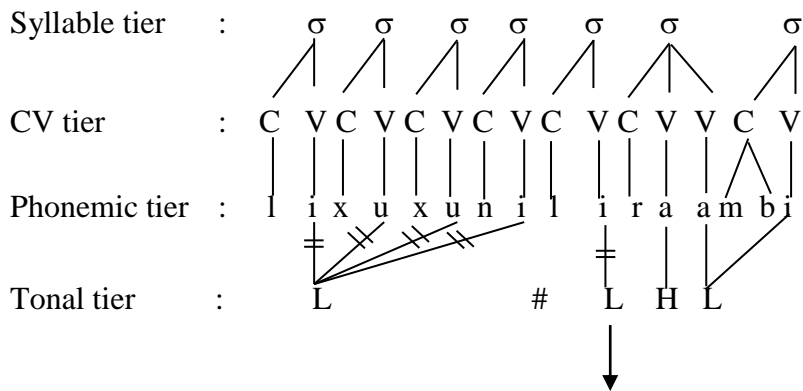
(192) (b)

lí-ráàmbì ‘long’



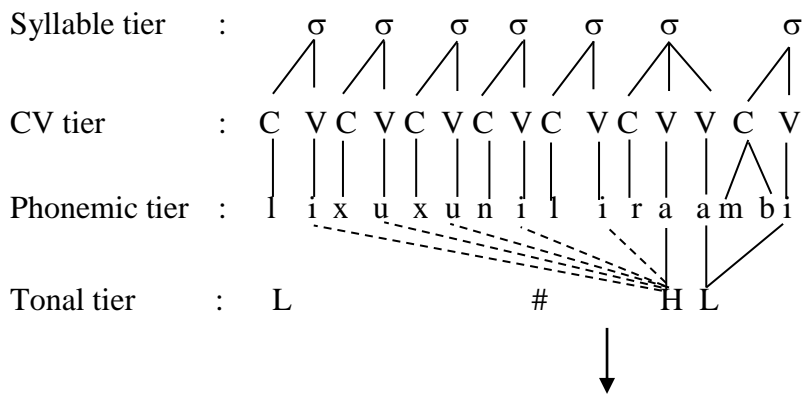
(192) (c) (i)

lí-xúxúní lí-ráàmbì ‘a long amoeba’



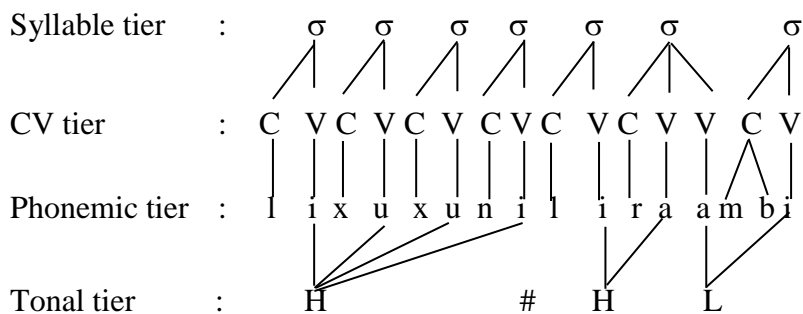
(192) (c) (ii)

lí-xúxúní lí-ráàmbì ‘a long amoeba’



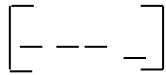
(192) (c) (iii)

lí-xúxúní lí-ráàmbì ‘a long amoeba’

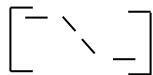


The tone patterns of the noun *lì-xùxùnì* ‘amoeba’, the adjective *lí-ráàmbì* ‘long’ and the noun phrase *lí-xùxùnì lí-ráàmbì* ‘a long amoeba’ are illustrated in (193) (i) (ii) (iii) using RTT formalisms.

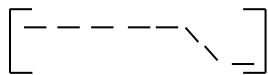
(193) (i) *lì-xùxùnì* ‘amoeba’



(193) (ii) *lí-ráàmbì* ‘long’



(193) (iii) *lí-xùxùnì lí-ráàmbì* ‘a long amoeba’



4.3.9 High tone anticipation in toneless nouns with adjective *-táàmàànû/-dáàmàànû* ‘bad’

In example (194) the nouns in isolation surface with a low tone on all the syllables. Alongside each noun in isolation is the adjective *-táàmàànû* ‘bad’. The adjectives have a high tone on the prefix, a falling tone on the stem initial syllable, a low tone on the penultimate syllable and a falling tone on the final syllable when uttered in isolation [H.HL.L.HL]. The tone pattern of these adjectives changes in the phrasal context to a high tone on the prefix, a falling tone on the stem initial syllable, a low tone on the penultimate syllable and a high tone on the final syllable [H.HL.L.H]. In these adjectives only one part of the falling tone on the syllable *táà* or *dáà* has an effect that is the part with the high tone. Therefore, the high tone on the stem initial syllable *táà* or *dáà* spreads to the adjective prefix up to the nouns. The adjective *ín-dáàmàànû* has sound /d/ and not /t/ because there is voice assimilation. The sound is then produced as a prenasalized consonant since /n/ is preceding. There is high tone anticipation in toneless nouns and the adjectives *mú-táàmàànû*, *ín-dáàmàànû* and *lí-táàmàànû* which means bad as shown in example (194).

(194) High tone anticipation in Ø nouns with adjective -táàmàànû/-dáàmàànû ‘bad’

Ø nouns	Gloss	N + /H/ adjective	Gloss
mùù-ndù	‘person’	<u>múú-ndú</u> <u>mú-táàmàànú</u>	‘a bad person’
lí-hòòndò	‘pumpkin’	<u>lí-hóóndó</u> <u>lí-táàmàànú</u>	‘a bad pumpkin’
ì-nàmà	‘meat’	<u>í-námá</u> <u>ín-dáàmàànú</u>	‘bad meat’

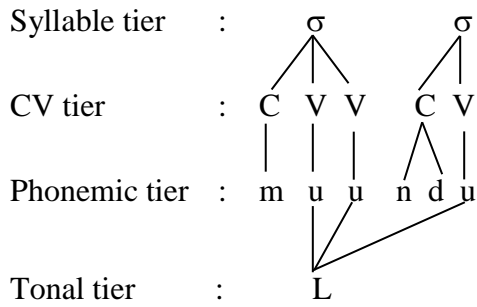
The diagram in (195) (a) shows the autosegmental representation of mùù-ndù ‘person’ as shown in example (194). This noun has a low tone on all the syllables when uttered in isolation. The adjective mú-táàmàànû ‘bad’ has a high tone on the prefix, a falling tone on the stem initial syllable, a low one on the penultimate syllable and a falling tone on the final syllable [H.HL.L.H] when uttered in isolation as shown in diagram (195) (b). However, in the phrasal context from the low tone on the falling tone of the final syllable is deleted and is replaced with a high tone as shown in (195) (c) (iii).

The diagram in (195) c) (i) shows delinking of a low tone on the noun mùù-ndù ‘person’ and the adjective prefix mù and the final syllable of the adjective nû. The diagram in (195) (c) (ii) shows reassociation. The broken lines are used to show that the low tone on the noun mùù-ndù ‘person’, the adjective prefix mù and the final syllable of the adjective nû do not remain stable. The low tone on all the syllables on the noun, the adjective prefix mù and the final syllable of the adjective is therefore replaced with a high tone on all the syllables as shown in diagram (195) (c) (iii). The low tone remains floating in (195) (c) (ii) and does not get anchored to any vowel hence it is deleted as shown in (195) (c) (iii).

The diagram in (195) (c) (iii) shows a high tone spreading leftwards. The high tone on the stem initial syllable of the adjective mú-táàmàànû spreads leftwards to the adjective prefix mú up to the noun mùù-ndù ‘person’. In this diagram OCP has been applied. Consecutive high tones exist because of the word boundary between the two words (i.e. múú-ndú and mú-táàmàànú). Therefore, diagram (195) (c) (iii) is the final autosegmental representation and not the diagram in (195) (c) (ii).

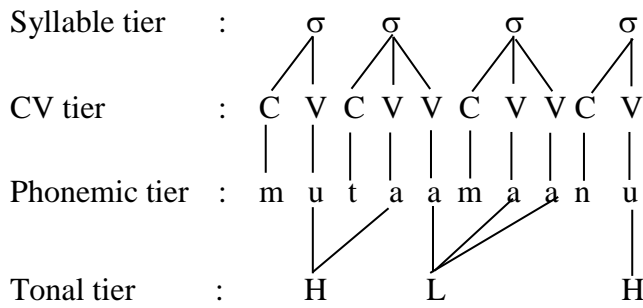
(195) (a)

mùù-ndù 'person'



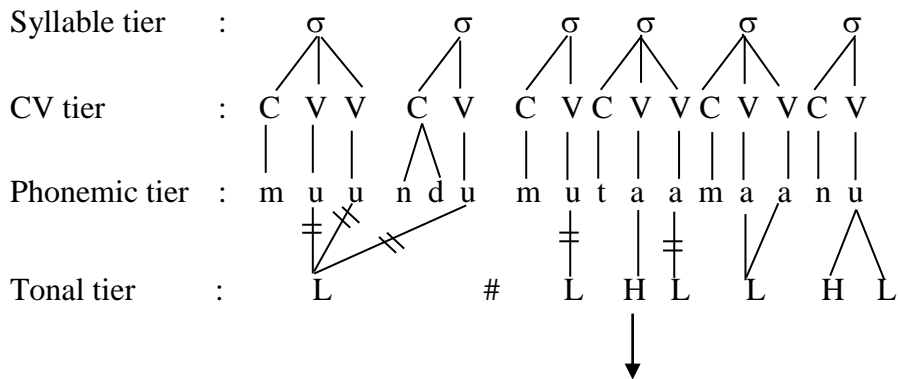
(195) (b)

mú-táàmàànú 'a bad'



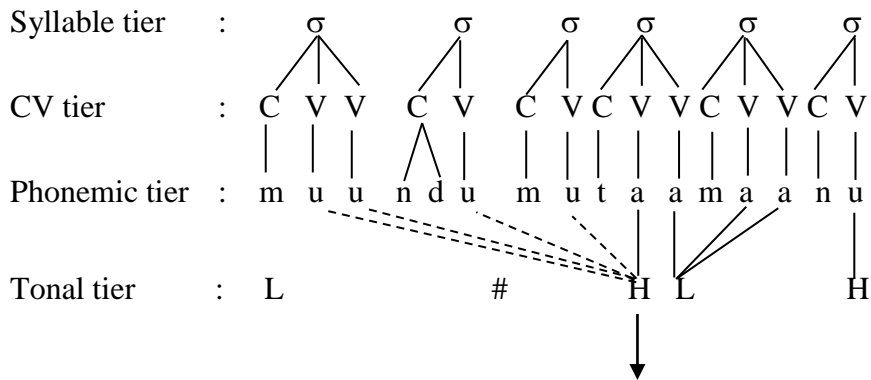
(195) (c) (i)

múú-ndú mú-táàmàànú 'a bad person'



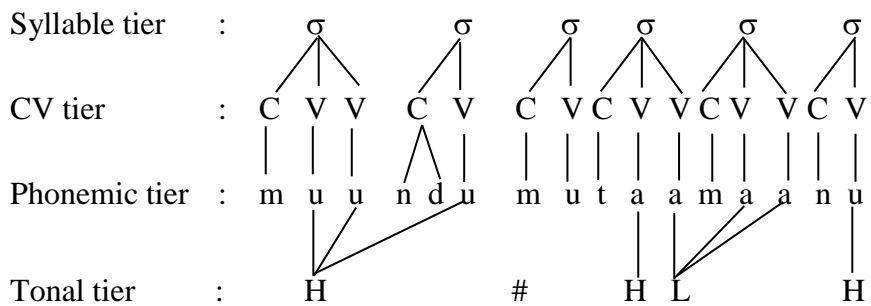
(195) (c) (ii)

múú-ndú mú-táàmàànú 'a bad person'



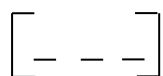
(195) (c) (ii)

múú-ndú mú-táàmàànú 'a bad person'

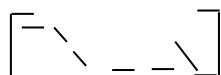


The tone patterns of the noun mùù-ndù 'person' the adjective mú-táàmàànú 'bad' and the noun phrase múú-ndú mú-táàmàànú 'a bad person' are illustrated in (196) (i), (ii), (iii) by using RTT formalisms.

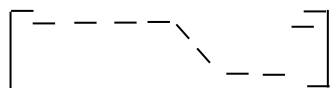
(196) (i) mùù-ndù 'person'



(196) (ii) mú-táàmàànú 'bad'



(196) (iii) múú-ndú mú-táàmàànú 'a bad person'



4.3.10 High tone anticipation in toneless nouns with adjective -tʃááfù ‘dirty’

The nouns in isolation in example (197) surface with a low (L) tone on all the syllables. Alongside each noun in isolation is the noun modified by the agreeing form of the adjective -*n*ʃááfù or -tʃááfù ‘dirty’. In each of these phrasal forms the nouns surface with H tone on all the syllables followed by the adjective which has a high tone on the adjective prefix, a downstepped high tone on the stem initial syllable and a low tone on the final syllable [H.⁺H.L] uttered in isolation and in the phrasal form. In the phrasal forms the nouns surface with a high tone [H] because the H on the stem initial syllable of the adjective spreads left across the toneless syllables.

(197) High tone anticipation in Ø nouns with adjective -tʃááfù ‘dirty’

Ø nouns	Gloss	N + /H/ adjective	Gloss
ì-njì	‘fly’	ì-njì í- ⁺ nʃááfù	‘a dirty fly’
mùù-ndù	‘person’	mùù-ndù mú- ⁺ tʃááfù	‘a dirty person’
ʃì-ndù	‘thing’	ʃì-ndù ʃì- ⁺ tʃááfù	‘a dirty thing’
mù-βànú	‘knife’	mù-βànú mú- ⁺ tʃááfù	‘a dirty knife’

The diagram in (198) (a) shows the autosegmental representation of the tone pattern of the noun mù-βànú ‘knife’ as shown in example (197). This noun has a low tone on all the syllables when uttered in isolation but is underlyingly toneless. The adjective mú-⁺tʃááfù ‘dirty’ surfaces with a high tone on the prefix, a downstepped high tone on the stem initial syllable and a low tone on the final syllable [H.⁺H.L] when uttered in isolation as shown in diagram (198) (b). This adjective maintains the same tone pattern in the phrasal form. Therefore, the floating tone on the downstepped high tone on the stem initial syllable is not lost in the phrasal form as shown in (198) (c) (i), (ii) and (iii).

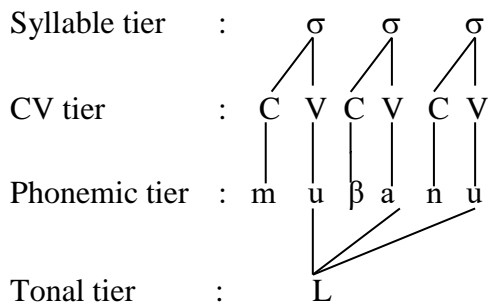
The diagram in (198) (c) (i) shows delinking of a low tone on the noun mù-βànú ‘knife’ and the adjective prefix mù followed by reassociation in diagram (198) (c) (ii). The broken lines are used to show that the low tone on the noun mù-βànú ‘knife’ and the adjective prefix mù do not remain stable thus are replaced with a high tone in the phrase context form as shown in (198) (c) (iii).

The diagram in (198) (c) (iii) shows high tone anticipation. The high tone on the stem initial syllable of the adjective mú-⁺tʃááfù spreads leftwards to the adjective prefix mú and up to the

noun mù-βànú ‘knife’. In this diagram OCP has been applied. Consecutive high tones exist because of the word boundary between the two words (i.e. mú-βánú and mú-⁺tʃááfù). Therefore, diagram (198) (c) (iii) is the final autosegmental representation and not the representation in (198) (c) (ii).

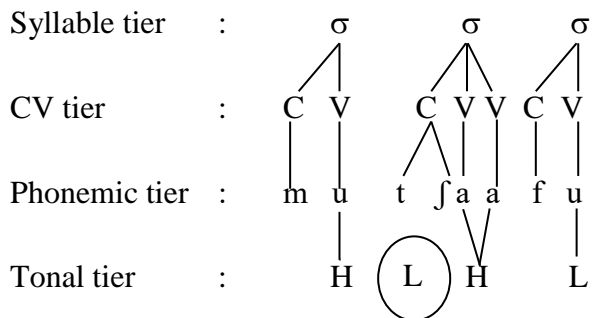
(198) (a)

mù-βànú ‘knife’



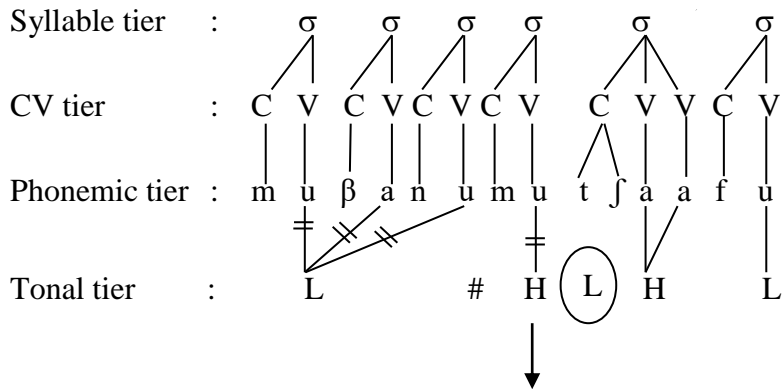
(198) (b)

mú-⁺tʃááfù ‘dirty’



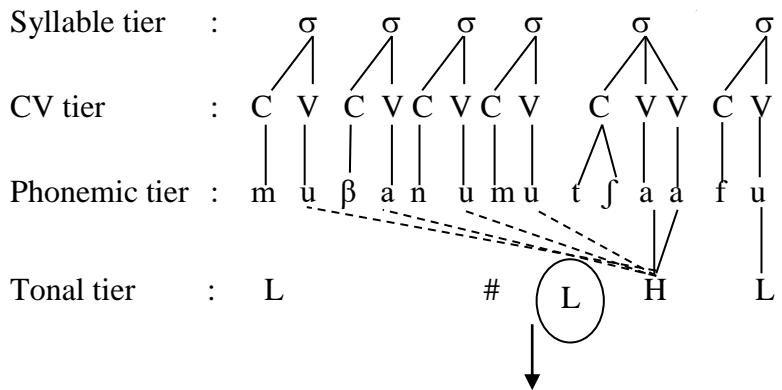
(198) (c) (i)

mú-βánú mú-⁺tʃááfù ‘a dirty knife’



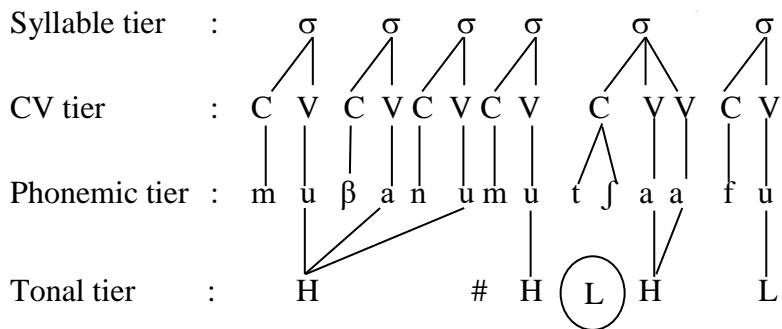
(198) (c) (ii)

mú-βánú mú-⁺tʃááfù ‘a dirty knife’



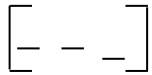
(198) (c) (iii)

mú-βánú mú-⁺tʃááfù ‘a dirty knife’

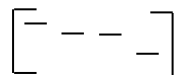


The tone patterns of the noun *mù-βànú* ‘knife’, the adjective *mú-⁺tʃááfù* ‘dirty’ and the noun phrase *mú-βánú mú-tʃááfù* ‘a dirty knife’ are illustrated in (199) (i), (ii), (iii) by using RTT formalisms.

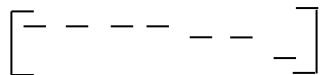
(199) (i) *mù-βànú* ‘knife’



(199) (ii) *mú-⁺tʃááfù* ‘dirty’



(199) (iii) *mú-βánú mú-⁺tʃááfù* ‘a dirty knife’



In all the examples discussed in section 4.3, it is observed that high tone anticipation is triggered when a toneless noun is followed by an adjective that has a high tone. From the examples in this section, it is also clear that, the high tone spreads leftwards from the adjectives to the toneless syllables.

In the next section, the discussion is on high tone anticipation in nouns that have a high tone and a syllable that is toneless (HØ) followed by adjectives that have a high tone.

4.4 High tone anticipation in HØ nouns with adjectives that have a high tone

The nouns in isolation in example (200) surface with a (HL) tone pattern but underlyingly have (HØ) tone pattern. Alongside each noun in isolation is the noun modified by the agreeing form of the adjective *-léjì* ‘good’ and *-mútʃì* ‘red’. In each of these phrasal forms the noun surfaces with (H⁺H) tone pattern when collapsed. They surface with a (H⁺H) tone pattern because the H on the adjective spreads left across toneless syllables. Its spread is blocked by the high tone on the noun prefix. When two high tones are realized on adjacent syllables, the second is phonetically realized as a dowstepped high tone.

(200) High tone anticipation in HØ nouns

HØ nouns	Gloss	N + /H/ adjective	Gloss
mwáá-nà	‘a child’	mwáá- ⁺ <u>ná</u> mú-léjì	‘a good child’
lwí-íkà	‘horn’	lwí-í ⁺ <u>ká</u> lú-léjì	‘a good horn’
í-nzúxà	‘snake’	í-nzú ⁺ <u>xá</u> í-mútjì	‘a red snake’
ǐ-láárò	‘shoe’	ǐ-láá ⁺ <u>ró</u> ǐ-mútjì	‘a red shoe’

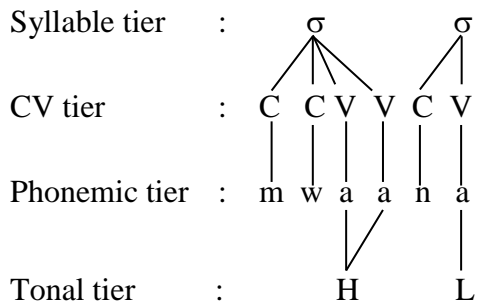
The diagram in (201) (a) shows the autosegmental representation of the tone of mwáá-nà ‘child’ in example (200). This noun has a high tone on the prefix and a low tone on the final syllable [H.L] when uttered in isolation. The final syllable surface low tone is toneless. The adjective mú-léjì ‘good’ surfaces with a high tone on the prefix and the stem initial syllable and a low tone on the final syllable [H.H.L] when uttered in isolation and in the phrase context form as shown in diagram (201) (b).

The diagram in (201) (c) (i) shows delinking of a low tone on the noun mwáá-nà ‘child’ and the adjective prefix mù followed by reassociation in (201) (c) (ii). In this diagram, the low tone on the noun mwáá-nà and the adjective prefix mù is displaced by a high tone. The low tone on the noun mwáá-nà remains floating in (201) (c) (ii) and does not get anchored to any vowel as shown in (201) (c) (iii). We know that it is floating because the final syllable ná ends up having a downstepped high tone. This means that it is not lost. The prefix mú of the adjective mú-léjì has a low tone when uttered in isolation and is replaced with a high tone in the phrase context form. This adjective prefix is underlyingly toneless, thus it receives its surface H as a result of high tone anticipation.

The diagram in (201) (c) (iii) shows high tone anticipation. The high tone on the stem initial syllable of the adjective mú-léjì ‘good’ spreads leftwards to the adjective prefix mú up to the final syllable of the noun mwáá-⁺nà. In this diagram OCP has been applied. Consecutive high tones exist because of the word boundary between the two words (i.e. mwáá-⁺ná and mú-léjì). Therefore, the autosegmental representation in (201) (c) (iii) is the final form and not the representation in (201) (c) (ii).

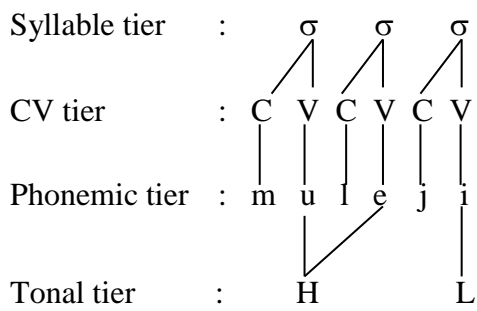
(201) (a)

mwáá-nà ‘child’



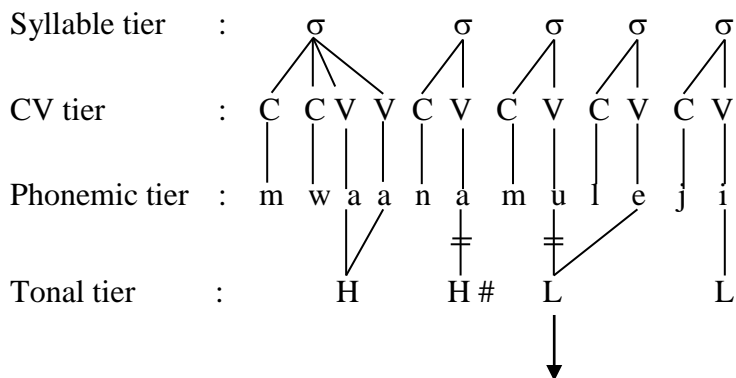
(201) (b)

mú-léjì ‘good’

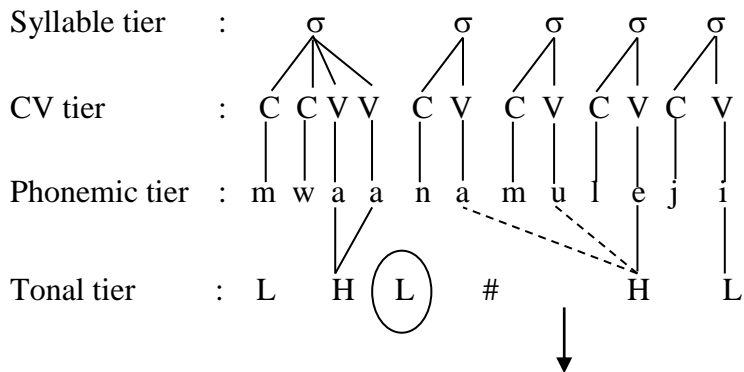


(201) (c) (i)

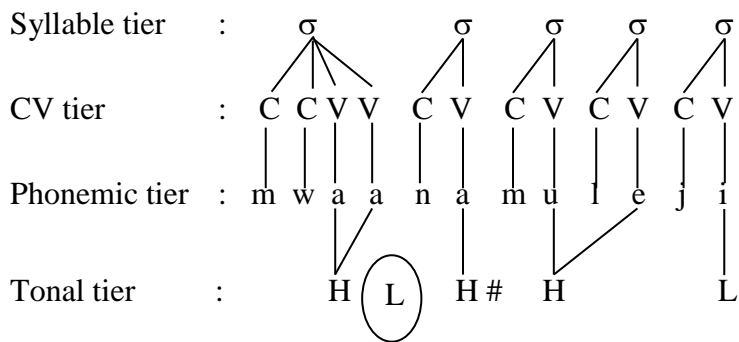
mwáá-[↓]ná mú-léjì ‘ a good child’



(201) (c) (ii)
 mwáá-⁺ná mú-léjì ‘a good child’

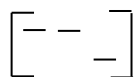


(201) (c) (iii)
 mwáá-⁺ná mú-léjì ‘a good child’

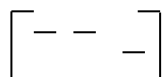


The noun *mwáá-nà* ‘child’, the adjective *mú-léjì* ‘good’ and the noun phrase *mwáá-⁺ná mú-léjì* ‘a good child’ tone patterns are illustrated in (202) (i), (ii) and (iii) using RTT formalisms.

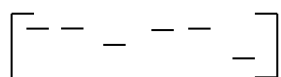
(202) (i) *mwáá-nà* ‘child’



(202) (ii) *mú-léjì* ‘good’



(202) (iii) *mwáá-⁺ná mú-léjì* ‘a good child’



In the next section, the discussion is on high tone anticipation in toneless nouns and numerals that have a high tone.

4.5 High tone anticipation in toneless nouns with numerals that have a high tone

As mentioned earlier in section 4.2 when a noun is followed by a numeral that has a high tone, the high tone on the numeral spreads left to the toneless syllables of the noun. This leftward spreading is known as high tone anticipation (HTA). The nouns in example (203) have a low tone on the surface when uttered in isolation but are underlyingly toneless. The tone pattern of the same nouns changes to a high tone on all the syllables in the phrase context form because the high tone on the numeral spreads leftwards to the toneless syllables of the noun. The numerals *síità* ‘six’ and *kúmì* ‘ten’ have a high tone on the first syllable and a low tone on the final syllable [H.L] when uttered in isolation and in the phrase context form. In these examples there is HTA, the high tone on the numerals spreads leftwards to the toneless final syllable of the nouns.

(203) High tone anticipation in Ø nouns with numerals

Ø nouns	Gloss	N + /H/ numerals	Gloss
<i>βàà-ndù</i>	‘people’	<i>βáá-ndú kúmì</i>	‘ten people’
<i>mà-ɲòɲì</i>	‘birds’	<i>má-ɲóní síità</i>	‘six birds’
<i>tsì-ɲàmà</i>	‘meat, animals’	<i>tsí-ɲámá síità</i>	‘six pieces of meat, six animals’

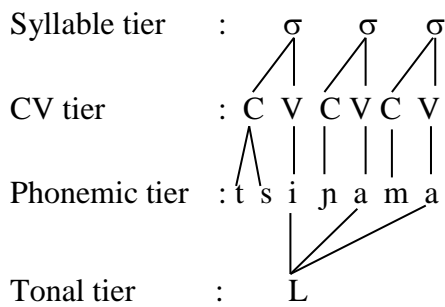
The diagram in (204) (a) shows the autosegmental representation the tone pattern of *tsì-ɲàmà* ‘six pieces of meat, six animals’ as shown in example (203). This noun has a low tone on all the syllables when uttered in isolation. The numeral *síità* ‘six’ has a high tone on the first syllable and a low tone on the final syllable [H.L] when uttered in isolation and in the phrase context form as shown in diagram (204) (b).

The diagram in (204) (c) (i) shows delinking of a low tone on the noun *tsì-ɲàmà* ‘six pieces of meat, six animals’ followed by reassociation as shown in diagram (204) (c) (ii). The broken lines are used to show that the low tone on the noun *tsì-ɲàmà* does not remain stable. The low tone on all the syllables of the noun *tsì-ɲàmà* is therefore replaced with a high tone on all the syllables as shown in diagram (204) (c) (iii). The low tone remains floating in (204) (c) (ii) and does not get anchored to any vowel hence it is deleted as shown in (204) (c) (iii). The tones on the numeral *sí-ità* ‘six’ are stable thus are not replaced.

The diagram in (204) (c) (iii) shows high tone anticipation. The high tone on the first syllable of the numeral *sítà* ‘six’ spreads leftwards to the toneless syllables of the noun *tsí-námá* ‘six pieces of meat, six animals’. In this diagram OCP has been applied. Consecutive high tones exist because of the word boundary between the two words (i.e. *tsí-námá* and *sítà*). Therefore, diagram (204) (c) (iii) is the final autosegmental representation and not the representation in (204) (c) (ii).

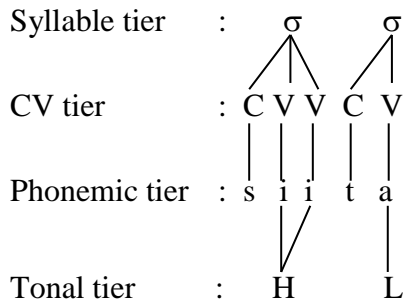
(204) (a)

tsí-námà ‘pieces of meat, animals’



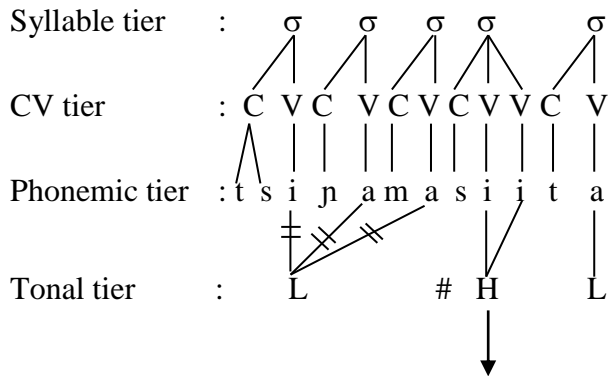
(204) (b)

sítà ‘six’



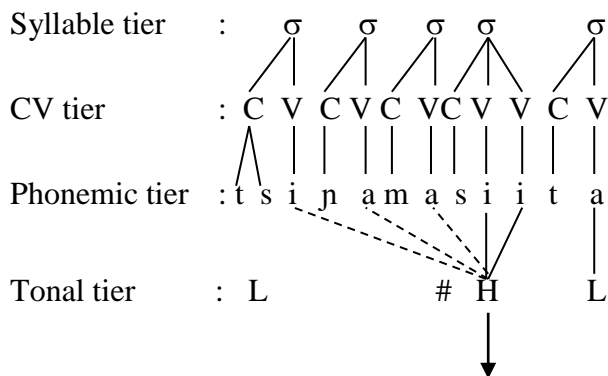
(204) (c) (i)

tsí-námá síitá ‘six pieces of meat, six animals’



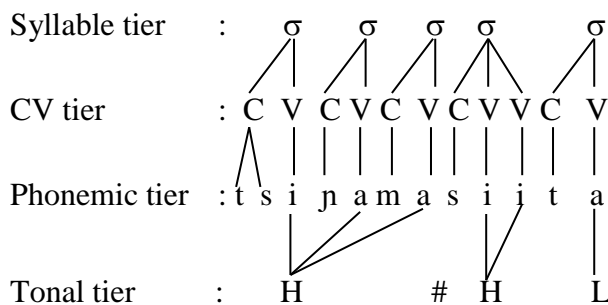
(204) (c) (ii)

tsí-námá síitá ‘six pieces of meat, six animals’



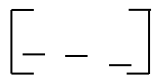
(204) (c) (iii)

tsí-námá síitá ‘six pieces of meat, six animals’

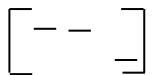


The RTT is used to illustrate the tone pattern of tsí-námà ‘pieces of meat, animals’, the numeral síitá ‘six’ and the noun phrase tsí-námá síitá ‘six pieces of meat, six animals’ in (205) (i), (ii), (iii).

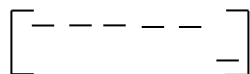
(205) (i) tsì-nàmà ‘pieces of meat, animals’



(205) (ii) sífà ‘six’



(205) (iii) tsí-námá sífà ‘six pieces of meat, six animals’



4.6 High tone anticipation in HØ nouns with numerals that have a high tone

When uttered in isolation the nouns in example (206) have a high tone on the prefix and the stem initial syllable and a low tone on the final syllable [H.H.L] but underlyingly these nouns have a high tone on the prefix and the stem initial syllables followed by a final syllable that is toneless [H.H.Ø]. When collapsed the noun has a (HØ) tone pattern. In the phrases discussed in example (206) the high tone on the numeral spreads leftwards to the final syllable of the noun that is toneless. The numerals sífà ‘six’ and kúmì ‘ten’ have a high tone on the first syllable and a low tone on the final syllable [H.L] when uttered in isolation and in the phrase context form. Example (206) shows high tone anticipation in HØ nouns with numerals that have a high tone.

(206) High tone anticipation in HØ nouns with numerals

HØ nouns	Gloss	N + /H/ numerals	Gloss
má-pátà	‘ducks’	má-pátá <u>sífà</u>	‘six ducks’
βá-línà	‘friends’	βá-líná <u>kúmì</u>	‘ten friends’
mí-xónò	‘hands’	mí-xónó <u>sífà</u>	‘six hands’

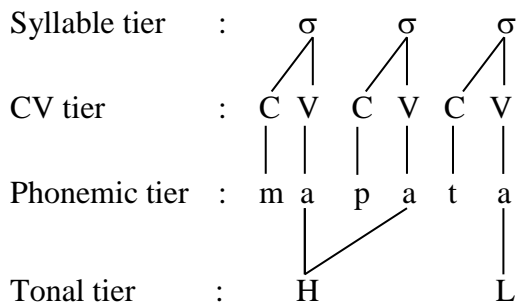
The diagram in (207) (a) shows the autosegmental representation of the tone pattern of má-pátà ‘ducks’ in example (206). This noun has a high tone on the prefix and the stem initial syllable and a low tone on the final syllable [H.H.L] when uttered in isolation but underlyingly has a [H.H.Ø] tone pattern. The numeral sífà ‘six’ has a high tone on the first syllable and a low tone on the final syllable [H.L] uttered in isolation and in the phrase context form as shown in diagram (207) (b).

The diagram in (207) (c) (i) shows delinking of a low tone on the noun *má-pátà* ‘ducks’ followed by reassociation as shown in diagram in (207) (c) (ii). The broken lines are used to show that the low tone on the syllable *tà* on the noun *má-pátà* ‘ducks’ does not remain stable. The low tone that is unstable is therefore replaced with a high tone in the phrase context form as shown in diagram (207) (c) (iii). The low tone remains floating in (207) (c) (ii) and does not get anchored to any vowel hence it is deleted as shown in (207) (c) (iii). The tones on the numeral *síi-tà* ‘six’ are all stable thus are not replaced.

The diagram in (207) (c) (iii) shows high tone anticipation. The high tone on the numeral *síi-tà* ‘six’ spreads leftwards to the final syllable of the noun *má-pátà* ‘ducks’. This means that the syllable *tà* is toneless. In this last diagram, OCP has been applied. Consecutive high tones exist because of the word boundary between the two words (i.e. *má-pátà* and *síi-tà*). Therefore, the diagram in (207) (c) (iii) is the final autosegmental representation and not the representation in (207) (c) (ii).

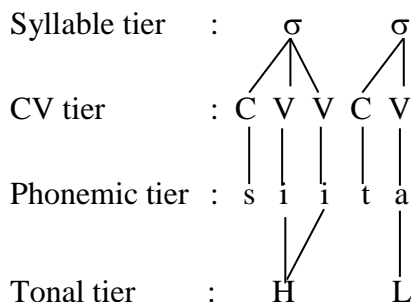
(207) (a)

má-pátà ‘ducks’



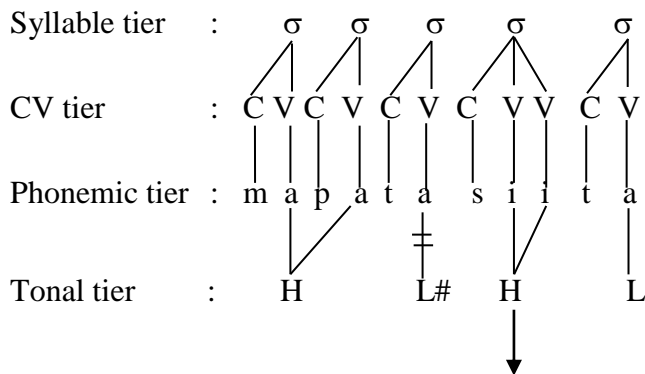
(207) (b)

síi-tà ‘six’



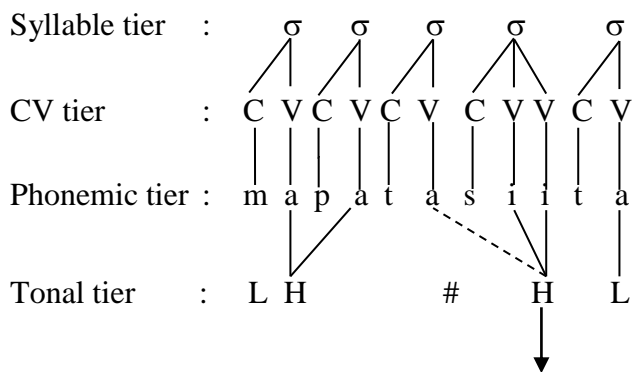
(207) (c) (i)

má-pátá síítà ‘six ducks’



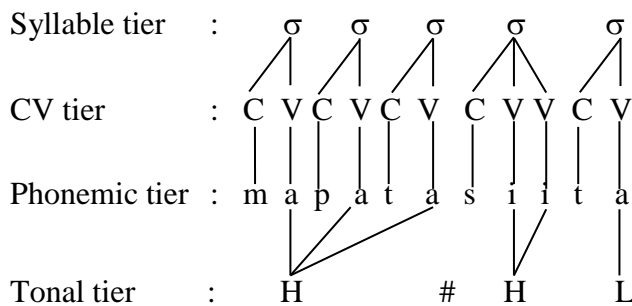
(207) (c) (ii)

má-pátá síítà ‘six ducks’



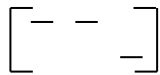
(207) (c) (iii)

má-pátá síítà ‘six ducks’

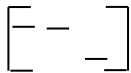


By using RTT formalisms the tone pattern of the noun *má-pátà* ‘ducks’, the numeral *síítà* ‘six’ and the noun phrase *má-pátá síítà* ‘six ducks’ are illustrated in (208) (i), (ii) and (iii).

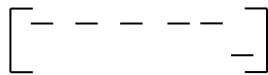
(208) (i) má-pátà ‘ducks’



(208) (ii) sífà ‘six’



(208) (iii) má-pátá sífà ‘six ducks’



In this section, it is clear that when (Ø) nouns are followed by a numeral that has a high tone they trigger high tone anticipation. In addition, nouns that have a (HØ) tone pattern followed by a numeral that has a high tone also trigger high tone anticipation. The discussion in the next section is on toneless nouns followed by the numeral -làlà ‘one’ that has a low tone on all the syllables and the adjective -léjì ‘good’.

4.7 HTA in toneless nouns, toneless numeral -làlà ‘one’ and adjective -léjì ‘good’

The nouns in isolation in example (209) surface with a low [L] tone on all the syllables. Alongside each noun in isolation is the noun modified by the agreeing form of the numeral -làlà ‘one’ and -léjì ‘good’. In each of these phrasal forms the nouns surface with H tone on all the syllables followed by the numeral -làlà ‘one’ that has low tones on all the syllables but is underlyingly toneless. The adjective -léjì ‘good’ has a high tone on the stem initial syllable and a low tone on the final syllable. In the phrasal forms the nouns surface with a high tone [H] because the H on the adjective spreads left across the toneless syllable of the adjective prefix, to the toneless numeral -làlà ‘one’ up to the toneless nouns. Therefore, high tone anticipation is triggered.

(209) HTA in Ø nouns, Ø numeral -làlà ‘one’ and adjective -léjì ‘good’

Ø nouns	Gloss	N + /Ø/ numeral +/H/ adjective	Gloss
lì-hòòndò	‘pumpkin’	<u>lí-hóóndólí-lálá</u> lí-léjì	‘one good pumpkin’
mùù-ndù	‘person’	<u>múù-ndú mú-lálá</u> mú-léjì	‘one good person’
mù-lìmì	‘farmer’	<u>mú-límí mú-lálá</u> mú-léjì	‘one good farmer’

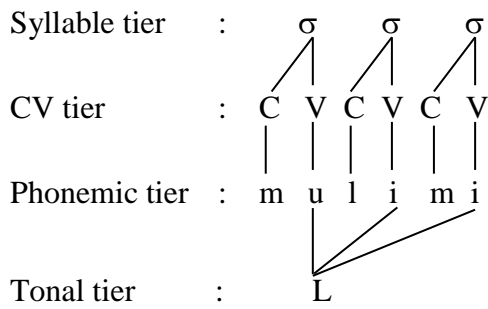
The diagram in (210) (a) shows the autosegmental representation of the tone pattern of *mù-lìmì* ‘farmer’ as shown in example (209). This noun has a low tone on all the syllables when uttered in isolation but is underlyingly toneless. The numeral *mù-làlà* ‘one’ has a low tone on all the syllables when uttered in isolation as shown in diagram (210) (b). The adjective *mù-léjì* ‘good’ has a high tone on the prefix and the stem initial syllable and a low tone on the final syllable [H.H.L] when uttered in isolation and in the phrasal form as shown in diagram (210) (c).

The diagram in (210) (d) (i) shows delinking of a low tone on the noun *mù-lìmì* ‘farmer’, the numeral *mù-làlà* ‘one’ and the adjective prefix *mù* followed by reassociation as shown in diagram (210) (d) (ii). The broken lines are used to show that the low tone on the noun *mù-lìmì* ‘farmer’ the numeral *mù-làlà* ‘one’ and the adjective prefix *mù* do not remain stable. The low tone on all the syllables of the noun, the numeral and the adjective prefix is therefore replaced with a high tone on all the syllables as shown in diagram (210) (d) (iii). The low tone remains floating in (210) (c) (ii) and does not get anchored to any vowel hence it is deleted as shown in (210) (c) (iii).

The diagram in (210) (d) (iii) shows high tone anticipation. The high tone on the stem initial syllable of the adjective *mù-léjì* spreads leftwards to the adjective prefix *mù* to the numeral *mù-làlà* ‘one’ and up to the noun *mù-lìmì* ‘person’. The noun *mù-lìmì* ‘farmer’, the numeral *mù-làlà* ‘one’ and the adjective prefix *mù* are underlyingly toneless thus receive the surface H as a result of high tone anticipation. In this last diagram OCP has been applied. Consecutive high tones exist because of the word boundary between the three words (i.e. *mù-límí*, *mù-lálá* and *mù-léjì*). Therefore, diagram (210) (d) (iii) is the final autosegmental representation and not the representation in (210) (d) (ii).

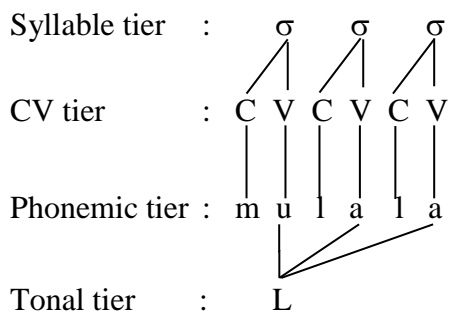
(210) (a)

mù-lìmi 'farmer'



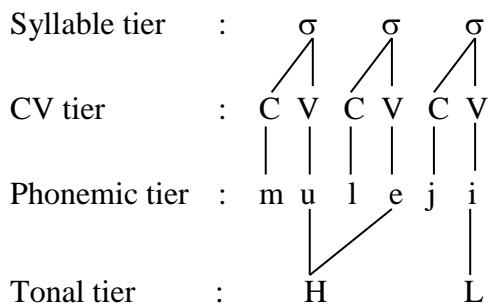
(210) (b)

mù-làlà 'one'

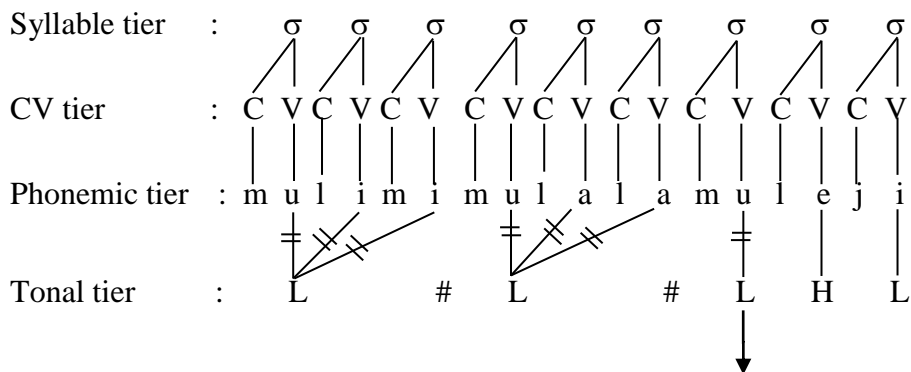


(210) (c)

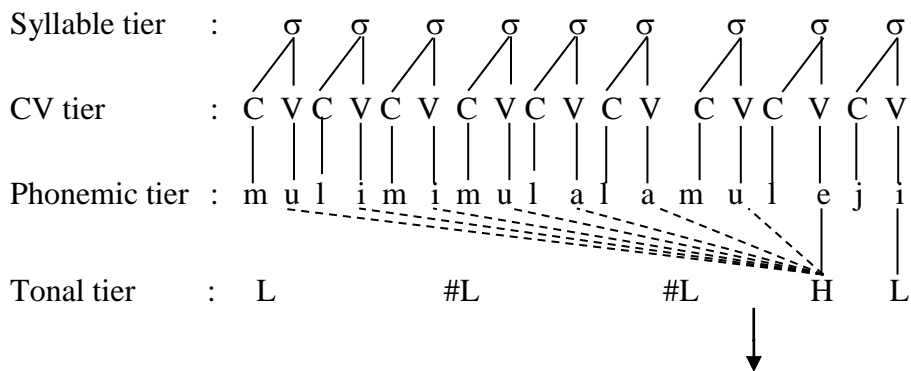
mù-léji 'good'



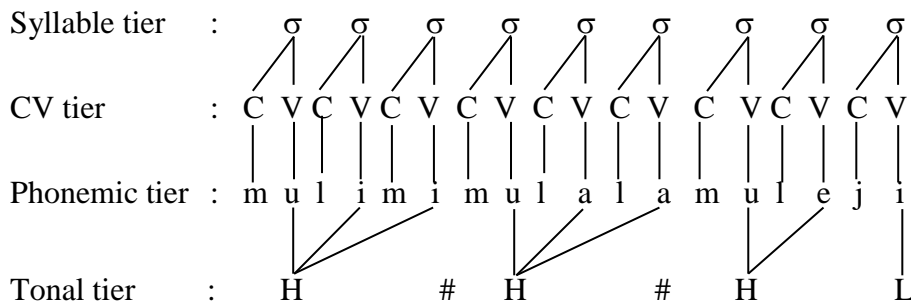
(210) (d) (i)
 mú-límí mú-lálá mú-léjì ‘one good farmer’



(210) (d) (ii)
 mú-límí mú-lálá mú-léjì ‘one good farmer’



(210) (d) (iii)
 mú-límí mú-lálá mú-léjì ‘one good farmer’



The tone patterns of the noun *mù-lìmì* ‘farmer’, the numeral *mù-làlà* ‘one’ and the adjective *mù-léjì* ‘good’ and the noun phrase *mù-límí mú-lálá mú-léjì* ‘one good farmer’ are illustrated in (211) (i), (ii), (iii) by using RTT formalisms.

(211) (i) mù-lìmì ‘farmer’

[— — —]

(211) (ii) mù-làlà ‘one’

[— — —]

(211) (iii) mú-léjì ‘good’

[— — —]

(211) (iv) mú-límí mú-lálá mú-léjì ‘one good farmer’

[— — — — — — —]

If you compare the noun phrase mú-límí mú-lálá mú-léjì ‘one good farmer’ in example (209) and mù-lìmì mù-làlà ‘one farmer’ in example (229) you will realise that in the phrase mú-límí mú-lálá mú-léjì ‘one good farmer’ there is high tone anticipation because the high tone on the stem initial syllable lé of the adjective spreads leftwards to the adjective prefix mú, to the toneless numeral mù-làlà and the toneless noun mù-lìmì. On the other hand, in the noun phrase mù-lìmì mù-làlà ‘one farmer’ there is no high tone anticipation because the numeral mù-làlà has a low tone on all the syllables. As discussed earlier in this chapter, in section 4.2, high tone anticipation is triggered when toneless nouns or (HØ) are with an adjective or a numeral that has a high tone. When toneless nouns are followed by a numeral, for example -làlà ‘one’ that has low tones on all the syllables high tone anticipation is not triggered.

4.8 HTA in toneless nouns, toneless numeral -làlà ‘one’ and a possessive pronoun that has a high tone

The nouns in isolation in example (212) surface with a low (L) tone on all the syllables. Alongside each noun in isolation is the noun modified by the agreeing form of the numeral -làlà ‘one’ and a possessive pronoun. In each of these phrasal forms the noun lì-hòndò ‘pumpkin’ surface with H tone on all the syllables followed by the numeral -làlà ‘one’ that has low tones on all the syllables but is underlyingly toneless, the possessive pronoun lj-èèrù has a falling tone on the stem initial syllable and a low tone on the final syllable [HL.L] and the possessive pronouns ljólj-ó and ljélj-é have a high tone on the first syllable and the final syllable [H.H]. In the phrasal form the noun and the numeral surface with a high tone [H]

because the H on the possessive pronouns spreads left across the toneless numeral -làlà ‘one’ up to the toneless nouns. Therefore, high tone anticipation is triggered.

(212) HTA in Ø nouns, Ø numeral -làlà ‘one’ with a possessive pronoun

Ø nouns	Gloss	N + /Ø/numeral +/H/ possessive	Gloss
li-hòòndò	‘pumpkin’	<u>lí-hóóndó lí-lálá</u> lj-ээрù	‘our one pumpkin’
li-hòòndò	‘pumpkin’	<u>lí-hóóndó lí-lálá</u> ljólj-ó	‘your one pumpkin’
li-hòòndò	‘pumpkin’	<u>lí-hóóndó lí-lálá</u> ljélj-é	‘his one pumpkin’

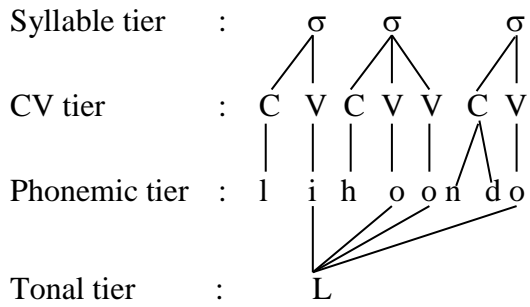
The diagram in (213) (a) shows the autosegmental representation of the tone of li-hòòndò ‘pumpkin’ as shown in example (212). This noun has a low tone on all the syllables when uttered in isolation. The numeral li-làlà ‘one’ has a low tone on all the syllables when uttered in isolation as shown in diagram (213) (b). The possessive pronoun lj-ээрù ‘ours’ has a falling tone on the stem initial syllable and a low tone on the final syllable when uttered in isolation as shown in diagram (213) (c).

The diagram in (213) (d) (i) shows delinking of a low tone on the noun li-hòòndò ‘pumpkin’ and the numeral -làlà ‘one’ followed by reassociation as shown in diagram in (213) (d) (ii). The broken lines are used to show that the low tone on the noun li-hòòndò ‘pumpkin’ and the numeral li-làlà ‘one’ does not remain stable. The low tone on all the syllables of the noun and the numeral are therefore replaced with a high tone on all the syllables as shown in diagram (213) (d) (iii). The low tone remains floating in (213) (c) (ii) and does not get anchored to any vowel hence it is deleted as shown in (213) (c) (iii). The tones on the possessive lj-ээрù are all stable thus are not replaced in the phrase context form.

The diagram in (213) (d) (iii) shows high tone anticipation. Only one part of the falling tone has effect that is the part with the high tone of the syllable lj-ээр of the possessive pronoun lj-ээрù. The high tone on the stem initial syllable of possessive pronoun spreads leftwards to the numeral lí-lálá ‘one’ up to the noun lí-hóóndó ‘pumpkin’. The noun li-hòòndò ‘pumpkin’ and the numeral lí-lálá ‘one’ are underlyingly toneless thus receive the surface H as a result of high tone anticipation. In this diagram, OCP has been applied. Consecutive high tones exist because of the word boundary between the three words (i.e. lí-hóóndó, lí-lálá and lj-ээрù). Therefore, the diagram in (213) (d) (iii) is the final autosegmental representation and not the representation in (213) (d) (ii).

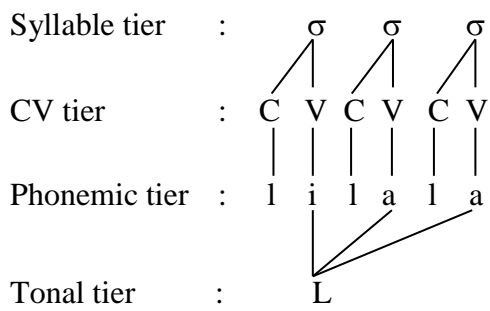
(213) (a)

li-hòndò 'pumpkin'



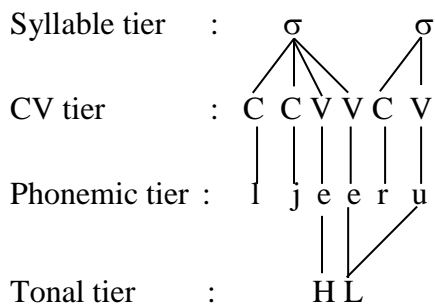
(213) (b)

li-làlà 'one'



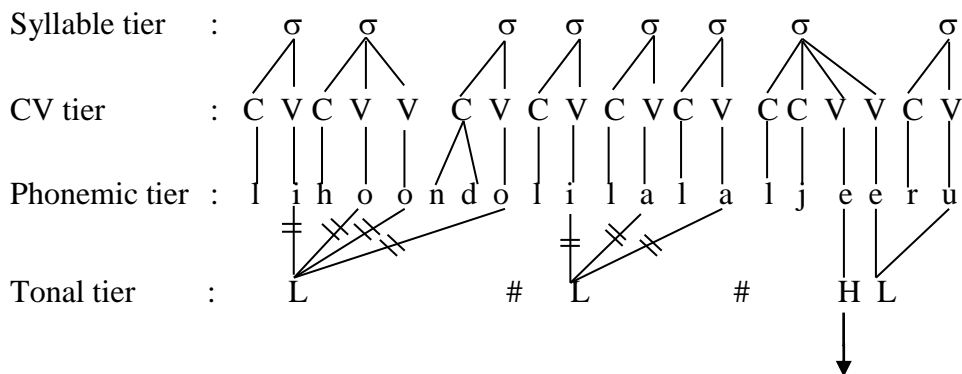
(213) (c)

lj-ээрù 'ours'



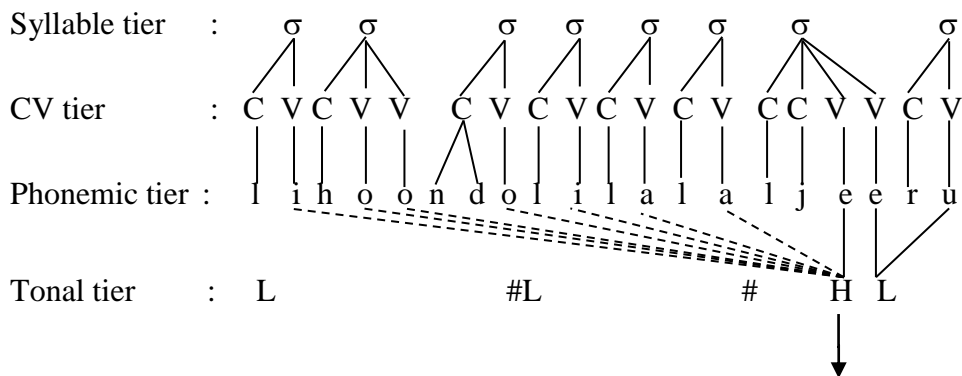
(213) (d) (i)

lí-hóondó lí-lálá lj-ээрù 'our one pumpkin'



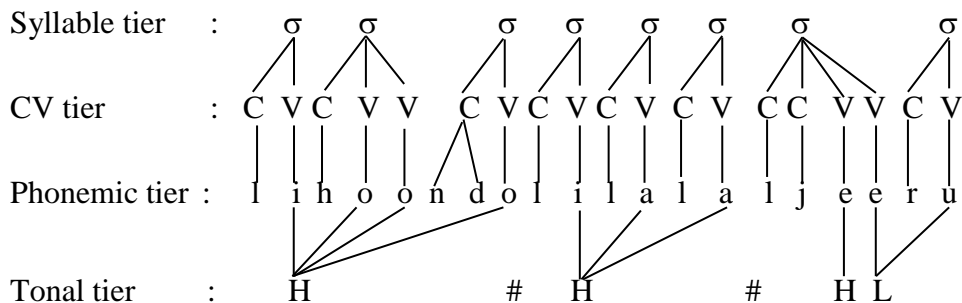
(213) (d) (ii)

lí-hóondó lí-lálá lj-ээрù 'our one pumpkin'



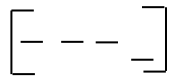
(213) (d) (iii)

lí-hóondó lí-lálá lj-ээрù 'our one pumpkin'

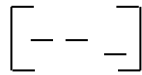


Using RTT formalisms, the tone pattern of the noun lí-hóondò 'pumpkin', the numeral lí-làlà 'one', the possessive pronoun lj-ээрù 'ours' and the noun phrase lí-hóondó lí-lálá lj-ээрù 'our one pumpkin' are illustrated in (214) (i), (ii) and (iii).

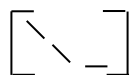
(214) (i) lì-hòòndò ‘pumpkin’



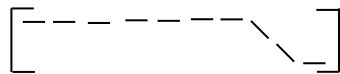
(214) (ii) lì-làlà ‘one’



(214) (iii) lǐ-éèrù ‘ours’



(214) (iv) lí-hóóndó lí-lálá lǐ-éèrù ‘our one pumpkin’



4.9 HTA in toneless nouns with an adjective, a numeral, a possessive pronoun and a demonstrative

The nouns in isolation in example (215) surface with a low (L) tone on all the syllables but are underlyingly toneless. The toneless nouns are followed by an adjective, a numeral, a possessive and a demonstrative. In these noun phrases, high tone anticipation is triggered because the demonstrative has a high tone that spreads to the rest of the rest of the words in the phrase. Therefore, the high tone on the demonstrative spreads to the toneless syllable of the possessive pronoun, to the toneless numeral, the adjective and the toneless noun.

(215) HTA in Ø nouns, an adjective, numeral, a possessive pronoun and a demonstrative

Ø nouns	Gloss	N +Adj+Num+Poss+ Dem	Gloss
mù-kòjè	‘rope’	<u>mù-kójé</u> <u>mù-léjì</u> <u>mù-lálá</u> kw-é j-úkù	‘this one good rope of his/hers’
lì-hòòndò	‘pumpkin’	<u>lí-hóóndó</u> <u>lí-léjì</u> <u>lí-lálá</u> ly-é j-íli	‘this one good pumpkin of his/hers’
lì-sààmbù	‘leaf’	<u>lí-sáámbú</u> <u>lí-léjì</u> <u>lí-lálá</u> ly-é j-íli	‘this one good leaf of his/hers’

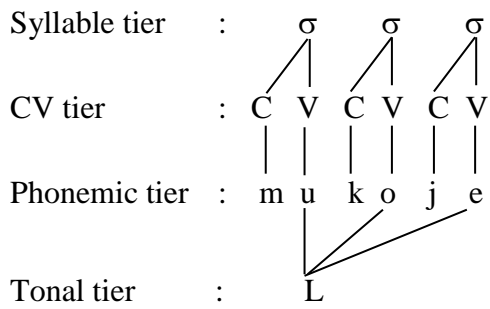
The diagram in (216) (a) shows the autosegmental representation of the tone pattern of *mù-kòjè* ‘rope’ in example (215). This noun has a low tone on all the syllables when uttered in isolation. The adjective *mù-léjì* ‘good’ has a high tone on the prefix and the stem initial syllable and a low tone on the final syllable [H.H.L] when uttered in isolation as shown in diagram (216) (b). Diagram (216) (c) shows the tone pattern of the noun *mù-làlà* ‘one’. This noun has a low tone on the syllables when uttered in isolation. The possessive pronoun *kw-é* ‘his/hers’ has a high tone when uttered in isolation as shown in diagram (216) (d). The demonstrative *j-úkù* ‘this’ has high tone on the stem initial syllable and a low tone on the final syllable [H.L] when uttered in isolation as shown in diagram (216) (e).

The diagram in (216) (f) (i) shows delinking of a low tone on the noun *mù-kòjè* ‘rope’, the prefix *mù* and the final syllable of the adjective *mù-léjì* ‘good’ and the numeral *mù-làlà* ‘one’ and the possessive pronoun *kw-é* that are underlyingly toneless. The diagram in (216) (f) (ii) shows reassociation. The broken lines are used to show that the low tone on the noun *mù-kòjè* ‘rope’, the low tone on the adjective prefix *mù* and the final syllable *jì* of the adjective and the low tone on the numeral *mù-làlà* ‘one’ and the possessive pronoun *kw-é* ‘his/hers’ do not remain stable. The low and high tones on all these syllables are therefore replaced with a high tone as shown in diagram (216) (f) (iii). The low and the high tone remains floating in (216) (c) (ii) and does not get anchored to any vowel hence it is deleted as shown in (216) (c) (iii).

The diagram in (216) (f) (iii) shows high tone anticipation in the noun phrase *mù-kójé mù-léjì mù-lálá kw-é j-úkù* ‘this one good rope of his/hers’. The high tone on the demonstrative *j-úkù* ‘this’ spreads leftwards to the possessive pronoun *kw-é* ‘his/hers’, to the numeral *mù-lálá* ‘one’, to the adjective *mù-léjì* ‘good’ and finally to the noun *mù-kójé* ‘rope’. This means that all the syllables that receive the surface H are underlyingly toneless. In this last diagram, OCP has been applied. Consecutive high tones exist because of the word boundary between the five words (i.e. *mù-kójé* ‘rope’, *mù-léjì* ‘good’, *mù-lálá* ‘one’, *kw-é* ‘his/hers’ and *j-úkù* ‘this’). Therefore, the diagram in (216) (d) (iii) is the final autosegmental representation and not the representation in (216) (d) (ii).

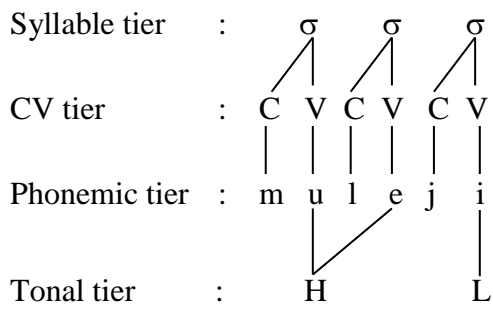
(216) (a)

mù-kòjè 'rope'



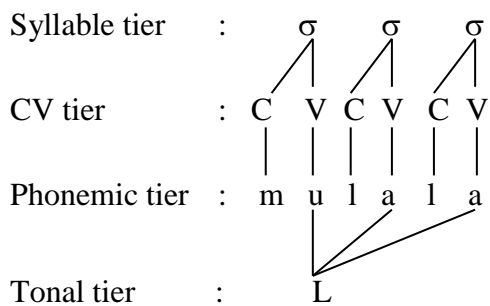
(216) (b)

mú-léjì 'good'



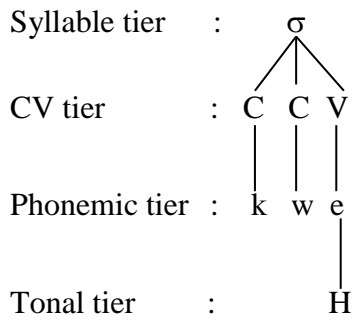
(216) (c)

mù-làlà 'one'



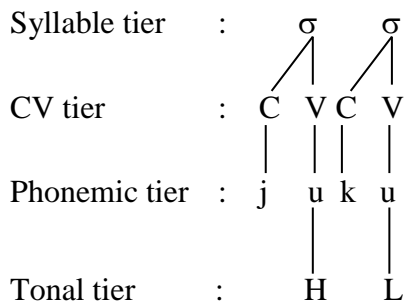
(216) (d)

kw-é 'his'



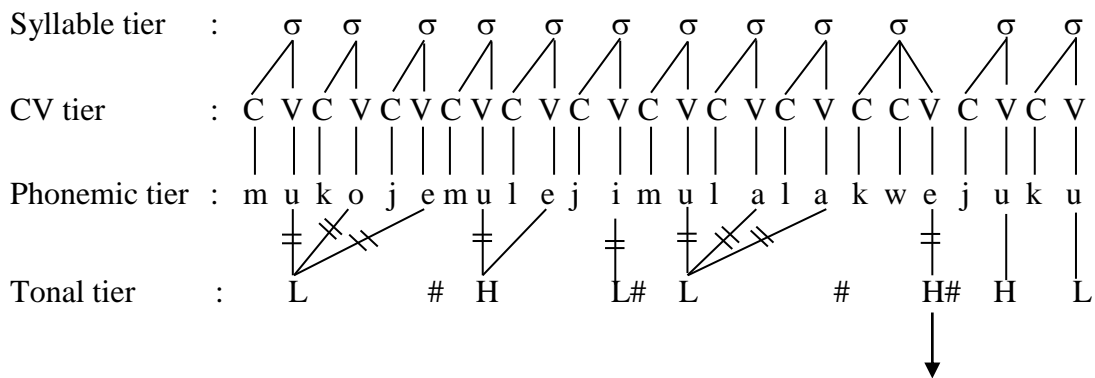
(216) (e)

j-úkù 'this'



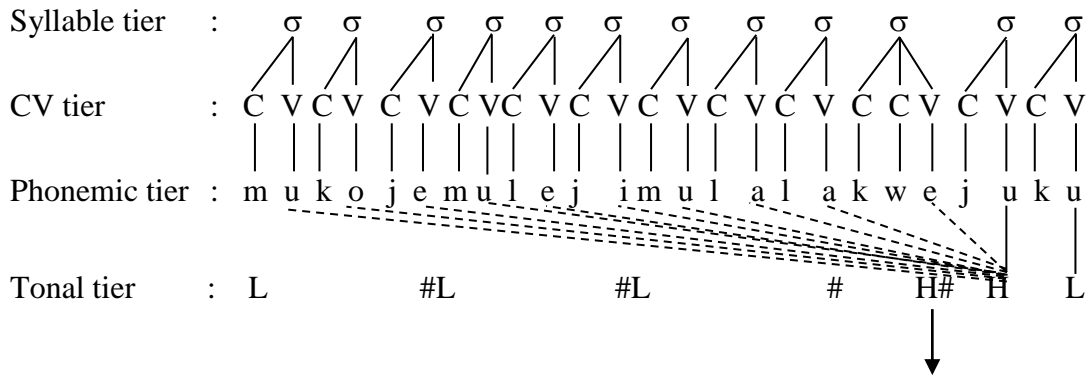
(216) (f) (i)

mú-kójé mú-léjí mú-lálá kw-é j-úkù 'this one good rope of his/hers'



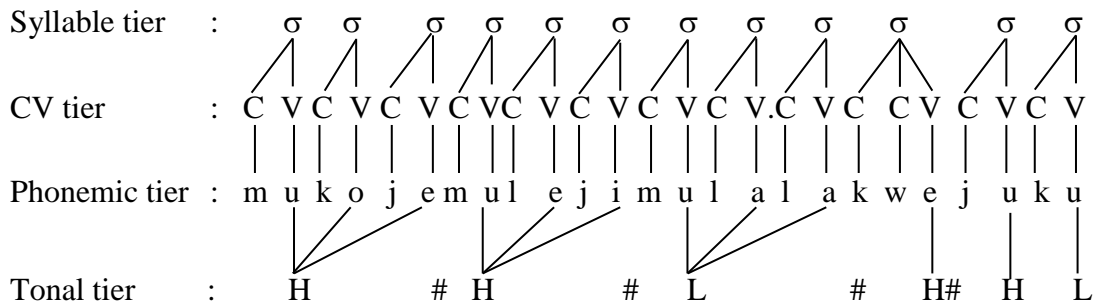
(216) (f) (ii)

mú-kójé mú- léjí mú-lálá kw-é j-úkù ‘this one good rope of his/hers’



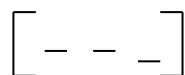
(216) (f) (iii)

mú-kójé mú-léjí mú-lálá kw-é j-úkù ‘this one good rope of his/hers’

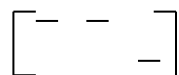


The tone patterns of the noun *mù-kòjè* ‘rope’, the adjective *mú-léjì* ‘good’, the numeral *mù-làlà* ‘one’, the possessive pronoun *kw-é* ‘his/hers’, the proximal demonstrative *j-úkù* ‘this’ and the noun phrase *mú-kójé mú-léjì mú-làlà kw-é j-úkù* ‘this one good rope of his/hers’ are illustrated in (217) (i), (ii), (iii), (iv) using RTT formalisms.

(217) (i) *mù-kòjè* ‘rope’



(217) (ii) *mú-léjì* ‘good’



(217) (iii) mù-làlà ‘one’

[- - -]

(217) (iv) kw-é ‘his/hers’

[-]

(217) (v) j-úkù ‘this’

[-]

(217) (vi) mú-kójé mú-léjí mú-lálá kw-é j-úkù ‘this one good rope of his/hers’

[- - - - - - - - - -]

Just like in the Lwisukha dialect, HTA spreads the H on the adjective leftwards to toneless syllables on the adjective, up to the noun class prefix of the toneless nouns in Lutiriki dialect, Ebarb et al (2015) and in Lubukusu dialect, Everhart et al (2015). For example, in Lutiriki, HTA is triggered in the noun phrase lí-hóóndó lí-láji ‘a good pumpkin’. In this noun phrase the high tone on the syllable lá of the adjective spreads across the toneless syllables to the prefix of the noun lí-hòòndò ‘pumpkin’. The noun phrase lí-hóóndó lí-láji is shown in (218) with other examples.

(218) High tone anticipation in Ø nouns in Lutiriki dialect

Ø nouns	Gloss	N + /H/ adjective/numeral	Gloss
lí-hòòndò	‘pumpkin’	<u>lí-hóóndó lí-láji</u>	‘a good pumpkin’
mùù-ndù	‘person’	<u>múú-ndú mú-sááxùlù</u>	‘an old person’
tsì-pámà	‘animals’	<u>tsì-pámá síítà</u>	‘six animals’

As mentioned above, in Lubukusu dialect, HTA spreads the H on the adjective leftwards across the toneless syllables, to the noun class prefix. The noun phrases in example (219) from Lubukusu dialect show HTA.

(219) High tone anticipation in Ø nouns in Lubukusu dialect

Ø nouns	Gloss	N + /H/ adjective/numeral	Gloss
βàβàà-ndù	‘people’	βáβáá-ndú βáà-làjì	‘good people’
kìmi-kòjè	‘ropes’	kímí-kójè kímì-βòfù	‘bad ropes’
tʃì-mòsì	‘calves’	tʃĩ-mósí tʃĩ-rànò	‘five calves’

In Luwanga dialect the leftward spread of H is only limited to the nominal stem, Marlo & Steimel (2015). H tones on the adjectives and numerals do not spread to the noun class prefix and pre prefixes as seen in Lwisukha and Lutiriki. The high tone spreads from the adjective to the stem of the noun. The noun class prefix is shown in bold type. The noun phrases in example (220) from Luwanga dialect show HTA.

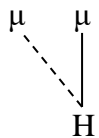
(220) High tone anticipation in Ø nouns in Luwanga dialect

Ø nouns	Gloss	N + /H/ adjective/numeral	Gloss
lì-hòòndò	‘pumpkin’	lì -hóóndó lí-léjì	‘a good pumpkin’
àmà-jòni	‘birds’	àmà -jóní káβìrì	‘two birds’
ì-tàlàjì	‘lion’	ì -tálání ín-dítì	‘a small lion’

The high tone anticipation rule is diagrammatically illustrated in (221). The broken association lines show high tone spreading from right to left. For this reason, the rule is called high tone anticipation. This rule is also found in Lutiriki according to Paster and Kim (2011). I agree with this rule HTA because it represents all the autosegmental phonology theory formalisms. The rule is given in example (221)

(221)

High tone anticipation

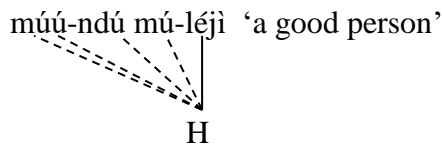


Taken from Paster & Kim (2011:11)

In example (222) the nouns phrase múú-ndú mú-léjì ‘a good person’ in Lwisukha is used to illustrate the high tone anticipation rule. The noun mùùndù ‘person’ has a low tone on all the syllables on the surface but is underlyingly toneless. The adjective mú-léjì ‘good’ has a high

tone on the prefix and the stem initial syllables and a low tone on the final syllable [H.H.L]. The high tone on the adjective syllable lé spreads leftwards across toneless syllables in the phrasal form. As discussed earlier in section 4.3 adjectives that have a high tone trigger high tone anticipation.

(222)

múú-ndú mú-léjì ‘a good person’


In the next section, the discussion is on lack of high tone anticipation in HL nouns with an adjective that has a high tone. In addition, nouns followed by the toneless adjective -lìtòhò ‘heavy’ and nouns followed by the toneless numeral -làlà ‘one’ are discussed.

4.10 Non-application of the high tone anticipation rule

As earlier discussed in section 4.2, high tone anticipation means the right to left spreading of a high tone to toneless syllables of a postmodified noun. Therefore, lack of high tone anticipation means there is no right to left high tone spreading to toneless syllables to a postmodified noun. In the next section, the discussion is on lack of high tone anticipation in HL nouns with an adjective that has a high tone.

4.10.1 Lack of high tone anticipation in HL nouns with an adjective that has a high tone

According to Marlo & Steimel (2015:6) high tone anticipation does not occur in nouns that have a high tone on the prefix and the stem initial syllables and a final syllable that has a low tone [H.H.L] in Luwanga dialect. This characteristic is also observed in Lwisukha dialect as discussed in this section. This suggests that there is an underlying distinction between syllables that have a low tone and toneless syllables. Nouns that do not allow leftward spreading of the high tone to the final syllable of the noun have a low tone and not toneless. Therefore, when such nouns are followed immediately with an adjective that has a high tone, the high tone on the adjective does not spread to the nouns because the nouns have a high tone and a low tone (HL). As discussed earlier in the introduction of this paper, a high tone and a low tone block HTA. A high tone on the adjective only spreads where there is a toneless syllable. Therefore, the nouns in this example have a low tone on the surface and underlyingly. That is why we refer to the nouns in this section as HL nouns. The nouns discussed in this section therefore maintain the same tone pattern, whether they are uttered in

isolation or in a phrase. Example (223) shows that there is no high tone anticipation in HL nouns with an adjective that has a high tone.

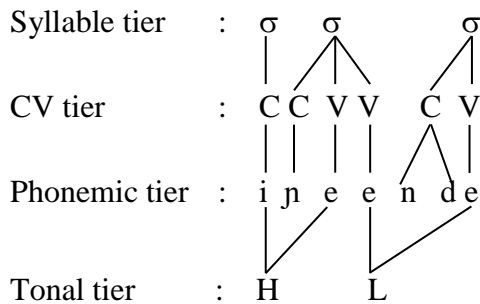
(223) Lack of high tone anticipation in HL nouns

HL nouns	Gloss	N+/H/ adjectives	Gloss
ʃí-kóòmbè	‘cup’	ʃí-kóòmbè ʃí-léjì	‘a good cup’
mú-sáàlà	‘tree’	mú-sáàlà mú-léjì	‘a good tree’
lí-túùndà	‘fruit’	lí-túùndà lí-léjì	‘ a good fruit’
í-ńéèndè	‘jigger’	í-ńéèndè í-ńdítìtì	‘a small jigger’

The diagram in (224) (a) shows the autosegmental representation of the tone pattern of í-ńéèndè ‘jigger’ in example (223). This noun has a high tone on the prefix, a falling tone on the stem initial syllable and a low tone on the final syllable [H.HL.L] when uttered in isolation. The adjective í-ńdítìtì ‘small’ has a high tone on the prefix and the stem initial syllable and a low tone on the penultimate syllable and the final syllable [H.H.L.L] when uttered in isolation as shown in diagram (224) (b). The diagram in (224) (c) shows that high tone anticipation is not triggered in the phrase í-ńéèndè í-ńdítìtì ‘a small jigger’.

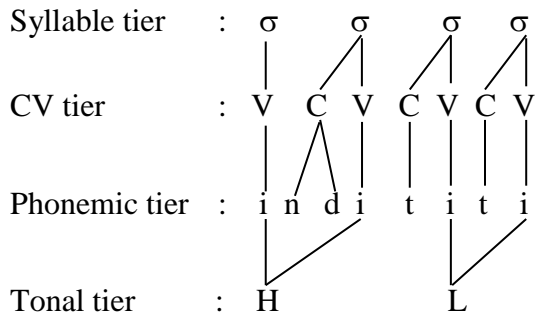
(224) (a)

í-ńéèndè ‘a jigger’



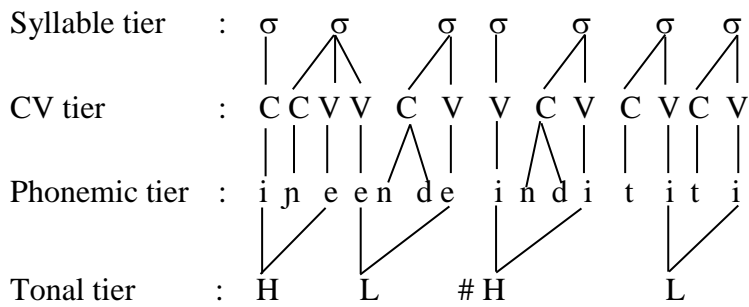
(224) (b)

í-ndítìtì ‘small’



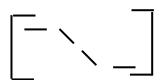
(224) (c)

í-ńéèndè í-ndítìtì ‘a small jigger’

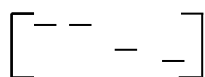


The noun í-ńéèndè ‘jigger’, the adjective í-ndítìtì ‘small’ and the noun phrase í-ńéèndè í-ndítìtì ‘a small jigger’ tone pattern are illustrated in (225) (i), (ii), (iii) by using RTT formalisms.

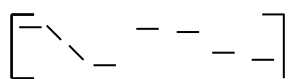
(225) (i) í-ńéèndè ‘jigger’



(225) (ii) í-ndítìtì ‘small’



(225) (iii) í-ńéèndè í-ndítìtì ‘a small jigger’



4.10.2 Lack of high tone anticipation in nouns with the adjective -litòhò ‘heavy’

As earlier discussed in section 4.3, adjectives that have a high tone trigger high tone anticipation while adjectives that have a low tone on all the syllables don’t trigger HTA. For example, the adjective -litòhò ‘heavy’ does not trigger high tone anticipation when preceded with nouns of different tone patterns as seen in example (226) because the adjective has low tones on all the syllables. The nouns discussed in this section therefore maintain the same tone pattern, whether they are uttered in isolation or in a phrase.

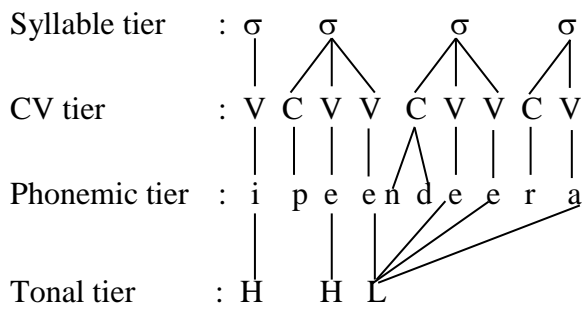
(226) Lack of HTA in nouns with adjective -litòhò ‘heavy’

Nouns	Gloss	N + /L/ adjectives	Gloss
mùù-ndù	‘person’	mùù-ndù mù-litòhò	‘a heavy person’
lwíí-kà	‘horn’	lwíí-kà lù-litòhò	‘a heavy horn’
líí-nù	‘tooth’	líí-nù lì-litòhò	‘a heavy tooth’
mú-xónò	‘hand’	mú-xónò mù-litohò	‘a heavy hand’
mú-xáàná	‘girl’	mú-xáàná mù-litohò	‘a heavy girl’
mú- [↓] túkâ	‘car’	mú- [↓] túkâ mù-litohò	‘a heavy car’
í-péèndèèrà	‘flag’	í-péèndèèrà i-nditohò	‘a heavy flag’
ʃí- [↓] táámbájâ	‘cloth’	ʃí- [↓] táámbájâ ʃi-litohò	‘a heavy cloth’

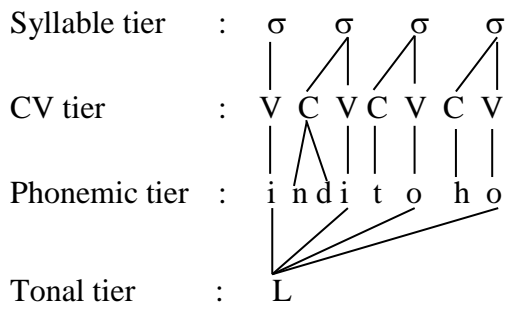
The diagram in (227) (a) shows the autosegmental representation of the tone pattern of í-péèndèèrà ‘flag’ in example (226). This noun has a high tone on the prefix and a falling tone on the stem initial syllable followed by a low tone on the penultimate syllable and the final syllable. [H.HL.L.L] when uttered in isolation. The adjective ì-nditòhò ‘heavy’ has a low tone on all the syllables when uttered in isolation as shown in diagram (227) (b). The diagram in (227) (c) shows the tone pattern of the noun í-péèndèèrà i-nditohò ‘a heavy flag.’ High tone anticipation is not triggered in this noun phrase because the adjective ì-nditòhò has a low tone on all the syllables.

(227) (a) :

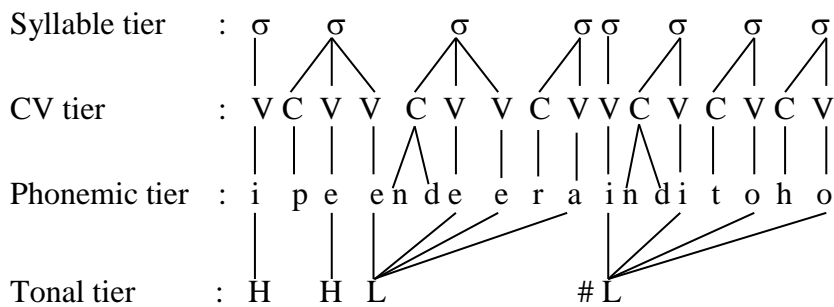
í-péèndèèrà ‘flag’



(227) (b) :
 ì-nditòhò ‘heavy’

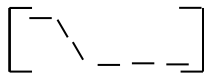


(227) (c) :
 í-péèndèèrà ì-nditòhò ‘ a heavy flag’

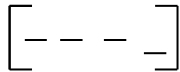


The noun í-péèndèèrà ‘flag’, the adjective ì-nditòhò ‘heavy’ and the noun phrase í-péèndèèrà ì-nditòhò ‘a heavy flag’ tone pattern are illustrated in (228) (i), (ii), (iii) by using RTT formalisms.

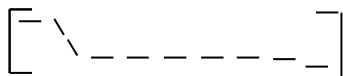
(228) (i) í-péèndèèrà ‘flag’



(228) (ii) ì-nditòhò ‘heavy’



(228) (iii) í-péèndèèrà ì-nditòhò ‘a heavy flag’



4.10.3 Lack of high tone anticipation in nouns and numeral -làlà ‘one’

Earlier in section 4.5, the discussion was on nouns with numerals that have a high tone. The observation was that in such noun phrases high tone anticipation is triggered. In this section the discussion is on nouns with numeral -làlà ‘one’ that has a low tone on all the syllables. The nouns discussed have different tone patterns uttered in isolation. In these noun phrases high tone anticipation is not triggered because the numeral -làlà ‘one’ has a low tone on all the syllables and not a high tone. Therefore, the nouns and numeral -làlà ‘one’ maintain the same tone pattern, whether they are uttered in isolation or in a phrase. Example (229) shows that high tone anticipation is not triggered when nouns are with the numeral -làlà which means ‘one’.

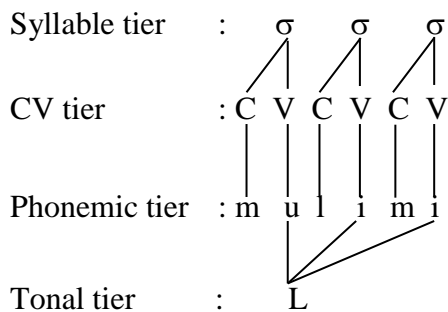
(229) Lack of high tone anticipation in nouns and numeral -làlà ‘one’

Nouns	Gloss	N + /L / numeral	Gloss
mùù-ndù	‘person’	mùù-ndù mù-làlà	‘one person’
mù-lìmi	‘farmer’	mù-lìmi mù-làlà	‘one farmer’
í-sùrì	‘bedbug’	í-sùrì in-dàlà	‘one bedbug’
ǰí-βùǰi	‘jerry can’	ǰí-βùǰi ǰi-làlà	‘one jerry can’
ǰí-kóòmbè	‘cup’	ǰí-kóòmbè ǰi-làlà	‘one cup’
mú-sààtsà	‘man’ husband’	mú-sààtsà mù-làlà	‘one man, one husband’
ǰí-fwáànàni	‘doll’	ǰí-fwáànàni ǰi-làlà	‘one doll’
mú-ká [†] lááni	‘clerk’	mú-ká [†] lááni mù-làlà	‘one clerk’

The diagram in example (230) (a) shows the autosegmental representation of mù-lìmì ‘farmer’ in example (229). This noun has a low tone on all the syllables when uttered in isolation but is underlyingly toneless. The numeral mù-làlà has a low tone on all the syllables when uttered in isolation as shown in diagram (230) (b). The diagram in (230) (c) shows the tone pattern of the noun phrase mù-lìmì mù-làlà ‘one’ farmer.’. High tone anticipation is not triggered in this noun phrase because the numeral mù-làlà ‘one’ has a low tone on all the syllables.

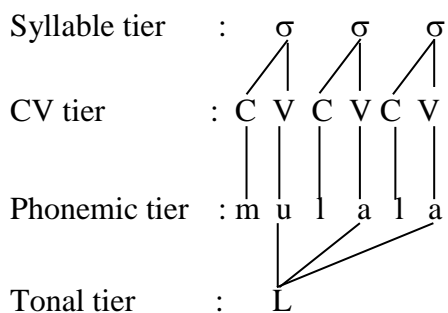
(230) (a)

mù-lìmì ‘farmer’



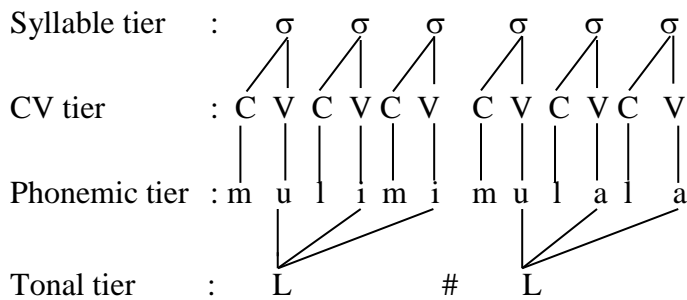
(230) (b)

mù-làlà ‘one’



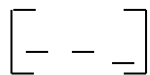
(230) (c)

mù-lìmì mù-làlà ‘one farmer’

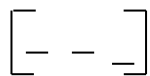


The tone pattern of the noun mù-lìmì ‘farmer’ the numeral mù-làlà ‘one’ and the noun phrase mù-lìmì mù-làlà ‘one farmer’ are illustrated in (231) (i), (ii), (iii) using RTT formalisms.

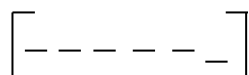
(231) (i) mù-lìmì ‘farmer’



(231) (ii) mù-làlà ‘one’



(231) (iii) mù-lìmì mù-làlà ‘one farmer’



In the next section the discussion is on high tone insertion triggered by demonstratives, possessive pronouns and quantifiers.

4.11 High tone insertion

High tone insertion is a phenomenon in which demonstratives, possessive pronouns and some quantifiers insert a high tone on the penultimate syllable or the final syllable of a preceding noun that has toneless syllables. These modifiers do not need to surface with any high tone on the modifier itself for high tone insertion to be triggered. In some cases, the high tone that is inserted undergoes high tone anticipation. Marlo & Steimel (2015:14) discuss that, in Luwanga the high tone is inserted on the final syllable of the preceding toneless syllables of the noun. This study seeks to establish whether the same modifiers trigger the high tone

insertion rule and where the high tone is inserted on the noun in Lwisukha dialect. In this section the syllable in the toneless nouns that has high tone insertion is in bold type.

4.12 High tone insertion in toneless nouns triggered by demonstratives

The demonstratives that trigger high tone HTI insertion are grouped into three: proximal, distal and remote demonstratives. The next section 4.12.1 discusses high tone insertion triggered by proximal demonstratives.

4.12.1 High tone insertion in toneless nouns triggered by proximal demonstratives

According to Murphy (2012) proximal demonstratives are demonstratives that point to objects that are close or very near to the speaker for example ‘this’ and ‘these’. ‘This’ is used in the singular form and ‘these’ is used in the plural form. The examples discussed in this section show that proximal demonstratives insert a high tone to the penultimate syllable of the preceding noun. The high tone that is inserted on toneless syllables under high tone insertion is shown in bold type in this section.

The nouns in example (232) surface with a low tone when uttered in isolation but are underlyingly toneless. Alongside each noun in isolation is the noun with a proximal demonstrative. In each of the phrasal forms, a high tone is inserted on the penultimate syllable *kó*, *ḡóó*, *hóó* and *xú* of the nouns. The first two nouns in the phrasal form have a low tone on the prefix, a high tone on the penultimate syllable and a low tone on the final syllable [L.H.L] on the surface. However, in the third and the fourth noun phrases the high tone insertion and the high tone anticipation rules are triggered. The high tone on the penultimate syllable of these nouns spreads leftwards to the prefix. These noun phrases have the noun *má-hóóndò* ‘pumpkin’ with a [H.H.L] tone pattern and the noun *má-xúxúnì* ‘amoeba’ with a [H.H.H.L] tone pattern on the surface. The proximal demonstratives have a high tone on the stem initial syllable and a low tone on the final syllable [H.L] when uttered in isolation and in the phrasal form.

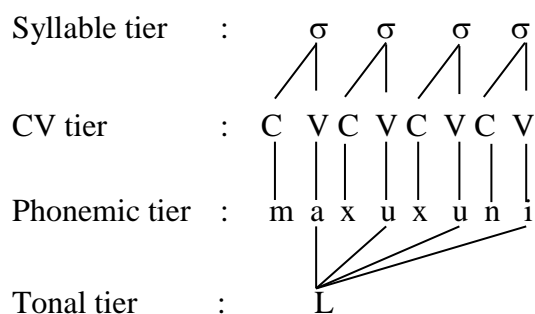
(232) High tone insertion triggered by proximal demonstratives

Ø nouns	Gloss	N + Dem	Gloss
mì-kòjè	‘ropes’	mì- kó jè j-ítʃi	‘these ropes’
tsì-ŋòòmbè	‘cows’	tsì- ŋóó mbè j-ítsì	‘these cows’
mà-hòòndò	‘pumpkin’	<u>má-hóó</u> ndò j-ákà	‘these pumpkins’
mà-xùxùni	‘amoeba’	<u>má-xúxú</u> ni j-ákà	‘these amoebas’

The diagram in (233) (a) shows the autosegmental representation of the tone of mà-xùxùni ‘amoebas’ in example (232). This noun has a low tone on all the syllables when uttered in isolation. The demonstrative j-ákà ‘these’ has a high tone on the stem initial syllable and a low tone on the final syllable [H.L] uttered in isolation as shown in diagram (233) (b). The diagram in (233) (c) (i) shows delinking of a low tone on the noun mà-xùxùni ‘amoebas’ followed by reassociation in diagram (233) (c) (ii). The broken lines show that the low tone on the first three syllables of the noun mà-xùxùni ‘amoebas’ does not remain stable. This low tone on the first three syllables is therefore replaced with a high tone as shown in diagram (233) (c) (iii). The low tone remains floating in (233) (c) (ii) and does not get anchored to any vowel hence it is deleted as shown in (233) (iii). The diagram (233) (iii) shows that the high tone insertion and high tone anticipation rules are triggered because the high tone inserted on the syllable xú of the noun spreads leftwards up to the prefix.

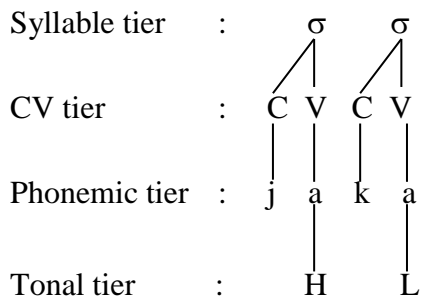
(233) (a)

mà-xùxùni ‘amoebas’



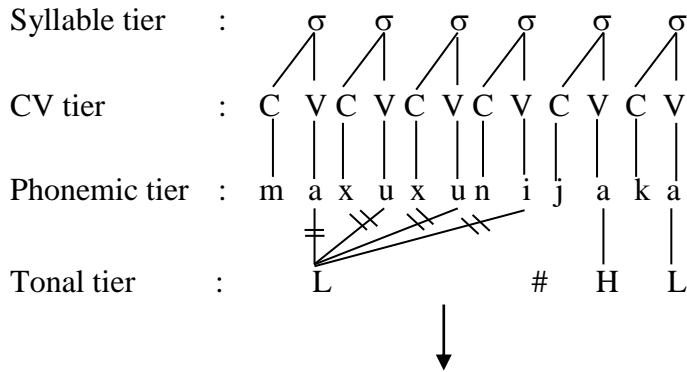
(233) (b)

j-ákà 'these'



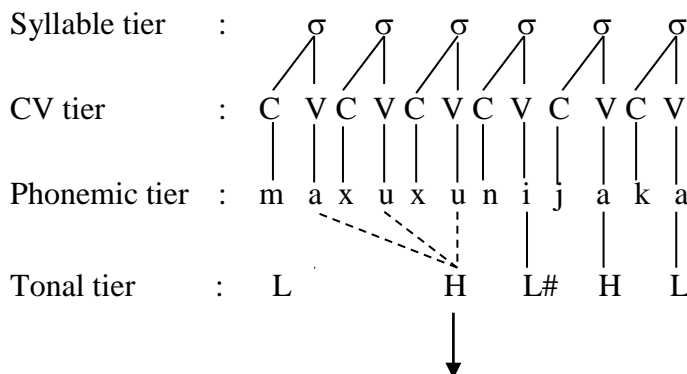
(233) (c) (i)

má-xúxúni j-ákà 'these amoebas'



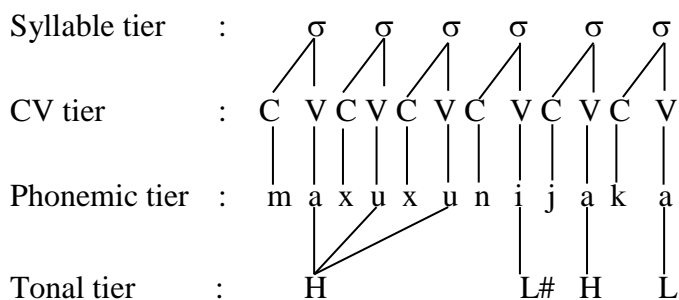
(233) (c) (ii)

má-xúxúni j-ákà 'these amoebas'



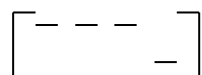
(233) (c) (iii)

má-xúxúni j-ákà ‘these amoebas’

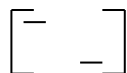


The tone pattern of the noun mà-xùxùni ‘amoebas’, the demonstrative j-ákà ‘these’, the noun phrase má-xúxúni j-ákà ‘these amoebas’ are illustrated in (234) (i), (ii), (iii) by using RTT formalisms.

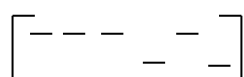
(234) (i) mà-xùxùni ‘amoebas’



(234) (ii) j-ákà ‘these’



(234) (iii) má-xúxúni j-ákà ‘these amoebas’



4.12.2 High tone insertion in toneless nouns triggered by distal demonstratives

High tone insertion is also triggered by distal demonstratives. According to Murphy (2012) distal demonstratives are demonstratives that point to objects that are far from the speaker. Examples of distal demonstratives are ‘that’ and ‘those’. ‘That’ is used in the singular form while ‘those’ is used in the plural form. The nouns in example (235) surface with a low tone when uttered in isolation but are underlyingly toneless. The nouns in isolation are followed by distal demonstratives. In each of the phrasal forms, a high tone is inserted on the penultimate syllable hóó, hóó and kó of the noun. Therefore, in the phrasal forms, the nouns surface with a low tone on the prefix, a high tone on the penultimate syllable and a low tone

on the final syllable [L.H.L]. The distal demonstratives have a low tone on the first syllable and high tone on the final syllable [L.H] when uttered in isolation but this tone pattern changes to a low tone on all the syllables [L.L] in the phrasal form. Consider the examples given in (235) below.

(235) High tone insertion triggered by distal demonstratives

Ø nouns	Gloss	N + Dem	Gloss
ì-ṅòòmbè	‘cows’	ì-ṅóómbè èj-ò	‘that (far) cow’
lì-hòòndò	‘pumpkin’	lì-hóóndò èr-ò	‘that (far) pumpkin’
mù-kòjè	‘rope’	mù-kójè òk-ò	‘that (far) rope’

4.12.3 High tone insertion in toneless nouns triggered by remote demonstratives

According to Murphy (2012), remote demonstratives are demonstratives that point to objects that are very far from the speaker for example ‘that’ and ‘those’. ‘That’ is used in the singular form while ‘those’ is used in the plural form. Therefore, remote demonstratives point to objects that are at a further distance from the speaker as compared to distal demonstratives. The nouns in example (236) surface with a low tone in isolation but are underlyingly toneless. In the phrasal form, the nouns are with the remote demonstratives. In each of the phrasal forms, a high tone is inserted on the penultimate syllable ṅóó, hóó and kó of the noun. Therefore, the nouns surface with a low tone on the prefix, a high tone on the penultimate syllable and a low tone on the final syllable [L.H.L].

It is important to note that in Lwisukha the distal demonstratives and remote demonstratives have the same sounds but are differentiated by tone thus they are pronounced differently. Distal demonstratives and remote demonstratives have the same tone pattern uttered in isolation that is a [L.H] tone pattern. In the phrasal form, the distal demonstratives have a low tone on the first and the final syllables [L.L] while the remote demonstratives have a high tone on the first and the final syllable [H.H]. Example (236) shows high tone insertion triggered by remote demonstratives.

(236) High tone insertion triggered by remote demonstratives

Ø nouns	Gloss	N + Dem	Gloss
ì-ηòòmbè	‘cows’	ì-ηóómbè éj-ó	‘that (very far) cow’
lì-hòòndò	‘pumpkin’	lì-hóóndò éér-ó	‘that (very far) pumpkin’
mù-kòjè	‘rope’	mù-kójè ók-ó	‘that (very far) rope’

In the next section, the discussion is on high tone insertion triggered by possessive pronouns.

4.13 High tone insertion in toneless nouns triggered by possessive pronouns

Possessive pronouns also trigger high tone insertion (HTI). In this section the discussion is on high tone insertion triggered by possessive pronoun -áàṅJè which means ‘mine’, ó which means ‘yours’ (2nd person singular), -éèṅù which means ‘yours’ (2nd person plural), -é which means ‘his/hers’, -éèrù which means ‘ours’ and -áàβò which means ‘theirs’. Table 79 shows the tone patterns of these possessive pronouns when uttered in isolation. In the phrase context form, some of the possessive pronouns maintain the same tone patterns as uttered in isolation but others acquire new tone patterns.

Table 79: Tone patterns of possessive pronouns in isolation

Lwisukha	Gloss	Tone patterns
-áàṅJè	‘mine’ (1 st person singular)	HL.L
-éèrù	‘ours’ (1 st person plural)	HL.L
-ó	‘yours’ (2 nd person singular)	H
-éèṅù	‘yours’ (2 nd person plural)	HL.L
-é	‘his/hers’ (3 rd person singular)	H
-áàβò	‘theirs’ (3 rd person plural)	HL.L

4.13.1 High tone insertion in toneless nouns triggered by possessive pronoun -áàṅJè ‘mine’

The nouns in example (237) surface with a low tone in isolation but are underlyingly toneless. In the phrasal form, the nouns are with the agreeing form of the possessive pronoun -áàṅJè ‘mine’. In each of the phrasal forms a high tone is inserted on penultimate syllable ηóó, kó and tsí of the nouns. Therefore, the nouns have a low tone on the prefix, a high tone on the penultimate syllable and a low tone on the final syllable [L.H.L]. The possessive

pronoun -ààṅJè ‘mine’ has a falling tone on the stem initial syllable and a low tone on the final syllable [HL.L] uttered in isolation and in the phrasal form.

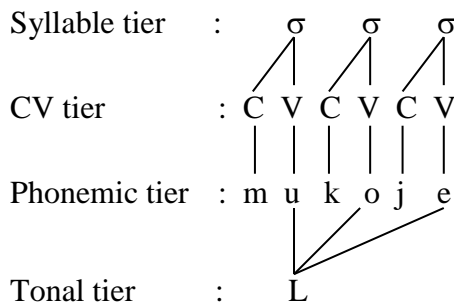
(237) High tone insertion triggered by possessive pronoun -ààṅJè ‘mine’

Ø nouns	Gloss	N + Possessive	Gloss
ì--ṅòòmbè	‘cow’	ì-ṅóómbè j-ààṅJè	‘my cow’
mù-kòjè	‘rope’	mù-kójè kw-ààṅJè	‘my rope’
mù-tsìkù	‘enemy’	mù-tsìkù w-ààṅJè	‘my enemy’

The diagram in (238 (a) shows the autosegmental representation of the tone of mù-kòjè ‘rope’ in (237). This noun has a low tone on all the syllables. The possessive pronoun kw-ààṅJè ‘mine’ has a falling tone on the stem initial syllable and a low tone on the final syllable [HL.L] when uttered in isolation and in the phrasal form as shown in diagram (238 (b). The diagram in (238 (c) (i) shows delinking of a low tone on the penultimate syllable of the noun mù-kòjè ‘rope’ followed by reassociation in diagram (238 (c) (ii). The broken lines show that the low tone on the penultimate syllable of the noun mù-kòjè ‘rope’ does not remain stable. This low tone is therefore replaced with a high tone as shown in diagram (238 (c) (iii). The low tone remains floating in (238 (ii) and does not get anchored to any vowel hence it is deleted as shown in (238 (iii). The diagram (238 (iii) shows that a high tone is inserted on the syllable kó of the noun mù-kójè ‘rope’.

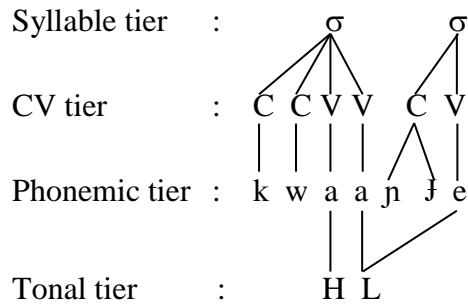
(238) (a)

mù-kòjè ‘rope’



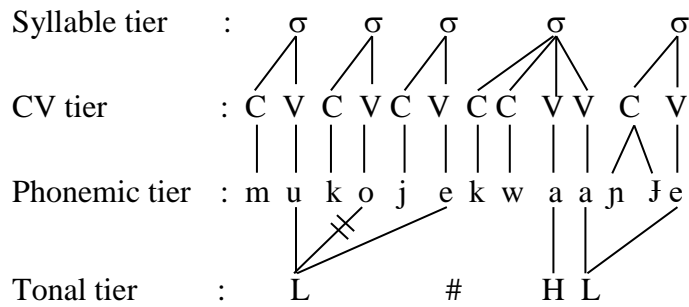
(238) (b)

kw-ààṅḂè 'mine'



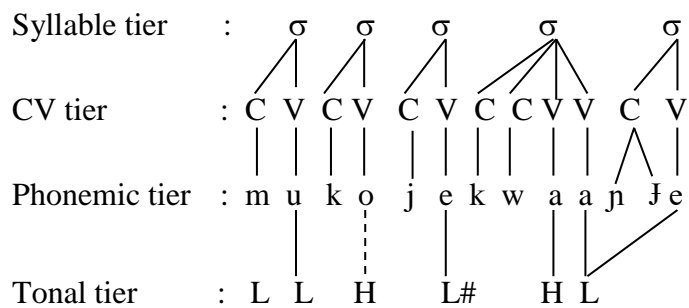
(238) (c) (i)

mù-kójè kw-ààṅḂè 'my rope'



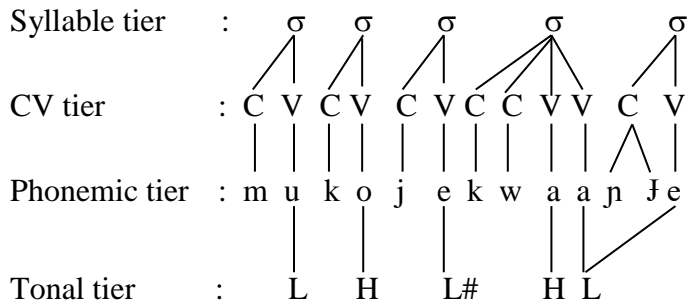
(238) (c) (ii)

mù-kójè kw-ààṅḂè 'my rope'



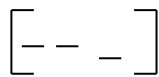
(238) (c) (iii)

mù-kójè kw-ààṅJè ‘my rope’

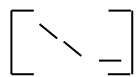


In example (239) (i), (ii) (iii), the tone pattern of the noun mù-kòjè ‘rope’, the possessive pronoun kw-ààṅJè ‘mine’ and the noun phrase mù-kójè kw-ààṅJè ‘my rope’ are illustrated using RTT formalisms.

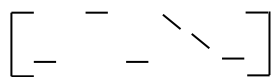
(239) (i) mù-kòjè ‘rope’



(239) (ii) kw-ààṅJè ‘my’



(239) (iii) mù-kójè kw-ààṅJè ‘my rope’



4.13.2 High tone insertion in toneless nouns triggered by possessive pronoun -èèrù ‘ours’

In example (240) high tone insertion is triggered by the possessive pronoun -èèrù ‘ours’. The nouns surface with a low tone when uttered in isolation but are underlyingly toneless. The nouns in isolation are followed by the possessive pronoun -èèrù ‘ours’ in the phrasal form. In each of the phrasal forms a high tone is inserted on the penultimate syllable hóó, sáá and kó of the noun. Therefore, in the phrasal form, the first two nouns mà-sáámbù ‘leaves’ and mì-kójè ‘ropes’ have a low tone on the prefix, a high tone on the penultimate syllable and a low tone on the final syllable [L.H.L] on the surface. In the noun phrases má-hóóndò k-èèrù ‘our

pumpkins’ and $\beta\acute{ı}$ -róré \acute{f} ítsò $\beta\acute{ı}$ -èèrù ‘our sign’ high tone insertion and high tone anticipation rules are triggered. The noun má-hóóndò ‘pumpkin’ has high tone on the prefix and the penultimate syllable and a low tone on the final syllable [H.H.L] on the surface and the noun $\beta\acute{ı}$ -róré \acute{f} ítsò has a high tone on the prefix, the stem initial syllable, the third syllable and the penultimate syllable and a low tone on the final syllable [H.H.H.H.L] on the surface. The possessive pronoun -èèrù ‘ours’ has a falling tone on the stem initial syllable and a low tone on the final syllable [HL.L] when uttered in isolation but this tone pattern changes to a low tone on the stem initial syllable and the final syllable [L.L] in the phrasal form.

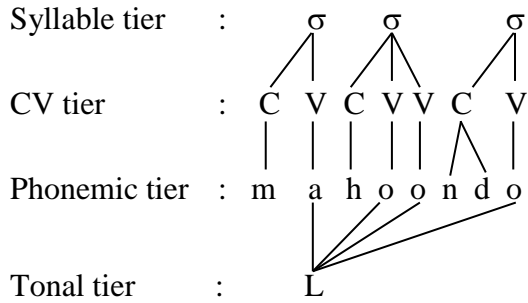
(240) High tone insertion triggered by possessive pronoun -èèrù ‘ours’

Ø nouns	Gloss	N + Possessive	Gloss
mà-sààmbù	‘leaves’	mà-sáámbù k-èèrù	‘our leaves’
mì-kòjè	‘ropes’	mì-kójè t \acute{f} \acute{f} -èèrù	‘our ropes’
mà-hòòndò	‘pumpkins’	<u>má-hóó</u> ndò k-èèrù	‘our pumpkins’
$\beta\acute{ı}$ -ròrè \acute{f} ítsò	‘sign’	<u>$\beta\acute{ı}$-róré\acute{f}ítsò</u> $\beta\acute{ı}$ -èèrù	‘our signs’

Diagram (241) (a) shows the autosegmental representation of the tone of mà-hòòndò ‘pumpkins’ in example (240) when uttered in isolation. This noun has a low tone on all the syllables. The possessive pronoun k-èèrù ‘ours’ has a falling tone on the stem initial syllable and low tone on the final syllable when uttered in isolation as shown in diagram (241) (b). This tone pattern changes to a low tone on all the syllables (i.e. k-èèrù) in the phrase context form. Diagram (241) (c) (i) shows delinking of a low tone on the noun mà-hòòndò ‘pumpkins’. Diagram (241) (c) (ii) shows by reassociation. The broken lines show that the low tone on the prefix and the penultimate syllable hòò of the noun does not remain stable. The low tone on the penultimate syllable is therefore replaced with a high tone as shown in diagram (241) (c) (iii). The low tone remains floating in (241) (c) (iii) and does not get anchored to any vowel hence it is deleted as shown in (241) (c) (iii). Diagram (241) (c) (iii) shows that the high tone insertion and high tone anticipation rules are triggered. The high tone inserted on the syllable hóó spreads leftwards up to the prefix.

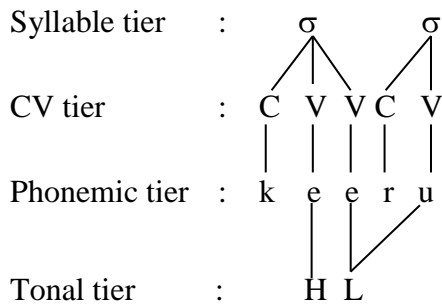
(241) (a)

mà-hòòndò 'pumpkins'



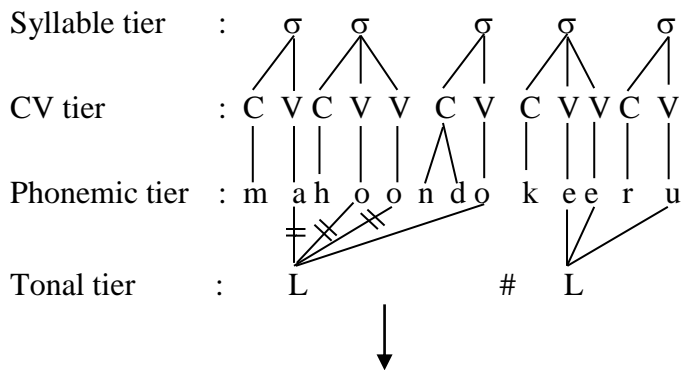
(241) (b)

k-ээрù 'our'

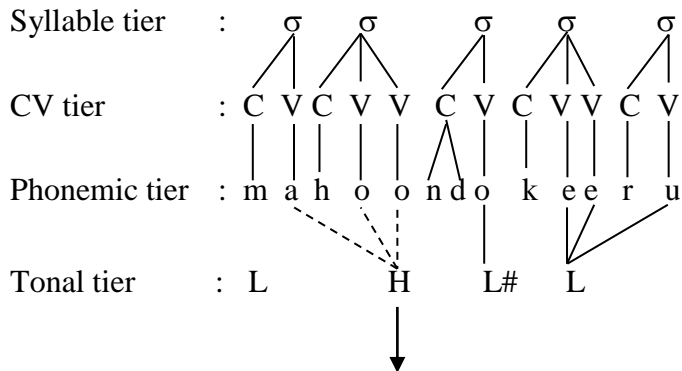


(241) (c) (i)

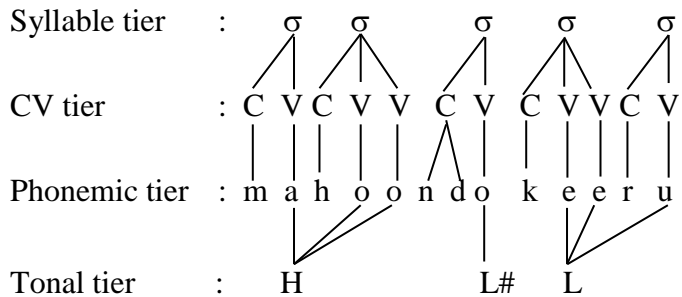
má-hóòndò k-ээрù 'our pumpkins'



(241) (c) (ii)
 má-hóondò k-èèrù 'our pumpkins'

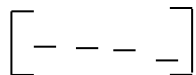


(241) (c) (iii)
 má-hóondò k-èèrù 'our pumpkins'

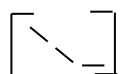


The tone pattern of the noun mà-hòondò 'pumpkins', the possessive pronoun k-èèrù 'ours' and the noun phrase má-hóondò k-èèrù 'our pumpkins' are illustrated in (242) (i), (ii) and (iii) using RTT formalisms.

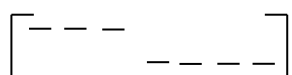
(242) (i) mà-hòondò 'pumpkins'



(242) (ii) k-èèrù 'ours'



(242) (iii) má-hóondò k-èèrù 'our pumpkins'



4.13.3 High tone insertion triggered in toneless nouns with possessive pronoun -èèrù ‘ours’ and a demonstrative

When a demonstrative is added to the noun phrases in example (240) high tone insertion is still triggered because possessives and demonstratives trigger high tone insertion. This is shown in the noun phrases in example (243). In the phrasal forms, the first two noun phrases have nouns with a low tone on the prefix, a high tone on the penultimate syllable and a low tone on the final syllable [L.H.L] on the surface. In the noun phrase *má-hóóndò k-èèrù j-áká* ‘these pumpkins are ours’ and *βí-rórèfítsò βj-èèrù j-íβí* ‘these signs are ours’ high tone insertion and high tone anticipation rules are triggered. The high tone inserted on the syllable *hóó* and *í* of the nouns spreads up to the prefix. Therefore the noun *má-hóóndò* ‘pumpkin’ has high tone on the prefix and the penultimate syllable and a low tone on the final syllable [H.H.L] tone on the surface. The noun *βí-rórèfítsò* ‘signs’ have a high tone on the prefix, the stem initial syllable, the third syllable, the penultimate syllable and a low tone on the final syllable [H.H.H.H.L] tone on the surface. The possessive pronoun -èèrù ‘ours’ has a falling tone on the stem initial syllable and a low tone on the final syllable [H.L] when uttered in isolation but has a low tone on the stem initial syllable and the final syllable [L.L] in the phrasal form.

(243) HTI triggered by possessive pronoun -èèrù ‘ours’ and a demonstrative

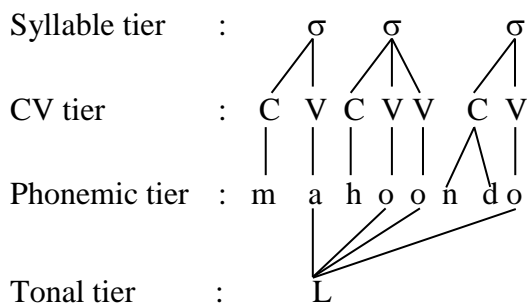
Ø nouns	Gloss	N + Possessive+Dem	Gloss
<i>mà-sàambu</i>	‘leaves’	<i>mà-sáambu k-èèrù j-áká</i>	‘these leaves are ours’
<i>mì-kòjè</i>	‘ropes’	<i>mì-kójè tʃj-èèrù j-ítʃí</i>	‘these ropes are ours’
<i>mà-hòòndò</i>	‘pumpkins’	<i><u>má-hóó</u>ndò k-èèrù j-áká</i>	‘these pumpkins are ours’
<i>βì-ròrèfítsò</i>	‘signs’	<i><u>βí-rórèfítsò</u> βj-èèrù j-íβí</i>	‘these signs are ours’

Diagram (244) (a) shows the autosegmental representation of *mà-hòòndò* ‘pumpkins’ when uttered in isolation. This noun has a low tone on all the syllables. The possessive pronoun *k-èèrù* ‘ours’ has a falling tone on the stem initial syllable and low tone on the final syllable [HL.L] when uttered in isolation as shown in diagram (244) (b). This tone pattern changes to a low tone on all the syllables (i.e. *k-èèrù*) in the phrase context form. The proximal demonstrative *j-ákà* ‘these’ has a high tone on the stem initial syllable and a low tone on the final syllable [H.L] when uttered in isolation and in the phrasal form as shown in diagram (244) (c). Diagram (244) (d) (i) shows delinking of a low tone on the noun *mà-hòòndò* ‘pumpkins’ followed by reassociation in diagram (244) (d) (ii). The broken lines show that the low tone on the prefix and the penultimate syllable *hòò* of the noun does not remain

stable. The low tone on the prefix and the penultimate syllable is therefore replaced with a high tone as shown in diagram (244) (d) (iii). The low tone remains floating in (244) (d) (iii) and does not get anchored to any vowel hence it is deleted as shown in (244) (d) (iii). Diagram (244) (d) (iii) shows that the high tone insertion and high tone anticipation rules are triggered. The high tone inserted on the syllable hóó spreads leftwards up to the prefix of the noun.

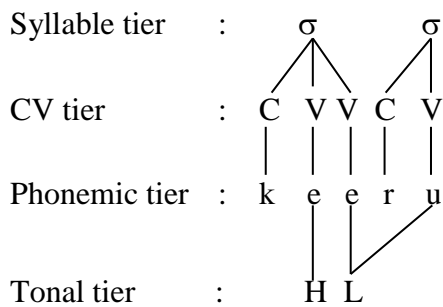
(244) (a)

mà-hòòndò ‘pumpkins’

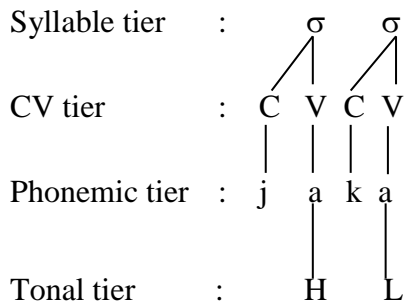


(244) (b)

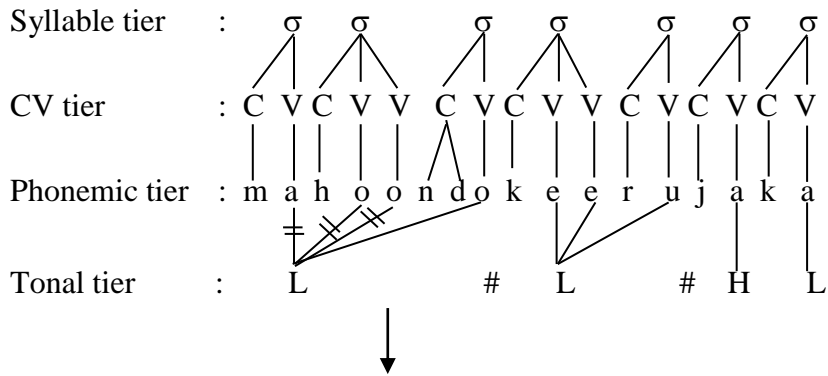
k-éèrù ‘ours’



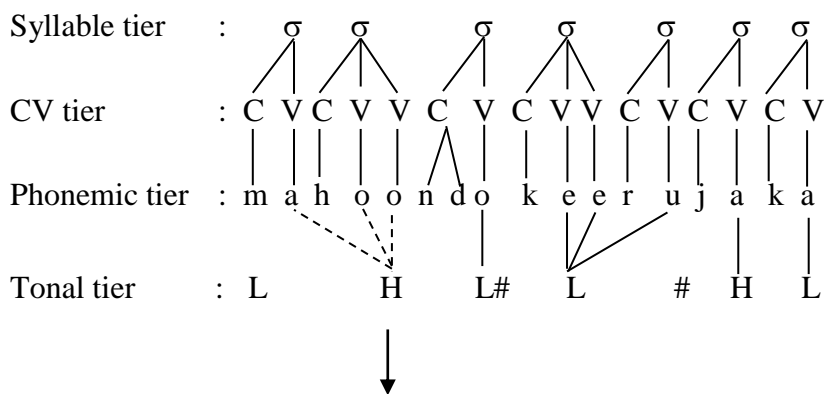
(244) (c)
 j-ákà 'these'



(244) (d) (i)
 má-hóondò k-èèrù j-ákà 'these pumpkins are ours'

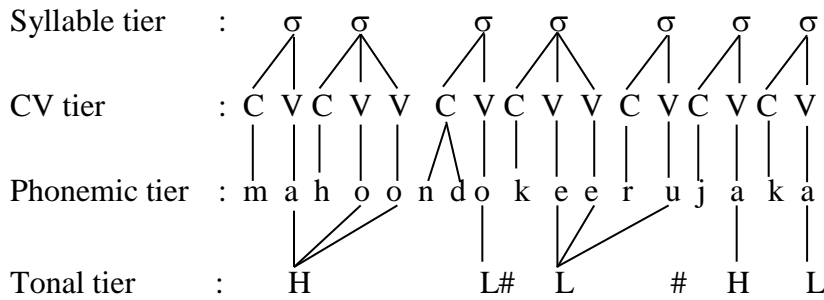


(244) (d) (ii)
 má-hóondò k-èèrù j-ákà 'these pumpkins are ours'



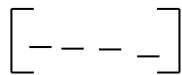
(244) (d) (iii)

má-hóóndò k-èèrù j-ákà 'these pumpkins are ours'

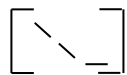


The tone patterns of the noun mà-hòòndò ‘pumpkins’, the possessive pronoun k-éèrù ‘ours’, the proximal demonstrative j-ákà ‘these’ and the noun phrase má-hóóndò k-èèrù j-ákà ‘these pumpkins of ours’ are illustrated in (245) (i), (ii), (iii), (iv) using RTT formalisms.

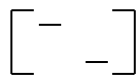
(245) (i) mà-hòòndò ‘pumpkins’



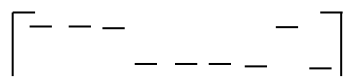
(245) (ii) k-éèrù ‘ours’



(245) (iii) j-ákà ‘these’



(245) (iv) má-hóóndò k-èèrù j-ákà ‘these pumpkins are ours’



4.13.4 High tone insertion in toneless nouns triggered by possessive pronoun -ó ‘yours, 2nd person singular’

In example (246), the nouns in isolation surface with a low tone but are underlyingly toneless. In this noun phrases high tone insertion is triggered by possessive pronoun -ó ‘yours’ representing second person singular. The phrase form has a high tone inserted on the syllable hóó, kó and tsí of the nouns. Therefore, in the phrasal form, the nouns mì-kójè

‘ropes’ and mù-tsíkù ‘enemy’ have a [L.H.L] tone pattern on the surface while the noun má-hóondò ‘pumpkins’ surfaces with a [H.H.L] tone pattern. The noun má-hóondò ‘pumpkins’ surfaces with a [H.H.L] tone pattern because the high tone inserted on the syllable hóó spreads leftwards up to the noun prefix. Therefore, the high tone insertion and high tone anticipation rules are triggered. The possessive pronouns have a high tone on first syllable and a downstepped high tone on the final syllable [H. ⁺H] when uttered in isolation and in the phrasal context form. There is a downstepped high tone on all the possessive pronoun because the high tone on the final syllable is pronounced at a lower pitch than the high tone on the first syllable.

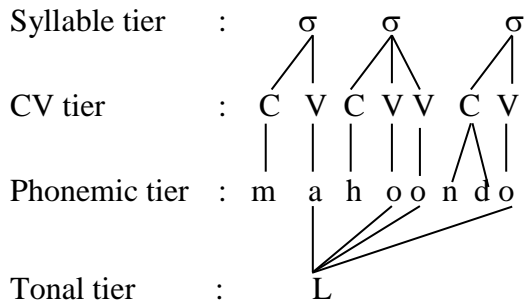
(246) High tone insertion triggered by possessive pronoun -ó ‘yours’

Ø nouns	Gloss	N + Possessive	Gloss
mì-kòjè	‘ropes’	mì-kójè tʃjó ⁺ tʃj-ó	‘your ropes’
mù-tsíkù	‘enemy’	mù-tsíkù wóó ⁺ w-ó	‘your enemy’
mà-hòondò	‘pumpkins’	<u>má-hóondò</u> kóó ⁺ k-ó	‘your pumpkins’

The diagram in (247) (a) shows the autosegmental representation of the tone of mà-hòondò ‘pumpkins’. This noun has a low tone on the syllables when uttered in isolation. The possessive pronoun kóó⁺k-ó ‘yours’ has a high tone on the first syllable and a downstepped high tone on the final syllable [H. ⁺H] when uttered in isolation and in the phrasal form as shown in diagram (247) (b). The diagram (247) (c) (i) shows delinking of a low tone on the prefix and the penultimate syllable of the noun má-hóondò ‘pumpkin’. The broken lines show reassociation as shown in diagram (247) (c) (ii). The broken lines in diagram (247) (c) (ii) show that the low tone on the noun prefix and the penultimate syllable of the noun mà-hòondò ‘pumpkins’ does not remain stable. This low tone is therefore replaced with a high tone as shown in diagram (247) (c) (iii). The low tone remains floating in (247) (c) (iii) and does not get anchored to any vowel hence it is deleted as shown in (247) (c) (iii). The diagram (247) (c) (iii) shows that the high tone insertion and high tone anticipation rules are triggered. The high tone inserted on the syllable hóó of the noun spreads leftwards up to the prefix.

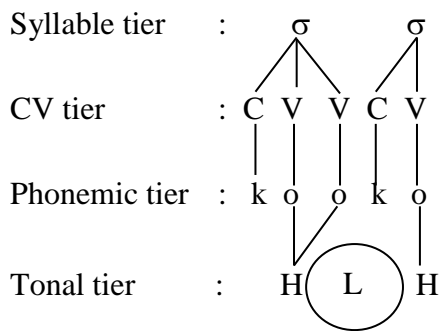
(247) (a)

mà-hòòndò 'pumpkin'



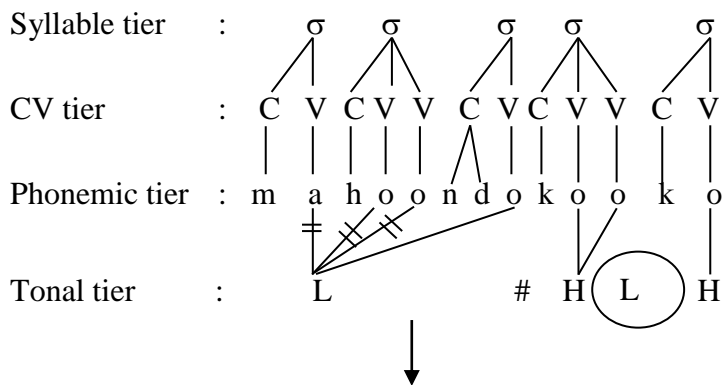
(247) (b)

kóó⁺k-ó 'your'

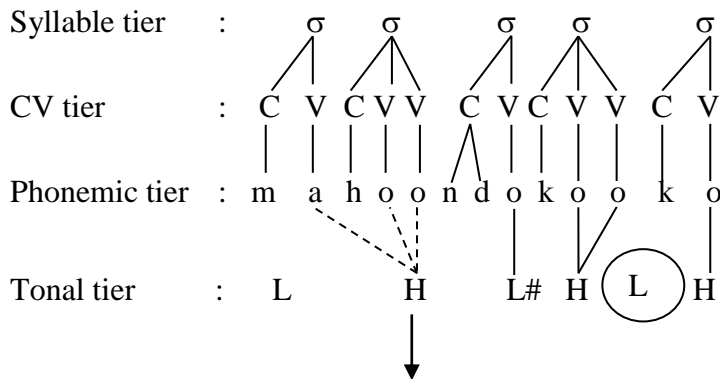


(247) (c) (i)

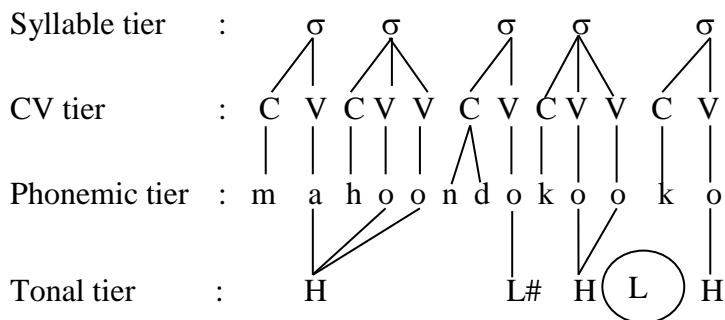
má-hóóndò kóó⁺k-ó 'your pumpkin'



(247) (c) (ii)
 má-hóondò kóó⁺k-ó ‘your pumpkin’

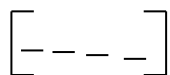


(247) (c) (iii)
 má-hóondò kóó⁺k-ó ‘your pumpkin’

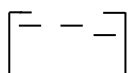


The tone patterns of the noun mà-hòndò ‘pumpkins’, the possessive pronoun kóó⁺k-ó ‘yours’ and the noun phrase má-hóondò kóó⁺k-ó ‘your pumpkins’ are illustrated in (248) (i), (ii), (iii) by using RTT formalisms.

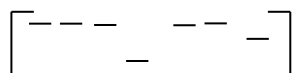
(248) (i) mà-hòndò ‘pumpkins’



(248) (ii) kóó⁺k-ó ‘yours’



(248) (iii) má-hóondò kóó⁺k-ó ‘your pumpkins’



4.13.5 High tone insertion in toneless nouns triggered by possessive pronoun -*éè̀nù* ‘yours, 2nd person plural’

In example (249) the nouns in isolation have a low tone on all the syllables but are underlyingly toneless. In the phrasal form the nouns are with the agreeing form of the possessive pronoun -*éè̀nù* ‘yours’. In each of the phrasal forms a high tone is inserted on the penultimate syllable *tsí*, *kó* and *ḡóó* of the nouns. Therefore, on the surface the nouns have a low tone on the prefix, a high tone on the penultimate syllable and a low tone on the final syllable [L.H.L]. The possessive pronoun -*éè̀nù* ‘yours’ has a falling tone on the stem initial syllable and a high tone on the final syllable [HL.L] when uttered in isolation and in the phrasal form.

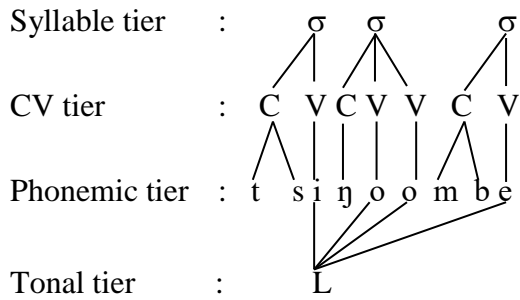
(249) High tone insertion triggered by possessive pronoun -*éè̀nù* ‘yours’

Ø nouns	Gloss	N + Possessive	Gloss
<i>βà</i> - <i>tsikù</i>	‘enemies’	<i>βà</i> - <i>tsíkù</i> <i>β</i> - <i>éè̀nù</i>	‘your enemies’
<i>mì</i> - <i>kòjè</i>	‘ropes’	<i>mì</i> - <i>kójè</i> <i>tʃj</i> - <i>éè̀nù</i>	‘your ropes’
<i>tsì</i> - <i>ḡòòmbè</i>	‘cows’	<i>tsì</i> - <i>ḡóómbè</i> <i>tsj</i> - <i>éè̀nù</i>	‘your cows’

The diagram in (250) (a) shows the autosegmental representation of the tone pattern of *tsì-ḡòòmbè* ‘cows’ in example (249). This noun has a low tone on all the syllables when uttered in isolation. The possessive pronoun *tsj-éè̀nù* ‘theirs’ has a falling tone on the stem initial syllable and a low tone on the final syllable when uttered in isolation and the phrasal form as shown in diagram (249) (b). Diagram (250) (c) (i) shows delinking of a low tone on the noun *tsì-ḡòòmbè* ‘cows’ followed by reassociation in (250) (c) (ii). In diagram (250) (c) (ii), the low tone on the penultimate syllable of the noun *tsì-ḡòòmbè* ‘cows’ is replaced by a high tone. The low tone on the penultimate syllable remains floating in (250) (c) (ii) and does not get anchored to any vowel hence it is deleted as shown in diagram (250) (c) (iii). Diagram (250) (c) (iii) shows that there is a high tone inserted on the noun *tsì-ḡóómbè* ‘cow’ which has a low tone all the syllables when uttered in isolation.

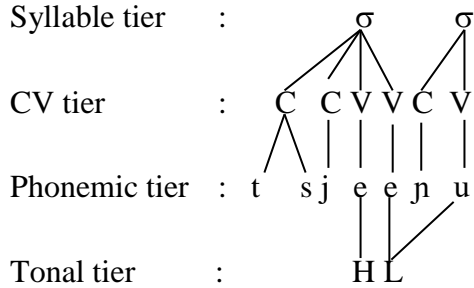
(250) (a)

tsì-ŋòombè ‘cows’



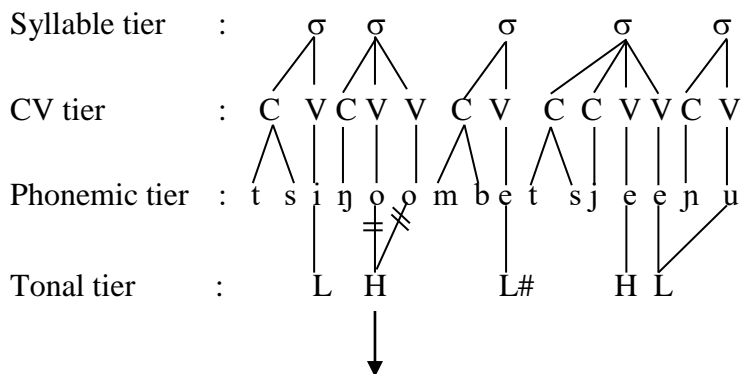
(250) (b)

tsj-èèjù ‘yours’



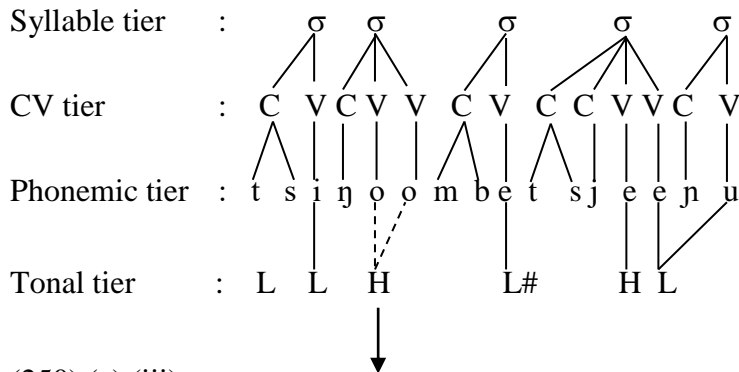
(250) (c) (i)

tsì-ŋóombè tsj-èèjù ‘your cows’



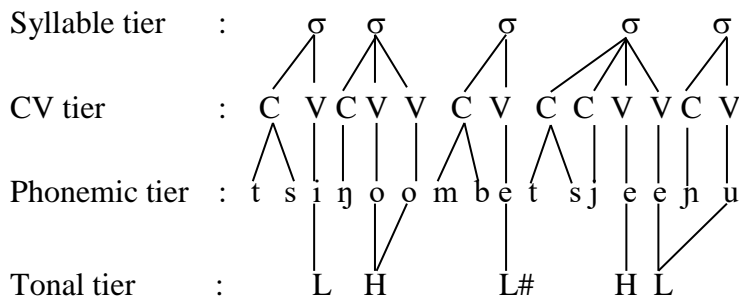
(250) (c) (ii)

tsì-ηóómbè tsj-éèjù ‘your cows’



(250) (c) (iii)

tsì-ηóómbè tsj-éèjù ‘your cows’

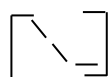


The tone patterns of the noun tsì-ηòòmbè ‘cows’, the possessive pronoun tsj-éèjù ‘theirs’ and the noun phrase tsì-ηóómbè tsj-éèjù ‘their cows’ are illustrated in (251) (i), (ii), (iii) by using RTT formalisms.

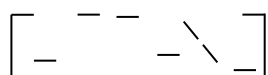
(251) (i) tsì-ηòòmbè ‘cows’



(251) (ii) tsj-éèjù ‘your’



(251) (iii) tsì-ηóómbè tsj-éèjù ‘your cows’



4.13.6 High tone insertion in toneless nouns triggered by possessive pronoun -é ‘his/hers’

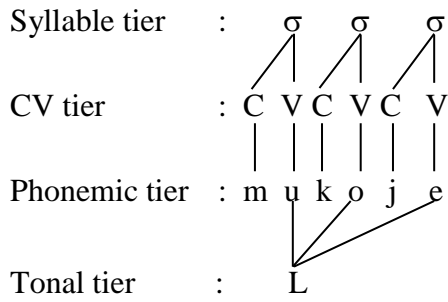
In example (252) high tone insertion is triggered by a possessive pronoun -é ‘his/hers’ representing third person singular. The nouns in isolation have a low tone on all the syllables on the surface but are underlyingly toneless. In the phrasal form the nouns are with the agreeing form of the possessive pronoun -é ‘his/hers’. In each of the phrasal form a high tone is inserted on the penultimate syllable kó, hóó and sáá of the nouns. Therefore, the nouns have a low tone on the prefix, a high tone on the penultimate syllable and a low tone on the final syllable [L.H.L]. The possessive pronoun -é ‘his or hers’ has a high tone when uttered in isolation and in the phrasal form.

(252) High tone insertion triggered by possessive pronoun -é ‘his/hers’

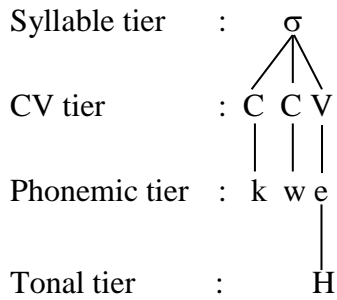
Ø nouns	Gloss	N + Possessive	Gloss
mù-kòjè	‘rope’	mù-kójè kw-é	‘his/her rope’
lì-hòòndò	‘pumpkin’	lì-hóóndò lj-é	‘his/her pumpkin’
lì-sààmbù	‘leaf’	lì-sáámbù lj-é	‘his/her leaf’

The diagram in (253) (a) shows the autosegmental representation of the tone pattern of mù-kòjè ‘rope’ as shown in example (252). This noun has a low tone on the syllables when uttered in isolation. The possessive pronoun kw-é ‘his/hers’ has a high tone when uttered in isolation and in the phrasal form as shown in diagram (253) (b). Diagram (253) (c) (i) shows delinking of a low tone on the noun mù-kòjè ‘rope’ followed by reassociation in (253) (c) (ii). In diagram (253) (c) (ii), the low tone on the penultimate syllable of the noun mù-kòjè ‘rope’ is replaced with a high tone. The low tone on the noun mù-kòjè remains floating in (253) (c) (ii) and does not get anchored to any vowel hence it is deleted as shown in diagram (253) (c) (iii). Diagram (253) (c) (iii) shows that there is a high tone inserted on the penultimate syllable kó of the noun mù-kójè ‘rope’.

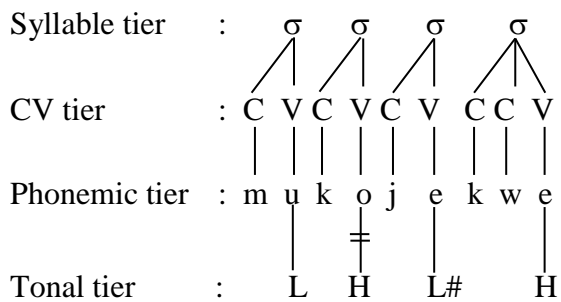
(253) (a)
 mù-kòjè 'rope'



(253) (b)
 kw-é 'his/hers'

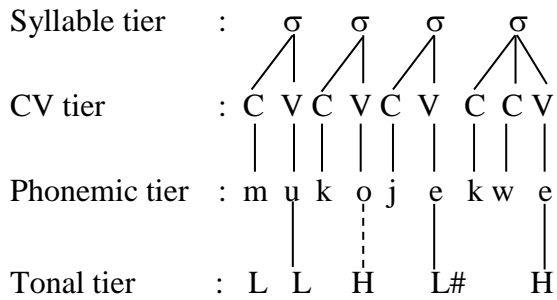


(253) (c) (i)
 mù-kójè kw-é 'his/her rope'



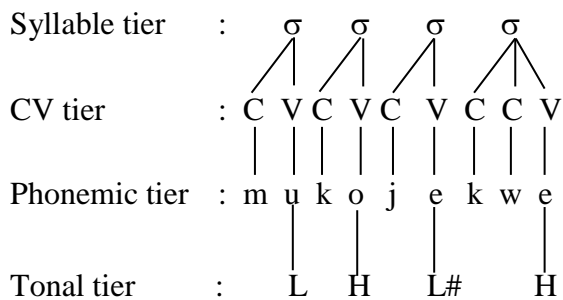
(253) (c) (ii)

mù-kójè kw-é ‘his/her rope’



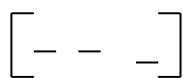
(253) (c) (iii)

mù-kójè kw-é ‘his/her rope’

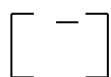


The tone patterns of the noun mù-kòjè ‘rope’, the possessive pronoun kw-é ‘his/hers’, the noun phrase mù-kójè kw-é ‘his/her rope’ are illustrated in (254) (i), (ii), (iii) by using RTT formalisms.

(254) (i) mù-kòjè ‘rope’



(254) (ii) kw-é ‘his/her’



(254) (iii) mù-kójè kw-é ‘his/her rope’



4.13.7 High tone insertion in toneless nouns triggered by a possessive pronoun, a numeral, an adjective and a demonstrative

When the noun phrases in example (252) are followed by three other modifiers that is a numeral, an adjective and lastly a demonstrative as seen in example (255) high tone insertion is still triggered in the phrases because the immediate word that follows the nouns is the possessive pronoun *kw-é* ‘his/hers’ that has a high tone. As discussed earlier, in section 4.13.4, when a noun is followed by a possessive pronoun *-é* which means ‘his/hers’ high tone insertion is triggered. Therefore, in the noun phrases in example (255) HTI is triggered.

(255) HTI triggered by a possessive pronoun, a numeral, an adjective and a demonstrative

Ø nouns	Gloss	N + Poss+Num+Adj+Dem	Gloss
mù-kòjè	‘rope’	mù- kó jè kw-é mú-lálá mú-léjì j-úkù	‘this one good rope of his’
lì-hòòndò	‘pumpkin’	lì- hó òndò lj-é lí-lálá lí-léjì j-íílì	‘this one good pumpkin of his’
lì-sààmbù	‘leaf’	lì- sá àmbù lj-é lí-lálá lí-léjì j-íílì	‘this one good leaf of his’

When you compare the noun phrases in example (255) and (215) in this chapter, you will realize that the nouns, the possessive pronouns, the numeral, the adjective and the demonstrative in both examples are the same. The only difference is that the possessive pronoun *kw-é* ‘his/hers’ and the adjective-*léjì* ‘good’ have interchanged positions. For example, in (255) the noun phrase is *mù-kójè kw-é mú-lálá mú-léjì j-úkù* and in (215), the noun phrase is *mú-kójé mú-léjì mù-làlà kw-é j-úkù*. In example (255), high tone insertion HTI rule is triggered because the possessive pronoun *kw-é* comes immediately after the nouns but in example (215) the HTA rule is triggered because there is a high tone on the demonstrative *j-úkù* that spread across the other word category up to the noun.

The diagram in (256) (a) shows the autosegmental representation of the tone pattern of *mù-kòjè* ‘rope’ in example (255). This noun has a low tone on the syllables when uttered in isolation. The possessive pronoun *kw-é* ‘his/hers’ has a high tone when uttered in isolation as shown in diagram (256) (b). Diagram (256) (c) shows the tone pattern of the numeral *mù-làlà* ‘one’. This numeral has a low tone on the syllables when uttered in isolation. This numeral is underlyingly toneless. The adjective *mú-léjì* ‘good’ has a high tone on the prefix and the stem initial syllable and a low tone on the final syllable [H.H.L] when uttered in isolation as shown in diagram (256) (d). Diagram (256) (e) shows the tone pattern of the demonstrative *j-úkù*

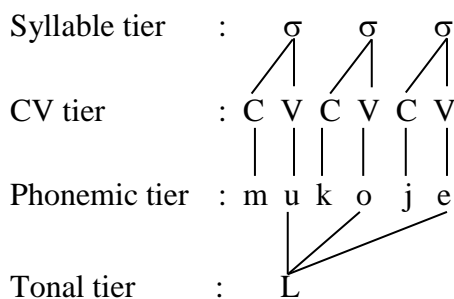
‘this’. This demonstrative has a high tone on the stem initial syllable and a low tone on the final syllable [H.L] when uttered in isolation.

The diagram (256) (f) (i) shows delinking of a low tone on the syllable kò on the mù-kòjè ‘rope’ and the numeral mù-làlà ‘one’. Diagram (256) (f) (ii) shows reassociation. The low tone on the syllable kò on the noun mù-kòjè is not stable thus is replaced with a high tone. The low tones on the numeral mù-làlà are not stable thus are replaced with a high tone as shown in (256) (f) (iii). The low tone on the penultimate syllable of the noun mù-kòjè ‘rope’ and a low tone on all the syllables of the numeral mù-làlà ‘one’ remain floating in (256) (f) (iii) and does not get anchored to any vowel hence it is deleted as shown in diagram (256) (f) (iii).

The diagram (256) (f) (iii) shows the tone pattern of the noun phrase mù-kòjè kw-é mú-làlá mú-léjì j-úkù ‘this one good rope of his’. There is high tone insertion triggered by the possessive pronoun kw-é. The noun mù-kòjè ‘rope’ has a high tone inserted on the syllable kó in the phrase context form. In this last diagram, OCP has been applied. Consecutive high tones exist because of the word boundary between the words (i.e. mù-kòjè ‘rope’, kw-é ‘his/hers’ mú-làlá ‘one’, mú-léjì ‘good’ and j-úkù ‘this’).

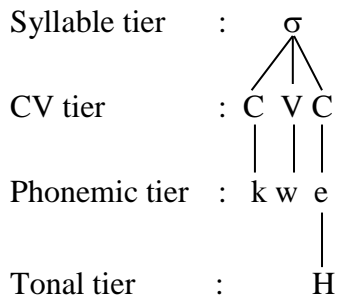
(256) (a)

mù-kòjè ‘rope’



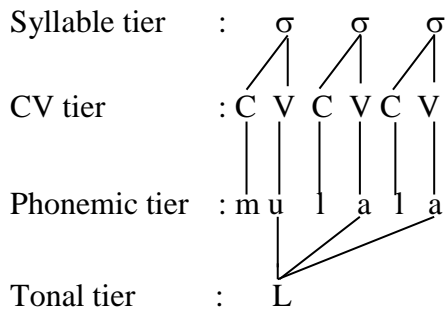
(256) (b)

kw-é 'his/hers'



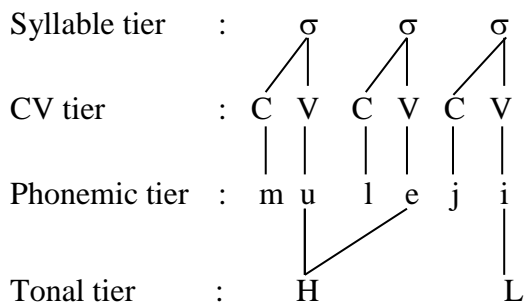
(256) (c)

mù-làlà 'one'



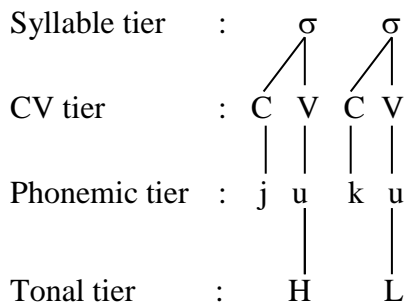
(256) (d)

mú-léji 'good'



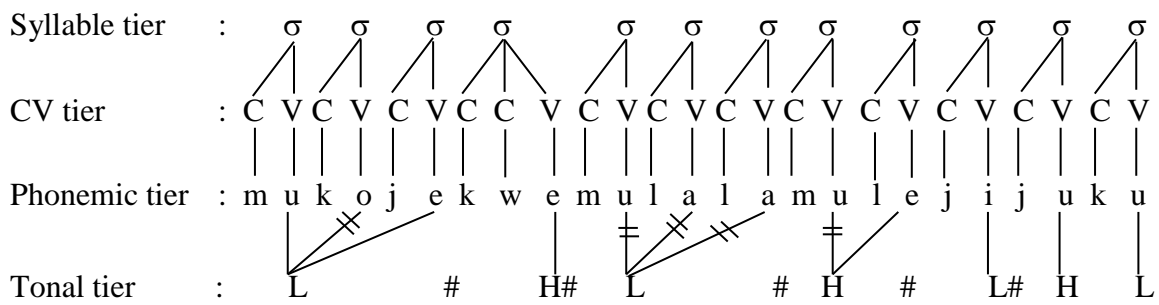
(256) (e)

j-úkù ‘this’



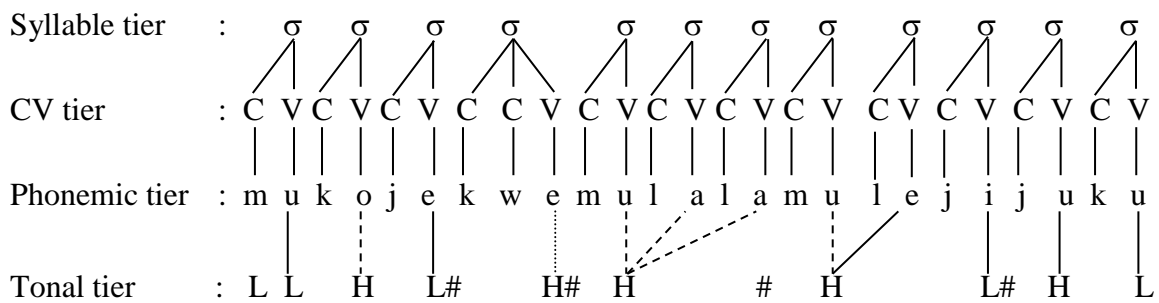
(256) (f) (i)

mù-kójè kw-é mú-lálá mú-léjì j-úkù ‘this one good rope of his’



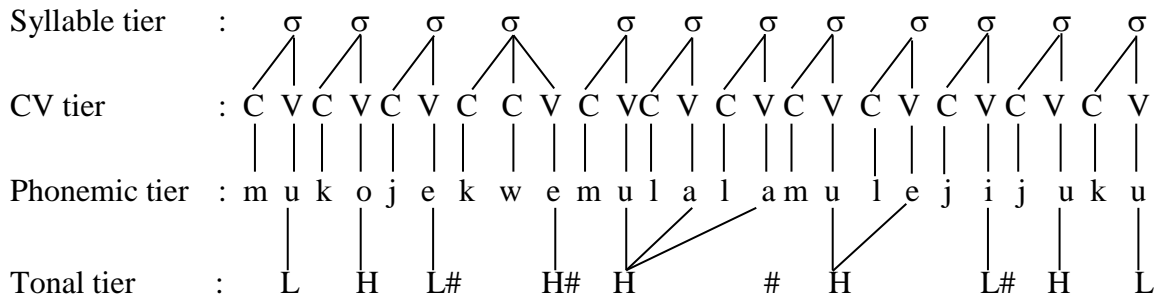
(256) (f) (ii)

mù-kójè kw-é mú-lálá mú-léjì j-úkù ‘this one good rope of his’



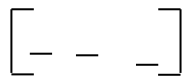
(256) (f) (iii)

mù-kòjè kw-é mú-lálá mú-léjì j-úkù ‘this one good rope of his’

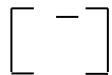


The tone patterns of the noun mù-kòjè ‘rope’, the possessive pronoun kw-é ‘his/hers’, the numeral mù-làlà ‘one’, the adjective mú-léjì ‘good’, the proximal demonstrative j-úkù ‘this’ and the noun phrase mù-kòjè kw-é mú-lálá mú-léjì j-úkù ‘this one good rope of his’ in (257) (i), (ii), (iii), (iv), (v) and (vi) are illustrated using RTT formalisms.

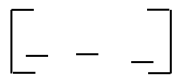
(257) (i) mù-kòjè ‘rope’



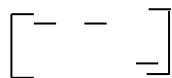
(257) (ii) kw-é ‘his/hers’



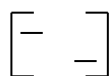
(257) (iii) mù-làlà ‘one’



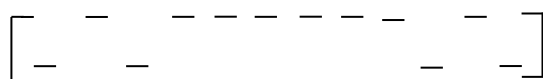
(257) (iv) mú-léjì ‘good’



(257) (v) j-úkù ‘this’



(257) (vi) mù-kójà kw-é mú-lálá mú-léjì j-úkù ‘this one good rope of his’



4.13.8 High tone insertion in toneless nouns triggered by possessive pronouns and numeral -làlà

In example (258) the nouns surface with a low tone when uttered in isolation but are underlyingly toneless. The noun *lì-hòòndò* ‘pumpkin’ in isolation is followed by the possessive pronoun *lj-ээрù* ‘ours’ *l-jóljó* ‘yours’ and *l-jéljé* ‘his/hers’ and numeral *lì-làlà* ‘one’ in the phrasal form. In each phrasal form, a high tone is inserted on the stem initial syllable *hóó* of the noun *lì-hóóndò*. Therefore, the noun *lì-hóóndò* ‘pumpkin’ surfaces with a low tone on the prefix, a high tone on the penultimate syllable and a low tone on the final syllable [L.H.L]. The possessive pronoun *lj-ээрù* ‘ours’ has a falling tone on the stem initial syllable and a low tone on the final syllable [HL.L] when uttered in isolation and in the phrasal form. The possessive pronoun *l-jóljó* ‘yours’ and *l-jéljé* ‘his/hers’ have a high tone on the stem initial syllable and the final syllable [H.H] uttered in isolation and in the phrasal form.

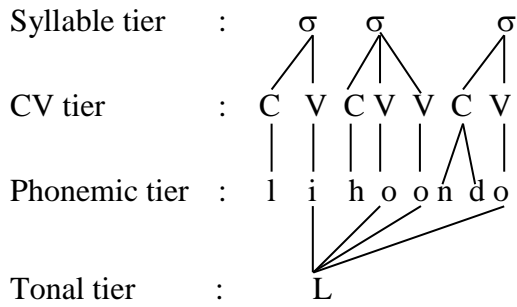
(258) HTI triggered by possessive pronouns and toneless numeral -làlà

Ø nouns	Gloss	N+possessive+/ Ø /numeral	Gloss
<i>lì-hòòndò</i>	‘pumpkin’	<i>lì-hóóndò lj-ээрù lì-làlà</i>	‘our one pumpkin’
<i>lì-hòòndò</i>	‘pumpkin’	<i>lì-hóóndò l-jóljó lì-làlà</i>	‘your one pumpkin’
<i>lì-hòòndò</i>	‘pumpkin’	<i>lì-hóóndò l-jéljé lì-làlà</i>	‘his one pumpkin’

The diagram in (259) (a) shows the autosegmental representation of *lì-hòòndò* ‘pumpkin’ in example (258). This noun has a low tone on all the syllables when uttered in isolation. The possessive pronoun *lj-ээрù* ‘our’ has a falling tone on the stem initial syllable and a low tone on the final syllable [HL.L] when uttered in isolation and in the phrasal form as shown in diagram (259) (b). Diagram (259) (c) (i) shows delinking of a low tone on the noun *lì-hòòndò* ‘pumpkins’. Diagram (259) (c) (ii) shows reassociation. The broken lines show that the low tone on the penultimate syllable *hòò* of the noun does not remain stable. The low tone on the penultimate syllable is therefore replaced with a high tone as shown in diagram (259) (c) (iii). The low tone remains floating in (259) (c) (iii) and does not get anchored to any vowel hence it is deleted as shown in (259) (c) (iii). Diagram (259) (c) (iii) shows that a high tone is inserted on the penultimate syllable *hóó* of the noun.

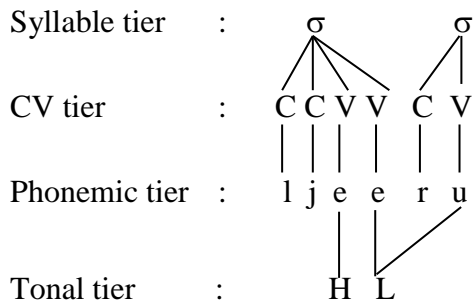
(259) (a)

li-hòndò 'pumpkin'



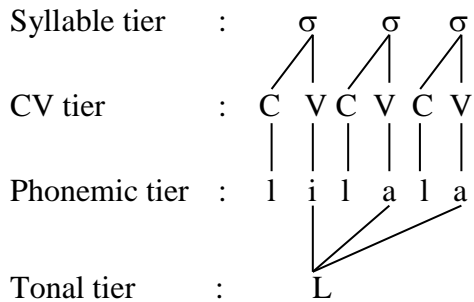
(259) (b)

lj-ээрù 'our'



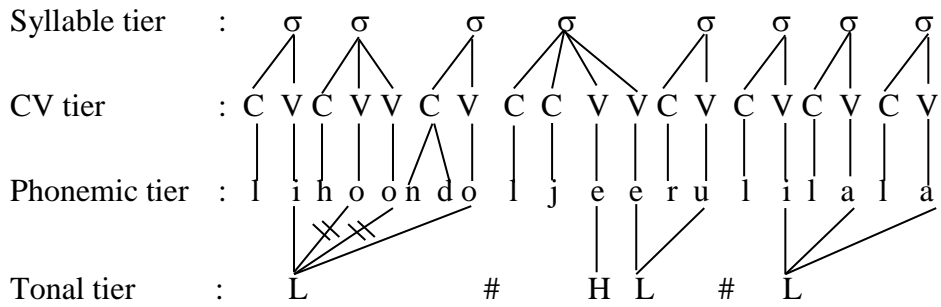
(259) (c)

li-làlà 'one'



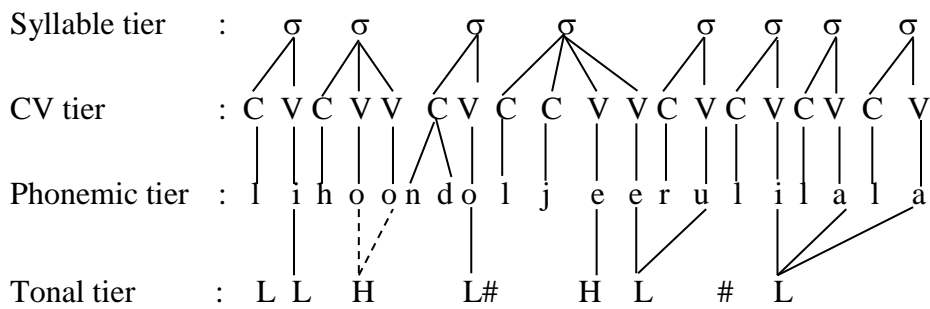
(259) (d) (i)

li-hóóndò lj-èèrù li-làlà 'our one pumpkin'



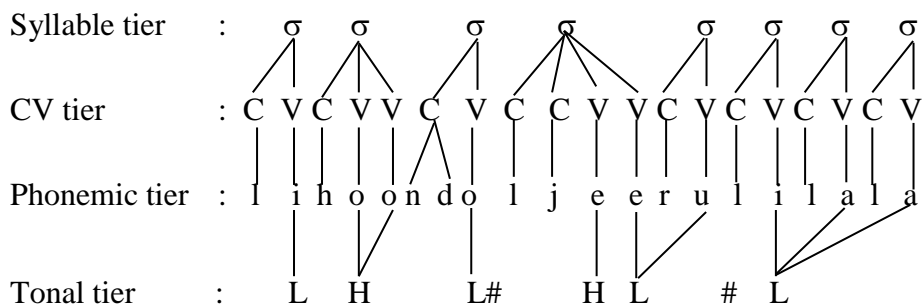
(259) (d) (ii)

li-hóóndò lj-èèrù li-làlà 'our one pumpkin'



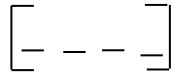
(259) (d) (iii)

li-hóóndò lj-èèrù li-làlà 'our one pumpkin'

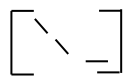


The tone patterns of the noun *lì-hòòndò* ‘pumpkin’, the possessive pronoun *lj-éèrù* ‘ours’, the numeral *lì-làlà* ‘one’ and the noun phrase *lì-hóóndò lj-éèrù lì-làlà* ‘our one pumpkin’ are illustrated in (260) (i), (ii), (iii) and (iv) using RTT formalisms.

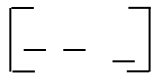
(260) (i) *lì-hòòndò* ‘pumpkin’



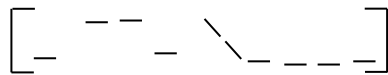
(260) (ii) *lj-éèrù* ‘ours’



(260) (iii) *lì-làlà* ‘one’



(260) (iv) *lì-hóóndò lj-éèrù lì-làlà* ‘our one pumpkin’



When you compare the noun phrases in example (212) and the noun phrases in example (258) you will realize that when the noun *lì-hòòndò* ‘pumpkin’ is followed by the numeral *-làlà* ‘one’, then followed by a possessive pronoun *lj-éèrù* ‘ours’, HTA is triggered as shown in example (212) but when the same noun *lì-hòòndò* ‘pumpkin’ is followed by a possessive pronoun *lj-éèrù* ‘ours’ then followed by the numeral *-làlà* ‘one’ HTA is not triggered instead HTI is triggered as shown in example (258).

In example (212) HTA is triggered because the possessive pronouns have a high tone that spreads leftwards to the numeral *lì-làlà* ‘one’ and the noun *lì-hòòndò* ‘pumpkin’ that are toneless. In example (258) HTI is triggered because the noun *lì-hòòndò* ‘pumpkin’ is immediately followed by a possessive pronoun and a numeral that is toneless.

4.13.9 High tone insertion in toneless nouns triggered by possessive pronoun -áàβò ‘theirs’

In example (261) high tone insertion is triggered by possessive pronoun -áàβò ‘theirs’. The nouns in this example surface with a low tone when uttered in isolation but are underlyingly toneless. Alongside each noun in isolation is the noun with the agreeing form of the possessive pronoun -áàβò ‘theirs’. In each of the phrasal form a high tone is inserted on the syllable kó, pá, hóó and ré of the nouns. The first noun mì-kòjè ‘ropes’ in the phrasal form surfaces with a [L.H.L] tone pattern. The other nouns tsí-pámà ‘animals’, má-hóóndò ‘pumpkins’ and ǰí-rórérò ‘mirror’ have a high tone inserted on the penultimate syllable that spreads to the prefix. Therefore, high tone insertion and high tone anticipation rules are triggered. The nouns tsí-pámà ‘animals’ and má-hóóndò ‘pumpkins’ surface with a [H.H.L] tone pattern while the noun ǰí-rórérò ‘mirror’ has a [H.H.H.L] tone pattern in the phrasal form. The possessive pronoun -áàβò ‘theirs’ has a [HL.L] tone pattern when uttered in isolation and in the phrasal form.

(261) High tone insertion triggered by possessive pronoun -áàβò ‘theirs’

Ø nouns	Gloss	N + Possessive	Gloss
mì-kòjè	‘ropes’	mì-kòjè tǰj-áàβò	‘their ropes’
tsì-pámà	‘animals’	tsì-pámà tsj-áàβò	‘their animals’
mà-hòóndò	‘pumpkins’	má-hóóndò k-áàβò	‘their pumpkins’
ǰí-rórérò	‘mirror’	ǰí-rórérò ǰj-áàβò	‘their mirror’

4.14 High tone insertion in toneless nouns triggered by quantifiers

Quantifiers also trigger high tone insertion. In this section the discussion is on high tone insertion triggered by quantifier -ósi ‘any’, -ndí ‘some’ and -tì ‘few, little’. Table 80 shows the tone patterns of quantifiers discussed in this section uttered in isolation.

Table 80: Tone patterns of quantifiers in isolation

Lwisukha	Gloss	Tone pattern
-ósi	‘any’	H.L
-ndí	‘some’	H
-tì	‘few, little’	L

In the next section the discussion is on high tone insertion triggered by quantifier -ósi which means ‘any’.

4.14.1 High tone insertion in toneless nouns triggered by quantifier -ósi ‘any’

In example (262) high tone insertion is triggered by quantifier -ósi ‘any’. The nouns in this example, surface with a low tone when uttered in isolation but are underlyingly toneless. The nouns in isolation are followed by quantifier -ósi ‘any’. In each of the phrasal forms a high tone is inserted on the penultimate syllable *ńóó*, *kó* and *hóó* of the noun. The nouns surface with a low tone on the prefix, a high tone on the penultimate syllable and a low tone on the final syllable [L.H.L] in the phrasal form. The quantifier -ósi has a high tone on the stem initial syllable and a low tone on the final syllable [H.L] when uttered in isolation and in the phrasal form.

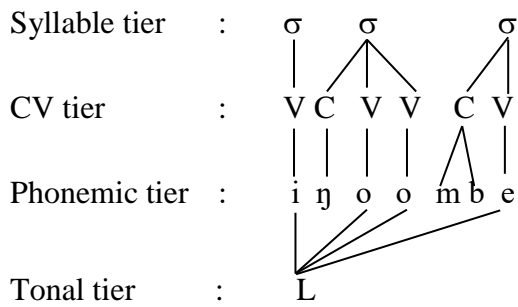
(262) High tone insertion triggered by quantifier -ósi ‘any’

Ø nouns	Gloss	N + Quantifier	Gloss
ì-ńòòmbè	‘cow’	ì-ńóómbè j-ósi	‘any cow’
mù-kòjè	‘rope’	mù-kójè kw-ósi	‘any rope’
lì-hòòndò	‘pumpkin’	lì-hóóndò lj-ósi	‘any pumpkin’

The diagram in (263) (a) shows the autosegmental representation of the tone of ì-ńòòmbè ‘cow’ in example (262). This noun has a low tone on all the syllables when uttered in isolation. The quantifier j-ósi ‘any’ has a high tone on the stem initial syllable and a low tone on the final syllable [H.L] when uttered in isolation and in the phrasal form as shown in diagram (263) (b). Diagram (263) (c) (i) shows delinking of a low tone on the noun ì-ńòòmbè ‘cow’. Diagram (263) (c) (ii) shows reassociation. The broken lines show that the low tone on the penultimate syllable *ńóó* of the noun does not remain stable. The low tone on the penultimate syllable is therefore replaced with a high tone as shown in diagram (263) (c) (iii). The low tone remains floating in (263) (c) (iii) and does not get anchored to any vowel hence it is deleted as shown in (263) (c) (iii). Diagram (263) (c) (iii) shows that a high tone insertion is triggered. The high tone is inserted on the syllable *ńóó* of the noun.

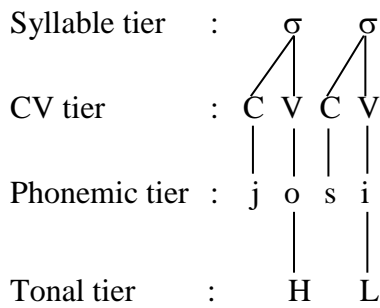
(263) (a)

ì-ηòòmbè ‘cow’



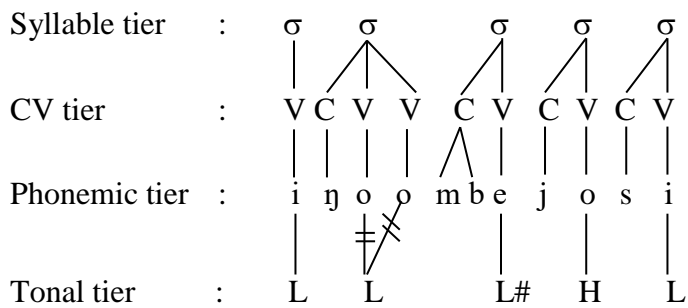
(263) (b)

j-òsì ‘any’



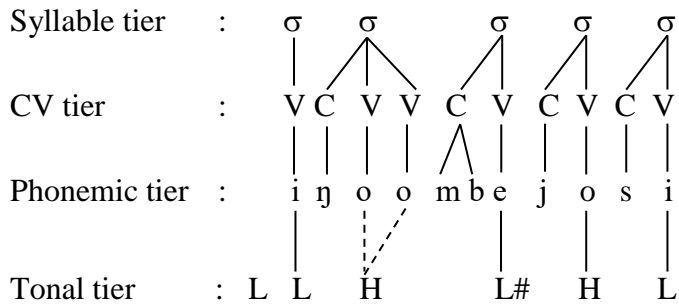
(263) (c) (i)

ì-ηóómbè j-òsì ‘any cow’



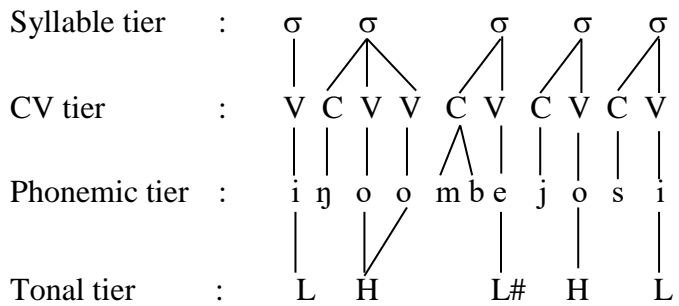
(263) (c) (ii)

ì-ηóómbè j-ósì ‘any cow’



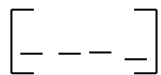
(263) (c) (iii)

ì-ηóómbè j-ósì ‘any cow’

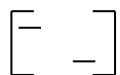


The tone patterns of the noun ì-ηòòmbè ‘cow’, the quantifier j-ósì ‘any’ and the noun phrase ì-ηóómbè j-ósì ‘any cow’ are illustrated in (264) (i), (ii) and (iii) by using RTT formalisms.

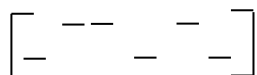
(264) (i) ì-ηòòmbè ‘cow’



(264) (ii) j-ósì ‘any’



(264) (iii) ì-ηóómbè j-ósì ‘any cow’



4.14.2 High tone insertion in toneless nouns triggered by quantifier -ndí ‘some’

In example (265) the nouns in isolation have a low tone on all the syllables but are underlyingly toneless. The nouns are with quantifier -ndí ‘some’ in the phrasal form. In each of these phrasal forms a high tone is inserted on the penultimate syllable tsí, ná, hóó and ngá of the noun. Therefore, in the phrasal form the noun *βà-tsíkù* ‘enemies’ has a [L.H.L] tone pattern, *tsì-nàmà* ‘animals’ and *má-hóóndò* ‘pumpkins’ have a [H.H.L] tone pattern and finally the noun *má-háàngàrì* has a [H.H.H.L] tone pattern. The quantifier -ndí has a high [H] tone when uttered in isolation and in the phrase context form. Example (265) shows high tone insertion triggered by quantifier -ndí which means ‘some’.

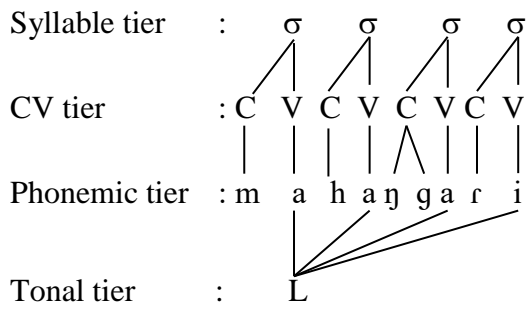
(265) High tone insertion triggered by quantifier -ndí ‘some’

Ø nouns	Gloss	N + Quantifier	Gloss
<i>βà-tsíkù</i>	‘enemies’	<i>βà-tsíkù βà-ndí</i>	‘some enemies’
<i>tsì-nàmà</i>	‘animals’	<i>tsì-<u>námà</u> tsì-ndí</i>	‘some animals’
<i>mà-hóóndò</i>	‘pumpkins’	<i>má-<u>hóó</u>ndò kà-ndí</i>	‘some pumpkins’
<i>mà-hàngàrì</i>	‘arguements’	<i>má-<u>hàngá</u>rì kà-ndí</i>	‘some arguements’

The diagram in (266) (a) shows the autosegmental representation of the tone of *mà-hàngàrì* ‘arguements’ in example (265). This noun has a low tone on all the syllables when uttered in isolation. The quantifier *ká-ndí* ‘some’ has a high tone on the first syllable and a low tone on the final syllable [H.L] when uttered in isolation as shown in diagram (266) (b). The tone pattern of this quantifier changes to a low tone on the first syllable and a high tone on the final syllable [L.H] when uttered in the phrasal form. Diagram (266) (c) (i) shows delinking of a low tone on the noun *mà-hàngàrì* ‘arguements’. Diagram (266) (c) (ii) shows reassociation. The broken lines show that the low tone on the syllable *mà, hà* and *ngà* of the noun does not remain stable. The low tone on these syllables is therefore replaced with a high tone as shown in diagram (266) (c) (iii). The low tone remains floating in (266) (c) (iii) and does not get anchored to any vowel hence it is deleted as shown in (266) (c) (iii). Diagram (266) (c) (iii) shows that the high tone inserted on the syllable *ngá* spreads up to the prefix of the noun. Therefore, in this example high tone insertion and high tone anticipation rules are triggered.

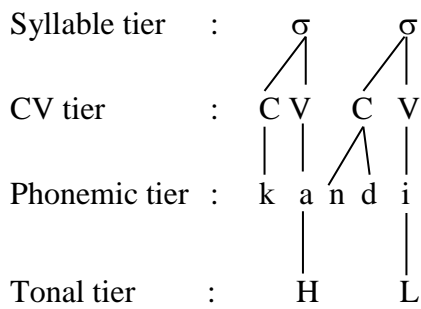
(266) (a)

mà-hàngàrì ‘arguements’



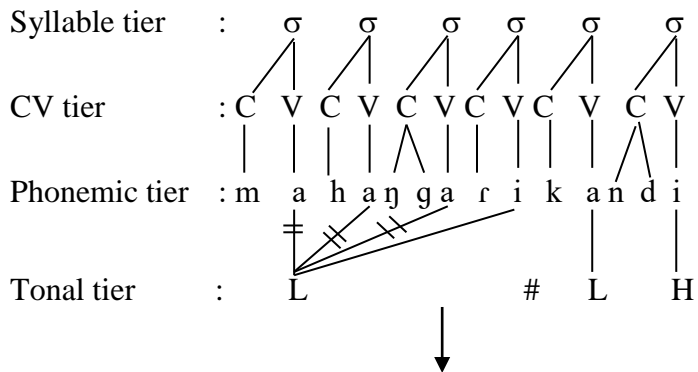
(266) (b)

ká-ndì ‘some’

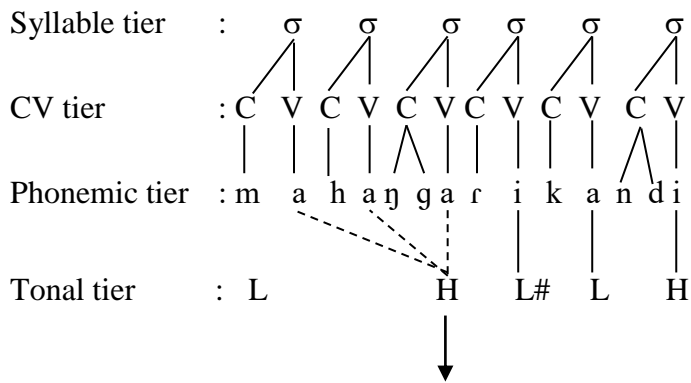


(266) (c) (i)

má-hàngàrì kà-ndí ‘some arguements’

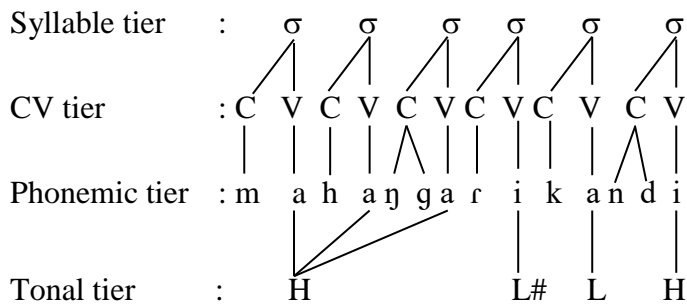


(266) (c) (ii)



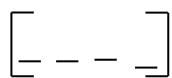
(266) (c) (iii)

má-hàngàrì kà-ndí 'some arguments'

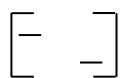


The tone patterns of the noun *mà-hàngàrì* 'arguments', the quantifier *ká-ndí* 'some' and the noun phrase *má-hàngàrì kà-ndí* 'some arguments' are illustrated in (267) (i), (ii) and (iii) by using RTT formalisms.

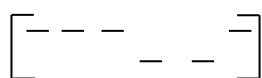
(267) (i) *mà-hàngàrì* 'arguments'



(267) (ii) *ká-ndí* 'some'



(267) (iii) *má-hàngàrì kà-ndí* 'some arguments'



4.14.3 High tone insertion in toneless nouns triggered by quantifier -tì ‘few, little’

In example (268), high tone insertion is triggered by a quantifier -tì ‘few, little’. The nouns in this example surface with a low tone on all the syllables when uttered in isolation but are underlyingly toneless. In the phrase context, the nouns are with quantifier -tì ‘few, little’. In each of the phrasal form a high tone is inserted on the penultimate syllable hóó, kó and sáá of the noun. The nouns surface with a low tone on the prefix, a high tone on the penultimate syllable and a low tone on the final syllable [L.H.L] in the phrasal context. The quantifier -tì has a low tone pattern when uttered in isolation and in the phrase context form.

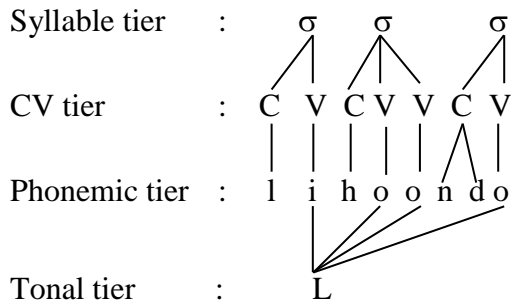
(268) High tone insertion triggered by quantifier -tì ‘few, little’

Ø nouns	Gloss	N + Quantifier	Gloss
lì-hòòndò	‘pumpkin’	lì- hóó ndò lì-tì	‘a little pumpkin’
mì-kòjè	‘ropes’	mì- kó jè mì-tì	‘few ropes, little ropes’
lì-sààmbù	‘leaf’	lì- sáá mbù lì-tì	‘a little leaf’

The diagram in (269) (a) shows the autosegmental representation of the tone of lì-hòòndò ‘pumpkin’ in example (268). This noun has a low tone on all the syllables when uttered in isolation. The quantifier lì-tì ‘little’ has a low tone on all the syllables [L.L] when uttered in isolation and in the phrasal form as shown in diagram (269) (b). Diagram (269) (c) (i) shows delinking of a low tone on the noun lì-hòòndò ‘pumpkin’. Diagram (269) (c) (ii) shows reassociation. The broken lines show that the low tone on the penultimate syllable hòò of the noun does not remain stable. The low tone on the penultimate syllable is therefore replaced with a high tone as shown in diagram (269) (c) (iii). The low tone remains floating in (269) (c) (iii) and does not get anchored to any vowel hence it is deleted as shown in (269) (c) (iii). Diagram (269) (c) (iii) shows that a high tone is inserted on the penultimate syllable hóó of the noun. Therefore, in this example the high tone insertion rule is triggered.

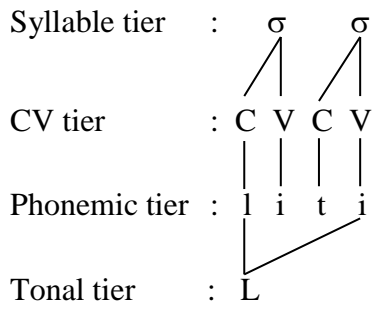
(269) (a)

li-hòndò 'pumpkin'



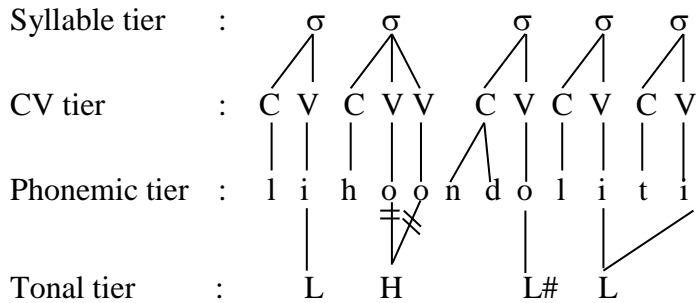
(269) (b)

li-tì 'little'



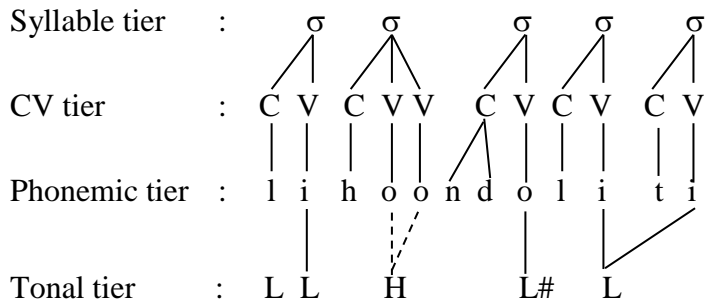
(269) (c) (i)

li-hóondò li-tì 'a little pumpkin'



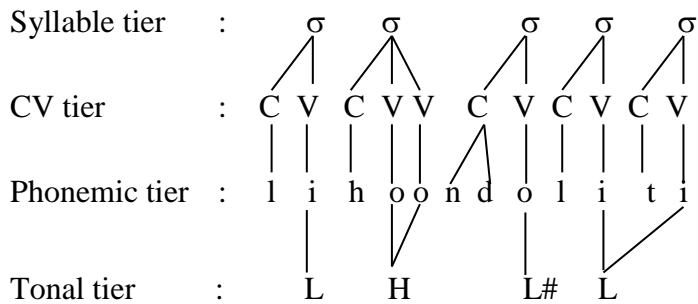
(269) (c) (ii)

li-hóóndò li-tì ‘a little pumpkin’



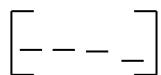
(269) (c) (iii)

li-hóóndò li-tì ‘a little pumpkin’

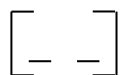


The noun li-hòòndò ‘pumpkin’, the quantifier li-tì ‘little’ and the noun phrase li-hóóndò li-tì ‘a little pumpkin’ are illustrated in (270) (i), (ii) and (iii) by using RTT formalisms.

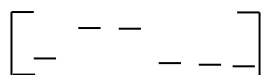
(270) (i) li-hòòndò ‘pumpkin’



(270) (ii) li-tì ‘little’



(270) (iii) li-hóóndò li-tì ‘a little pumpkin’



Luyia dialects differ on where the high tone is inserted. In this study on Lwisukha dialect the high tone is inserted on the penultimate syllable of the toneless noun and in some cases HTA is triggered. This is similar to Lutiriki dialect. For example, in the noun phrase *má-hóóndò kànù*, ‘these pumpkins’ in Lutiriki, a high tone is inserted on the syllable *hóó* on the penultimate syllable, on the noun *má-hóóndò* and the high tone spreads to the prefix. Therefore, HTI and HTA are triggered. In Lubukusu dialect, the high tone is inserted on the augment as seen in example (271). The syllable where H is inserted is shown in bold type.

(271) High tone insertion triggered by demonstratives in Lubukusu dialect

Ø nouns	Gloss	N + Dem	Gloss
<i>βùù-lò</i>	‘millet’	βùù -lò βùnò	‘this millet’
<i>sii-kèlè</i>	‘leg’	sii -kèlè sìnò	‘this leg’
<i>βáβàà-ndù</i>	‘people’	βáβàà -ndù βànò	‘these people’

Source: Everhart et al (2015)

As earlier discussed in section 4.11, the high tone is inserted on the final syllable in Luwanga dialect as seen in example (272). The high tone then undergoes HTA in some noun phrases. The final syllable that undergoes HTI is in bold and the high tone spreading leftwards to toneless syllables HTA rule is underlined.

(272) High tone insertion triggered by demonstratives in Luwanga dialect

Ø nouns	Gloss	N + Dem	Gloss
<i>ì-ndà</i>	‘enemy’	ì- ndá ì-nò	‘this stomach’
<i>àmà-hòòndò</i>	‘pumpkin’	àmà- <u>hóóndó</u> kà-nò	‘these pumpkins’
<i>ì-ηòòmbè</i>	‘cow’	ì- <u>ηóómbé</u> èj-ò	‘that cow’

Source: Marlo & Steimel (2015)

In example (273) the nouns phrase *mì-kòjè j-ítjì* ‘these ropes’ is used to illustrate the high tone insertion rule. The noun *mì-kòjè* ‘rope’ has a low tone on all the syllables when uttered in isolation but is underlyingly toneless. The possessive pronoun *j-ítjì* ‘these’ has a high tone on the first syllable and a low tone on the final syllable [H.L] when uttered in isolation and in

the phrasal form. The high tone is inserted on the penultimate syllable kó of the noun mì-kójè ‘rope’. As discussed earlier in section 4.12.1, possessive pronouns trigger high tone insertion.

(273)

mì-kójè j-ítʃì ‘these ropes’

 H ← ∅

This rule is different from the high tone anticipation rule in (222) because it does not involve spreading of a high tone. If we represent it as spreading, then it would mean that there is Xing or crossing of association lines which then violates WFC. Therefore, there is a leftward movement of the high tone which can only be explained in terms of H tone insertion.

4.15 Non-application of the high tone insertion rule

As earlier discussed in section 4.2, high tone insertion means the insertion of a high tone on the penultimate syllable or final syllable of a noun. Therefore, lack of high tone insertion means that a high tone is not inserted on a noun.

4.15.1 Lack of high tone insertion in proximal demonstratives and toneless nouns

When the nouns in example (232) are reversed, that is start with a proximal demonstrative then followed by a noun, high tone insertion is not triggered as shown in example (274). The demonstratives and the nouns maintain the same tone pattern as uttered in isolation form. When pronouncing these noun phrases there must be a pause that is why there is a comma after the demonstratives. There is also a comma in the noun phrases discussed in example (277) and (280) because the order is reversed.

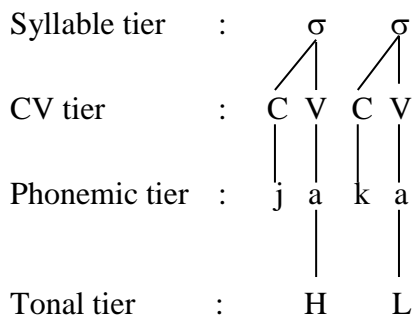
(274) Lack of high tone insertion in proximal demonstratives and ∅ nouns

∅ nouns	Gloss	Dem+N	Gloss
mà-hòòndò	‘pumpkins’	j-ákà, mà-hòòndò	‘these pumpkins’
mikòjè	‘ropes’	j-ítʃì, mikòjè	‘these ropes’
tsì-ɲòòmbè	‘cows’	j-ítsì, tsì-ɲòòmbè	‘these cows’
mà-xùxùni	‘amoebas’	j-ákà, mà-xùxùni	‘these amoebas’

The diagram in (275) (a) shows the autosegmental representation of the tone of the proximal demonstrative *j-ákà* ‘these’. This proximal demonstrative has a high tone on the first syllable and a low tone on the final syllable [H.L] when uttered in isolation and in the phrasal form. The noun *tsì-ḡòòmbè* ‘cows’ has a low tone on all the syllables when uttered in isolation as shown in diagram (275) (b). This noun is underlyingly toneless. The diagram (275) (c) shows the tone pattern of the noun phrase *jítsì, tsì-ḡòòmbè* ‘these cows’. In this noun phrase high tone insertion is not triggered.

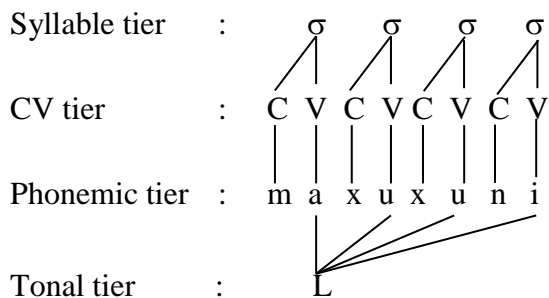
(275) (a)

j-ákà ‘these’

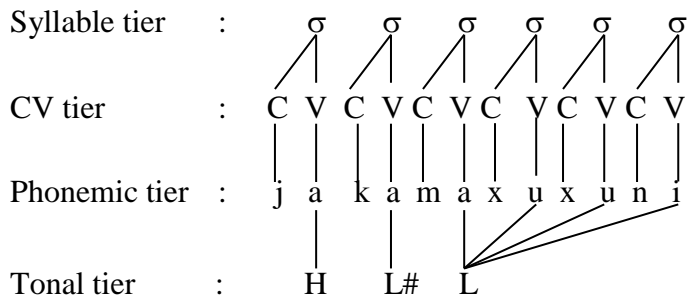


(275) (b)

mà-xùxùni ‘amoebas’

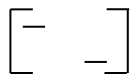


(275) (c)
 j-ákà, mà-xùxùnì ‘these amoebas’

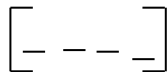


The tone pattern of the demonstrative j-ákà ‘these’, the noun mà-xùxùnì ‘amoebas’ and the noun phrase j-ákà, mà-xùxùnì ‘these amoebas’ are illustrated in (276) (i), (ii) and (iii) using RTT formalisms.

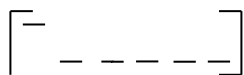
(276) (i) j-ákà ‘these’



(276) (ii) mà-xùxùnì ‘amoebas’



(276) (iii) j-ákà, mà-xùxùnì



In the examples discussed in section 4.12.1, it is observed that proximal demonstratives trigger HTI on the penultimate syllable of the nouns. However, when the reverse occurs that is, the phrase starts with a proximal demonstrative followed by a toneless noun, high tone insertion is not triggered as discussed in 4.15.1. Distal and remote demonstratives cannot be the first words in a noun phrase in Lwisukha that is why they are not discussed in this section.

4.15.2 Lack of high tone insertion in possessive pronoun -áàṅJè ‘mine’ and toneless nouns

When the noun phrases in example (237) are reversed that is the phrase starts with a possessive pronoun -áàṅJè followed by a noun, high tone insertion is not triggered as shown in example (277). In the phrasal form the nouns and the possessive pronouns maintain the same tone pattern as uttered in isolation.

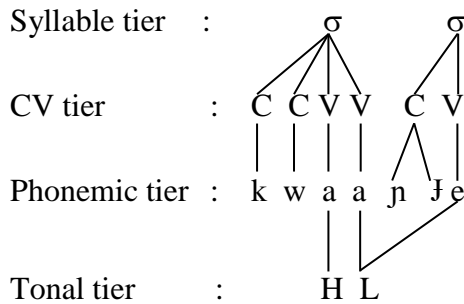
(277) Lack of high tone insertion in possessive pronoun -áàṅJè ‘mine’ and Ø nouns

Ø nouns	Gloss	Possessive + N	Gloss
ì-ṅòòmbè	‘cow’	j-áàṅJè, ì-ṅòòmbè	‘my cow’
lì-hòòndo	‘pumpkin’	lj-áàṅJè, lì-hòòndo	‘my’ pumpkin
mù-kòjè	‘rope’	kw-áàṅJè, mù-kòjè	‘my rope’
mù-tsikù	‘enemy’	wáàṅJè, mù-tsikù	‘my enemy’

The diagram in (278) (a) shows the autosegmental representation of the tone of the possessive pronoun kw-áàṅJè ‘mine’. The possessive pronoun has a falling tone on the stem initial syllable and a low tone on the final syllable [HL.L] when uttered in isolation and in the phrasal form. The noun mù-kòjè ‘rope’ has a low tone on all the syllables when uttered in isolation and in the phrasal form as shown in diagram (278) (b). Diagram (278) (c) shows the tone pattern of the noun phrase kw-áàṅJè, mù-kòjè ‘my rope’. In this noun phrase high tone insertion is not triggered.

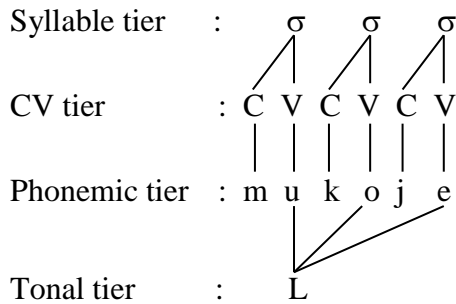
(278) (a)

kw-áàṅJè ‘mine’



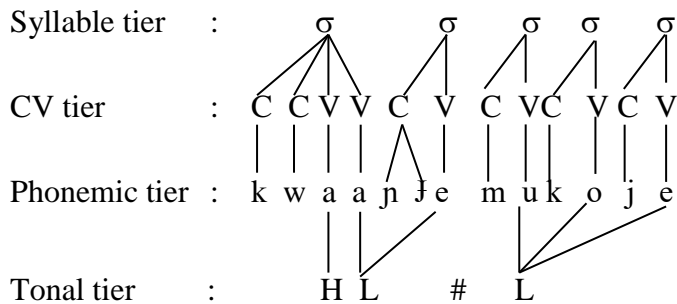
(278) (b)

mù-kòjè 'rope'



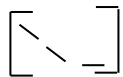
(278) (c)

kw-àànjè mù-kòjè 'my rope'

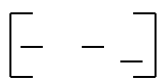


The tone pattern of the possessive pronoun kw-àànjè 'mine', the noun mù-kòjè 'rope' and the noun phrase, kw-àànjè, mù-kòjè 'my rope' are illustrated in (279) (i), (ii), (iii) by using RTT formalisms.

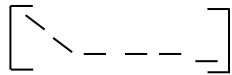
(279) (i) kw-àànjè 'mine'



(279) (ii) mù-kòjè 'rope'



(279) (iii) kw-áàṅJè, mù-kòjè ‘my rope’



4.15.3 Lack of high tone insertion in possessive pronoun -áàḅò ‘theirs’ and toneless nouns

When the noun phrases in example (261) start with a possessive pronoun -áàḅò, high tone insertion is not triggered as shown in example (280). The nouns and the possessive pronouns maintain the same tone pattern as uttered in isolation.

(280) Lack of high tone insertion in possessive pronoun -áàḅò ‘theirs’ and Ø nouns

Ø nouns	Gloss	Possessive + N	Gloss
mà-hòòndò	‘pumpkins’	k-áàḅò, mà-hòòndò	‘their pumpkins’
mì-kòjè	‘ropes’	tʃj- áàḅò, mì-kòjè	‘their ropes’
tsì-ṅàmà	‘animals’	tsj-áàḅò, tsì-ṅàmà	‘their animals’
ʃì-ròrèrò	‘mirror’	tʃj- áàḅò, ʃì-ròrèrò	‘their mirror’

In section 4.15, proximal demonstratives and possessive pronouns -áàṅJè and -áàḅò have been discussed. Note that quantifiers cannot be the first words in a noun phrase in Lwisukha that is why they are not discussed in this section.

In table 81 the nouns *mùù-ndù*, *mú-xáli* and *mú-línà* are used to analyze high tone anticipation and high tone insertion rules in a tabular form. The tone patterns of these three nouns are shown in table 81 as uttered in isolation and in the phrase context form.

Table 81: Nouns with adjectives, possessive pronouns and numeral 'one'

Tone patterns of nouns in isolation	N+/H/ adjective (e.g. <i>leji</i> 'good')	N+/L/ adjective (e.g. <i>litòhò</i> 'heavy')	N+/L/ possessive pronouns (e.g. <i>-èèrù</i> 'ours')	N+/H/ possessive pronouns (e.g. <i>-é</i> 'his')	N +/L/ numeral (e.g. <i>-làlà</i> 'one')
Ø noun <i>mùù-ndù</i> 'person'	<u><i>múù-ndú</i></u> <i>mú-léjì</i> 'a good person'	<i>múù-ndù</i> <i>mùlitòhò</i> 'a heavy person'	<u><i>múù-ndù</i></u> <i>w-èèrù</i> 'our person'	<u><i>múù-ndù</i></u> <i>wé</i> 'his/her person'	<i>mùù-ndù</i> <i>mù-làlà</i> 'one person'
HL noun <i>mú-xáli</i> 'woman'	<u><i>mú</i></u> - <i>xáli</i> <i>mú-léjì</i> 'a good woman'	<i>mú-xáli</i> <i>mù-litòhò</i> 'a heavy woman'	<i>mú-xáli</i> <i>w-èèrù</i> 'our woman'	<i>mú-xáli</i> <i>wé</i> 'his woman'	<i>mú-xáli</i> <i>mù-làlà</i> 'one woman'
HØ noun <i>mú-línà</i> 'friend'	<u><i>mú-líná</i></u> <i>mú-léjì</i> 'a good friend'	<i>mú-línà</i> <i>mù-litòhò</i> 'a heavy friend'	<i>mú-línà</i> <i>w-èèrù</i> 'our friend'	<i>mú-línà</i> <i>wé</i> 'his/her friend'	<i>mú-línà</i> <i>mù-làlà</i> 'one friend'

The first column in table 81 shows the tone pattern of the nouns *mùù-ndù* 'person', *mú-xáli* 'woman' and *mú-línà* 'friend' uttered in isolation. The noun *mùù-ndù* has a low tone on all the syllables [L.L.L]. The noun *mú-xáli* has a high tone on the prefix and the stem initial syllable and a low tone on the final syllable [H.H.L]. The noun *mú-línà* also has a high tone on the prefix and the stem initial syllable and a low tone on the final syllable [H.H.L].

In the second column, the nouns *mùù-ndù*, *mú-xáli* and *mú-línà* are followed by the adjective *mú-léjì* that has a high tone. The high tone on the syllable *lé*, spreads to the adjective prefix *mú* and to the entire noun *múù-ndù* as seen in the noun phrase *múù-ndù* *mú-léjì*. This means that the entire noun *mùù-ndù* is underlyingly toneless, so it undergoes high tone anticipation. The other nouns *mú-línà* 'friend' and *mú-xáli* 'woman, wife' in the same column are tonally the same because on the surface they both have a [H.H.L] tone pattern. However, when each of these nouns is in the phrasal context with the adjective *mú-léjì* 'good', the two nouns are tonally different. In *mú-líná* *mú-léjì* 'a good friend' the high tone on the syllable *lé* of the adjective *mú-léjì* 'good' spreads to the final syllable *nà* of the noun *mú-línà*. In *mú-xáli*

múlèjì ‘a good woman’, the high tone on the syllable lé of the adjective mú-lèjì ‘good’ does not spread to the final syllable of the noun mú-xàlì. Therefore, this means that the final syllable nà of the noun mú-línà ‘friend’ is underlyingly toneless, so it undergoes high tone anticipation, but the final syllable of mú-xàlì is underlyingly L toned, so it does not undergo high tone anticipation.

In the third column, the nouns are followed by the adjective mù-lìtòhò ‘heavy’ which has low tone on all the syllables. This adjective does not have any effect or does not alter the tone of the nouns mùù-ndù, mú-xàlì and mú-línà. In the phrasal form, the nouns maintain the same tone pattern as uttered in isolation. Therefore, we can conclude that adjectives with a low tone on all the syllables do not trigger the high tone anticipation rule.

In the fourth column, the noun phrase múú-ndù w-èèrù has a high tone that is inserted on the penultimate syllable of the noun. This means that the noun mùù-ndù ‘man’ is underlyingly toneless so it undergoes high tone insertion. In the noun phrases mú-xàlì w-èèrù and mú-línà w-èèrù high tone insertion is not triggered. This means that the nouns mú-línà and mú-xàlì underlyingly have a high tone on the penultimate syllable, so these nouns do not undergo high tone insertion. The possessive pronoun w-èèrù has a low tone on all the syllables.

In the fifth column, the noun phrase múú-ndù wé has a high tone that is inserted on the penultimate syllable of the noun. The high tone on the possessive pronoun wé is inserted to a toneless noun mùù-ndù ‘person’. This means that the noun mùù-ndù ‘person’ is underlyingly toneless, so it undergoes high tone insertion. In mú-xàlì wé and mú-línà wé, the high tone of wé is not inserted on the penultimate syllable of the noun. This means that the nouns mú-línà and mú-xàlì have underlyingly a high tone on the penultimate syllable, so these nouns do not undergo high tone insertion.

In the sixth column, the nouns mùù-ndù, mú-xàlì, mú-línà are followed by the numeral -làlà ‘one’. This numeral has a low tone on all the syllables, so it does not have any effect or does not alter the tone on the nouns mùù-ndù, mú-xàlì and mú-línà. Therefore, in the phrasal form the nouns maintain the same tone pattern as uttered in isolation. Therefore, we can conclude that numerals with a low tone on all the syllables do not trigger high tone anticipation

4.16 Conclusion

In conclusion, different elements of the noun phrase in Lwisukha trigger different tonal rules. For example, the high tone anticipation rule is triggered when a noun is followed by an adjective or a numeral with a high tone. The high tone on the adjective or numeral spreads leftwards to the toneless syllables. The adjectives -léjì ‘good’, -káli/ηgáli ‘big’, -sílò ‘stupid’, -áβù ‘white’, -tʃéli ‘clever’, -tʃííngà ‘stupid’, -mwáámû ‘a dark skinned person, black’, -ráàm̀bì ‘tall, long,’ -táámáánû ‘bad’ and -^ɿtʃááfù ‘dirty’ discussed in this chapter have a high tone on the stem initial syllable. All these adjectives trigger high tone anticipation. The numerals síítà ‘six’ and kúmì ‘ten’ have a high tone on the first syllable. These numerals trigger high tone anticipation. However, adjectives and numerals that have a low tone on all the syllables do not trigger high tone anticipation. For example, the adjective -litòhò ‘heavy’ and the numeral -làlà ‘one’ do not trigger the high tone anticipation rule.

When a noun with a high tone and a final syllable that is toneless [HØ] is followed by an adjective or a numeral that has a high tone, high tone anticipation is triggered but when a noun with a high tone and a final syllable that has a low tone [HL] is followed by an adjective or numeral that has a high tone, high tone anticipation is not triggered. This means that a high tone spreads leftwards only to syllables that are toneless but not to syllables that have a low tone. In this chapter, it is clear that the difference between a noun or a syllable with a low tone and one with a toneless syllable is not realised on the surface.

On the other hand, high tone insertion is triggered when a toneless noun is followed by a demonstrative, a possessive pronoun or a quantifier. In such noun phrases a high tone is inserted leftwards on the penultimate syllable of the noun. Proximal demonstratives, distal demonstratives -ò ‘that (far)’ and remote demonstratives -ó ‘that (very far)’ trigger high tone insertion. Possessive pronouns -áànjè ‘mine’, -èèrù ‘ours’, -ó ‘yours’, -éèjù ‘yours’ -é ‘his/hers’, and -áàβò ‘theirs’ trigger high tone insertion. Quantifiers -ósì, ‘any’, -ndí ‘some’, -tì ‘few or little’ also trigger high tone insertion. In some of the noun phrases high tone insertion and high tone anticipation rules are triggered. This means that the high tone inserted on the penultimate syllable spreads to the toneless syllables.

When the reverse occurs, that is a demonstrative or a possessive pronoun is followed by a toneless noun, as seen in some noun phrases, high tone insertion is not triggered. In such

cases the nouns and the modifiers maintain the tone pattern they had when uttered in isolation. For example, when proximal demonstratives, possessive pronoun -áàṅJé ‘mine’ and -áàḃò ‘theirs’ are followed by a noun high tone insertion is not triggered.

This shows that Lwisukha has an underlying contrast between H-toned, a toneless syllable and in addition there is evidence that some syllables have underlying L tones since these syllables behave differently from the toneless syllables. L toned syllables always surface with L tone, while toneless syllables surface with L tone except in certain contexts where they become H as a result of high tone spreading. We can thus say that Lwisukha has a three-way contrast between high tone, low tone and toneless. This reduces to a two-way surface contrast between H and L (plus downstepped H). Paster & Kim (2011:3) also say that Lutiriki has a three-way contrast between high, toneless and low tone that reduces to a two-way surface contrast between H and L (plus downstepped H). Therefore, Lwisukha and Lutiriki dialect of Luyia have similar contrasts.

It should be noted that most of the nouns discussed in this chapter acquire new tone patterns in the phrasal context. This means that the tone pattern the nouns have when uttered in isolation is different in most cases from the tone pattern the nouns have in the phrase context form. In such cases the high tone anticipation or the high tone insertion rules are triggered. The tables 82, 83, 84 and 85 summarize the tone patterns of nouns when uttered in isolation and in the phrasal contexts.

Table 82: Summary of nouns tone patterns in isolation and within phrasal contexts (Noun phrases undergo HTA)

Tone Patterns			
Nouns with monosyllabic stems			
Nouns in isolation	Gloss	Nouns in phrasal contexts	Gloss
ì-ndà	‘stomach’	í-ndá í-ṅgáli	‘a big stomach’
tsìì-njì	‘flies’	tsíí-nJí tsí-ṅgáli	‘big flies’
ʃìì-ndù	‘thing’	ʃíí-ndú ʃì- ⁺ tʃááfù	‘a dirty thing’
mùù-ndù	‘person’	múú-ndú mú-mwáámú	‘a dark skinned person’
lwíí-kà	‘horn’	lwíí- ⁺ ká lú-léjì	‘a good horn’
Nouns with disyllabic stems			
Nouns in isolation	Gloss	Nouns in phrasal contexts	Gloss
mù-lìmi	‘farmer’	mú-límí mú-léjì	‘a good farmer’
lì-tʃínà	‘stone’	lí-tʃíná lí-káli	‘a big stone’
mò-sòòmì	‘student’	mú-sóómí mú-sílò	‘a stupid student’
ì-ṅgùβù	‘cloth’	í-ṅgùβú ín-dáβù	‘a white, clean cloth’
mú-sòòmì	‘student’	mú-sóómí mú-tʃéì	‘a clever student’
mú-tsíkú	‘enemies’	mú-tsíkú mú-tʃííngà	‘stupid enemies’
ì-ṅòòmbè	‘cow’	í-ṅóómbé í-mwáámú	‘a black cow’
mù-kòjè	‘rope’	mú-kójé mú-ráàmbì	‘a long rope’
lì-hòòndò	‘pumpkin’	lí-hóóndó lí-táàmàànú	‘a bad pumpkin’
mù-βánù	‘knife’	mú-βánú mú- ⁺ tʃááfù	‘a dirty knife’
ʃì-láárò	‘shoe’	ʃí-láá ⁺ ró ʃì-mútʃì	‘a red shoe’
βàà-ndù	‘people’	βáá-ndú kúmì	‘ten people’
mà-ṅòṅì	‘birds’	má-ṅóní síítà	‘six birds’
má-pátà	‘ducks’	má-pátá síítà	‘six ducks’
βá-línà	‘friends’	βá-líná kúmì	‘ten friends’
Nouns with trisyllabic stems			
Nouns in isolation	Gloss	Nouns in phrasal contexts	Gloss
mà-hàṅgàrì	‘arguements’	má-háṅgárí má-léjì	‘good arguements’
lì-xùxùní	‘amoeba’	lí-xúxúní lí-ráàmbì	‘a long amoeba’
ʃì-nààpènzò	‘ghost’	ʃí-náàpènzó ʃì-mwáámú	‘a black ghost’
ʃì-ròrèrò	‘mirror’	ʃí-róréró ʃì-káli	‘a big mirror’

In table, 82 the tone pattern of nouns when uttered in isolation is different from when the nouns are in phrasal contexts. As discussed earlier in this chapter, adjectives and numerals that have a high tone trigger HTA. Therefore, the nouns in this table have a low tone on the surface when uttered in isolation but are underlyingly toneless. The same nouns have a high tone in the phrasal context because of high tone anticipation. This means that all the toneless syllables in the noun phrases in table 82 receive surface H as a result of high tone anticipation.

Table 83: Summary of nouns tone patterns in isolation and within phrasal contexts (Noun phrases do not undergo high tone anticipation)

Tone Patterns			
Nouns with monosyllabic stems			
Nouns in isolation	Gloss	Nouns in phrasal contexts	Gloss
mùù-ndù	‘person’	mùù-ndù mú-litòhò	‘a heavy person’
lwíí-kà	‘horn’	lwíí-kà lù-litòhò	‘a heavy horn’
líí-nù	‘tooth’	líí-nù lì-litòhò	‘a heavy tooth’
mùù-ndù	‘person’	mùù-ndù mù-làlà	‘one person’
lwíí-kà	‘horn’	lwíí-kà lù-làlà	‘one horn’
líí-nù	‘tooth’	líí-nù lì-làlà	‘one tooth’
Nouns with disyllabic stems			
Nouns in isolation	Gloss	Nouns in phrasal contexts	Gloss
mù-xáàná	‘girl’	mù-xáàná mú-litòhò	‘a heavy girl’
mú ⁺ túkà	‘car’	mú ⁺ túkà mù-litòhò	‘a heavy car’
mú-xónò	‘hand’	mú-xónò mù-litòhò	‘a heavy hand’
mù-lìmì	‘farmer’	mù-lìmì mù-làlà	‘one farmer’
í-sùrì	‘bedbug’	í-sùrì in-dàlà	‘one bedbug’
ʃí-kòòmbè	‘cup’	ʃí-kòòmbè ʃí-làlà	‘one cup’
ʃí-βùjì	‘jerry can’	ʃí-βùjì ʃí-làlà	‘one jerry can’
Nouns with trisyllabic stems			
Nouns in isolation	Gloss	Nouns in phrasal contexts	Gloss
ʃí-fwáànàni	‘doll’	ʃí-fwáànàni ʃí-làlà	‘one doll’
mú-ká ⁺ lááni	‘clerk’	mú-ká ⁺ lááni mù-làlà	‘one clerk’
í-péèndèèrà	‘flag’	í-péèndèèrà in-ditòhò	‘a heavy flag’
ʃí- ⁺ táámbájâ	‘cloth, handkerchief’	ʃí- ⁺ táámbájâ ʃí-litòhò	‘a heavy cloth, handkerchief’

Table 83 shows that the nouns in isolation maintain the same tone pattern in the phrasal context form. As discussed earlier in this chapter in section 4.10.2 and 4.10.3, the adjective -litòhò ‘heavy’ and the numeral -làlà ‘one’ that have a low tone on all the syllables do not trigger high tone anticipation. Therefore, all the noun phrases in table 83 do not undergo HTA.

Table 84: Summary of nouns tone patterns in isolation and within phrasal contexts (Noun phrases undergo high tone insertion)

Tone Patterns			
Nouns with monosyllabic stems			
Nouns in isolation	Gloss	Nouns in phrasal contexts	Gloss
tsì-ndà	‘stomachs’	tsí-ndà j-ítsì	‘these stomachs’
βàà-ndù	‘people’	βáá-ndù βàà-ndí	‘some people’
mùù-ndù	‘person’	múú-ndù wé	‘his person’
tsì-nɔ̃	‘flies’	tsí-nɔ̃ j-ítsì	‘these flies’
ʃì-ndù	‘thing’	ʃí-ndù ʃj-èèrù	‘our thing’
Nouns with disyllabic stems			
Nouns in isolation	Gloss	Nouns in phrasal contexts	Gloss
mì-kòjè	‘ropes’	mì-kójè j-ítʃì	‘these ropes’
ì-ηòòmbè	‘cow’	ì-ηóómbè èj-ò	‘that (far) cow’
ì-ηòòmbè	‘cow’	ì-ηóómbè éj-ó	‘that (very far) cow’
mù-kòjè	‘rope’	mù-kójè kw-áàɲJé	‘my rope’
mù-tsíkù	‘enemy’	mù-tsíkù wóó ⁺ w-ó	‘your enemy’
tsì-ηòòmbè	‘cows’	tsì-ηóómbè tsjéè-nù	‘their cows’
lì-sààmbù	‘leaf’	lì-sáámbù lǝ	‘his/her leaf’
lì-sààmbù	‘leaf’	lì-sáámbù lǝ-é lí-lálá lí-léjì j-íìlì	‘this one good leaf of his’
mà-hòòndò	‘pumpkins’	má-hóóndò k-èèrù	‘our pumpkins’
mà-hòòndò	‘pumpkins’	má-hóóndò k-èèrù j-áká	‘these pumpkins are ours’
lì-hòòndò	‘pumpkin’	lì-hóóndò l-jóljó lí-làlà	‘your one pumpkin’
ì-ηòòmbè	‘cow’	ì-ηóómbè j-ósi	‘any cow’
mì-kòjè	‘rope’	mì-kójè mì-tì	‘a little rope’
Nouns with trisyllabic stems			
Nouns in isolation	Gloss	Nouns in phrasal contexts	Gloss
mà-xùxùni	‘amoebas’	má-xúxúni j-ákà	‘these amoebas’
mà-hàngàri	‘arguments’	má-hàngàri kà-ndí	‘some arguments’
ʃì-ròrèrò	‘mirror’	ʃì-róréro ʃj-ááβò	‘their mirror’
Other nouns with polysyllabic stems			
Nouns in isolation	Gloss	Nouns in phrasal contexts	Gloss
ʃì-ròrèʃitsò	‘sign’	ʃì-róréʃisò ʃj-èèrù	‘our sign’

Table 84 shows that the tone pattern of nouns when uttered in isolation is different from when the nouns are in phrasal contexts. The nouns in isolation have a low tone on all the syllables on the surface but are underlyingly toneless. In the phrase context form these nouns have a high tone inserted on the penultimate syllable. Therefore, high tone insertion is triggered. As discussed earlier in these chapter demonstratives, possessives pronouns and some quantifiers trigger HTI. In some cases, high tone insertion and high tone anticipation rules are triggered

because the high tone inserted on the penultimate syllables spreads leftwards to toneless syllables.

Table 85: Summary of nouns tone patterns in isolation and within phrasal contexts (Noun phrases do not undergo high tone insertion)

Tone Patterns			
Nouns with monosyllabic stems			
Nouns in isolation	Gloss	Nouns in phrasal contexts	Gloss
tsì-ndà	‘stomachs’	j-ítsì, tsi-ndà	‘these stomachs’
tsì-ɲɛ	‘flies’	j-ítsì, tsi-ɲɛ	‘these flies’
ʃì-ndù	‘thing’	ʃj-èèrù ʃì-ndù	‘our thing’
Nouns with disyllabic stems			
Nouns in isolation	Gloss	Nouns in phrasal contexts	Gloss
mà-hòòndò	‘pumpkins’	j-ákà, mà-hòòndò	‘these pumpkins’
mikòjè	‘ropes’	j-ítʃì mikòjè	‘these ropes’
tsì-ɲòòmbè	‘cows’	j-ítsì, tsi-ɲòòmbè	‘these cows’
mà-hòòndò	‘pumpkins’	k-áàβò, mà-hòòndò	‘their pumpkins’
mì-kòjè	‘ropes’	tʃj- áàβò, mì-kòjè	‘their ropes’
tsì-ɲàmà	‘animals’	tsj-áàβò, tsi-ɲàmà	‘their animals’
ì-ɲòòmbè	‘cow’	j-áàɲʃè, ì-ɲòòmbè	‘my cow’
lì-hòòndo	‘pumpkin’	lj-áàɲʃè, lì-hòòndo	‘my pumpkin’
mù-kòjè	‘rope’	kw-áàɲʃè, mù-kòjè	‘my rope’
mù-tsikù	‘enemy’	wáàɲʃè, mù-tsikù	‘my enemy’
Nouns with trisyllabic stems			
Nouns in isolation	Gloss	Nouns in phrasal contexts	Gloss
mà -xùxùnì	‘amoebas’	j-ákà, mà-xùxùnì	‘these amoebas’
mù-kòjè	‘rope’	kw-áàɲʃè, mù-kòjè	‘my rope’
mà-hàṅgàrì	‘arguments’	k-áàβò, mà-hàṅgàrì	‘their arguments’
ʃì-ròrèrò	‘mirror’	ʃj- áàβò, ʃì-ròrèrò	‘their mirror’

When some of the noun phrases in table 84 are reversed high tone insertion is not triggered as shown in table 85. The noun phrases in this table start with proximal demonstratives, possessive pronouns -áàɲʃè ‘mine’ and -áàβò ‘theirs’ followed by a noun. In the phrasal context, the nouns, proximal demonstratives and the possessive pronouns maintain the same tone pattern as uttered in isolation.

CHAPTER FIVE

FUNCTIONS OF TONE IN LWISUKHA NOUNS

5.1 Introduction

In chapter four the discussion was on tone patterns of Lwisukha nouns in phrasal contexts. In this chapter the function of tone in Lwisukha nouns is discussed. Though nouns are the major focus of discussion in this chapter, there are sections where nouns are discussed with other word categories like verbs and adjectives among others. In chapter one Lwisukha is described as a tone language meaning that pitch can be used to distinguish word meaning or to convey grammatical distinctions. In some languages tone has a predominantly the lexical function, meaning that it is used almost exclusively to distinguish word meaning (Katamba 1993). In other languages, the function of tone is primarily grammatical in that it is mainly used to signal grammatical distinctions. In Lwisukha tone has a lexical, grammatical and pragmatic function. In this chapter we shall discuss these three functions of tone.

5.2 Lexical function of tone in Lwisukha nouns

A large number of tonal minimal pairs have been identified in Lwisukha. The minimal pairs have consonants and vowels that are identical but differ in meaning only on the basis of tone. The minimal contrast is created by particular tones found either in initial, medial or final positions in the words in question. In this section, bold type is used to show where there is a different tone pattern in the minimal pairs. The data discussed in this section shows that tone is a lexically contrastive feature in nouns. Table 86 shows tonal minimal pairs with monosyllabic stems -rà and -râ.

Table 86: Monosyllabic stems -rà and -râ

Nouns	Lwisukha	Gloss	Lwisukha	Gloss
Citation form	líí-rà	‘name’	líí-râ	‘burial’
Tone	H L	high.low	H HL	high.falling

In table 86 the noun líí-rà ‘name’ has a high.low [H.L] tone pattern. This noun has class 5 noun prefix {líí} that represents singular. The noun prefix has a high tone and the monosyllabic stem -rà has a low tone. The noun líí-râ ‘burial’ has a high.falling [H.HL] tone

pattern. The noun prefix has a high tone and the monosyllabic stem -râ has a falling tone. The contrast in these nouns is seen on the final syllable, one noun has a low [L] tone pattern while the other noun has a falling [HL] tone.

Using the OCP the two nouns have the same tone pattern that is a (HL) tone pattern because adjacent identical autosegments are not allowed to follow one another. Therefore, the high tone on the prefix of the noun lí-râ ‘burial’ is merged with the high tone on the final syllable thus we have a (HL) tone pattern. The noun lí-rà ‘name’ also has a (HL) tone pattern when merged.

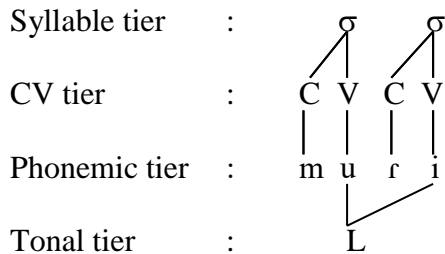
Table 87: Monosyllabic stems -rì and -rî

Nouns	Lwisukha	Gloss	Lwisukha	Gloss
Citation form	mù-rì	‘one who eats’	mù-rî	‘root’
Tone	L L	low.low	L HL	low.falling

In table 87 the noun mù-rì ‘one who eats’ has a low.low [L.L] tone pattern. This noun has class 1 noun prefix {mù} which represents the singular. This noun prefix has a low tone while the monosyllabic stem -rì has a low tone. The noun mù-rî ‘root’ has a low.falling [L.HL] tone pattern. This noun has class 3 noun prefix {mù} which represents the singular. This noun prefix has a low tone while the monosyllabic stem -rî has a falling tone. The contrast in these nouns is seen on the final syllable, the noun mù-rì has a low [L] tone pattern on the final syllable rì while the noun mù-rî has a falling [HL] tone on the final syllable rî. The diagrams in examples (281) and (282) show the autosegmental representation of the tone of nouns in table 87.

(281)

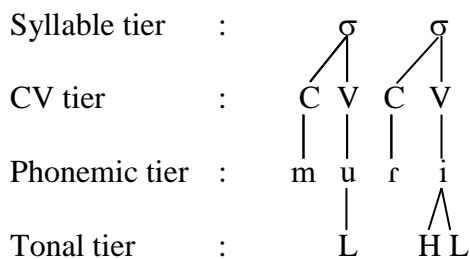
mù-rì 'one who eats'



The left to right mapping principle is used in matching the TBUs and tone. Association lines join the TBUs and tones in a one-to-one fashion from left to right. In example (281) the OCP has been applied whereby adjacent identical autosegments are not allowed to follow one another. The low tone on the prefix also appears on the final syllable. Therefore, the low tones on the prefix and the final syllable of the noun have been collapsed into one.

(282)

mùrî 'root'



In example (282) there is a low tone on the prefix and the final syllable has a falling tone that is associated to one vowel. In APT, a falling tone is analysed as a sequence of a high tone followed by a low tone. This is reflected in example (282). Table 88 shows nouns with monosyllabic stems -xò 'relative' and -xô 'cooking stick'.

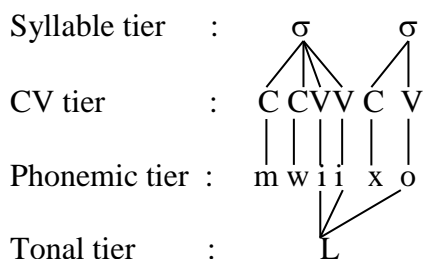
Table 88: Monosyllabic stems -xò and -xô

Nouns	Lwisukha	Gloss	Lwisukha	Gloss
Citation form	mwii-xò	‘relative’	mwii-xô	‘cooking stick’
Tone	L L	low.low	L HL	low.falling

The noun mwii-xò ‘relative’ in table 88 has a low tone on the syllables [L.L]. This noun has class 1 noun prefix {mwii} which represents singular. The noun mwii-xô ‘cooking stick’ has low tone on the prefix and a falling tone on the final syllable [L.HL]. This noun has class 3 noun prefix {mwii} which represents singular. The contrast in these nouns is seen on the final syllable. The noun mwii-xò ‘relative’ has a low tone while the noun mwii-xô ‘cooking stick’ has a falling tone. The diagrams in examples (283) and (284) show the autosegmental representation of the tone of nouns in table 88.

(283)

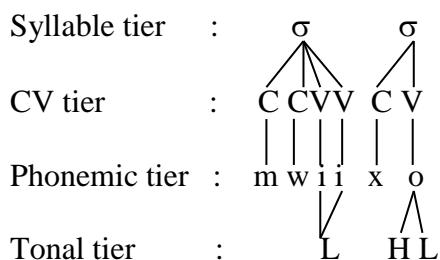
mwii-xò ‘relative’



In example (283) the OCP has been applied, the low tones on the noun mwii-xò ‘relative’ have been collapsed into one.

(284)

mw-iixô ‘cooking stick’



In example (284) there is a low tone on the prefix and a falling tone on the final syllable that is associated to one vowel. As discussed earlier in example (282), in APT, a falling tone is analysed as a sequence of a high tone followed by a low tone. This is reflected in example (284). Table 89 shows nouns with disyllabic stems -tùxù and -túxù.

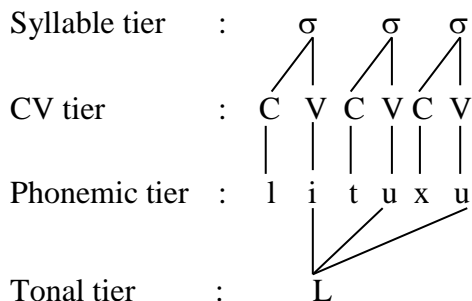
Table 89: Disyllabic stems -tùxù and -túxù

Nouns	Lwisukha	Gloss	Lwisukha	Gloss
Citation form	lì-tùxù	‘hole’	lí-túxù	‘day’
Tone	L L L	low	H H L	high.high.low

The noun lì-tùxù ‘hole’ in table 89 has a low.low.low [L.L.L] tone pattern. This noun has class 5 noun prefix {lì} which represents singular. This noun prefix has a low tone while the stem -tùxù which has two syllables has a low tone as well. The noun lí-túxù ‘day’ has a high.high.low [H.H.L] tone pattern. This noun has class 5 noun prefix {lí} which represents singular. This noun prefix has a high tone while the stem -túxù which has two syllables has a high tone on the stem initial syllable and a low tone on the final syllable. The contrast in these nouns is seen on the prefix and the stem initial syllable. One noun has a low.low [L.L] tone pattern while the other noun has a high.high [H.H] tone pattern. The diagrams in examples (285) and (286) show the autosegmental representation of the tone of nouns in table 89.

(285)

litùxù ‘hole’

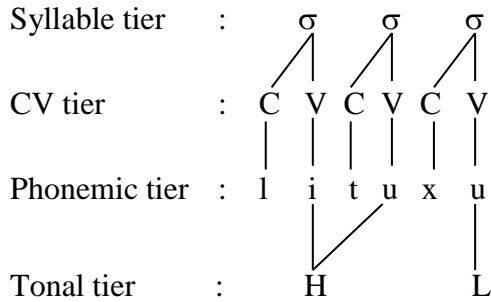


In example (285), the OCP has been applied whereby adjacent identical autosegments are not allowed to follow one another. The low tone on the prefix also appears on the stem initial

syllable and the final syllable. Therefore, the low tones on the prefix, stem initial syllable and the final syllable have been collapsed.

(286)

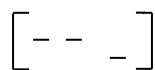
lítúxù ‘day’



In example (286) OCP has been applied, the high tone on the prefix and the stem initial syllable have been collapsed into one high tone. The AC has led to the association of the left most tone to the left most TBU in one to one fashion from left to right until all the tones and all the TBU are exhausted. The tone pattern of the noun lítúxù ‘day’ when collapsed is (HL). Examples (287) and (288) show the tone pattern of the nouns lítùxù ‘hole’ and lí-túxù ‘day’ using the RTT formalisms.

(287)

lítùxù ‘hole’



(288)

lí-túxù ‘day’

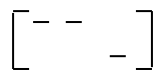


Table 90: Disyllabic stems -βèkà and -βékà

Nouns	Lwisukha	Gloss	Lwisukha	Gloss
Citation form	lì-βèkà	‘shoulder’	líβékà	‘shaving style’
Tone	L L L	low.low.low	H H L	high.high.low

In table 90, the noun *lì-βèkà* ‘shoulder’ has a low.low.low [L.L.L] tone pattern. This noun has class 5 noun prefix {lì} which represents singular. The prefix has a low tone while the stem -βèkà which has two syllables has a low tone. The noun *líβékà* ‘shaving style’ has a high.high.low [H.H.L] tone pattern. The contrast in these nouns is seen on the first and second syllables. One noun has a low.low [L.L] tone pattern on the first two syllables while the other noun has high.high [H.H] tone pattern. Table 91 shows nouns with disyllabic stems -ndèmà and -ndémà.

Table 91: Disyllabic stems -ndèmà and -ndémà

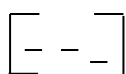
Nouns	Lwisukha	Gloss	Lwisukha	Gloss
Citation form	ì-ndèmà	‘cheek’	í- ⁺ ndémà	‘cigarette, tobacco’
Tone	L L L	low.low.low	H ⁺ H L	high.downstepped high.low

The noun *ì-ndèmà* ‘cheek’ in table 91, has a low.low.low [L.L.L] tone pattern. This noun has class 9 noun prefix {ì} which represents singular. The prefix has a low tone while the stem -ndèmà which has two syllables has a low tone. The noun *í-⁺ndémà* ‘cigarette, tobacco’ has a high.downstepped high.low [H.⁺H.L] tone pattern. This noun has class 9 noun prefix {í} which represents singular. The prefix has a high tone while the stem -ndémà which has two syllables has a downstepped high tone on the stem initial syllable and a low tone on the final syllable.

The contrast in the nouns above is seen on the prefix and the stem initial syllable. The noun *ì-ndèmà* has a low tone [L.L] on the syllable *ì* and *ndè* while the noun *í-⁺ndémà* has a high tone and a downstepped high [H.⁺H] tone pattern on the syllable *í* and *ndé*. Examples (289) and (290) shows the tone pattern of the nouns *ì-ndèmà* ‘cheek’ and *í-⁺ndémà* ‘cigarette, tobacco’ using the RTT formalisms.

(289)

ì-ndèmà ‘cheek’



(290)

í-⁺ndémà ‘cigarette, tobacco’

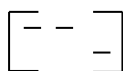


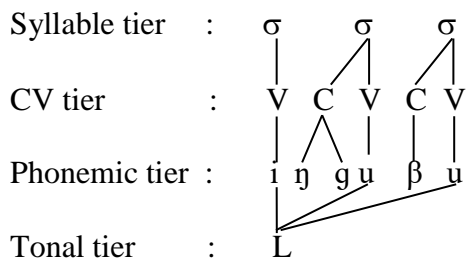
Table 92: Disyllabic stems -ngùβù and -ngúβû

Nouns	Lwisukha	Gloss	Lwisukha	Gloss
Citation form	ì-ngùβù	‘cloth’	í- ⁺ ngúβû	‘hippopotamus’
Tone	L L L	low.low.low	H ⁺H HL	high.downstepped high.falling

In table 92, the noun ì-ngùβù ‘cloth’ has a low.low.low [L.L.L] tone pattern. This noun has class 9 noun prefix {ì} that represents singular. This noun prefix has a low tone while the stem -ngùβù has a low tone on the two syllables. The noun í-⁺ngúβû ‘hippopotamus’ has a high tone on the noun prefix, a downstepped high tone on the stem initial syllable and a falling tone on the final syllable [H.⁺H.HL]. This noun has a class 9 noun prefix {í} that represents singular. The contrast in the nouns is seen in all the three syllables. The diagrams in examples (291) and (292) show the autosegmental representation of the tone of nouns in table 92.

(291)

ì-ngùβù ‘cloth’

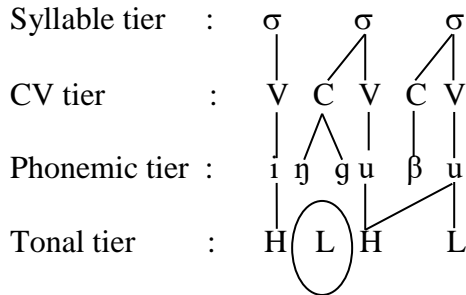


In example (291), OCP has been applied so that adjacent identical autosegments are not allowed to follow one another. The low tone on the prefix also appears on the stem initial

syllable and the final syllable. Therefore, the low tones on the three syllables have been collapsed into one.

(292)

í-⁺ŋgúβû ‘hippopotamus’



In example (292) there is a high tone on the prefix, the stem initial syllable has a downstepped high tone and the final syllable has a falling tone. The tonal tier has a floating low tone that is circled. The floating tone has the effect of making the high tone on the stem initial syllable a downstepped high tone.

Table 93: Disyllabic stems -tère and -⁺tère

Nouns	Lwisukha	Gloss	Lwisukha	Gloss
Citation form	lí-tère	‘a big toe’	lí- ⁺ tère	‘algae (edible)’
Tone	H H L	high.high.low	H ⁺ H L	high.downstepped high.low

In table 93, the noun lí-tère ‘a big toe’ has a high.high.low [H.H.L] tone pattern. This noun has class 5 noun prefix {lí} that represents singular. This noun prefix has a high tone and the stem -tère, which has two syllables, has a high tone on the stem initial syllable and a low tone on the final syllable. The noun lí-⁺tère ‘algae (edible)’ has a high.downstepped high.low [H.⁺H.L] tone pattern. This noun has class 5 noun prefix {lí} that represents singular. This noun prefix has a high tone and the stem -tère which has two syllables, has a downstepped high tone on the stem initial syllable and a low tone on the final syllable. The contrast in the nouns in table 93 is seen on the stem initial syllable. One noun has a high [H] tone while the other noun has a downstepped high tone [⁺H].

Table 94: Disyllabic stems -sìmbà and -símbà

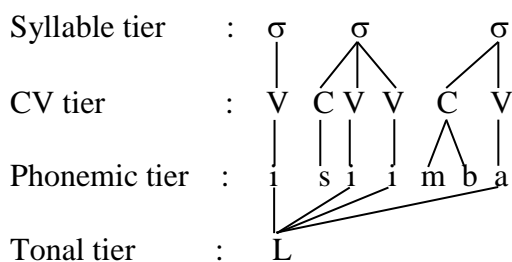
Nouns	Lwisukha	Gloss	Lwisukha	Gloss
Citation form	ì-sìmbà	‘hut’	í-símbà	‘lion’
Tone	L L L	low.low.low	H H L	high.high.low

The noun ì-sìmbà ‘hut’ has a low.low.low [L.L.L] tone pattern. This noun has class 9 noun prefix {i} that represents singular. This noun prefix has a low tone and the stem -sìmbà which has two syllables has a low tone on the stem initial syllable and the final syllable. The noun í-símbà ‘lion’ has a high.high.low [H.H.L] tone pattern. This noun has class 9 noun prefix {i} that represents singular. This noun prefix has a high tone and the stem -símbà which has two syllables, has a high tone on stem initial syllable and a low tone on the final syllable.

The contrast in the nouns in table 94 is seen on the prefix and the stem initial syllable. One noun has a low.low [L.L] tone pattern while the other noun has a high.high [H.H] tone pattern. The diagrams in examples (293) and (294) show the autosegmental representation of the tone of nouns in table 94.

(293)

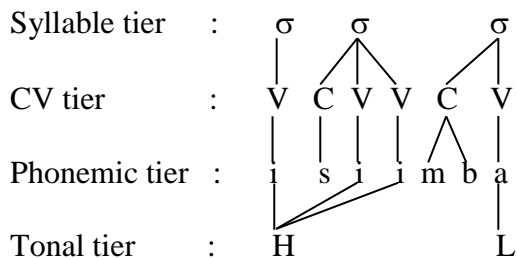
ì-sìmbà ‘hut’



In example (293), OCP has been applied so that adjacent identical autosegments are not allowed to follow one another. The low tone on the prefix also appears on the stem initial syllable and the final syllable. Therefore, the low tones on the three syllables have been collapsed into one.

(294)

í-símbà ‘lion’



In example (294), OCP has been applied so that adjacent identical autosegments don't follow one another. The high tone on the prefix also appears on the stem initial syllable. Therefore, the high tones on the prefix and the stem initial syllable have been collapsed. Therefore, the noun í-símbà 'lion' has a (HL) tone pattern when collapsed.

5.3 Lexical function of tone in Lwisukha nouns with other word categories

Tone can also be used to contrast a noun and other word categories for example, verbs, adjectives and interjections. Tone has been used to contrast a pair of monosyllabic words in table 95.

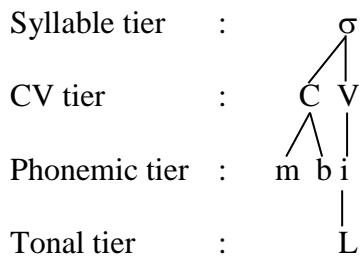
Table 95: Monosyllabic words mbì and mbí

Words	Lwisukha	Gloss	Lwisukha	Gloss
Citation form	mbì	'feaces'	mbí	'give me (plural)'
Tone	L	low	H	high

In table 95, the noun mbì 'feaces' has a low (L) tone pattern. The word mbí 'give me (plural)' has a high [H] tone pattern. These words have one syllable. The contrast in the nouns in table 95 is seen on the mora 'i'. The noun mbì has a low [L] tone pattern on the vowel while the verb mbí has a high [H] tone pattern. The diagrams in (295) and (296) show the autosegmental representation of tone of the words in table 95.

(295)

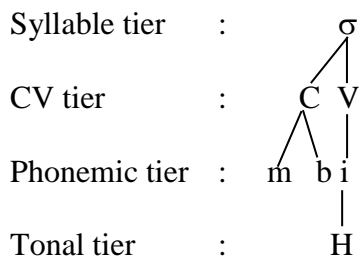
mbì ‘faeces’



In example (295) the mora ‘i’ has a low tone.

(296)

mbí ‘give me (plural)’



In the example (296) the mora ‘i’ has a high tone.

Table 96: Disyllabic words mwáánà and mwáánâ

Words	Lwisukha	Gloss	Lwisukha	Gloss
Citation form	mwáánà	‘child’	mwáánâ	‘idiophone’
Tone	H L	high.low	H HL	high.falling

In table 96, the noun mwáá-nà ‘child’ has a high.low [H.L] tone pattern. This noun has the class 1 noun prefix {mwáá} which represents singular. The stem -nà has a low tone on the final syllable. The interjection mwáánâ! ‘idiophone’ has a high.falling [H.HL] tone pattern. The contrast in these words is seen on the final syllable. One word has a low [L] tone while the other has a falling [HL] tone.

Table 97: Disyllabic words *ǰírítsâ* and *ǰírítsà*

Words	Lwisukha	Gloss	Lwisukha	Gloss
Citation form	ǰírítsâ	‘uphill’	ǰírítsà	‘it will come’
Tone	H H HL	low.low.low	H H L	high.high.low

In table 97, the noun *ǰí-rítsâ* ‘uphill’ has a high.high.falling [H.H.HL] tone pattern. This noun has class 7 noun prefix {ǰí} that represents singular. The noun prefix {ǰí} has a high tone and the stem *-rítsâ* which has two syllables, has a high tone on the stem initial syllable and a falling tone on the final syllable. The verb *ǰírítsà* ‘it will come’ has a high.high.low [H.H.L] tone pattern. The contrast in these nouns is seen on the final syllable. One word has a falling tone while the other has a low tone.

Table 98: Disyllabic words *rìrà* and *rírà*

Words	Lwisukha	Gloss	Lwisukha	Gloss
Citation form	rìrà	‘intestine’	rírà	‘cry’
Tone	L L	low.low	H L	high.low

The noun in table 98 *rì-rà* ‘intestine’ has a low-low [L.L] tone pattern. This noun has a class 5 noun prefix {rìí} that represents singular. The stem *-rà* which has one syllable has a low tone. The verb *rírà* ‘cry’ has a high.low [H.L] tone pattern. The contrast in these words is seen on the first syllable. One word has a low [L] tone while the other has a high [H] tone.

Table 99: Disyllabic words *mwímbí* and *mwímbî*

Words	Lwisukha	Gloss	Lwisukha	Gloss
Citation form	mwímbí	‘singer’	mwímbî	‘sing’ (many people being asked to sing)
Tone	H H	high.high	H HL	high.falling

In table 99, the noun *mw-ímbí* ‘singer’ has a high.high [H.H] tone pattern. This noun has the prefix {mw} and the stem *-ímbí*, has a high tone on the stem initial syllable and the final syllable. The verb *mwímbî* ‘sing’ (many people being asked to sing) has a high.falling

[H.HL] tone pattern. This verb stem -ímbî has high tone on the stem initial syllable and a falling tone on the final syllable. The contrast in the words in table 99 is seen on the final syllable. One noun has a high [H] tone while the other has a falling [HL] tone.

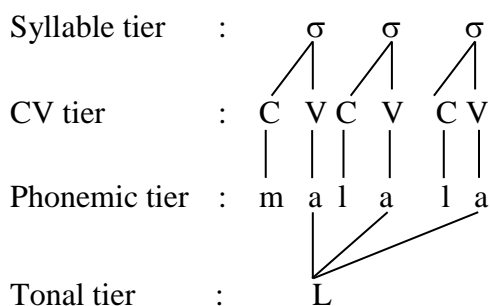
Table 100: Trisyllabic words òp̄fírà, òp̄fírà and màlàlà, màlálá

Words	Lwisukha	Gloss	Lwisukha	Gloss
Citation form	òp̄fírà	‘road’	òp̄fírà	‘come in’
	màlàlà	‘all the same’	màlálá	‘dry leaves of a banana tree’
Tone	L L L	low.low.low	H H H	high.high.high

In table 100, the noun òp̄fírà ‘road’ and the adjective màlàlà ‘all the same’ have a low tone on all the syllables. The verb òp̄fírà ‘come in’ and the noun mà-lálá ‘dry leaves’ have a high tone on all the syllables. The contrast in the words above is seen in all the three syllables. The diagrams in (297) and (298) show the autosegmental representation of tone of the words màlàlà ‘all the same’ and màlálá ‘dry leaves of a banana tree’ in table 100.

(297)

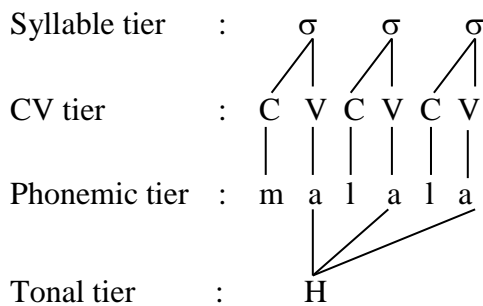
màlàlà ‘all the same’



In example (297), OCP has been applied. Adjacent identical autosegments are not allowed to follow one another. The low tone on the first syllable also appears on the second and third syllable. Therefore, the low tones on the three syllables have been collapsed.

(298)

má-lálá ‘dry leaves’



In example (298), the OCP has been applied. Adjacent identical autosegments are not allowed to follow one another. The high tone on the noun prefix also appears on the stem initial syllable and the final syllable. Therefore, the high tones on the three syllables have been collapsed into one.

Table 101: Trisyllabic words múxóòpè and múxóópê

Words	Lwisukha	Gloss	Lwisukha	Gloss
Citation form	múxóópè	‘sugarcane’	múxóópê	‘help him/her’
Tone	H H L	high.high.low	H H HL	high.high.falling

The noun mú-xóópè ‘sugarcane’ in table 101 has a class 3 noun class prefix {mú} which represents singular. This noun prefix has a high tone while the stem -xóópè which has two syllables has a high tone on the stem initial syllable and a low tone on the final syllable. The imperative verb múxóópê ‘help him/her’ has high tones on two syllables and the final syllable has a falling tone. This imperative verb has class 1 object prefix combined with the verb root -xóòpê ‘help’ in the imperative. The contrast in the words above is seen on the final syllable. The noun mú-xóópè has a low [L] tone on the final syllable while the verb múxóópê has a falling tone [HL] on the final syllable. By applying OCP, the noun mú-xóópè ‘sugarcane’ and the verb múxóópê ‘help him/her’ have the same tone pattern that is a (HL) tone pattern.

Table 102: Trisyllabic words mú-rími and mú-rími

Words	Lwisukha	Gloss	Lwisukha	Gloss
Citation form	mú-rími	‘farm, garden’	mú-rími	‘may you dig’
Tone	H H L	high.high.low	H H H	high.high.high

In table 102, the noun mú-rími ‘farm, garden’ has a class 3 noun class prefix {mú} which represents singular. This noun prefix has a high tone while the stem -rími which has two syllables has a high tone on the stem initial syllable and a low tone on the final syllable. The verb mú-rími has a high tone on all the syllables. The contrast in these words is seen on the final syllable. The noun mú-rími ‘farm, garden’ has a [L] tone while the verb mú-rími ‘may you dig’ has a high [H] tone.

5.4 Tone and Word classes

Tone differences in Lwisukha do not only bring about difference of meanings of lexical items but also change of word classes. In the examples discussed in this section there is a change of word-class, from an imperative verb to a deverbal noun. Deverbal nouns are nouns derived from verbs, these nouns have a noun class prefix and an imperative verb form combined with an object prefix. Imperative verbs instruct people to do something. Some examples of this type are shown in table 103.

Table 103: Disyllabic words mw-írì and mw-írì

Words	Lwisukha	Gloss	Lwisukha	Gloss
Citation form	mw-írì	‘killer’	mw-írì	‘kill him/her’
Tone	H L	high.low	H H	high.high

In table 103, the noun mw-írì ‘killer’ has a high.low (H.L) tone pattern. This noun has a class 1 noun prefix {mw} which represents singular. The stem -írì which has two syllables has a high tone on the stem initial syllable and a low tone on the final syllable. The imperative verb mw-írì ‘kill him/her’ has a high tone on all the syllables. This verb has class 1 object prefix {mw} combined with the verb stem -írà ‘kill’ in the imperative. The verb stem -írà has a high tone on the stem initial syllable and low tone on the final syllable. The contrast in the words in table 103 is seen on the final syllable. One word has a low tone while the other word has a high tone.

Table 104: Trisyllabic words múlэфè, múлэфé, múβóhè, múβóhé, јítэфè and јítэфé

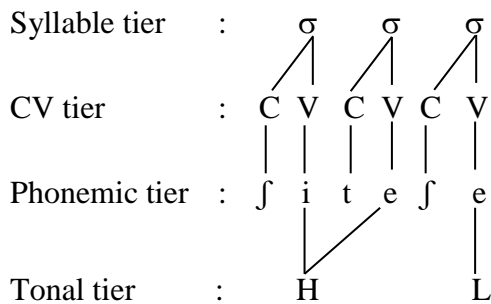
Words	Lwisukha	Gloss	Lwisukha	Gloss
Citation form	múlэфè	‘the left one’	múlэфé	‘let go of him/her’
	múβóhè	‘the tied one’	múβóhé	‘tie him/her’
	јítэфè	‘the cooked one’	јítэфé	‘cook it’
Tone	H H L	high.high.low	H H H	high.high.high

The nouns in table 104 mú-лэфè, mú-βóhè and јí-тэфè have a high.high.low [H.H.L] tone pattern. The noun mú-лэфè has a class 1 noun prefix {mú} which represents singular. The noun mú-βóhè has a class 1 noun prefix {mú} which represents singular. The noun јí-тэфè has a class 7 noun prefix {јí} which represents singular. The stem -лэфè, -тэфè and -βóhè which have two syllables each have a high tone on the stem initial syllable and a low tone on the final syllable.

The imperative verbs múлэфé, múβóhé and јítэфé have a high tone on all the syllables. The imperative verb múлэфé has a class 1 object prefix {mú} combined with the verb stem -лэфà ‘leave’ in the imperative. This imperative verb múβóhé has a class 1 object prefix {mú} combined with the verb stem -βóhà ‘tie’ in the imperative. This imperative verb јítэфé has a class 7 object prefix {јí} combined with the verb stem -тэфà ‘cook’ in the imperative. The prefix {mú} and {јí} have a high tone. The verb stems -лэфà -βóhà and -тэфà have a high tone on the stem initial syllable and a low tone on the final syllable when uttered in isolation. The contrast in the words in table 113 is seen in the final syllable. The nouns have a low tone while the verbs have a high tone. The diagrams in (299) and (300) show the autosegmental representation of the tone of the noun јí-тэфè ‘the cooked one’ and the verb јítэфé ‘cook it’ in table 104.

(299)

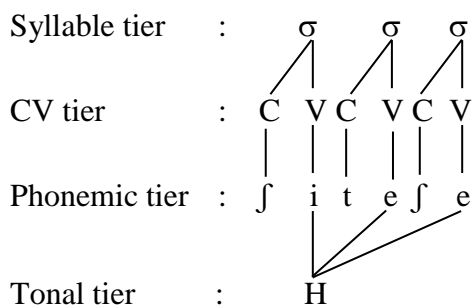
ʃi-téʃè ‘the cooked one’



According to OCP, the high tones in the prefix and the stem initial syllable have been collapsed into one high tone. The tone pattern of the noun in example (299) is (HL) when collapsed.

(300)

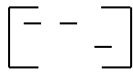
ʃítéʃé ‘cook it’



The left to right mapping principle is used in matching the TBUs and tone. Association lines join the TBUs and tones in a one-to-one fashion from left to right. In example (300), the OCP has been applied so that adjacent identical autosegments are not allowed to follow one another. The high tone on the first syllable also appears on the second and third syllables. Therefore, the high tones on the three syllables have been collapsed into one. The left to right mapping principle is applied in this example. When the register tier theory is applied, the tone pattern of ʃi-téʃè and ʃítéʃé is illustrated in example (301) and (302). Examples (301) and (302) show the tone pattern of the noun ʃi-téʃè ‘the cooked one’ and ʃítéʃé ‘cook it’ using the RTT formalisms.

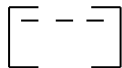
(301)

ʃĩ-téǰě ‘the cooked one’



(302)

ʃítéǰě ‘cook it’



In the examples discussed in this section 5.4, it is evident that the the derived nouns have a high tone on the noun prefix and the stem initial syllable and a low tone on the final syllable. This is a (HL) tone pattern when collapsed. The imperative verbs have a high tone on all the syllables. This is a (H) tone pattern when collapsed. The difference between the derived nouns and the imperative verbs is on the final syllable, the derived nouns have a low tone while the imperative verbs have a high tone.

5.5 Tone of nouns in affirmative sentences and questions

In Lwisukha tone of nouns can change an affirmative sentence to a question. An affirmative sentence is any statement that is positive and not negative and is also referred to as an assertive sentence. In example (303) there is an affirmative statement and in example (304) there is a question.

(303)

βàǰènzì ínǰù ‘They swept the house’ (Affirmative sentence)
L L L H L

βà-ǰènz-ì í-nǰù ‘They swept the house’
3P.SU-sweep-AFF.PFV-FV 9-house

(304)

βájénzí ínǰú? ‘Did they sweep the house?’ (Question)
H H H H H

βá-ǰènz-í ínǰú? ‘Did they sweep the house?’
3P.SU-sweep-QUE-FV 9-house

In the phrasal context in example (303), the affirmative sentence has a [H.L] tone pattern on the noun *ínzù* ‘house’ while in example (304) the question form has high tones [H.H] on all the syllables of the noun *ínzú* ‘house’. The difference in tone, in the nouns makes one sentence an affirmative and the other a question. However, though the focus of this study is not on the verbs, it is also important to note that the difference in tone in the two sentences is also brought about by the verb. The verb *βàjènzì* ‘sweep’ has low tones on all the syllables [L.L.L] in the affirmative sentence. The same verb *βá-jé-í* ‘sweep’ has high tones [H.H.H] on all the syllables in the question. Another example of an affirmative sentence is in (305) and the question is in (306).

(305)

àtèjì fú⁺xúlà ‘he/she has cooked food.’ (Affirmative sentence)
 LLL H⁺H LL

à-tèjì fú-⁺xúlà ‘he/she has cooked food.’
 3S.SU-cook-AFF.PFV 7-food

(306)

átéjì fúxulía ‘did he/she cook the food?’ (Question)
 HHH H H HH

átéjì fúxulía ‘did he/she cook the food?’
 3S.SU-cook-QUE.PFV 7-food

In the phrasal context in example (305), the affirmative sentence has a [[H.⁺H.LL] tone pattern on the noun *fú⁺xúlà* ‘food’ while in example (306) the question form has high tones [H.H. HH] on all the syllables of the noun *fúxulía* ‘food’. The difference in tone in the nouns makes one sentence an affirmative sentence and the other a question. The verb *àtèjì* ‘cook’ has low tones on all the syllables [L.L.L] in the affirmative sentence. The same verb *átéjì* ‘cook’ has high tones [H.H.H] on all the syllables in the question. In example (307) there is another example of an affirmative sentence and in example (308) a question.

(307)

àtsìrì mùsòkóónì ‘he/she went to the market’ ‘Affirmative sentence’
L L L L HL HH L

à-tsìrì mù-sòkóónì ‘he/she went to the market’
3S.SU-went.AFF. PFV 18- market

(308)

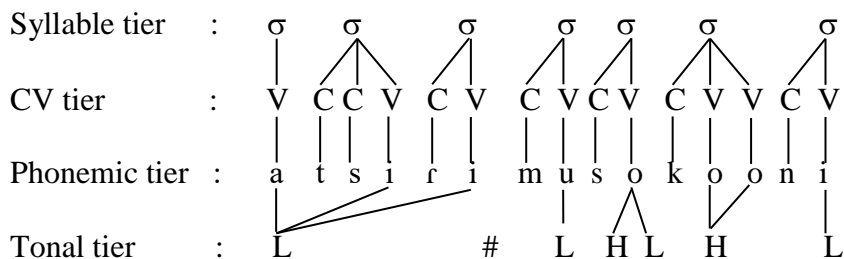
átsírí músókóónì ‘did he/she go to the market?’ ‘Question’
H H H H H H L

á-tsírí mú-sókóónì ‘did he/she go to the market?’
3S.SU-went.QUE. 18- market

In the affirmative sentence in example (307), the noun mùsòkóónì ‘at the market’ has a [L.HL.HH.L] tone pattern but in the question form, the tone pattern of the noun músókóóní ‘at the market’ changes to [H.H.HH.L]. By applying OCP in example (309), the affirmative sentence àtsìrì mùsòkóónì ‘he/she went to the market’ has a (LHLHL) tone pattern when collapsed while the question form in (310) átsírí músókóónì ‘did he/she go to the market?’ has a (HL) tone pattern. The diagram in (309) shows the autosegmental representation of the tone of the affirmative statement àtsìrì mùsòkóónì ‘he/she went to the market’.

(309)

àtsìrì mùsòkóónì ‘he/she went to the market’ ‘Affirmative sentence’
L L L L HL H L

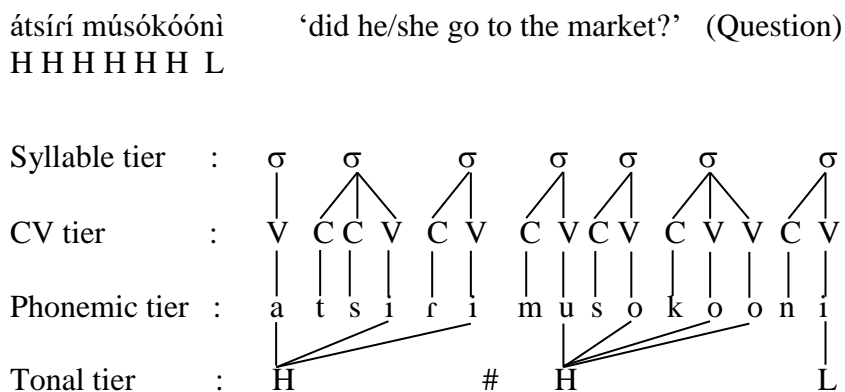


The left to right mapping principle is used in matching the TBUs and tone. Association lines join the TBUs and tones in a one-to-one fashion from left to right. In the example (309), OCP has been applied. The low tone on the first syllable also appears on the second and third

syllables of the verb *àtsìrì* ‘he/she went’. Therefore, the low tones on the three syllables have been collapsed or merged into one.

The noun *mù-sòkóónì* ‘in the market’ has a [LHLHL] tone pattern. This noun has class 18 noun prefix {*mù*} which has a low tone while the stem *-sòkóónì* which has three syllables has a falling tone on the stem initial syllable, a high tone on the penultimate syllable and a low tone on the final syllable. The diagram in (310) shows the autosegmental representation of the tone of the question *átsírí músókóónì* ‘did he/she go to the market?’

(310)



The left to right mapping principle is used in matching the TBUs and tone. Association lines join the TBUs and tones in a one-to-one fashion from left to right. In example (310), the OCP has been applied so that adjacent identical autosegments are not allowed to follow one another. The high tone on the first syllable also appears on the second and the third syllable of the verb *àtsìrì* ‘he/she went’. Therefore, the high tones on the three syllables have been collapsed into one high tone. The noun *mù-sòkóónì* ‘in the market’ has high tone on all the syllables except the final syllable. The high tones on the prefix, stem initial syllable and the penultimate syllable of the noun have been collapsed into one high tone. The affirmative sentences have verbs with a low tone on all the syllables and the questions have verbs with a high tone on all the syllables. Table 105 summarizes affirmative sentences and questions discussed in this section.

Table 105: Affirmative sentences and questions differentiated by tone of nouns

Phrases/tone	Lwisukha	Gloss	Lwisukha	Gloss
		Affirmative sentences		Questions
Phrasal contexts	βàjènzì ínzù	‘They swept the house.’	βájénzì ínzú?	‘Did they sweep the house?’
Tone	L.L.L.H.L	low.low.low.high · falling	H.H.H.H.H	high.high.high.high .high
Phrasal contexts	àtèfì jú ⁺ xúlià	‘he/she has cooked food’	átéjì fúxúliá?	‘did he/she cook the food?’
Tone	L.L.L.H. ⁺ H.LL	low.low.low.high downstepped high.low	H.H.H.HH.HH	high.high.high.high .downstepped high.high
Phrasal contexts	àtsìrì mùsòkóónì	‘he/she went to the market’	átsírì músòkóónì?	‘did he/she go to the market?’
Tone	L.L.L.L.HL.HH.L	low.low.low.low .falling.high.low	H.H.H.H.H.HH.L	high.high.high. high.high.high. low

5.6 Tone and pragmatics distinctions

Pragmatics is defined as a branch of linguistics dealing with language in context. It looks at the meaning as communicated by the speaker (or writer) and interpreted by the listener (or reader) in a particular context (Yule 2008:3). Politeness is one area in pragmatics where tone plays a significant role. Bussman (2006:916) defines politeness as an umbrella term for a combination of interpersonal considerations and linguistic choices affecting the form and function of linguistic interactions. According to Leech (1980, 1983) the degree of politeness depends on three sociological variables which are the social distance between the speaker and the listener, the relative power of the listener over the speaker and the absolute ranking of impositions in the particular culture. During a normal interaction, these factors play a significant role.

When a speaker pronounces certain words with particular tones in given social contexts, the speaker can be seen to be polite or impolite. For example, in Lwisukha, under normal circumstances the noun tsìṅòòmbè ‘cows’ in low tones shows that the speaker is polite. When it is pronounced with a high tone on all the syllables tsíṅóómbé ‘cows’, it expresses a command or it indicates rudeness depending on the context. Another noun like líkáátò ‘avocado’ when said in a low tone makes the speaker sound polite. But when the speaker says with high tones líkáátó ‘avocado’, he/she will sound harsh, angry or commanding depending on the context. The example in (311) shows the noun tsìṅòòmbè ‘cows’ (polite) and example (312) has the noun tsíṅóómbé ‘cows’ (impolite, harsh, angry, irritation, command) in phrasal context.

(311)

βáj-à tsì-ṅòòmbè	‘domesticate cows’
H L L LL L	‘polite’

βáj-à tsì-ṅòòmbè	‘domesticate cows’
Domesticate-FV-polite 3-cows	

(312)

βájá tsí-ṅóómbé	‘domesticate cows’
H H H HH H	‘impolite, annoyed, harsh, angry, irritation, command’

βájá tsí-ṅóómbé	‘domesticate cows’
Domesticate-FV-impolite 3-cows	

In example (311), the phrase βájà tsì-ṅòòmbè means ‘domesticate cows’ with a (HL) tone pattern, the speaker is polite but in the phrase βájá tsí-ṅóómbé ‘domesticate cows’ with a high tone on all the syllables (H) as shown in (312), the speaker is impolite, annoyed, harsh angry or irritated. It is also a command.

(313)

rà likààtò hási	‘put the avocado down’
L L LL L H L	Polite

(314)

rá líkáátó hásí	‘put the avocado down’
H H HH H H H	impolite, annoyed, harsh, angry, irritation, command.

In example (313), the phrasal form rà likààtò hási ‘put the avocado down’, the noun likààtò ‘avocado’ has a low tone (L) on all the syllables, When the noun likààtò ‘avocado’ has a low tone on all the syllables the speaker is polite but when the noun líkáátó ‘avocado’ has a high tone (H) on all the syllables as seen in (314), ’rá líkáátó hásí ‘put the avocado down’, the speaker is impolite, annoyed, harsh or angry. It also shows irritation or a command.

In the examples discussed in this section, we find that pitch variation on a word can convey non-linguistic information about the speaker’s emotional state, namely whether he/she is calm or angry, happy or sad (Ladefoged, 1982). In Lwisukha emotions like impoliteness, harshness, anger, annoyance, irritation, command horror, exasperation and grief, are expressed in a high tone and politeness is expressed in a low tone on the nouns.

5.7 Conclusion

This chapter has discussed the function of tone in Lwisukha nouns. It has been shown that tone plays a lexical function in Lwisukha dialect. Lexical function of tone relates to the use of tone to distinguish the lexical meaning of words. In the examples discussed in this chapter, it is observed that tone is used to differentiate the meaning of one noun from another. Minimal pairs of nouns with monosyllabic stems and disyllabic stems have been discussed. The minimal pairs have the same sounds but differ in meaning only on the basis of tone. Secondly, tone is also used to distinguish nouns and other word categories. The lexical function of tone in Lwisukha nouns with other word categories, for example, verbs, adjectives and interjections has been discussed. Minimal pairs of nouns, verbs, adjectives and interjections that have monosyllabic, disyllabic and trisyllabic words have been discussed. The nouns and the other word categories (e.g. verbs, adjectives and interjections) have the same sound but differ only in meaning on the basis of tone.

Minimal pairs that have deverbal nouns and imperative verbs have also been discussed. It was noted that tone not only brings about difference in meaning in deverbal nouns and imperative verbs but also a change in word classes. The deverbal nouns have a high and low tone pattern (HL) when collapsed while the imperative verbs have a high tone pattern (H) when collapsed. The contrast in deverbal nouns and the imperative verbs is seen on the final syllable. The deverbal nouns have a low tone on the final syllable while the imperative verbs have a high tone.

Tone in Lwisukha is also used to make grammatical distinctions. Such grammatical distinctions include the use of tone on nouns to differentiate an affirmative statement from a question. In the affirmative statements $\beta\grave{a}j\grave{e}nz\grave{i}$ $\acute{i}nz\grave{u}$ ‘they have swept the house’, the noun $\acute{i}nz\grave{u}$ ‘house’ has a high and low tone pattern [H.L], in the affirmative statement $\grave{a}t\grave{e}\grave{f}\grave{i}$ $\acute{f}\acute{u}^{\downarrow}x\acute{u}l\grave{i}\grave{a}$ ‘he/she has cooked food, the noun $\acute{f}\acute{u}^{\downarrow}x\acute{u}l\grave{i}\grave{a}$ has a high tone, downstepped high tone, and a low tone on the final syllable [H. \downarrow H.L] and in the statement $\grave{a}ts\grave{i}r\grave{i}$ $\grave{m}\grave{u}s\grave{o}k\acute{o}n\grave{i}$ ‘he/she went to the market’, the noun $\grave{m}\grave{u}s\grave{o}k\acute{o}n\grave{i}$ ‘market’ has a low tone on prefix, a falling tone on the stem initial syllable, a high tone on the penultimate syllable and a low tone on the final syllable [L.HL.HH.L].

In the questions the tone patterns of the nouns are different from the affirmative sentences. In the question, βájénzí ínzú? ‘did they sweep the house?’, the noun ínzú ‘house’ has a high tone on all the syllables [H]. In the second question, átéjǐ jǔxúliá ‘did he/she cook the food?’ the noun jǔxúliá ‘food’ has a high tone on all the syllables [H] and in the final question átsírí músókóónì? ‘did he/she go to the market?’ the noun músókóónì has a high tone on the prefix and the stem initial syllable, the penultimate syllable has a high tone and the final syllable has a low tone (HL) tone pattern when collapsed. We can therefore conclude that the tone on the nouns differentiates an affirmative statement from a question.

The pragmatic function of tone is the other function of tone discussed. A person can be perceived as angry, rude, irritated, horrified, sad or grieved depending on the type of tone she or he places on a word in a given context. For example, a noun that is pronounced with low tones in the phrasal context (L) shows politeness but when the same noun is pronounced in high tones (H) in the phrasal context, it shows impoliteness or a command. The nouns discussed have a low tone on all the syllables when uttered in isolation.

CHAPTER SIX

SUMMARY OF FINDINGS, CONCLUSION AND RECOMMENDATIONS

6.1 Introduction

This chapter presents the summary of the study findings. It also gives a conclusion of the research and recommendations for further research. This study aimed at investigating and describing the tone patterns of Lwisukha nouns. The study sought to achieve four objectives. First and foremost, to investigate the tone patterns of Lwisukha nouns when uttered in isolation, in phrasal contexts and sentences, to describe tonal rules that apply in Lwisukha noun phrases, to establish the functions of tone in Lwisukha nouns and lastly to establish whether Lwisukha falls under the conservative, predictable, reversive or a combination of these three tone systems or a new system.

In addressing these objectives, the study was guided by the autosegmental phonology theory and its extension, namely the register tier theory. This study found that APT can be used to adequately describe tonal patterns in Lwisukha nouns in isolation, phrasal contexts and sentences. The OCP and AC in APT ensured that every tone was associated to at least one tone except in the case of floating low tones. The register tier theory which is an extension of APT was able to clearly illustrate a low pitch that is lower than another and a high pitch that is higher than the other by using the bar system.

6.2 Summary of findings

The first objective was to investigate the tone patterns of Lwisukha nouns when uttered in isolation, in phrasal contexts and sentences. Its corresponding question was: what are the tone patterns of Lwisukha nouns in isolation, in phrasal contexts and sentences? This study found that Lwisukha nouns have level tones, contour tones and toneless syllables. The level tones found in Lwisukha dialect are low, high and downstepped high tone. The only contour tone is the falling tone. It was observed that the falling tone is found in Lwisukha nouns when uttered in isolation and in the phrasal contexts and sentences. This tone occurs on both short and long vowels, though it is mostly found on a short vowel.

As mentioned earlier the downstepped high tone is also found in Lwisukha. The downstepped high tone is found mostly on the stem initial syllable with long vowels. It is also found on the stem initial and the final syllables of short vowels. The downstepped high tone is mostly

found on the stem initial syllable of the stem rather than the final syllable. However, there are nouns that have two downstepped high tones that is on the stem initial syllable and the final syllable of the stem.

Lwisukha dialect has toneless syllables. These are syllables that on the surface have a low tone but underlyingly are toneless. A syllable on the surface can have a low tone when uttered in isolation but when in the phrasal context the syllable acquires a high tone as a result of high tone anticipation or high tone insertion. The low tone on the syllable or noun therefore gets deleted. This means that such syllables have a low or high tone on the surface but underlyingly are toneless. Toneless syllables are presented in chapter four. Therefore, in Lwisukha dialect, L toned syllables always surface with L tone, while toneless syllables surface with L tone except in certain contexts where they become H. We can thus say that Lwisukha has a three-way contrast between high, toneless and low tone that reduces to a two-way surface contrast between H and L (plus downstepped H). Paster & Kim (2011:3) also say that Lutiriki has a three-way contrast between high, toneless and low tone that reduces to a two-way surface contrast between H and L (plus downstepped H). Therefore, Lwisukha and Lutiriki dialect of Luyia have similar contrasts.

The findings in chapter three of our study show that Lwisukha nouns have forty-four tone patterns when uttered in isolation. Nouns with the monosyllabic stems have six tone patterns as follows L.L, LL.L, L.HL, HH.L, H.HL, H.⁺H, disyllabic stems have sixteen tone patterns as follows L.L.L, L.H.L, L.LL.HL, L.H.⁺H, H.L.L, H.L.L, HH.L.L, H.L.HL, H.HH.L, H.H.HL, H.HL.L, H⁺.H.LL, H⁺.H.H, H.⁺H.HL, H.⁺HH.HL, H.⁺HH.⁺H, trisyllabic stems have fifteen tone patterns as follows L.L.L.L, L.H.L.L, L.HH.L.L, L.H.LL.L, L.H.LL.H, L.H.⁺HH.L, H.L.L.L, H.H.L.L, H.HL.H.L, H.HL.L.HL, H.⁺H.H.L, H.⁺HH.L, H.⁺HH.H.HL, H.H.⁺HH.HL and H.H.⁺HH.⁺H. Nouns with other polysyllabic stems have seven tone patterns as follows L.L.L.L.L, H.H.L.L.L, H.H.H.LL.L, H.H.HL.L.L, H.H.⁺H.H.L, H.H⁺H.H.HL and H.H.H.⁺HH.L. By applying OCP, the tone patterns of nouns in Lwisukha dialect when uttered in isolation are ten as follows L, LHL, LH⁺H, LHLHL, LH⁺HL, HL, HLHL, H⁺H, H⁺HL and H⁺H⁺H.

It was observed that majority of Lwisukha nouns in isolation start with a high tone on the prefix and end with a low tone uttered in isolation. Out of the forty-four tone patterns

discussed, thirty tone patterns start with a high tone on the prefix while fourteen tone patterns start with a low tone on the prefix. There are twenty-seven tone patterns that end with a low tone, eleven tone patterns that end with a falling tone and four tone patterns that end with a downstepped high tone and only two tone patterns end with a high tone. Therefore, a majority of Lwisukha nouns end with a low tone when uttered in isolation.

Group 1 is the largest group in our data. It has 158 nouns. These nouns have low tone (L) on all the syllables. The second largest set (group 2) has nouns with a high tone on the noun class prefix and the stem initial syllable and the rest of the syllables have a low tone (HL). This group has 122 nouns. All the groups analyzed in this study are found in Appendix 2.

In general, nouns with the same nominal stem share the same tonal pattern across noun classes in the singular and plural form. Though we have some nouns that share the same nominal stem in the singular form and the plural form but the tone pattern of the same nouns in the singular form is different from that of the plural form. It was noted that majority of the nouns acquire new tone patterns in the phrasal form and sentences. This means that the tone pattern of majority of the nouns when uttered in isolation is different from the tone pattern of the nouns in the phrasal form and sentences. However, there are some nouns that don't acquire new tone patterns in the phrasal form and sentences. These nouns maintain the tone pattern they had when uttered in isolation.

The second objective, in this study, was to describe tonal rules that apply in Lwisukha noun phrases. Its corresponding research question was: what tonal rules apply in Lwisukha noun phrases? Two rules that affect the tone pattern of nouns in the phrasal contexts in Lwisukha dialect have been identified. These rules are the high tone anticipation and the high tone insertion rules. The high tone anticipation rule spreads a high tone on an adjective or numeral leftwards to toneless syllables of the noun. HTA is also triggered when a noun has a high tone and a final syllable that is toneless, (HØ). The high tone on the adjective or numeral spreads leftwards to the final syllable of the noun that is toneless. The high tone on the adjective does not spread to the high tones on the noun.

However, when a noun has a high tone and a low tone on the final syllable (HL) followed by an adjective or numeral that has a high tone, high tone anticipation rule is not triggered because the low tone on the final syllable blocks HTA. This means that a high tone spreads

leftwards only to syllables that are toneless but not to syllables that have a low tone. It is also important to note that, adjectives and numerals that have a low tone on all the syllables do not trigger the high tone anticipation rule.

On the other hand, high tone insertion is a rule whereby certain modifiers, namely demonstratives, possessive pronouns and some quantifiers, insert a high tone leftwards on the penultimate syllable of the preceding toneless noun. In some cases, the high tone inserted on the penultimate syllable of the noun spreads leftwards to the noun prefix. Therefore, in such noun phrases HTI and HTA are triggered. When the reverse occurs that is the phrase starts with some of the demonstratives and possessive pronouns followed by a toneless noun, high tone insertion is not triggered. For example, when a proximal demonstrative, possessive pronoun *ááβò* and possessive pronoun *-áàṅJè* are first in a noun phrase then followed by a toneless noun high tone insertion is not triggered. In such noun phrases, the nouns and the modifiers maintain the tone pattern they had as uttered in isolation.

The third objective, in this study, was to establish the function of tone in Lwisukha nouns. The research question answered is: what are the functions of tone in Lwisukha nouns? From this study, it was noted that tone plays a lexical function in Lwisukha dialect. Lexical function of tone relates to the use of tone to distinguish the lexical meaning of words. It was observed that tone is used to differentiate the meaning of one noun from another, nouns and other word categories like verbs, adjectives and interjections and deverbal nouns and imperative verbs. Therefore, minimal pairs of nouns and minimal pairs of nouns with other word categories e.g. verbs, adjectives and interjections that have monosyllabic, disyllabic and trisyllabic words have been discussed. The minimal pairs discussed have the same sounds but differ in meaning only on the basis of tone.

As mentioned above, minimal pairs that have deverbal nouns and imperative verbs have also been discussed. It was noted that the deverbal nouns have a high and low tone pattern (HL) when collapsed while the imperative verbs have a high tone pattern (H) when collapsed. The contrast in deverbal nouns and the imperative verbs is seen on the final syllable. The deverbal nouns have a low tone on the final syllable while the imperative verbs have a high tone.

Tone in Lwisukha is also used to make grammatical distinctions. Such grammatical distinctions include the use of tone of the nouns to differentiate an affirmative statement from

a question. In the examples discussed in this study the affirmative statements have a different tone pattern on the nouns from the questions.

The third function of tone discussed is the pragmatic function. A person can be perceived as angry, rude, irritated, horrified, and sad or grieved depending on the type of tone she or he places on a word in a given context. Tone is used to show politeness and impoliteness. Nouns with a low (L) tone in the phrasal form show politeness but nouns with a high tone show impoliteness, anger, harshness, irritation or a command. The nouns discussed have a low tone on all the syllables in isolation but have a low or high tone in the phrasal context.

The final objective in this study was to establish whether Lwisukha nouns fall under the conservative, predictable, reversive or a combination of these 3 tone systems or a new system. The research question answered is: what type of tone system does Lwisukha nouns have? Lwisukha nouns tend to have a conservative tone system than the predictable or reversive tone system. This is because Lwisukha nouns have toneless (\emptyset) nouns. Lwisukha nouns also have nouns that have an underlying high tone on the stem initial syllable that is (H) nouns. These tones are similar to those analyzed in the conservative Luyia dialects verbs hence (Lwisukha) because in the conservative tone system there are two categories of verbs that is the toneless (\emptyset) verbs and verbs that have an underlying high tone on the stem initial syllable that is (H) verbs). However, it is advisable that studies should be done on the tone system of nouns of all Luyia dialects in order to classify them. The classification of Luyia dialects under the conservative, predictable and reversive tone systems was based on verbs on all Luyia dialects.

6.3 Conclusion

The Lwisukha nouns discussed in this study were from different noun classes. Nouns in each noun class exhibited different tone patterns. Therefore, this means that nouns in one class have similar morphological structure but have different tone patterns. The noun phrases discussed in this study undergo two rules which are the high tone anticipation and the high tone insertion rules. These tone rules are significant since they constitute part of the Lwisukha native speaker's phonological competence.

The high tone anticipation rule means the right to left tone spreading of a high tone to toneless syllables. The high tone on the adjectives or numeral spreads leftward to toneless

syllables. The leftward spreading of a high tone to toneless syllables is also found in other Luyia dialects for example Luwanga, Lubukusu and Lutiriki and other Bantu languages for example Lunyankore in Uganda. In Lwisukha, Lutiriki and Luwanga dialects of Luyia the high tone spreads leftwards to the stem of the noun up to the prefix. Marlo & Steimel (2015) discussed HTA in Luwanga dialect. They found out that the high tone spreads from adjectives and numerals with a high tone to toneless syllables of the nouns stems but not to the noun pre-prefixes or noun prefix. This is because the syllables of the noun pre-prefixes and the prefix of nouns in Luwanga dialect are not toneless. This shows that HTA is a parameter of variation in tone languages especially Luyia dialects.

The high tone insertion rule means that a high tone is inserted on the penultimate syllable or the final syllable of toneless syllables of the nouns. In Lwisukha and Lutiriki dialect of Luyia the high tone is inserted on the penultimate syllable of the noun. In some noun phrases the high tone inserted spreads leftwards to the prefix of the noun. In such cases the high tone insertion and high tone anticipation rules are triggered. In Lubukusu dialect the high tone is inserted on the augment of the noun. In Luwanga dialect of Luyia the high tone is inserted on the final syllable of the noun that is toneless. The high tone that is inserted then undergoes HTA. This also shows that HTI is also a parameter of variation in tone languages especially Luyia dialects. From the discussion on HTA and HTI in this study we can conclude that the noun system of Lwisukha is closely related to Lutiriki rather than Luwanga and Lubukusu dialect.

Another conclusion is that the tone is used to differentiate the meaning of one noun from another, a noun and other word categories e.g. verbs, adjectives and interjections. Tone of nouns also enables one to differentiate an affirmative sentence from a question, politeness and impoliteness. This finding shows that it is important to include tone in the description of Lwisukha grammar.

Finally, the autosegmental phonological theory and its extension the register tier theory can adequately explain the tone pattern of nouns in isolation, in noun phrases and sentences in Lwisukha. The tone patterns of other word categories for example verbs, adjectives, adverbs, prepositions and interjections can also be explained using APT and RTT.

6.4 Recommendations for further research

This study dealt with tone of Lwisukha nouns when uttered in isolation, within phrasal contexts and sentences. Functions of tone in Lwisukha nouns were also investigated. A study should be done on the tonal patterns of other word categories in Lwisukha like the verbs, adjectives, adverbs conjunctions, prepositions, interjections and pronouns uttered in isolation and in the phrasal form. Further studies can also be done to find out which tonal rules apply to Lwisukha verbs, adjectives, adverbs and other word categories. It should also be done on phrases and sentences. A study on tonal patterns of nouns and modifier WH words can also be investigated. WH words include whom, which, what, who and whose.

Research should also be done on the tonal patterns of nouns in the other Luyia dialects. Such studies can contribute to the classification of Luyia dialects based on nouns. This is important because the tonal properties of nouns are different from those of other word categories for example verbs. The classification of Luyia dialects as conservative, predictable and reversive was done after investigating the tonal patterns of verbs in Luyia dialects.

The tonal similarities and differences between Lwisukha and other Luyia dialects is another possible area for further research. Such a comparative study would provide the necessary information needed for the development of teaching materials for Luyia dialects. These dialects may be taught to second language learners who may need to use them in everyday communication or in translation and interpretation. It is important to emphasize the fact that a mastery of the tone system of a language is a critical factor in enhancing communication.

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Appendix 1: Interview data

Questionnaire for collecting background information

- (i) Name:.....
- (ii) Age:.....
- (iii) Sex:.....
- (iv) Highest level of education:.....
- (v) Residential Area/Sub-Location:.....
- (vi) For how long have you lived in your present residential area?.....
- (vii) Have you ever lived somewhere else? If 'yes' for how long?.....
- (viii) What is your ethnic group?.....
- (ix) Which dialect of Luyia have you been speaking since your childhood?.....
- (x) Which other Luyia dialects do you speak?.....
- (xi) What is your mother's Luyia dialect?.....
- (xii) What is your father's Luyia dialect?.....
- (xiii) Are you married or not? If 'yes' what is the Luyia dialect of your spouse?
.....
- (xiv) Which other language(s) do you speak?.....
.....

Elicitation questions

(a) It is important to note that respondents pronounced the nouns in isolation in both singular and plural forms in this section.

- (i) List 10 names of people who have blood relations and people who are related through marriage, ethnonyms, and people with physical or mental handicaps, agentive human nouns.
- (ii) List 10 names of body parts, trees, parts of trees, objects with length or height, flat objects, round objects, thin objects, abstract nouns and time reference nouns.
- (iii) List 10 names of animals, insects, small creatures, fruits vegetables and other foods, inanimate objects and mass nouns.
- (iv) List 10 nouns derived from verbs.
- (v) List 10 names of different languages spoken in the world.
- (vi) List 10 names of colour terms.
- (vii) List 10 names of liquids and sticky substances.
- (viii) List 10 names denoting places for example at home, near the house, on the bed, inside the water and among the visitors. Also list place names of countries, cities, market places and village names.
- (ix) Give 10 names of small size, or little forms of the human, inanimate objects, trees body parts, animals, insects, small creatures and of any noun mentioned above.

- (x) Give 10 names of big size of the human, inanimate objects, trees body parts, animals, insects, small creatures and of any noun mentioned above.

(b) Noun phrases

Respondents were asked to pronounce nouns given to them by the researcher within a frame with adjectives, numerals, demonstratives, possessive pronouns and quantifiers.

- (i) Pronounce nouns with the adjective ‘good’.
 - (ii) Pronounce nouns with adjective good, big, stupid, white, light skinned person, clean, clever, dirty, tall, long, colour, heavy and bad.
 - (iii) Pronounce nouns with numerals (Use numbers 1-10).
 - (iv) Pronounce nouns with numerals and the adjective good.
 - (v) Pronounce nouns with numeral -làlà ‘one’ and a possessive pronoun.
 - (vi) Pronounce nouns with an adjective, a numeral, a possessive pronoun and a demonstrative pronoun.
 - (vii) Pronounce nouns with demonstratives; proximal, distal and remote demonstratives.
 - (viii) Pronounce nouns with the following possessive pronouns.
 - (a) -áàṣṣé which means ‘mine’
 - (b) -éèrù which means ‘ours’,
 - (c) -ó which means ‘yours’
 - (d) -éèṣṣù which means ‘yours’
 - (e) -é which means ‘his/hers’,
 - (f) -áàḃò which means ‘theirs’
 - (ix) Pronounce nouns with possessive pronoun -éèrù and a demonstrative.
 - (x) Pronounce nouns with possessive pronouns with numeral -làlà.
 - (xi) Pronounce nouns with possessive pronouns, numeral -làlà, adjective and a demonstrative.
3. Natural conversations should be on different topics. These include family, agriculture, colours, human beings, numbers, etc.
4. Questions for eliciting affirmative sentences and questions.
5. Questions for eliciting politeness and impoliteness.
6. Pronounce the minimal pairs of nouns and the minimal pairs of nouns with other word categories on the list provided.

Thank you for that information.

Appendix 2: Interview data

Tone patterns of nouns in isolation

Group 1: Nouns with a low tone on all the syllables

1. (a) Nouns with singular and plural form

Orthographic representation			IPA representation		
No.	Singular	Plural	Singular	Plural	Gloss
1.	inda	tsinda	ìndà	tsìndà	‘stomach’
2.	khaata	ruuta	xààtà	ròòtà	‘a small stomach’
3.	muunda	mutsinda	mùùndà	mùtsìndà	‘inside the stomach’
4.	nyina	vanyina	ɲìná	βáɲìná	‘mother’
5.	inji	tsinji	ìɲʝì	tsìɲʝì	‘housefly’
6.	isa	tsiisa	ìsà	tsiìsà	‘watch, clock’
7.	muundu	vaandu	mùùndù	βààndù	‘person’
8.	khaandu	vaandu	xààndù	ròòndù	‘a small person’
9.	kuundu	miindu	kùùndù	mìindù	‘a big person’
10.	shyeeyo	vyeyo	ʃjèèjò	βjèèjò	‘broom’
11.	mwiikho	miikho	mwiìxò	βiìxò	‘relative’
12.	mwooyo	myooyo	mwoòjò	mjoòyò	‘heart’
13.	maama	vamaama	mààmà	βámààmà	‘mother’
14.	taata	vataata	tààtà	βàtààtà	‘father’
15.	ise	vaise	ìsè	βáìsè	‘father’
16.	muleli	valeli	mùlèlì	βàlèlì	‘baby sitter’
17.	mucheni	vacheni	mòtʃèní	βàtʃèní	‘visitor’
18.	mulimi	valimi	mòlìmì	βàlìmì	‘farmer’
19.	muluvi	valuvi	mòlùβì	βàlùβì	‘fisherman’
20.	munavi	vanavi	mònàβì	βànàβì	‘one who sews’
21.	musavi	vasavi	mòsàβì	βàsàβì	‘beggar’
22.	muheyi	vaheyi	mòhèjì	βàhèjì	‘adulterous’

					person'
23.	mulochi	valochi	mùlòtʃì	βàlòtʃì	'witch'
24.	khalochi	rulochì	xàlòtʃì	ròlòtʃì	'a small witch'
25.	kulochi	milochi	kùlòtʃì	mìlòtʃì	'a big witch'
26.	muvekhu	vavekhu	mùβèxù	βàβèxù	'blind person'
27.	mushevi	vashevi	mùʃèβì	βàʃèβì	'circumciser'
28.	mutsiku	vatsiku	mùtsìkù	βàtsìkù	'enemy'
29.	muvili	mivili	mùβìrì	mìβìrì	'body'
30.	khavili	ruvili	xàβìrì	ròβìrì	'a small body'
31.	kuvili	mivili	kùβìrì	mìβìrì	'a big body'
32.	muvanu	mivanu	mùβànù	mìβànù	'knife'
33.	khavanu	ruvanu	xàβànù	ròβànù	'a small knife'
34.	kuvanù	mivanu	kùβànù	mìβànù	'a big knife'
35.	muchiro	michiro	mùtʃìrò	mìtʃìrò	'taboo'
36.	muchera	michera	mùtʃèrà	mìtʃèrà	'river'
37.	lishere	mashere	lìʃèrè	màʃèrè	'frog'
38.	linyonyi	manyonyi	lìŋòŋì	màŋòŋì	'bird'
39.	ling'ori	mang'ori	lìŋòrì	màŋòrì	'neck'
40.	khang'ori	rung'ori	xàŋòrì	ròŋòrì	'a small neck'
41.	kung'ori	ming'ori	kùŋòrì	mìŋòrì	'a big neck'
42.	mwing'ori	mumang'ori	mwiŋòrì	mùmàŋòrì	'inside the neck'
43.	litukhu	matukhu	litùxù	màtùxù	'valleys'
44.	likoso	makoso	likòsò	màkòsò	'wrong'
45.	lichina	machina	litʃìnà	màtʃìnà	'stone'
46.	khachina	ruchina	xàtʃìnà	ròtʃìnà	'a small stone'
47.	kuchina	michina	kùtʃìnà	mìtʃìnà	'a big stone'
48.	lichera	machera	litʃèrà	màtʃèrà	'exam'
49.	shilenje	vilenje	ʃìrèŋʃè	βìrèŋʃè	'leg'
50.	shikulu	vikulu	ʃìkùlù	βìkùlù	'hill'

51.	shiriri	viriri	ʃiriri	βiriri	‘a traditional music instrument’
52.	injira	tsinjira	ɪ̃nʃira	tsɪ̃nʃira	‘road, street’
53.	indika	tsindika	ɪ̃ndikà	tsɪ̃ndikà	‘bicycle’
54.	inguvu	tsinguvu	ɪ̃ngùβù	tsɪ̃ngùβù	‘cloth’
55.	luvalu	tsimbalu	lùβálù	tsìmbàlù	‘rib’
56.	lukanu	tsinganu	lúkánù	tsɪ̃ngànù	‘tale’
57.	luvuvi	tsimbuvi	lùβùβì	tsìmbùvì	‘spider’
58.	mukoye	mikoye	mùkòjè	mìkòjè	‘rope’
59.	mutchitsi	michitsi	mùtʃitsi	mìtʃitsi	‘within an area’
60.	inyama	tsinyama	ɪ̃nàmà	tsɪ̃nàmà	‘meat, animals’
61.	ingutsa	tsingusa	ɪ̃ngùtsà	tsɪ̃ngùtsà	‘vegetable’
62.	imbukhu	tsimbukhu	ɪ̃mbùxù	tsɪ̃mbùxù	‘mole’
63.	literu	materu	rìtèrù	màtèrù	‘beard’
64.	shifulya	vifulya	ʃifùljà	βifùljà	‘cooking pan’
65.	khafulya	rufulya	xàfùcjà	ròfùcjà	‘a small cooking pan’
66.	kufulya	mifulya	kùfùljà	mifùljà	‘a big cooking pan’
67.	mwing’ori	mumang’ori	mwĩnòri	mùmànòri	‘inside the neck’
68.	shikala	vikala	ʃikàlà	βikàlà	‘sole’
69.	inzaka	tsinzaka	ɪ̃nzàkà	tsɪ̃nzàkà	‘marijuana’
70.	isekho	tsisekho	ɪ̃fèxò	tsɪ̃fèxò	‘laughter’
71.	shilivi	vilivi	ʃiriβi	βiriβi	‘a traditional basket’
72.	shileche	vileche	ʃirètʃè	βirètʃè	‘foolery’
73.	mbootso	βaaβootso	mbòòtsò	βááβóótsò	‘opposite sex sibling’
74.	amwavo	vamwaavo	àmwàβò	βámwááβò	‘same sex sibling’

75.	inzeku	tsinzeke	ìnzèkù	tsinzèkù	‘elephant’
76.	ingoyi	tsingoyi	ìngòjì	tsìngòjì	‘leopard’
77.	isukuti	tsisukuti	ìsùkùtì	tsìsùkùtì	‘type of drum’
78.	musaali	vasaali	mùsààlì	βàsààlì	‘one who prays’
79.	mushyeere	vashyeere	mùʃjèèrè	βàʃjèèrè	‘old lady’
80.	mukhaayo	vakhaayo	mùxààjò	βàxààjò	‘wife (more respectful)’
81.	muloonji	valoonji	mùlòòŋʃì	βàlòòŋʃì	‘potter’
82.	munyaati	vanyaati	mùŋààtì	βàŋààtì	‘butcher’
83.	mukooko	vakooko	mùkòòkò	βàkòòkò	‘wife’
84.	musyeevi	vasyeevi	mùsjèèβì	βàsjèèβì	‘dancer’
85.	mutaandi	vataandi	mùtààndì	βàtààndì	‘drunkard’
86.	muyookha	vayookha	mùjòòxà	vàjòòxà	‘a clan of vayookha’
87.	mukuusi	vakuusi	mùkùùsì	βàkùùsì	‘a clan of vakuusi’
88.	mulyaango	milyaango	mùrjààngò	mìrjààngò	‘door’
89.	lihoondo	mahoondo	lihòòndò	màhòòndò	‘pumpkin’
90.	khahoondo	ruhoondo	xàhòòndò	rùhòòndò	‘a small pumpkin’
91.	kuhoondo	mihoondo	kùhòòndò	mihòòndò	‘a big pumpkin’
92.	lihika	mahika	lihìkà	màhìkà	‘cooking stone’
93.	khahika	ruhika	xàhìkà	ròhìkà	‘a small cooking stone’
94.	kuhika	mihika	kùhìkà	mihìkà	‘a big cooking stone’
95.	likaato	makaato	likààtò	màkààtò	‘avocado’
96.	mukaato	mikaato	mùkààtò	mìkààtò	‘avocado tree’
97.	liseero	maseero	lisèèrò	màsèèrò	‘hides’

98.	lileesi	maleesi	lilèèsi	màlèèsi	‘cloud’
99.	lisaala	masaala	lisààlà	màsàalà	‘prayer’
100.	shikuuri	vikuuri	ʃikùùrì	βikùùrì	‘playing ground’
101.	lucheendo	tsinjeendo	lùtʃèèndò	tsɪɲʃèèndò	‘journey’
102.	lucheembe	tsinjeembe	lùtʃèèmbè	tsɪɲʃèèmbè	‘razor blade’
103.	mwilwaatsi	vilwaatsi	mwlwààtsì	βilwààtsì	‘preacher’
104.	mukhoongo	vakhoongo	mùxòòŋgò	βàxòòŋgò	‘boss, big person’
105.	muliindi	valiindi	mùlììndì	βàlììndì	‘church elder, gatekeeper’
106.	muloondi	valoondi	mùlòòndì	βàlòòndì	‘one who follows’
107.	shiliitsa	viliitsa	ʃiriitsà	βiriitsà	‘hawk’
108.	shilaamo	vilaamo	ʃilààmò	βilààmò	‘curse’
109.	ing’oombe	tsing’oombe	ìŋòòmbè	tsìŋòòmbè	‘cow’
110.	imoosi	tsimoosi	ìmòòsì	tsìmòòsì	‘heifer’
111.	iseeru	tsiseeru	isèèrù	tsisèèrù	‘type of bird’
112.	imboongo	tsimboongo	ìmbòòŋgò	tsìmbòòŋgò	‘large species of antelope’
113.	shitooyi	vitooyi	ʃitòòjì	βitòòjì	‘tick’
114.	isiingo	tsisiingo	ìsììŋgò	tsìsììŋgò	‘cow dung’
115.	inyaanga	tsinyaanga	ìṅààŋgà	tsìṅààŋgà	‘season (e.g. of harvest, circumcision, etc.)’
116.	ilong’oo	tsilong’oo	ìlòŋòò	tsìlòŋòò	‘a pair of trousers’
117.	inyuundu	tsinyuundu	ìṅùùndù	tsìṅùùndù	‘hammer’
118.	inyaanya	tsinyaanya	ìṅààṅà	tsìṅààṅà	‘tomatoes’
119.	isiimba	tsisiimba	ìsììmbà	tsìsììmbà	‘hut’
120.	mulwaalo	tsilwaalo	mùlwààlò	tsìlwààlò	‘under the bed’
121.	khumuundu	khuvaandu	xùmùùndù	xùβààndù	‘at the person’

122.	shiseero	viseero	ʃisèèrò	βìsèèrò	‘hide’
123.	shitweetwe	vitweetwe	ʃitwèètèwè	βìtwèètèwè	‘a lady who is not married and gives birth to many children without plan’
124.	shikweekwe	vikweekwe	ʃikwèèkwè	βìkwèèkwè	‘gossip (agent)’
125.	nakukhulu	vanakukhulu	nàkùxòlò	βànákùxòlò	‘mother in law’
126.	mukulitsi	vakulitsi	mùkùlitsì	βàkùlitsì	‘seller’
127.	ichenjele	tsichenjele	ìtʃèŋʃèlè	tsìtʃèŋʃèlè	‘bell’
128.	khahinzili	ruhinzili	xàhìnzìrì	rùhìnzìrì	‘a small worker’
129.	isang’aali	tsisang’aali	ìsàŋàrì	tsìsàŋàrì	‘a gap on the teeth’
130.	shivakaya	vivakaya	ʃìβàkàjà	βìβàkàjà	‘fish bone, snake bone’
131.	litsushitsa	mitsukhitsa	lìtsùʃìtsà	mìtsùʃìtsà	‘anniversary’
132.	shinaanyenzo	vinaanyenzo	ʃìnáàŋènzò	βìnáàŋènzò	‘demons, ghosts’
133.	shivaambala	vivaambala	ʃìβààmbàlà	βìβààmbàlà	‘dried fish’
134.	shichuunjiru	vichuunjiru	ʃìtʃòŋʃìrò	βìtʃòŋʃìrò	‘sieve’
135.	muhiinziri	vahiinziri	mùhìinzìrì	βàhìinzìrì	‘worker’
136.	inganakani	tsinganakani	ìŋgànakàni	tsìŋgànakàni	‘thought’
137.	shipichaapichi	vipichaapichi	ʃìpìtʃààpìtʃì	βìpìtʃààpìtʃì	‘motorbike’
138.	muchendichendi	vachendichendi	mùtʃèndìtʃèndì	βàtʃèndìtʃèndì	‘one who walks aimlessly’ ‘traveller’, ‘harlot’

1. (b) Nouns without the singular or plural form

No.	Orthographic representation	IPA representation	Gloss
1.	vuluhu	βùlùhù	‘thirst’
2.	vululu	βùlùlù	‘bitter’
3.	ikulu	ìkùlù	‘up’
4.	inyuma	ìyùmà	‘at the back’
5.	imbeli	ìmbèrì	‘infront’
6.	inzala	ìnzàlà	‘hunger’
7.	lukuushi	lùkùùfì	‘dust’
8.	vusoomi	βùsòòmì	‘learning’
9.	mwikulu	mwìkùlò	‘heaven’
10.	vutukhu	βòtùxù	‘night’
11.	mahaka	màhàkà	‘mischief, stubbornness’
12.	vusala	βòsàlà	‘porridge’
13.	lukulu	lòkòlò	‘city’
14.	ilukulu	ìlòkòlò	‘in/to/at the city’
15.	mulukulu	mòlòkòlò	‘in the city’
16.	ishisuumu	ìfìsòòmò	‘kisumu’
17.	tsingulu	tsìngùlù	‘energy’
18.	mamira	màmìrà	‘mucus’
19.	lutoro	lútòrò	‘childishness’
20.	vulimi	βùlìmì	‘farming’

Group 2: Nouns with a high tone on the prefix and the stem initial syllable while the rest of the syllables have a low tone

2. (a) Nouns with stem initial syllable that has a short vowel with singular and plural form

Orthographic representation			IPA representation		
No.	Singular	Plural	Singular	Plural	Gloss
1.	lulimi	tsinimi	rúrími	tsíními	‘tongue’
2.	khalimi	rulimi	xá límì	ró límì	‘a small garden’
3.	mukhali	vakhali	múxáli	βáxáli	‘wife, woman’
4.	khakhali	rukhalì	xáxáli	róxáli	‘a small wife, woman’
5.	kukhali	mikhali	kúxáli	míxáli	‘a big wife, woman’
6.	lukhali	tsikhali	lúxáli	tsíxáli	‘marriage’
7.	khahika	ruhika	xàhíkà	ròhíkà	‘a small cooking stone’
8.	mukhumu	vakhumu	múxúmù	váxúmù	‘soothsayer, magician’
9.	mulina	valina	múlínà	βálinà	‘friend’
10.	musilu	vasilu	músílò	βásilò	‘a stupid person or a deaf person’
11.	mulalu	valalu	múlálù	βálalù	‘mad person’
12.	mukhono	mikhono	múxónò	míxónò	‘hand’
13.	xakhono	rukxono	xáxónò	róxónò	‘a small hand’
14.	kukhono	mikhono	kúxónò	míxónò	‘a big hand’
15.	muhini	mihini	múhínì	míhínì	‘jembe stick’
16.	mukepe	mikopo	múkópò	míkópò	‘tin’
17.	lipata	mapata	lípátà	mápátà	‘duck’
18.	liroyi	maroyi	rírójì	márójì	‘ear’
19.	lituma	matuma	rítúmà	mátúmà	‘maize’
20.	livuyu	mavuyu	líβújù	máβújù	‘egg’
21.	litukhu	matukhu	lítúxù	mátúxù	‘day’
22.	lisukhu	masukhu	lísúxú	másúxù	‘lung’

23.	imoni	tsimoni	ímónì	tsímónì	‘eye’
24.	imbiko	tsimbiko	ímbíkò	tsímbíkò	‘kidney’
25.	shiliru	viliru	ʃírírù	βírírù	‘chest’
26.	shivala	vivala	ʃíβálà	βíβálà	‘world’
27.	shitere	vitere	ʃítèrè	βítèrè	‘finger’
28.	shisoko	visoko	ʃísókò	βísókò	‘chair’
29.	shivoko	vivoko	síβókò	βíβókò	‘whip’
30.	shiteli	viteli	ʃítèrì	βítèrì	‘bed’
31.	khateli	ruteli	xátèrì	rótèrì	‘a small bed’
32.	kuteli	miteli	kútèrì	mítèrì	‘a big bed’
33.	imbutse	tsimbutse	ímbútsè	tsímbútsè	‘white hair’
34.	inzushi	tsinzushi	ínzúʃì	tsínzúʃì	‘bee’
35.	isuli	tsisuli	ísúrì	tsísúrì	‘bedbug’
36.	lukhuyi	tsikhuyi	lóxújì	tsíxújì	‘firewood’
37.	lukhule	tsikhule	lúxúrè	tsíxúrè	‘type of tree’
38.	lutelu	tsindelù	lútèrù	tsíndèrù	‘tray’
39.	khasoko	rusoko	xásókò	rósókò	‘a small chair’
40.	khateri	ruteri	xátèrì	rótèrì	‘a small bed’
41.	shitapu	vitapu	ʃítápù	βítápù	‘book’
42.	linyinya	manyinya	línínà	máínínà	‘bat’
43.	imbuli	tsimbuli	ímbúrì	tsímbúrì	‘goat’
44.	inzukha	tsinzukha	ínzúxà	tsínzúxà	‘snake’
45.	isutsi	tsisutsi	ísútsì	tsísútsì	‘fish’
46.	ikhovu	tsikhovu	íxóβù	tsíxóβù	‘belly button’
47.	isupu	tsisupu	ísúpù	tsísúpù	‘soup’
48.	shivuyi	vivuyi	síβújì	βíβújì	‘jerry can’
49.	luvaha	tsimbaha	lúβáhà	tsímbáhà	‘feather’
50.	shichiko	vichiko	ʃítʃíkò	βítʃíkò	‘spoon’
51.	shisichi	visichi	ʃísítʃì	βísítʃì	‘eye brow’
52.	imbakha	tsimbakha	ímbáxá	tsímbáxá	‘joke’
53.	liyoko	mayoko	lójókò	májókò	‘noise’
54.	muleyi	valeyì	múlèjì	βálèjì	‘good’

55.	mukhuyu	mikhuyu	múxújù	míxújù	‘fig tree’
56.	shisoni	βisoni	ʃísónì	βísónì	‘great grand child’
57.	shichapi	vichapi	ʃítʃápi	βítʃápi	‘door lock (part that is pushed across and to which the padlock is attached)’
58.	luseye	tsiseye	lúséjè	tsíséjè	‘chick’
59.	ichayi	tsichayi	ítʃáji	tsítʃáji	‘tea’
60.	muchayi	mutsichayi	mútʃáji	mútsítʃáji	‘in the tea’
61.	itauni	tsitauni	ítaúnì	tsítaúnì	‘town’
62.	mushilishi	vashilishi	múʃìlìʃì	βáʃìlìʃì	‘doctor’
63.	mutirichi	vatirichi	mútírítʃì	βátírítʃì	‘a member of the Tiriki tribe’
64.	muchukuyu	vachukuyu	mútʃúkùjù	βátʃúkùjù	‘a member of the kikuyu tribe’
65.	munyelele	vanyelele	múnjélèlè	βánjélèlè	‘young person/slim or thin person’
66.	likanisa	makanisa	líkánìsà	mákánìsà	‘church’
67.	ikarachi	tsikarachi	íkáràtʃì	tsíkáràtʃì	‘garage’
68.	iparua	tsiparua	ípárùà	tsípárùà	‘letter’
69.	likafuli	makafuli	líkáfùlì	mákáfùlì	‘lock’
70.	khululimi	khutsinimi	xúlúlimì	xútsínìmì	‘on the tongue’
71.	mulokooli	valokooli	múlókòòlì	βálókòòlì	‘a member of the maragoli tribe’
72.	lukhuvambo	tsikhuvambo	lúxúβàmbò	tsíxúβàmbò	‘type of tree’
73.	itayili	tsitayili	ítájìrì	tsítájìrì	‘tyre’
74.	mucherumani	vacherumani	mútʃérùmàni	βátʃérùmàni	‘a German’

2. (b) Nouns with the stem initial syllable that has a long vowel with the singular and plural form

Orthographic representation			IPA representation		
No.	Singular	Plural	Singular	Plural	Gloss
1.	ikaambi	tsikaambi	íkáámbì	tsíkáámbì	‘eucalyptus tree’
2.	ikwaaho	tsikwaaho	íkwaáhò	tsíkwaáhò	‘armpit’
3.	ipiicha	tsipicha	ípíítjà	tsípíítjà	‘picture’
4.	ikeeki	tsikeeki	íkéékì	tsíkéékì	‘cake’
5.	itiimu	tsitiimu	ítíímù	tsítíímù	‘team’
6.	itraakta	tsitraakta	ítrááktà	tsítrááktà	‘tractor’
7.	ikaasi	tsikaasi	íkáásì	tsíkáásì	‘work’
8.	itwiika	tsitwiika	ítwííkà	tsítwííkà	‘giraffe’
9.	isiimba	tsisiimba	ísíimbà	tsísíimbà	‘lion’
10.	imeesa	tsimeesa	íméésà	tsíméésà	‘table’
11.	ipaamba	tsipaamba	ípáámbà	tsípáámbà	‘cotton’
12.	ichiita	tsichiita	ítʃíítà	tsítʃíítà	‘cheetah, guitar’
13.	inyaanza	tsinyaanza	ínáánzà	tsínáánzà	‘lake’
14.	iraanji	tsiraanji	íráájǰì	tsíráájǰì	‘paint’
15.	itaapu	tsitaapu	ítáápù	tsítáápù	‘problem’
16.	induumba	tsinduumba	índúúmbà	tsíndúúmbà	‘drum’
17.	itaaywa	tsitaaywa	ítáájwà	tsítáájwà	‘rooster, cock’
18.	iliitwa	tsiliitwa	ílíítwà	tsílíítwà	‘knife’
19.	likaare	makaare	líkáàrè	mákáàrè	‘train’
20.	inyuungu	tsinyuungu	ínúúngù	tsínúúngù	‘pot’
21.	isaavu	tsisaavu	íʃááβù	tsísááβù	‘mathematics’
22.	iseendi	tsiseendi	ísééndì	tsísééndì	‘money’
23.	indiimu	tsindiimu	índíímù	tsíndíímù	‘lemon’
24.	isiimbwa	tsisiimbwa	ísíimbwà	tsísíimbwà	‘dog’
25.	ipuunda	tsipuunda	ípúúndà	tsípúúndà	‘donkey’
26.	ikhoondo	tsikhoondo	íxóóndò	tsíxóóndò	‘monkey’
27.	khukwaana	khumyaana	xúkwáánà	xúmjàánà	‘at the big baby’
28.	inaasoli	tsinaasoli	ínáásólì	tsínáásólì	‘marijuana’

29.	itiishaati	tsitiishaati	ítííjààtì	tsítíjààtì	‘t-shirt’
30.	lisaanduku	masaanduku	lísáándúkù	másáándúkù	‘suitcase, storage box’
31.	ihoteeli	tsihoteeli	íhótèèlì	tsíhótèèlì	‘hotel’

2. (c) Nouns with no singular or plural with a stem initial syllable that has a short vowel

No.	Orthographic representation	IPA representation	Gloss
1.	vukhali	βúxáli	‘marriage’
2.	luvukusu	lúβúkùsù	‘Lubukusu language’
3.	vusiru	βúsírò	‘stupidity’
4.	milika	mílíkà	‘tears’
5.	vruma	βúrímà	‘anger’
6.	vumuchi	βúmútʃì	‘redness’
7.	imbula	ímúblà	‘rain’
8.	vulavu	βúláβù	‘light (e.g. sunshine, lightness (e.g. light color), whiteness’
9.	ilobi	ílóβì	‘nairobi city’
10.	vupata	βúpátà	‘hinge of door’
11.	vucheli	βútʃèrì	‘cleverness’
12.	luyali	lújálì	‘honour’
13.	lucherumani	lútʃèrùmàni	‘German language’

2. (d) Nouns with no singular or plural with a stem initial syllable that has a long vowel

No.	Orthographic representation	IPA representation	Gloss
1.	ichuumbi	ítʃúúmbì	‘salt’
2.	vukhoonyi	vúxóónì	‘help’
3.	ilwaanyi	írwááñì	‘outside’
4.	hamwaana	hámwáánà	‘at the baby’

Group 3: Nouns with a high tone on the prefix and a falling tone on the stem initial syllable followed by low tones on the rest of the syllables

3. (a) Nouns with singular and plural form

Orthographic representation			IPA representation		
No.	Singular	Plural	Singular	Plural	Gloss
1.	mukhaana	vakhaana	múxáànà	βáxáànà	‘girl’
2.	musaatsa	vasaatsa	músáàtsà	βátsáàtsà	‘man’
3.	likoondi	makoondi	líkóòndì	mákóòndì	‘sheep’
4.	liraango	maraango	ríráàngò	máráàngò	‘thigh’
5.	shisiindi	visiindi	ʃísíindì	βísíindì	‘waist’
6.	muhaanda	mihaanda	míháàndà	míháàndà	‘road’
7.	mureende	vareende	múrèèndè	βárèèndè	‘neighbour’
8.	mutuunji	mituunji	mútúùŋʃì	mítúùŋʃì	‘jerry can’
9.	shikuumba	vikuumba	ʃíkúùmbà	βíkúùmbà	‘bone’
10.	lisiisi	masiisi	lísiisì	másiisì	‘wall’
11.	shihuunwa	vihuunwa	ʃíhúùnwà	βíhúùnwà	‘bullock’
12.	shihuuvi	vihuuvi	ʃíhúùβì	βíhúùβì	‘thief’
13.	shilaaro	vilaaro	ʃíláàrò	βíláàrò	‘shoe’
14.	shikoombe	vikoombe	ʃíkóòmbè	βíkóòmbè	‘cup’
15.	mulwaale	valwaale	múlwáàrè	βúlwáàrè	‘a sick person’
16.	luvuusi	tsimbuusi	lúβúùsì	tsímbugúùsì	‘thread’
17.	lusaala	tsisaala	lúsáàlà	tsísááàlà	‘stick’
18.	lupaanga	tsimbaanga	lúpáàngà	tsímbugáàngà	‘machete’
19.	lukhaanda	tsikhaanda	lúxáàndà	tsíxááàndà	‘belt’
20.	luluundu	tsinuundu	lúlúùndù	tsínúúndù	‘type of tree’
21.	khakhaana	rukhaana	xáxáànà	rúxáànà	‘a small girl’
22.	shikhaanda	vikhaanda	ʃíxáàndà	βíxáàndà	‘skin’
23.	shivaavi	vivaavi	ʃíβáàβì	βíβáàβì	‘sword’
24.	shihuuvi	vihuuvi	ʃíhúùβì	βíhúùβì	‘thief’
25.	isyoongo	tsisyoongo	ísjóòngò	tsísjóòngò	‘a pot for keeping water cold’
26.	mukaanda	vakaanda	múkáàndà	βákáàndà	‘a baganda’

					person'
27.	luveere	tsimbeere	lúβéèrè	tsímbéèrè	'breast'
28.	khaveere	ruveere	xáβéèrè	róβéèrè	'a small breast'
29.	kuveere	miveere	kúβéèrè	míβéèrè	'a big breast'
30.	shipwoondo	vipwoondo	ʃípwoòndò	βípwoòndò	'innerwear'
31.	isiisi	tsisiisi	ísìisi	ísìisi	'bedroom'
32.	ipaambu	tsipaambu	ípáàmbù	tsípáàmbù	'pump'
33.	inyeende	tsinyeende	ínèèndè	tsínèèndè	'jigger'
34.	ikoofya	tsikoofya	íkóòfjà	tsíkóòfjà	'hat'
35.	shituuti	vituuti	ʃítúùti	βítúùti	'pigeon'
36.	xakoombe	rukoombe	xákóómbè	rokóómbè	'a small cup'
37.	shikoombe	vikoombe	ʃíkóòmbè	βíkóòmbè	'cup'
38.	musaatsa	vasaatsa	músáàtsà	βásáàtsà	'husband/man'
39.	khasaatsa	rusaatsa	xásáàtsà	rúsáàtsà	'a small husband/man'
40.	musaala	misaala	músáàlà	mísáàlà	'tree'
41.	shisaala	visaala	ʃísáàlà	βísáàlà	'stick'
42.	xasaala	rusaala	xàsáàlà	rùsáàlà	'small stick'
43.	kusaala	misaala	kúsáàlà	mísáàlà	'a big tree, stick'
44.	mulwaale	valwaale	múlwáàrè	βúlwáàrè	'a sick person'
45.	munaasi	vanaasi	múnáàsì	βánáàsì	'nurse'
46.	ipendeera	tsipendeera	ípèèndèèrà	tsípèèndèèrà	'flag'
47.	shifwaanani	vifwaanani	ʃífwáànàni	βífwáànàni	'dolly'
48.	isikaati	tsisikaati	ísíkáàti	tsísíkáàti	'skirt'
49.	musaakhulu	vasaakhulu	músáàxùlù	βásáàxùlù	'old man'
50.	vulwaale	malwaale	βúlwáàrè	málwáàrè	'disease'

3. (b) Nouns without the singular or plural form

No.	Orthographic representation	IPA representation	Gloss
1.	vusaatsa	βúsáàtsà	‘manliness’
2.	vunaasi	βúnáàsi	‘nursing profession’
3.	vusaakhulu	βúsáàxùlù	‘old age’
4.	vunyaasi	βúnáàsi	‘grass’
5.	vurambi	βúraàmbì	‘tallness’
6.	vuyaaya	βújáàjà	‘babysitting, care giving’
7.	khuveeha	xúβéèhà	‘lie’
8.	shisuundi	ʃísúùndì	‘darkness’
9.	vuyaanzi	βújáànzì	‘happiness’
10.	lukaanda	lúkààndà	‘Baganda language’
11.	maveele	máβéèrè	‘milk’

Group 4: Nouns with a high tone on the prefix and the rest of the syllables have a low tone

4. (a) Nouns with a short vowel on the noun class prefix

Orthographic representation			IPA representation		
No.	Singular	Plural	Singular	Plural	Gloss
1.	mwiri	viiri	mwírì	βírì	‘murderer, killer’
2.	musayi	misayi	músàjì	mísàjì	‘blood’
3.	indavu	tsindavu	índàβù	tsíndàβù	‘white’
4.	khatoka	rutoka	xátùkà	rútùkà	‘a small car’
5.	luvinu	tsimbinu	lúβìnù	tsímìnù	‘type of tree’

4. (b) Nouns with a long vowel on the noun class prefix

Orthographic representation			IPA representation		
No.	Singular	Plural	Singular	Plural	Gloss
1.	mwaami	vaami	mwáámì	βáámì	‘chief, leader’
2.	mwaana	vaana	mwáánà	βáánà	‘child’
3.	khaana	rwaana	xáánà	rwáánà	‘a small child’
4.	kwaana	myaana	kwáánà	myáánà	‘a big child’
5.	lwiika	tsinzika	lwííkà	tsínzíkà	‘horn’
6.	lwiimbo	tsinyimbo	lwíímbò	tsínímbò	‘song’
7.	lwaasa	tsinzasa	lwáásà	tsínzásà	‘gap from having lost a tooth’
8.	lwaakho	tsinzakho	lwááxò	tsínzáxò	‘boundary, fence’
9.	shyoole	vyoole	ʃjóólè	βjóólè	‘baldness’
10.	liinu	miinu	líínù	míínù	‘teeth’
11.	muuya	myuuya	múújà	mjúújà	‘breath’
12.	mwooshi	myooshi	mwóófì	mjóófì	‘smoke’
13.	mweeli	myeeli	mwééì	mjeéì	‘month, moon’
14.	mwaaka	myaaka	mwáákà	mjáákà	‘year’
15.	mwooni	vooni	mwóónì	βóónì	‘sinner, evil doer’
16.	mwaayi	vaayi	mwáájì	βáájì	‘herder’
17.	mweene	veene	mwéénè	βéénè	‘oneself’
18.	vwiina	mina	βwíínà	míínà	‘hole’
19.	mwiiivuli	viiivuli	mwííβùlì	βííβùlì	‘parent’
20.	mwiiisukha	viisukha	mwíísùxà	βíísùxà	‘Mwiiisukha person’
21.	mwiiitakho	viitakho	mwíítàxò	βíítàxò	‘Mwiiitakho person’
22.	shyooolero	vyooolero	ʃjóó’rèrò	βjóó’rèrò	‘fire for warming during funeral’

23.	mwitsukhulu	vitsukhulu	mwítsùxùlù	βítsùxùlù	‘grandchild’
24.	shitsukhulu	vitsukhulu	ʃítsùxùlù	rwítsùxùlù	‘a small grandchild’
25.	kwiitsukhulu	miitsukhulu	kwísùxùlu	mítsùxùlù	‘a big grandchild’

4. (c) Nouns with no singular or plural form with a noun prefix that has a short vowel

No.	Orthographic representation	IPA representation	Gloss
1.	khwisuha	xwísùhà	‘swear’

4. (d) Nouns with no singular or plural form with a noun prefix that has a long vowel

No.	Orthographic representation	IPA representation	Gloss
1.	vwooni	βwóónì	‘sin’
2.	maatsi	máátsì	‘water’
3.	vwiino	βwíínò	‘ink’
4.	vwaami	βwáámì	‘chieftaincy’
5.	lwaana	lwáánà	‘childishness’
6.	vwiikhutsili	βwííxùtsìlì	‘patience’

Group 5: Nouns with a high tone on all syllables except the final syllable that has a falling tone

5. (a) Nouns with singular and plural form

Orthographic representation			IPA representation		
No.	Singular	Plural	Singular	Plural	Gloss
1.	liru	maru	lírû	márû	'banana leaf'
2.	shivwe	vivwe	ʃíβwê	βíβwê	'hyena'
3.	mushi	mishi	mújî	míjî	'vein'
4.	liswi	maswi	líswî	máswî	'hair'
5.	inzu	tsinzu	ínzû	tsínzû	'house, building'
6.	khatsu	rutsu	xátsû	rútsû	'a small house or building'
7.	murwi	mirwi	múrwî	mírwî	'head'
8.	munwa	minwa	múnwâ	mínwâ	'mouth'
9.	mung'wi	vang'wi	múŋwî	βájwî	'drunkard'
10.	ingo	tsiingo	íŋgô	tsíŋgô	'home'
11.	lusja	tsisja	lúsjà	tsísjà	'a branch of tree'
12.	ihaywa	tsihaywa	íhájwâ	tsíhájwâ	'axe'
13.	inguchi	tsinguchi	íŋgútjî	tsíŋgútjî	'species of ape'
14.	indana	tsindana	índánâ	tsíndánâ	'new born, infant'
15.	mulase	milase	múlásê	mílásê	'molasses'
16.	lisuxu	masuxu	lísúxû	másúxù	'intestines'
17.	mumurwi	mumirwi	múmúrwî	múmírwî	'inside the head'

5. (b) Nouns without singular or plural form

No.	Orthographic representation	IPA representation	Gloss
1.	luswa	lúswâ	'taboo'
2.	vusi	βúsî	'flour'
3.	vule	βúlê	'sorghum'
4.	vuri	βúrí	'fear'
5.	vukhwi	βúxwî	'dowry'
6.	mukari	múkárî	'inside'

Group 6: Nouns with a low tone on all the syllables except the stem initial syllable that has a high tone

6. (a) Nouns with the stem initial syllable that has a short vowel

Orthographic representation			IPA representation		
No.	Singular	Plural	Singular	Plural	Gloss
1.	mukati	mikati	mùkátì	mìkátì	‘bread’
2.	muhika	mihika	mùhíkà	mìhíkà	‘year’
3.	lixutu	maxutu	lìxútù	màxútù	‘tortoise’
4.	shimooli	vimooli	ʃimóólì	βimóólì	‘calf’
5.	mupololo	mipololo	mùpólòlò	mìpólòlò	‘chain’
6.	isukulu	tsisukulu	ìsúkùlù	tsìsúkùlù	‘school’
7.	mumilonje	vamilonje	mùmílòŋʒè	βàmílòŋʒè	‘a person who belongs to vamilonje clan’

6. (b) Nouns with the stem initial syllable that has a long vowel

Orthographic representation			IPA representation		
No.	Singular	Plural	Singular	Plural	Gloss
1.	ihuunwa	tsihunwa	ìhúúnwà	tsìhúúnwà	‘calf’
2.	shikhuunikhu	vikhuunikhu	ʃìxúúnìxù	βìxúúnìxù	‘lid’
3.	muhiindila	vahiindila	mùhííndilà	βàhííndilà	‘elderly person, the elder one’

6. (c) Nouns without singular or plural form

No.	Orthographic representation	IPA representation	Gloss
1.	vushuma	βùʃúmà	‘ugali’
2.	makure	màkùrè	‘oil’
3.	ivuhiindi	ìβúhììndì	‘at the indians’

Group 7: Nouns with a high tone on the prefix and the stem initial syllable followed by a falling tone and the rest of the syllables have a low tone

7. (a) Nouns with the singular and plural form

Orthographic representation			IPA representation		
No.	Singular	Plural	Singular	Plural	Gloss
1.	isikaati	tsisikaati	ísíkààtì	tsísíkààtì	‘skirt’

7. (b) Nouns without the singular and plural form

No.	Orthographic representation	IPA representation	Gloss
1.	ivutanzania	ívútânzànià	‘In Tanzania’
2.	khumukhaana	xúmúxààná	‘on the girl’
3.	hamusaala	hámúsáàlà	‘at the tree’
4.	hamukhaana	hámúxààná	‘at the girl’
5.	ivumeereka	íβúméèrèkà	‘in america’

Group 8: Nouns with a low tone on all the syllables except the final syllable that has a falling tone

Orthographic representation			IPA representation		
No.	Singular	Plural	Singular	Plural	Gloss
1.	iswa	tsiswa	ìswâ	tsìswâ	‘termite’
2.	muli	mili	mùrî	mìrî	‘root’
3.	kuukhu	vakuukhu	kùùxû	βàkùùxû	‘grandmother’
4.	kuuka	vakuuka	kùùkâ	βàkùùkâ	‘grandfather’
5.	senje`	vasenje	sèpJê	βàsèèpJè	‘aunt’
6.	mukhwaasi	vakhwaasi	mùxwààtsî	βàxwààtsî	‘in law’

Group 9: Nouns with a low tone on the prefix and a falling tone on the stem initial syllable followed by a high tone on the penultimate syllable and a low tone on the final syllable

Orthographic representation			IPA representation		
No.	Singular	Plural	Singular	Plural	Gloss
1.	isokooni	tsisokooni	ìsôkóónì	tsìsôkóónì	‘market’
2.	iripooti	tsiripooti	ìrîpóótì	tsìrîpóótì	‘report’
3.	shiviliiti	viviliiti	ʃìβílíítì	βìβílíítì	‘matchbox’
4.	ipakuuli	tsipakuuli	ìpâkúúli	tsìpâkúúli	‘bowl’
5.	ishilinji	tsihilinji	ìʃìlìŋʃì	tsìʃìlìŋʃì	‘shilling’

Group 10: Nouns with a high tone on the prefix and a falling tone on the stem initial syllable followed by a low tone on the penultimate syllable and a falling tone on the final syllable

No.	Orthographic representation	IPA representation	Gloss
1.	vutaamaanu	βútààmàànû	‘problem’

Group 11: Nouns with a high tone on the first three syllables and the rest of the syllables have a low tone

11. (a) Nouns with the singular and plural form

Orthographic representation			IPA representation		
No.	Singular	Plural	Singular	Plural	Gloss
1.	indekeye	tsindekeye	índékéjè	tsíndékéjè	‘heel’
2.	isimoni	tsisimoni	tsísímónì	tsísímónì	‘50 cents’

11. (b) Nouns without the singular and plural form

No.	Orthographic representation	IPA representation	Gloss
1.	asuvuyi	ásúβúji	‘morning’
2.	ivusutaani	íβúsútàànì	‘in Sudan’

Group 12: Nouns with a high tone on the first syllable and a low tone followed by falling tone on the final syllable

12. (a) Nouns with the singular and plural form

Orthographic representation			IPA representation		
No.	Singular	Plural	Singular	Plural	Gloss
1.	mwechitsi	vechitsi	mwétʃitsî	vétʃitsî	‘teacher’

12. (b) Nouns without the singular and plural form

No.	Orthographic representation	IPA representation	Gloss
1.	vwechitsi	βwétʃitsî	‘teaching’
2.	vwiloli	βwílòlí	‘pride’

Group 13: Nouns with a high tone on the prefix and a falling tone on the stem initial syllable followed by a high tone and a low tone

Orthographic representation			IPA representation		
No.	Singular	Plural	Singular	Plural	Gloss
1.	ikasuku	tsikasuku	íkáàsúkù	tsíkáàsúkù	‘parrot’
2.	muliinjete	milinjeeti	múlínjéti	mílínjéti	‘blanket’
3.	liseeveve	maseeveeve	líséèβéβè	máséèβéβè	‘pumpkin leaves’

Group 14: Nouns with a low tone on the prefix and a high tone on the stem initial syllable followed by a low tone and a falling tone

Orthographic representation			IPA representation		
No.	Singular	Plural	Singular	Plural	Gloss
1.	muvisaandu	vavisaandu	mùβísààndû	βàβísààndû	‘orphan’

Group 15: Nouns with a high tone on the prefix and dowstepped high tone on the stem initial syllable followed by a falling tone on the final syllable

15. (a) Nouns with the stem initial syllable that has a short vowel

Orthographic representation			IPA representation		
No.	Singular	Plural	Singular	Plural	Gloss
1.	isuna	tsisuna	í ⁺ súnâ	tsí ⁺ súnâ	‘mosquito’
2.	inguvu	tsinguvu	í ⁺ ŋgúβû	tsí ⁺ ŋgúβû	‘hippopotamus’
3.	ingokho	tsingokho	í ⁺ ŋgóxô	tsí ⁺ ŋgóxô	‘chicken’
4.	shichenwa	vichenwa	ʃí ⁺ tʃénwâ	βí ⁺ tʃénwâ	‘comb’
5.	mutuka	mituka	mú ⁺ túkâ	mí ⁺ túkâ	‘car’
6.	mutali	matali	mú ⁺ tálî	βá ⁺ tálî	‘traveller’
7.	mwiimani	viimani	mwíí ⁺ mánî	βíí ⁺ mánî	‘mean person’
8.	mwikhula	vikhula	mwí ⁺ xúlâ	βí ⁺ xúlâ	‘son’

15. (b) Nouns with the stem initial syllable that has a long vowel

Orthographic representation			IPA representation		
No.	Singular	Plural	Singular	Plural	Gloss
1.	mufyaala	vafjaala	múfjáálâ	βá ⁺ fjáálâ	‘cousin’
2.	musyaala	vasjaala	músjáálâ	βá ⁺ sjáálâ	‘cousin’
3.	lilooro	malooro	rí ⁺ lóórô	má ⁺ lóórô	‘dream’
4.	shihaanwa	vihaanwa	ʃí ⁺ háánwâ	βí ⁺ háánwâ	‘gift’
5.	shituungu	vituuungu	ʃí ⁺ túúŋgû	βí ⁺ túúŋgû	‘onion’
6.	lwooshooshi	lwooshooshi	lwóó ⁺ ʃóóʃî	lwóó ⁺ ʃóóʃî	‘fog (plural refers to the fog when it is all round)’
7.	shitaambaya	vitaambaya	ʃí ⁺ táámbájâ	βí ⁺ táámbájâ	‘cloth, handkerchief’

15. (c) Nouns without the singular and plural form and the stem initial syllable has a short vowel

No.	Orthographic representation	IPA representation	Gloss
1.	Lwiisukha	lwíí ⁺ súxâ	‘Lwisukha language’

15. (d) Nouns without the singular and plural form and the stem initial syllable has a long vowel

No.	Orthographic representation	IPA representation	Gloss
1.	vumwaamu	βú ⁺ mwáámû	‘blackness’
2.	vwatooto	βwá ⁺ tótô	‘truth’
3.	kiliikali	kí ⁺ líkálfí	‘the truth’
4.	vuyaangu	βú ⁺ jááŋgû	‘time’
5.	vushiindu	βú ⁺ ǰííndû	‘cold’

Group 16: Nouns with high tone on the prefix with two downstepped high tones

(a) Nouns with the singular and the plural form

Orthographic representation			IPA representation		
No.	Singular	Plural	Singular	Plural	Gloss
1.	lipwooni	mapwooni	lí ⁺ pwóó ⁺ ní	má ⁺ pwóó ⁺ ní	‘sweet potato’
2.	muyaayi	vayaayi	mú ⁺ jáá ⁺ jí	βá ⁺ jáá ⁺ jí	‘boy’
3.	khayaayi	ruyaayi	xá ⁺ jáá ⁺ jí	ró ⁺ jáá ⁺ jí	‘a small boy’
4.	mufuuko	mifuuko	mú ⁺ fúú ⁺ kó	mí ⁺ fúú ⁺ kó	‘bag’
5.	musiiko	misiiko	mú ⁺ síí ⁺ kó	mí ⁺ síí ⁺ kó	‘bag’
6.	mupaango	mipaango	mú ⁺ páá ⁺ ŋgó	mí ⁺ páá ⁺ ŋgó	‘plan’
7.	mupiira	mipiira	mú ⁺ píí ⁺ rá	mí ⁺ píí ⁺ ra	‘ball’
8.	mueembe	mieembe	mú ⁺ éé ⁺ mbé	mí ⁺ éé ⁺ mbé	‘a mango tree’
9.	mupeera	mipeera	mú ⁺ péé ⁺ rá	mí ⁺ péé ⁺ rá	‘a guava tree’
10.	musuungu	vasuungu	mú ⁺ súú ⁺ ŋgú	βá ⁺ súú ⁺ ŋgú	‘a white person’
11.	ikalaamu	tsikalaamu	íká ⁺ láá ⁺ mú	tsíká ⁺ laa ⁺ mú	‘pencil, pen’
12.	iparaafu	tsiparaafu	ípá ⁺ ráá ⁺ fú	tsí ⁺ páráá ⁺ fú	‘ice’

16. (b) Nouns without the singular and the plural form

No.	Orthographic representation	IPA representation	Gloss
1.	vuchaafu	βú ⁺ tǰáá ⁺ fú	‘dirt’
2.	minyaali	mí ⁺ ǰáá ⁺ lí	‘urine’

Group 17: Nouns with a low tone on the prefix and a high tone on the stem initial syllable followed by a downstepped high tone on the penultimate syllable and a low tone on the final syllable

Orthographic representation			IPA representation		
No.	Singular	Plural	Singular	Plural	Gloss
1.	mukhuluundu	vakhuluundu	mùxú ⁺ lúúndù	βàxú ⁺ lúúndù	‘priest, first born’
2.	musikaali	vasikaali	mùsí ⁺ kááli	βàsí ⁺ kááli	‘police’
3.	mutalaakwa	mitaalakwa	mùtá ⁺ láákwà	mítá ⁺ láákwà	‘cyprus tree’
4.	musumeeno	misumeeno	mùsú ⁺ méénò	mùsú ⁺ méénò	‘saw’
5.	ikilaasi	tsikilaasi	ìkí ⁺ láásì	tsìkí ⁺ láásì	‘glass’
6.	itaraacha	tsitaraacha	ìtá ⁺ ráátǽ	tsítá ⁺ ráátǽ	‘bridge’
7.	isahaani	tsisahaani	ìsá ⁺ hááni	tsìsá ⁺ hááni	‘plate’
8.	lukalaayi	tsingalaayi	lùká ⁺ láájì	tsì ⁺ ŋgá láájì	‘basin’
9.	ichikooni	tsichiikooni	ìtǽ ⁺ kóónì	tsìtǽ ⁺ kóónì	‘kitchen’

Group 18: Nouns with a high tone on the prefix and a downstepped high tone on the stem initial syllable (some of the nouns have a high tone on the penultimate syllable) and a low tone on the final syllable

18. (a) Nouns with singular and plural form

Orthographic representation			IPA representation		
No	Singular	Plural	Singular	Plural	Gloss
1.	mucheka	micheka	mú ⁺ tǽkà	mú ⁺ tǽkà	‘carpet’
2.	likunia	makunia	lí ⁺ kúnìà	mà ⁺ kúnìà	‘sack’
3.	shukhulia	vikhulia	ǽ ⁺ xúlià	βí ⁺ xúlià	‘food’
4.	musokoto	misokoto	mú ⁺ sókótò	mí ⁺ sókótò	‘cigarette (may be filled with tobacco or leaves from the musuutsu tree)’
5.	mwinjeresà	Vanjeresà	mwí ⁺ ŋǽrésà	βá ⁺ ŋǽrésà	‘a European person’
6.	ingulume	tsingulume	í ⁺ ŋgúlúmè	tsí ⁺ ŋgúlúmè	‘pig’

18 (b) A noun without the singular and the plural form

No.	Orthographic representation	IPA representation	Gloss
1.	Luswahili	lú ⁺ swáhíli	‘Kiswahili language’

Group19: Nouns with a high tone on all the syllables and a dowstepped high tone on the stem initial syllable

19. (a) Nouns with the singular and plural form

Orthographic representation			IPA representation		
No.	Singular	Plural	Singular	Plural	Gloss
1.	muto	mito	mú ⁺ tó	mí ⁺ tó	‘mattress’
2.	ikhuvu	tsikhuvu	í ⁺ xúβú	tsí ⁺ xúβú	‘squirrel’
3.	mumbashi	vumbashi	mú ⁺ mbáfí	βú ⁺ mbáfí	‘builder’

19. (b) Nouns without the singular and plural forms

No.	Orthographic representation	IPA representation	Gloss
1.	muunyu	múú ⁺ ɲú	‘salt’
2.	vuushe	βúú ⁺ ʃé	‘honey’

Group 20: Nouns with a high tone on the prefix and the stem initial syllable followed by a downstepped high tone (some of the nouns have a high tone on the penultimate syllable) and a low tone on the final syllable

20. (a) Nouns with the singular and plural form

Orthographic representation			IPA representation		
No.	Singular	Plural	Singular	Plural	Gloss
1.	ikaniisa	tsikaniisa	íká ⁺ níísà	tsíká ⁺ níísà	‘church’
2.	mukalaani	vakalaani	múká ⁺ lááni	βáká ⁺ lááni	‘clerk’
3.	ingurumani	tsinguramani	íŋgó ⁺ rómáni	tsíŋgó ⁺ rómáni	‘liver’

20. (b) Nouns without the singular and the plural form

No.	Orthographic representation	IPA representation	Gloss
1.	Ivunjereesa	íβú ⁺ ɲJéréésà	‘in Europe’

Group 21: Nouns with a high tone on the prefix and the stem initial syllable, the third syllable has a downstepped high tone (some of the nouns have a high tone on the penultimate syllable) and a falling tone on the final syllable

Orthographic representation			IPA representation		
No.	Singular	Plural	Singular	Plural	Gloss
1.	mukoyaanu	vakoyaanu	múkó ⁺ jáánû	βákó ⁺ jáánû	'a disorganized person'
2.	likuyakuyi	makuyakuyi	líkú ⁺ jákújî	mákú ⁺ jákújî	'butterfly'
3.	inyininyini	tsinyininyini	íní ⁺ nínínî	tsíní ⁺ nínínî	'star'

Group 22: Nouns with a low tone on the prefix and a high tone on the stem initial syllable followed by a downstepped high tone

Orthographic representation			IPA representation		
No.	Singular	Plural	Singular	Plural	Gloss
1.	mukisi	vakisi	mùkí ⁺ sí	βàkí ⁺ sí	'A person from the Abagusi tribe'

Group 23: Nouns with a high tone on the prefix and the stem initial syllable and the third syllable followed by a downstepped high tone and a low tone on the final syllable

(a) Nouns without the singular or plural forms

No.	Orthographic representation	IPA representation	Gloss
1.	ivusomaali	íβúsó ⁺ máálî	'in Somalia'

Appendix 3: Interview data

Tone patterns of nouns in phrasal contexts High tone anticipation

No.	Orthographic representation	IPA representation	Gloss
1.	nyina muleyi	níná múléjì	‘a good mother’
2.	inyama indeyi	ínámá índéjì	‘good meat’
3.	mulimi muleyi	múlímí múléjì	‘a good farmer’
4.	lihoondo lileyi	lihóóndó líléjì	‘a good pumpkin’
5.	muundu muleyi	múúndú múléjì	‘a good person’
6.	mukhali muleyi	múxáli múléjì	‘a good woman’
7.	mulina muleyi	múlíná múléjì	‘a good friend’
8.	mahangali maleyi	máhángarí máléjì	‘good arguments’
9.	inda ingali	índá íngáli	‘a big stomach’
10.	tsiinji tsingali	tsíínjí tsíngáli	‘big flies’
11.	lichina likali	lítíná líkáli	‘a big stone’
12.	mukoongo mukali	mùkóóngó múkáli	‘a big back’
13.	shilolelo shikali	šíróréró šíkáli	‘a big mirror’
14.	inji isilu	ínjí ísílò	‘a stupid fly’
15.	muundu musilu	múúndú músílò	‘a stupid person’
16.	musoomi musilu	músóómí músílò	‘a stupid student’
17.	muundu mulavu	múúndú múláβù	‘a light skinned person’
18.	inguvu indavu	íngúβù índáβù	‘a white cloth’
19.	ilong’oo indavu	ìróŋóó índáβù	‘white trousers, ‘clean trousers’
20.	muundu mucheli	múúndú mútšéli	‘a clever person’
21.	musoomi mucheli	mùsóómì mútšéli	‘a clever student’
22.	mutsiku mucheli	mùtsíkú mútšéli	‘a clever enemy’
23.	muundu muchiinga	múúndú mútšíngà	‘a foolish person’
24.	musoomi muchiinga	mùsóómí mútšíngà	‘a foolish student’
25.	mutsiku muchiinga	mùtsíkú mútšíngà	‘a foolish enemy’
26.	muundu mumwaamu	múúndú múmwáámú	‘a dirty person, ‘a dark skinned person’
27.	ing’oombe imwaamu	Íŋóómbé ímwáámú	‘a black cow’
	shinaanyenzo shimwaamu	šínáánénzó šimwáámú	‘a black ghost’
28.	lihoondo limwaamu	lihóóndó límwáámú	‘a black pumpkin’
29.	muundu muraambi	múúndú múráàmbì	‘a tall person’
30.	mukoye muraambi	mìkójé míráàmbì	‘a tall rope’
	likhukhuni liraambi	líxúxúní líráàmbì	‘a long amoeba’
31.	musoomi muraambi	mùsóómí múráàmbì	‘a tall student’
32.	muundu mutaamanu	múúndú mútáàmàànú	‘a bad man’
33.	inyama indamaanu	ínámá índáàmàànú	‘bad meat’
34.	lihoondo litaamanu	lihóóndó lítáàmàànú	‘a bad pumpkin’
35.	injiinjaafu	ínjí í ⁺ njááfù	‘a dirty fly’
36.	muundu muchaafu	múúndú mú ⁺ tjááfù	‘a dirty person’
37.	shiindu shichaafu	šííndú ší ⁺ tjááfù	‘a dirty thing’
38.	muvanu muchaafu	mùβánú mú ⁺ tjááfù	‘a dirty knife’

39.	inzeku isaakhulu	ìnzékú ísáàxùlù	‘an old elephant’
40.	lihoondo lisaakhulu	lihóóndó lísáàxùlù	‘an old pumpkin’
41.	inguvu imuchi	íngúβú ímútʃì	‘a red cloth’
42.	ing’oombe imuchi	íngóómbé ímútʃì	‘a red cow’
43.	muundu mumuchi	múúndú múmútʃì	‘a light skinned person’
44.	shiindu shitinyu	ʃííndú ʃítínù	‘a hard thing’
45.	muundu mutinyu	múúndú mútínù	‘a strong or mean person’
46.	inda indinyu	índá índínù	‘a hard stomach’
47.	lichina likhulu	lítʃíná líxùlù	‘an old stone’
48.	shirivi shikhulu	ʃíríβí ʃixùlù	‘an old basket’
49.	inguvu ikhulu	íngúβú íxùlù	‘an old cloth’
50.	inguvu inihu	íngúβú íníhù	‘a smart cloth’
51.	musoomi munihu	mùsóómí múnihù	‘a clean student, a well dressed student’
52.	muundu munihu	múúndú múnihù	‘a clean person, a well dressed person’
53.	muundu mwaana	múúndú mwáána	‘a young person’
54.	lichina litinyu	lítʃíná lítínù	‘a hard stone’
55.	inyama inulu	ínámá ínùlù	‘sweet meat’
56.	lwiika luleyi	lwíí ⁺ ká lúléjì	‘a good horn’
57.	inzukha imuchi	ínzú ⁺ xá ímútʃì	‘a red snake’
58.	shilaaro shimuchi	ʃíláá ⁺ ro ʃímútʃì	‘a red shoe’
59.	mwaana muleyi	mwáá ⁺ ná múléjì	‘a good child’
60.	vaana valey	βáá ⁺ ná βáléjì	‘good children’
61.	khaana khaley	xáá ⁺ ná xáléjì	‘a good small child’
62.	rwaana ruleyi	rwáá ⁺ ná rúléjì	‘good small children’
63.	kwaana kuleyi	kwáá ⁺ ná kúléjì	‘a good big child’
64.	myaana mileyi	mjáá ⁺ ná míléjì	‘good big children’
65.	mulina mukali	múlí ⁺ ná múkálì	‘a great friend’
66.	valina vakali	βáí ⁺ ná βákálì	‘great friends’
67.	khalina khakali	xáí ⁺ ná xákálì	‘a small great friend’
68.	rulina rukali	rólí ⁺ ná rúkálì	‘small great friends’
69.	kulina kukali	kúlí ⁺ ná kúkálì	‘a big great friend’
70.	milina mikali	mílí ⁺ ná míkálì	‘big great friends’
71.	shikoombe shileyi	ʃíkóómbè ʃiléjì	‘a good cup’
72.	musaala muleyi	músáàlà múléjì	‘a good tree’
73.	lituunda linuulu	lítúúndà línùlù	‘a sweet fruit’
74.	inyeende indititi	ínééndè índítítì	‘a small jigger’
75.	lichina lilitoho	lítʃíná lìlítòhò	‘a heavy stone’
76.	lihoondo lilitoho	lihòòndò lì-lítòhò	‘a heavy pumpkin’
77.	inyama inditoho	ínàmà índítòhò	‘heavy meat’
78.	mulimi mulitoho	mùlímì mùlítòhò	‘a heavy farmer’
79.	muundu mulitoho	mùúndù mùlítòhò	‘a heavy person’
80.	mukhali mulitoho	múxáíì mùlítòhò	‘a heavy woman, wife’
81.	mulina mulitoho	múlínà mùlítòhò	‘a heavy friend’
82.	ingulume inditoho	íngúlúmè índítòhò	‘a heavy pig’
83.	shichapi shilitoho	ʃítʃáπì ʃilitòhò	‘a heavy door lock’
84.	induumba inditoho	índúúmba índítòhò	‘a heavy drum’

85.	lisaanduku lilitoho	lísáándúkù lilitòhò	‘a heavy ‘suitcase, box’
86.	mukhaana mulitoho	múxáànà mùlitòhò	‘a heavy girl’
87.	likoondi lilitoho	líkòòndì lilitòhò	‘a heavy sheep’
88.	shikuumba shilitoho	ʃíkùumbà ʃilitòhò	‘a heavy bone’
89.	indaana inditoho	índànà inditòhò	‘a heavy infant’
90.	lwiika lulitoho	lwííkà lùlitòhò	‘a heavy horn’
91.	liinu lilitoho	líínù lilitòhò	‘a heavy tooth’
92.	mwaami mulitoho	mwáámì mùlitòhò	‘a heavy chief, leader’
93.	khaana khalitoho	xáànà xàlitòhò	‘a heavy small child’
94.	ingokho inditoho	í ⁺ ngóxò inditòhò	‘a heavy chicken’
95.	mutuka mulitoho	mú ⁺ túkà mùlitòhò	‘a heavy car’
96.	likuyakuyi lilitoho	líkú ⁺ jákújì lilitòhò	‘a heavy butterfly’
97.	shitaambaya shilitoho	ʃí ⁺ táambájâ ʃilitòhò	‘a heavy cloth, handkerchief’
98.	likunia lilitoho	lí ⁺ kúnià lilitòhò	‘a heavy sack’
99.	shikhulia shilitoho	ʃí ⁺ xúlià ʃilitòhò	‘heavy food’
100.	musokoto mulitoho	mú ⁺ sókótò mùlitòhò	‘heavy cigarette’
101.	ingurumani inditoho	íngó ⁺ rómànì inditòhò	‘heavy liver’
102.	shikuumba shilitoho	ʃíkùumbà ʃilitòhò	‘a heavy bone’
103.	ipeendeera inditoho	Ípèèndèèrà inditòhò	‘a heavy flag’
104.	manyonyi siita	mánpóní síitâ	‘six birds’
105.	manyonyi kumi	mánpóní kúmì	‘ten birds’
106.	vaandu kumi	βààndú kúmì	‘ten people’
107.	tsinyama siita	tsínámâ síitâ	‘six pieces of meat, animals’
108.	mapata siita	mápá ⁺ tâ síitâ	‘six ducks’
109.	valina kumi	βálí ⁺ nâ kúmì	‘ten friends’
110.	mikhono siita	míxónó síitâ	‘six hands’
111.	misaala siita	mísáalâ síitâ	‘six trees’
112.	lichina lilala	litʃinâ lilâlâ	‘one stone’
113.	lihoondo lilala	lihòòndò lilâlâ	‘one pumpkin’
114.	inyama indala	ìṅàmâ indâlâ	‘one piece of meat’
115.	mulimi mulala	mùlimì mùlâlâ	‘one farmer’
116.	nyina mulala	ṅìnâ mùlâlâ	‘one mother’
117.	muundu mulala	mùùndù mùlâlâ	‘one person’
118.	mulina mulala	mùlínâ mùlâlâ	‘one friend’
119.	inda indala	ìndâ indâlâ	‘one stomach’
120.	tsiinji tsindala	tsiinʃì tsindâlâ	‘some flies’
121.	manyonyi malala	mànpòṅì màlâlâ	‘some birds’
122.	shiindu shilala	ʃìindù ʃilâlâ	‘one thing’
123.	isuli indala	ísúri indâlâ	‘one bedbug’
124.	shivuyi shilala	ʃíβújì ʃilâlâ	‘one duck’
125.	iliitwa indala	ílíítwâ indâlâ	‘one duck’
126.	shikoombe shilala	ʃíkòòmbè ʃilâlâ	‘one cup’
127.	musaatsa mulala	músáàtsâ mùlâlâ	‘one man, husband’
128.	musaala mulala	músáalâ mùlâlâ	‘one tree’
129.	shiviliti shilala	ʃíβílítì ʃilâlâ	‘one matchbox’
130.	lipwooni lilala	lí ⁺ pwóó ⁺ nì lilâlâ	‘one potato’

131.	khayaayi khalala	xá [↓] jáá [↓] jí xàlàlà	‘one small boy’
132.	musuungu mulala	mú [↓] súú [↓] ngú mùlálà	‘one white person’
133.	iparaafu indala	ípa [↓] ráá [↓] fú ìndàlà	‘one ice’
134.	shifwaanani shilala	ʃifwáànàni ʃilàlà	‘one doll’
135.	mukalaani mulala	múká [↓] lááni mùlálà	‘one clerk’

Appendix 4: Interview data
Tone patterns of nouns in phrasal contexts
High tone insertion

No.	Orthographic representation	IPA representation	Gloss
1.	mahoondo yaka	màhóóndó jákà	‘these pumpkins’
2.	mikoye yichi	mikójà jítʃi	‘these cows’
3.	tsing’ombe yitsi	tsiŋóómbè jítsi	‘these ropes’
4.	makhukhuni yaka	máxúxùni j-ákà	‘these amoebas’
5.	yaka, mahoondo	jákà, màhòòndò	‘these pumpkins’
6.	yichi, mikoye	jítʃi, mìkòjè	‘these cows’
7.	yitsi tsing’oombe	jítsi, tsiŋóómbè	‘these ropes’
8.	yaka makhukhuni	jákà, màxùxùni	‘these amoebas’
9.	mukoye yoko	mùkòjè jòkò	‘that rope’
10.	mukoye kwanje	mùkòjè kwáàŋjè	‘my rope’
11.	lihoondo lyaanje	lihóóndò ljáàŋjè	‘my’ pumpkin
12.	ing’oombe yaanje	iŋóómbè jáàŋjè	‘my cow’
13.	mutsiku waanje	mùtsíkù wáàŋjè	‘my enemy’
14.	kwanje, mukoye	kwáàŋjè, mùkòjè	‘my rope’
15.	lyaanje, lihoondo	ljáàŋjè, lihòòndò	‘my pumpkin’
16.	yaanje, ing’oombe	jáàŋjè, iŋòòmbè	‘my cow’
17.	waanje, mutsiku	wáàŋjè, mùtsíkù	‘my enemy’
18.	lihoondo lyeeru	lihóóndò ljèèrù	‘our pumpkin’
19.	shibaambala shyeeru	ʃiβáá ⁺ mbála ʃjèèrù	‘our fish’
20.	viloleshitso vyeeru	βíróréréʃitsò βj-èèrù	‘our signs’
21.	inda yeeru	ìndá jèèrù	‘our stomach’
22.	muundu weeru	mùúndù wèèrù	‘our person’
23.	mukhali weeru	múxáli wèèrù	‘our woman, wife’
24.	mulina weeru	múlínà wèèrù	‘our friend’
25.	mahoondo kooko	màhóóndò kóókó	‘your pumpkins’
26.	muundu we	mùúndù wé	‘his person’
27.	mukhali we	mú-xáli wé	‘his woman, wife’
28.	mulina we	múlínà wé	‘his friend’
29.	mikoye chyochyo	mìkòjè tʃjótʃjò	‘your ropes’
30.	mutsiku woowo	mùtsíkù wóó ⁺ wó	‘your enemy’
31.	tsing’oombe tseyenyu	tsiŋóómbè tsjéènú	‘your cow’
32.	vatsiku veenyu	βàtsíkù βéènú	‘your enemy’
33.	mikoye chyeenyu	mìkòjè tʃjéènú	‘your ropes’
34.	maama we	màámá ⁺ wé	‘his/her mother’
35.	mukoye kwe	mùkòjè kwé	‘his/her rope’
36.	lisaambu lye	lisaámbù lyé	‘his/her leaf’
37.	taata we	tààtà wé	‘his/her father’
38.	mahoondo kaavo	màhóóndò kááβò	‘their pumpkins’
39.	mikoye chyaavo	mìkòjè tsjááβò	‘their ropes’
40.	tsinyama tsaavo	tsiŋámà tsjááβò	‘their animals, meat’
41.	shilolelo shyaavo	ʃi-rórerò ʃj-ááβò	‘their mirror’
42.	kaavo, mahoondo	kááβò, màhòòndò	‘their pumpkins’
43.	chyaavo, mikoye	tsjááβò, mìkòjè	‘their ropes’

44.	tsyaavo, tsinyama	tʃjááβò, tsɪnámà	‘their animals, meat’
45.	mukoye kwosi	mùkójè kwósi	‘each rope’
46.	lihoondo lyosi	lihóóndò lʒósi	‘each pumpkin’
47.	ing’oombe josi	ìŋóómbè jósi	‘any cow’
48.	vaandu vosi	βààndú βòsi	‘all people’
49.	vatsiku vaandi	βàtsíkú βààndí	‘some enemies’
50.	tsinyama tsindi	tsɪnámà tsɪndí	‘some animals’
51.	mahoondo kandi	màhóóndò kàndí	‘some pumpkins’
52.	mahangali kandi	máhàngáɾì kàndí	‘some arguments’
53.	vaandu vati	βààndú βà-ti	‘few people, little people’
54.	inyama indi	ìŋámà ìndí	‘little meat’
55.	mikoye miti	míkójè mìti	‘few ropes, little ropes’
56.	lisaambu liti	lísáàmbù liti	‘a little leaf’
57.	muundu mulitoho	mùúndù mùlítóhò	‘a heavy person’
58.	mukhali mulitoho	múxáɫì mùlítóhò	‘a heavy woman’
59.	mulina mulitoho	múlínà mùlítóhò	‘a heavy friend’
60.	muundu muleyi	múúndù mùléjì	‘a good person’
61.	mukhali muleyi	múxáɫì mùléjì	‘a good woman’
62.	mulina muleyi	múlí [†] ná mùléjì	‘a good friend’
63.	muundu weeru	mùúndù wèèrù	‘our person’
64.	mukhali weeru	múxáɫì wèèrù	‘our woman’
65.	mulina weeru	múlínà wèèrù	‘our friend’
66.	mahoondo keeru	màhóóndò kèèrù	‘our pumpkins’
67.	masaambu keeru	màsáàmbù kèèrù	‘our leaves’
68.	mikoye chyeeru	míkójè tʃjèèrù	‘our ropes’
69.	masaambu keeru yaka	màsáàmbù kèèrù jáká	‘these leaves are ours’
70.	mikoye chyeeru yichi	míkójè tʃjèèrù jíʃí	‘these ropes are ours’
71.	mahoondo keeru yaka	màhóóndò kèèrù jáká	‘these pumpkins are ours’
72.	viloleshitso vyeeru yivi	βíróréʃítsò βjèèrù jíβi	‘these signs are ours’
73.	lihoondo lilala lileyi	lihóóndò lílálá líléjì	‘one good pumpkin’
74.	muundu mulala muleyi	múúndù mùlálá mùléjì	‘one good person’
75.	mulimi mulala muleyi	múlímí mùlálá mùléjì	‘one good farmer’
76.	mukoye muleyi mulala kwe yuku	múkójè mùléjì mùlálá kwé júkù	‘this one good rope of his’
77.	lihoondo lileyi lilala lye yiili	lihóóndò líléjì lílálá lʒé jíli	‘this one good pumpkin of his’
78.	lisaambu lileyi lilala lye yiili	lísáàmbù líléjì lílálá lʒé jíli	‘this one good leaf of his’
79.	mukoye kwe mulala muleyi yuku	múkójè kwé mùlálá mùléjì júkù	‘this one good rope of his’
80.	lihoondo lye lilala lileyi yiili	li-hóóndò lʒé lílálá líléjì jíli	‘this one good pumpkin of his’
81.	mahoondo keeru yaaka	màhóóndò kèèrù jáká	‘these pumpkins are ours’
82.	masaambu keeru yaaka	màsáàmbù kèèrù jáká	‘these leaves are ours’
83.	mikoye chyeeru yiichi	míkójè tʃjèèrù jíʃí	‘these ropes are ours’
84.	lihoondo ljeeru lilala	lihóóndò lʒèèrù lílálá	‘our one pumpkin’
85.	lihoondo ljolyo lilala	lihóóndò l-jólʒó lílálá	‘your one pumpkin’
86.	lihoondo ljelye lilala	lihóóndò lʒélʒé lílálá	‘his one pumpkin’

Appendix 5: Interview data

Tone patterns of adjectives, numerals, demonstratives, possessive pronouns and quantifiers in isolation

Table 1: Tone patterns of descriptive adjectives in isolation

No.	Orthographic representation	IPA representation	'Gloss'
1.	-leyi	-léjì	'good'
2.	-kali	-káli	'big'
3.	-ngali	-ŋgáli	'big'
4.	-silu	-sílò	'stupid'
5.	-lavu	-láβù	'clean, white, a light skinned person'
6.	-davu	-dáβù	'clean, white, a light skinned person'
7.	-cheli	-tʃéli	'clever'
8.	-chiinga	-tʃíŋgà	'stupid'
9.	-mwaamu	-mwaámù	'black'
10.	-raambi	-ráàmbi	'tall, long'
11.	-taamaanu	táàmàànù	'bad'
12.	-chaafu	-tʃááfù	'dirty'
13.	-muchi	-mútʃi	'red'
14.	-ndititi	-nditìtì	'small'
15.	-litofo	-litòhò	'heavy'
16.	-nihu	-níhù	'clean, smart, well dressed'
17.	-saakhulu	-sáàxùlù	'old'
18.	-tinyu	-tínù	'hard'
19.	-khulu	-xùlù	'old'
20.	-nulu	-núlù	'sweet'

Table 2: Tone patterns of a numerals in isolation

No.	Orthographic representation Numeral	IPA representation Numeral	Gloss
1.	indala	ìndàlà	'one'
2.	tsiviri	tsìβìrí	'two'
3.	tsivaka	tsìβàkà	'three'
4.	tsine	tsìné	'four'
5.	tsiraanu	tsìràànù	'five'
6.	siita	síità	'six'
7.	sapa	sàpá	'seven'
8.	munane	mùnànè	'eight'
9.	tisa	tìsá	'nine'
10.	likhomi/kumi	lìxòmì/kùmì	'ten'

Table 3: Tone patterns of proximal demonstratives in isolation (this, these)

Orthographic representation			IPA representation		
No.	Singular	Plural	Singular	Plural	Gloss
1.	uyu (Class 1)	yava (Class 2)	ùjù	jàβà	‘this’
2.	yuku (Class 3)	yichi (Class 4)	júkù	jítǽ	‘this’
3.	yiili (Class 5)	yaka (Class 6)	jíìlì	jàkà	‘this’
4.	yishi (class 7)	yivi (Class 8)	jíǽ	Jíβì	‘this’
5.	iyi (Class 9)	yitsi (Class 10)	ǽjì	Jítsì	‘this’
6.	yulu (Class 11)	No plural	júlù	No plural	‘this’
7.	yakha (Class 12)	yuru (Class 13)	jàxà	júrù	‘this’
8.	yuvu (Class 14)	No plural	júβù	No plural	‘this’
9.	yukhu (Class 15)	No plural	júxù	No plural	‘this’
10.	yaha (Class 16)	No plural	jàhà	No plural	‘this’
11.	yukhu (Class 17)	No plural	júxù	No plural	‘this’
12.	umu (Class 18)	No plural	úmù	No plural	‘this’
13.	yuku (Class 20/4)	Yichi	júkù	jítǽ	‘this’

Table 4: Tonal patterns of distal and remote demonstratives in isolation (that, those)

Orthographic representation			IPA representation		
No.	Singular	Plural	Singular	Plural	Gloss
1.	oyo (Class 1)	avo (Class 2)	òjó	àβó	‘that’
2.	oko(Class 3)	echo(Class 4)	òkó	ètǽ	‘that’
3.	elo (Class 5)	ako (Class 6)	èró	àkó	‘that’
4.	esho (class 7)	evo (Class 8)	èǽ	èβó	‘that’
5.	eyo (Class 9)	etso (Class 10)	èjó	ètsó	‘that’
6.	olo (Class 11)	etso (Class 10)	òló	ètsó	‘that’
7.	akho (Class 12)	oro (Class 13)	àxó	òró	‘that’
8.	obo (Class 14)	No plural	òβó	No plural	‘that’
9.	okho (Class 15)	No plural	òxó	No plural	‘that’
10.	aho (Class 16)	Aho	àhó	àhó	‘that’
11.	okho (Class 17)	Okho	òxó	òxó	‘that’
12.	omo (Class 18)	Omo	òmó	òmó	‘that’
13.	oko (Class 20/4)	Echo	òkó	ètǽ	‘that’

Table 5: Tone patterns of possessive pronouns in isolation

No.	Orthographic representation	IPA representation	Gloss
1.	-aanje	-áànǽ	‘mine’ (1 st person singular)
2.	-o	-ó	‘yours’ (2 nd person singular)
3.	-eenyu	-éèǽ	‘yours’ (2 nd person plural)
4.	-e	-é	‘his/hers’ (3 rd person singular)
5.	-eeru	-éèrù	‘ours’ (1 st person plural)
6.	-aavo	-áàβò	‘theirs’ (3 rd person plural)

Table 6: Tone patterns of quantifiers in isolation

No.	Orthographic representation	IPA representation	Gloss
1.	-osi	-ósi	‘any’
2.	-ndi	-ndí	‘some’
3.	-ti	-tì	‘few, little’

Appendix 6: Interview data

Tone patterns of nouns in isolation and nouns with other word categories - Minimal pairs

No.	Orthographic representation	IPA representation	Gloss
1.	liira	líirà	‘name’
		líirâ	‘burial’
2.	muli	mùrì	‘one who eats’
		mùrî	‘root’
3.	mwiikho	mwìixò	‘relative’
		mwìixô	‘cooking stick’
4.	mwimbi	mwímbí	‘singer’
		mwímbî	‘sing’ (asking many people to sing)
5.	litukhu	lítùxù	‘hole’
		lítúxù	‘day’
6.	liveka	lìbèkà	‘shoulder’
		líbékà	‘shaving style’
7.	indema	ìndèmà	‘cheek’
		í ⁺ ndémà	‘cigarette, tobacco’
8.	inguvu	ìngùbù	‘cloth’
		í ⁺ ngúbù	‘hippopotamus’
9.	litere	lítéré	‘a big toe’
		lí ⁺ téré	‘algae’ (edible)
10.	isiimba	ìsìimbà	‘hut’
		ísíimbà	‘lion’
11.	lisimba	lísimbà	‘beast’
		lìsimbà	‘repeated visit’
12.	shiliitsa	ʃìrìitsà	‘hawk’
		ʃìrìitsá	‘uphill’
13.	mbi	mbì	‘feaces’
		mbí	‘give me’ (plural)
14.	mwaana	mwáánà	‘child’
		mwáánâ	‘ideophone’
15.	liila	rìirà	‘intestine’
		ríirà	‘cry’
		rìirâ	‘eat for’
16.	injila	ìṅjìrà	‘route, road’
		ìṅjìrá	‘come in’
17.	malala	màlálà	‘all the same’
		málálá	‘dry leaves’
18.	mukhonye	múxóónè	‘sugarcane’
		mùxóónè	‘help him/her’
		múxóóné	‘do I help him/her’
		mùxóónè	‘ help him/her’
19.	mulimi	múríímì	‘farm, garden’
		múríímí	‘may you dig’

20.	muleme	mùrèmè	'a crippled person'
		múrèmè	'may you be crippled'
21.	mwiri	mwírì	'killer'
		mwírí	'Kill him/her'
		mwírî	'May u kill' (slaughter)
22.	muleshe	múléfè	'the left one'
		múléfé	'let go him/her now'
		múléfê	'leave it' (future)
23.	muvohe	múβóhè	'the tied one, prisoner'
		múβóhé	'tie him/her now'
		múβóhê	'tie him/her/it (future)'
24.	shiteshe	ſítéfè	'cooked one'
		ſítéfé	'cook it'
		ſítéfê	'do I cook it?'
		ſítèfè	'Is it the cooked one?'
25.	ruvili	ròβírì	'two small ones'
		ròβírî	'small bodies'
26.	vushiele	βúſièrè	'good morning'
		βùſièrè	'old age' (woman)
		βúſiéré	'when it is morning'
27.	muviri	múβírì	'may you pass' e.g exams
		múβírí	'Have you passed?' e.g exams
28.	shivula	ſìβùlá	'sucker/surgarcane'
		ſìβùlà	'Its not there'
		ſìβùlá	'may be'
29.	shivuula	ſìβùúlá	'It gave birth'
		ſìβùùlà	'It revealed itself'

Appendix 7: Interview data

Tone patterns of sentences

No.	Orthographic representation	IPA representation	Gloss
1.	vayenzi inzu	βàjènzì ínzu	‘They swept the house’
2.	vayenzi inzu	βájéńzí ínzu?	‘Did they sweep the house?’
3.	ateshi shukhulia	àtèʃi ʃú ⁺ xúlià	‘he/she has cooked food.’
4.	ateshi shukhulia	átéʃi ʃúxúliá	‘did he/she cook the food?’
5.	atsili musokooni	àtsìrì mùsòkóónì	‘he/she went to the market’
6.	atsili musokooni	át sírí mùsókóónì	‘did he/she go to the market?’
7.	vaya tsing’oombe	βájà tsìŋòòmbè	‘domesticate cows’ (polite)
8.	vaya tsing’oombe	βájá tsìŋóómbé	‘domesticate cows’ (impolite, harsh, angry, irritation, command)
9.	ra likaato hasi	rà líkààtò hási	‘put the avocado down’
10.	ra likaato hasi	rá líkáátó hási	‘put the avocado down’ (impolite, angry, harsh, irritation, command’)

Appendix 8: Luyia dialects map

Luyia dialect Map (Kenya varieties, adapted from Heine & Mohlig 1980 and Leung 1991)

