A SKETCH OUTLINE OF THE PHONOLOGY OF NDEMLI

A Dissertation Presented in Partial Fulfilment of the Requirements for the Award of a 'Maitrise' Diploma in Linguistics.

By

NGORAN LOVELINE LENAKA
B.A. IN ENGLISH

Supervised by:

PROF. MUTAKA NGESSIMO
(Maître de Conference)

Yaoundé, September 1999.
DEDICATION

I dedicate this work to:

my late father Mr. Ngoran Rudolf.
my mother Mrs. Ngoran Christiana Wirvem and
Ms. Mbiybe Miriam.
ACKNOWLEDGEMENTS

I am immensely thankful to my supervisor, Professor Ngessimo Mutaka who, despite his academic and professional obligations, took off time to guide me throughout this endeavour. More thanks go to the lecturers of the Linguistics department, especially Dr. Ogwana John for his pieces of advice he regularly gives to the students in the department of Linguistics and also Dr. Pius Tamanji for making me develop an interest in linguistics.

Further thanks go to my informant Ballong Bessack Cathérine and the Bessack family for, without them, this endeavour would have been futile. More thanks to Mrs. Mutaka Jackie for putting the manuscript into print.

I will never forget Mr. and Mrs. Mbiybe John and Mr. Landzeh Charles for their interest in my academic well-being and for their timely moral and financial support.

Further thanks go to my brothers Ngoran Ephraim and Ngoran Samuel and to my sisters Ngek Esther, Nfor Triphina, Chanji Florence, Tata Evelyn, Kosho Mary, and to my nieces and nephews Ngek Gaius, Ngek Jude, Ngek Stella, Mbiulung Emile, Changi Joyce, Tata Vera. Their love, care, understanding, and patience have truly contributed to shaping my future.

My profound gratitude goes to Wilson Baniyeh Ngam for his love, care, moral support and encouragement. Further thanks go to Fai Pascaline for moral and constant assistance.

I do not leave out my friends Wirdzeh Edith, Konneh Sifu, the Konneh family, Wirsiy Emmanuel, Wilfred Ndong, Mbinkar Evelyn, Anastasia Kimah, Chiatoh Judith, Genesis Ngalla, Mrs. Foy Asenath, Menjo Amos, and Ndze Lilian, Wirkom Mercy, Fai Jane, and Ijarig Quinta. Our cordial relationships have been impinging positively on my quest for knowledge.

Last but not least, I would like to thank my academic friends and classmates for the love and the moral support I have always had from them. I think especially about Akumbu Pius, Wirtimyen Precedy, Foy Francis, Frida Limnyuy, Rosaline Yaya, Yensi Agnes, Yefon Ntani, Ngah Fabian, Dubila Brendan, and Tuma Vivian.
List of Abbreviations and signs.

<table>
<thead>
<tr>
<th>Symbol</th>
<th>Meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td>/</td>
<td>high tone</td>
</tr>
<tr>
<td>\</td>
<td>low tone</td>
</tr>
<tr>
<td>-</td>
<td>mid tone</td>
</tr>
<tr>
<td>v</td>
<td>rising tone</td>
</tr>
<tr>
<td>^</td>
<td>falling tone</td>
</tr>
<tr>
<td>UR</td>
<td>Underlying Representation</td>
</tr>
<tr>
<td>PR</td>
<td>Phonetic Representation</td>
</tr>
<tr>
<td>TBU</td>
<td>Tone Bearing Unit</td>
</tr>
<tr>
<td>HTS</td>
<td>High Tone Spreading</td>
</tr>
<tr>
<td>C</td>
<td>Consonant</td>
</tr>
<tr>
<td>V</td>
<td>Vowel</td>
</tr>
<tr>
<td>\rightarrow</td>
<td>becomes or is realized as</td>
</tr>
<tr>
<td>VL</td>
<td>voiceless</td>
</tr>
<tr>
<td>VD</td>
<td>voiced</td>
</tr>
<tr>
<td>[</td>
<td>]</td>
</tr>
<tr>
<td>/ /</td>
<td>phonological transcription</td>
</tr>
<tr>
<td>H</td>
<td>High</td>
</tr>
<tr>
<td>M</td>
<td>Mid</td>
</tr>
<tr>
<td>L</td>
<td>Low</td>
</tr>
<tr>
<td>+R</td>
<td>Plus Raised</td>
</tr>
<tr>
<td>+U</td>
<td>Plus Upper</td>
</tr>
<tr>
<td>-R</td>
<td>Minus Raised</td>
</tr>
<tr>
<td>-U</td>
<td>Minus Upper</td>
</tr>
</tbody>
</table>
# TABLE OF CONTENTS

DEDICATION ................................................................................................................... i
ACKNOWLEDGEMENTS ................................................................................................. ii
LIST OF ABBREVIATIONS AND SIGNS .......................................................................... iii
TABLE OF CONTENTS ..................................................................................................... iv

## CHAPTER ONE: INTRODUCTION ................................................................................. 1

1.0. Introduction ............................................................................................................... 1
1.1. Geographical Situation of Ndemli ........................................................................ 1
1.2. Historical Location ................................................................................................ 5
1.3. Linguistic Classification ......................................................................................... 5
1.4. Literature Review .................................................................................................. 7
1.5. Aim of work ........................................................................................................... 9
1.6. Methodology ......................................................................................................... 9
1.7. Outline of Work .................................................................................................... 10

## CHAPTER TWO: PHONETIC AND PHONEMIC SOUNDS OF NDEMLI ............... 12

2.0. Introduction ........................................................................................................... 12
2.1. The alphabet of Ndemli ....................................................................................... 12
2.1.1. Phonetic consonant chart ............................................................................... 12
2.1.2. The phonetic vowel chart .............................................................................. 15
2.2. Phonemic consonant and vowel charts ............................................................. 16
2.2.1. The phonemic consonant chart ..................................................................... 16
2.2.2. The phonemic vowel chart ........................................................................... 18
2.3. Ndemli tones ....................................................................................................... 19
2.2.1. Phonetic tone chart ....................................................................................... 19
2.2.1. Phonemic tone chart ..................................................................................... 20

## CHAPTER THREE: THE NOUN CLASS SYSTEM OF NDEMLI ..................... 22
5.4. Phonological processes on phrasal constructions ........................................ 69
5.4.1. The structure of the conjugated verb forms ........................................ 69
5.4.2. Vestiges of verbal suffixal extensions .............................................. 73
5.4.3. High tone spreading in phrasal constructions ..................................... 75
5.4.4. Voicing of the consonant of the negative morpheme .......................... 76
5.4.5. Reduplication ..................................................................................... 78
5.4.6. Word order in some verb phrases ...................................................... 78
5.5. Conjugation of verbs in some tenses ...................................................... 79
5.5.1. The future tense .................................................................................. 79
5.5.2. The past tense ............................................................................... 80
5.5.3. The passive .................................................................................... 81
5.5.4. The imperative .................................................................................. 82

GENERAL CONCLUSION ............................................................................. 83

BIBLIOGRAPHY .................................................................................... 85

APPENDIX: selected list of nouns, verbs, and adjectives .............................. 87
Chapter 1: INTRODUCTION

This study is an attempt to carry out a linguistic analysis of the phonology of Ndemli (language of the Bandem people).

Within the introductory chapter, we will have a look at the geographical location, historical situation and the linguistic classification of the language. After reviewing the literature related to Ndemli, the goal and the methodology to be employed will be stated and data sources will also be discussed before we move into the work proper.

1.1. Geographical situation of Ndemli.

Ndemli is a language spoken in the Littoral province of Cameroon. It is spoken in the Nkam Division precisely on the right side of Yabassi subdivision. Speakers of this language extend to the left flank of Bandem and the South district of Mbang in Nkondjock subdivision. Some of the speakers are found in the district of Ndoktuna, Ndem and the North of Yingui in the Yingui subdivision. As also observed by Manga Blaise Désiré in his “Projet de thèse de doctorat de 3e cycle”, the dividing up of the population of Bandem in the Nkam Division gives advantage to Yabassi subdivision. Here, one finds a large coming together of the Bandem in little clans. These clans include Bewang, Bolan, Ndokati, Herun, Timte Bona Mangolo, Ndonta, Bindjeng, Ndokbekot, Biyi, Bekong, Boumkoua. In Nkondjock subdivision, we have the following clans: Minjeng, Ndokita, Ndokiti I, II, III and Ndokhan. In Yingui subdivision the Bandem are mixed with the Banen and this makes it difficult to strictly distinguish the clans. The Ndoglamba can however be recognized as a Bandem clan here.
Ndemli is spoken by a population of about 10,000 people dispersed in different sections of Yabassi. The Bandem area experiences a tropical climate with two distinct seasons: the rainy season and the dry season. The climate is hot and thus temperatures are high. Agriculture is the main occupation of Bandem people. The soil is very fertile and the produce includes groundnuts, cassava, yams, cocoyams, beans, cocoa, coffee and colanuts. Other occupations carried out by the Bandem people include hunting and fishing. Transportation of the agricultural produce is difficult because of bad roads and dense forests. There is rampant rural exodus by especially the youth who move to towns in search of jobs and for fear of witchcraft back at home. Maps one and two will situate Bandem and its language better.
1.2. Historical situation of Ndemli.

Ndemli is spoken by the people of Bandem. In Ndemli, “ba” means people. Consequently, Bandem means the people of Ndem. As also observed by Manga Blaise in his doctoral thesis project, the original speakers of Ndemli are the Bandem or the Ndem. Part of these Ndem came from the Bamileke land. This is accounted for by the fact that the Bamileke have a lot of affinities with the population of Nkondjock subdivision which is quite close to the Bamileke district of Batongtu. Like Dugast (1957), one of our informants holds that the founder of Ndem came from the Bakwa population (Bamileke). Manga Blaise also holds that this ancestor was able to regroup around him diverse groups (Bamileke, Mbang) who saw him as their chief (leader). Indeed, the founding of the Ndem society was effected in two stages. First, the chief and his group from Bakwa occupied the two banks of the Makombé (Wouri tributary) and secondly, there was the invasion of the newly arrived by the Basaa and the Banem bringing about the mixed nature of the Ndem people and speakers.

1.3. Linguistic classification of Ndemli

Ndemli is one of the languages for which the linguistic status is not yet clear. We are not thus surprised when Bendor Samuel (1989) observes that this language still needs to be surveyed. As also pointed out by Manga Blaise in his “Projet de thèse de Doctorat de 3e cycle,” we observed that the linguistic classification of Ndemli is still controversial. In ALCAM (1983), this language is classified in Zone 5, which is in the group of languages of Guthrie’s A40 languages. It is therefore found at the outskirts of the Grassfields Bantu languages, the classical Bantu of Zone A and the Bantu of Mbam Nkam. Williamson (1971) includes it among the Grassfields Bantu and proposes that it is closely related to the Central Ring languages which include Men, Kom, Bum, Babanki and Kuo. Voorhoeve
(1976) groups this language with Kom since he thinks it is more closely related to the sub-group of Mbam-Nkam languages. Grimes (1996:209) holds that Ndemli is related to Tikar and Bandobo and that the language still needs to be surveyed. We thus realize that there is some controversy as far as the linguistic status of Ndemli is concerned.

As pointed out by Williamson (1971), Ndemli belongs to the Ring languages of the Western Grassfields Bantu because of some characteristics that this language exhibits. Richardson (1957) observes that the Ring languages have noun class prefixes and suffixes unknown in Bantu. Ndemli exhibits these characteristics as seen in the presence of class suffixes observed in class 10, class prefixes observed in classes 1, 2, 7, 14 and 19. We also observe some morphological similarities between Ndemli and some Ring languages like Lamnso as seen below:

<table>
<thead>
<tr>
<th>Ndemli</th>
<th>Lamnso</th>
<th>Gloss</th>
</tr>
</thead>
<tbody>
<tr>
<td>tóŋ</td>
<td>tóŋ</td>
<td>navel</td>
</tr>
<tr>
<td>tím</td>
<td>tím</td>
<td>heart</td>
</tr>
<tr>
<td>tändá</td>
<td>tándá</td>
<td>chair</td>
</tr>
<tr>
<td>nyúŋ</td>
<td>nyúŋ</td>
<td>suck</td>
</tr>
<tr>
<td>ngóŋ</td>
<td>ngóŋ</td>
<td>termite</td>
</tr>
<tr>
<td>lómlí</td>
<td>lúmrí</td>
<td>to bite</td>
</tr>
<tr>
<td>kóŋli</td>
<td>kóŋ</td>
<td>spear</td>
</tr>
<tr>
<td>káŋli</td>
<td>káŋrí</td>
<td>to fry</td>
</tr>
<tr>
<td>káːrì</td>
<td>kár</td>
<td>head pad</td>
</tr>
</tbody>
</table>

The presence of suffixes constitutes a piece of evidence that this language does not belong to the Mbam-Mkam sub-group since one of the main characteristics of the Mbam-Nkam languages is the absence of such nominal prefixes.

Finally, what is certain about this language is the fact that it belongs to the Grassfields Bantu languages. What is the bone of contention is the subgoup to which it belongs. However, from the reasons given above, we propose that Ndemli
may belong to the Ring languages of the Western Grassfields sub-group. Considering the above discussion, therefore, we propose that the linguistic classification of Ndemli is as follows:

Niger Kordofanian
   ↓
   Niger Congo
   ↓
   Benue Congo
   ↓
   Bantoid
   ↓
   Grassfields
   ↓
   Ring
   ↓
   Ndemli

1.4. Literature review

A review of the literature on Ndemli shows the language as one of the less exploited languages of the Littoral province of Cameroon. Texts like the Niger-Congo Languages (edited by John Bendor-Samuel, 1989) and languages of the world (ed. Barbara F., 1996) indicate that Ndemli is one of the languages that still needs to be surveyed. What we got from texts is just an attempt to classify this language linguistically as seen in ALICAM (1983) where the language is classified in Zone 5 (500), that is in the group of languages of Guthrie's A43 languages. Here, it is located at the outskirts of the Grassfields Bantu languages and the classical Bantu of Zone A and the Bantu of Mbam. Kay Williamson (1971) includes it among
the Grassfields Bantu and proposes that it is closely related to the Central Ring languages which are Men, Kom, Bum, Babanki, and Kuo. Lastly, Voorhoeve (1980) groups Ndemli with Kom as he thinks that it is more closely related to the sub-group of Mham-Nkam languages.

Apart from the attempts made to classify the language, the only written material on Ndemli is the doctoral project of Manga Blaise Désiré and a series of papers by Ngessimo M. Mutaka on this language.

Manga Blaise Désiré in his doctoral Project titled "Phonologie et Morphologie du Ndemli", University of Yaoundé, 1987, attempts a classification of this language into the Grassfields Bantu language group. He explains that the language may belong to this group because of its characteristics that are similar to the languages of the Western Grassfields Bantu which are the presence of class suffixes, the absence of a nasal prefix in classes 1, 3, 4, and 6. Blaise Manga Désiré however observes that the bone of contention lies its sub-grouping. He ends by proving the Bantu origin of Ndemli seen in his comparison of Ndemli to Duala and Basaa in order to bring out their similarities.

As far as the papers written on Ndemli by Ngessimo M. Mutaka are concerned, we have three of them. The paper titled "The interaction of Tonal Features in Yahassi" tries to account for the tones of Ndemli. In his paper, Mutaka looks at the tone in nominal and infinitive forms as well as tonal features in the verb structure. The second paper on Ndemli by the same author is titled "Conflicting effects of language contact in Ndemli, Cameroonian minority language." Here, Mutaka states the importance of minority, the phonological sounds of Ndemli, Ndemli nominal class system, the conjugation of some verbs and finally, he proposes a minimal program likely to spur further development for this language. The last paper written by Mutaka on this language is "Preliminary Report on Ndemli". This paper agrees with Blaise Manga Désiré's proposal that Ndemli belongs to the western Grassfields group. It gives the nominal system of Ndemli, looks at some derived nouns, a sample of verbs in the language, phrasal constructions, and attempts to disclose vestiges of verbal suffixal extensions. He
further proposes a list of around 1,200 words (not printed yet) but typescripted for the Berkeley database of wordlists on African languages called CBOLD.

1.5. Aim of Work.

In this modern world, our African native languages run the risk of disappearing progressively as people become more interested in official and international languages. It is thus important to ensure the survival of these languages which are mostly oral by codifying them especially as we consider language as an important means of expressing culture.

By coming up with a sketch outline of the Phonology of Ndemli, we are contributing to the progress of the description of our national languages. This work thus lays a foundation for more detailed and exciting studies which may help to further bring out the grammar of the language. This language is very rich morphologically, tonologically and syntactically and there is thus a need for work to be carried out in these areas which are still unexploited. Finally, it is hoped that this work will not only make the Baridem people aware of the fact that their language can be written but will also make it possible for this language to be compared with other related languages.

1.6. Methodology

This work focuses on the phonology of Ndemli. We have thus used two linguistic theories: the descriptive and the generative approaches. The descriptive approach has been used to describe the sounds of this language as well as the nouns and verbs. However, to account for the irregularities noticed in this description, the generative approach has been used.

In order to carry out this study, a corpus of about 1,200 words has been used. Data have been collected from native speakers and cross checked with literate
Ndemli informants around Yaounde. The data collected have been analysed to show the phonology of the language.

In addition to the corpus of about 1,200 words, a substantial number of phrases were also used in order to realize this work. The informants contacted in Yaounde are native speakers of Ndemli who are both young and old, educated and uneducated. These informants are:

Mme Bessack Cécile née Ayika Cécile 50 years old
Mme Tchoya Elisabeth 55 years old
Ms. Moni Bessack Marie Louise 40 years old
Ms Ballong Bessack Catherine 32 years old

1.7. Outline of the work

This work will be divided into five chapters for the logical presentation of facts, orderliness and also to facilitate reading and understanding.

Chapter one is the general introduction to this work. It thus gives us the geographical, historical and linguistic location of Bandem and its language (Ndemli). This chapter also introduces the methodology used in this work, the literature review and the aim of the work.

The second chapter focuses on the consonants and vowels of Ndemli. It also presents the phonetic and phonemic charts of this language.

In chapter three, we take a look at the noun class system of Ndemli. It is presented with the demonstrative “this”, the possessive “my”, the associative “of” and the subject marker “he” to see if they can better differentiate the various classes.

The syllable structure of nouns is discussed in chapter four. Here, we also look at the contrastive tonal patterns in noun roots, the phonological processes within derived and non-derived nouns. The outcome of these phonological processes is also presented in this chapter.
Chapter five, which is the last chapter of this work, deals with the lexical tone on verbs and conjugation. In this chapter, we examine the morphological and syllable structure of verbs. We also look at the phonological processes on phrasal constructions as well as the conjugation of some verbs in some tenses.

Finally, we present the general conclusion which is the last section of the work. Finding and recommendations for further research as well as interesting ideas discovered in the work are highlighted here.
Chapter 2

Ndemli phonetic and phonemic charts

2.0. Introduction.

Ndemli like any language makes use of consonants and vowels in the formation of words. After collecting and analysing these data, we came up with an alphabet of the language. We also realised that Ndemli makes use of both phonetic and phonemic sounds as will be seen in this chapter.

2.1. The alphabet of Ndemli.

After analysing the data collected, we came up with the following alphabet of the language: b, c, d, f, g, h, k, l, m, n, p, r, s, t, w, y, η, ηk, ηg, nt, nd, ts, tʃ, dʒ, p, mb, y, ?, ηj, a, i, ε, e, o, ɔ, u, u, i.

2.1.1. Phonetic consonant chart.

Ndemli uses thirty-one consonants. These consonants occupy various positions in words. Consonants which occupy word initial position include:

<table>
<thead>
<tr>
<th>Consonant</th>
<th>Word</th>
</tr>
</thead>
<tbody>
<tr>
<td>(1) b</td>
<td>bà?lí</td>
</tr>
<tr>
<td>c</td>
<td>cà?</td>
</tr>
<tr>
<td>d</td>
<td>dú</td>
</tr>
<tr>
<td>f</td>
<td>fím</td>
</tr>
<tr>
<td>g</td>
<td>gwàndà</td>
</tr>
<tr>
<td>h</td>
<td>fùhùrì</td>
</tr>
<tr>
<td>j</td>
<td>jɛː</td>
</tr>
<tr>
<td>k</td>
<td>kàp</td>
</tr>
<tr>
<td>Consonants</td>
<td>Examples</td>
</tr>
<tr>
<td>------------</td>
<td>----------</td>
</tr>
<tr>
<td>l lâli</td>
<td>voice</td>
</tr>
<tr>
<td>m mà: nà</td>
<td>chief</td>
</tr>
<tr>
<td>n nãmbí</td>
<td>grass</td>
</tr>
<tr>
<td>p põmãlî</td>
<td>orange</td>
</tr>
<tr>
<td>s sãnà</td>
<td>rat</td>
</tr>
<tr>
<td>t tám</td>
<td>hole</td>
</tr>
<tr>
<td>w wè</td>
<td>person</td>
</tr>
<tr>
<td>y yó:</td>
<td>yesterday</td>
</tr>
<tr>
<td>ñ jàñ</td>
<td>party</td>
</tr>
<tr>
<td>ñg ñgilà</td>
<td>lion</td>
</tr>
<tr>
<td>nt ntò?</td>
<td>fist</td>
</tr>
<tr>
<td>nd ndà</td>
<td>house</td>
</tr>
<tr>
<td>ts tsì:</td>
<td>louse</td>
</tr>
<tr>
<td>dʒ, dʒ,wi</td>
<td>cold</td>
</tr>
<tr>
<td>j jàyà</td>
<td>cow</td>
</tr>
<tr>
<td>mb mbɔrì</td>
<td>cloth</td>
</tr>
<tr>
<td>nj njò</td>
<td>debt</td>
</tr>
</tbody>
</table>

Consonants like \( y \) and \( ? \) do not occupy the initial position as seen above.

Consonants which occupy the final positions in words are those exemplified below:

(2) kòb -b cup
ndông -g laziness
ndõndõk -k needle
àfāh -h spider
bõm -m egg
cícín -n tomorrow
bàjọŋ -ŋ slave
álá:cod? -? lizard
cọp -p tiger
àkọt -t squirrel

The consonants which occupy the medial position are exemplified in the following forms:

(3) b: ábọ dog
c: ácọsì sower
d: dịdụ? sweat
f: àfah spider
g: bọgá place
j: ájí stick
k: ákọt squirrel
l: álọ arrow
m: cịmá blood
mb: àmbá? knife
n: ánụ bird
nd: bọndi breast
ŋ: sọŋə grave
ŋk: bàŋkọlọ room
ŋg: bàngà word
r: bűrị mat
s: àsị hare
t: àtúm cane
y: mbeyè load
y: nyàyà cow
?: ewe?ẹ́rí beard
ny: kikọnyí millipede
From the above, we see that the consonants are made up of both voiced and voiceless sounds. We have plosives, fricatives, affricates, nasals, rolls, glides, pre-nasalized stops and approximants. This combination thus gives us the following chart:

The Phonetic consonant chart of Ndemli

<table>
<thead>
<tr>
<th>Place of articulation</th>
<th>Bilabial</th>
<th>Labial</th>
<th>Dental</th>
<th>Palato</th>
<th>Palatal</th>
<th>Velar</th>
<th>Glottal</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>dental</td>
<td>alveolar</td>
<td>alveolar</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>p</td>
<td>t</td>
<td>e</td>
<td>k</td>
<td>?</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>b</td>
<td>d</td>
<td>j</td>
<td>g</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fricatives</td>
<td>f</td>
<td>s</td>
<td></td>
<td>h</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Vd</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Affricates</td>
<td>ts</td>
<td>tf</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Vd</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nasals</td>
<td>Vd</td>
<td>m</td>
<td>n</td>
<td>j(ny)</td>
<td>η</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pre-nasalised</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Stops</td>
<td>Vl</td>
<td>nt</td>
<td></td>
<td>ηk</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Vd</td>
<td>mb</td>
<td>nd</td>
<td>nj</td>
<td>ηg</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lateral</td>
<td>Vd</td>
<td>l</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Roll</td>
<td>Vd</td>
<td>r</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Glides</td>
<td>Vd</td>
<td>w</td>
<td></td>
<td>y</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

2.1.2. The phonetic vowel chart

Ndemli makes use of ten vowels. We will look at these vowels at various positions in words.

(4) a: ábò  dog
     i: fifí  whole
i: ḳǐŋ=None
ε: ḻe=person
ε: ḳǎmbèli=chameleon
ɔ: ɤlf=foot
ɔ: ɡ̊lf=spear
u: ɦhù=bone
u: ɦu=eye
ø: c officer=salt

These vowels are presented on a chart as seen below:

```
 i  i  u  u
 e  ø  o
 e  ø  a
```

The vowel i does not appear underlyingly. It is derived by a rule which will be made clear later.

2.2. Phonemic consonant and vowel charts

After looking at the consonant and vowel charts which exist at the phonetic level, we will now observe them at the phonemic level, that is, at the underlying level.

2.2.1. The phonemic consonant chart.

From an examination of the data collected, we assume that all phonetic consonants appear at the phonemic level but for the glide “w” and “y” which are derived by rule in certain contexts, as will be made clear later. We assume that all the consonants appear at the phonemic level.
because we did not observe any cases of complementary distributions. In the cases where the glides are not underlying, they derive from the vowels "i" and "u" which devocalize to form the glide "y" or "w" as seen in this rule:

\[ V \rightarrow -\text{cons} / -\text{syll} \]

With the exception of the glides "w" and "y" therefore, the phonemic consonant chart will be as follows:

**The Phonemic consonant chart of Ndemli**

<table>
<thead>
<tr>
<th>Place of articulation</th>
<th>Bilabial</th>
<th>Labio-velar</th>
<th>Dental</th>
<th>Palato-alveolar</th>
<th>Palato-velar</th>
<th>Velar</th>
<th>Glottal</th>
</tr>
</thead>
<tbody>
<tr>
<td>Manner of articulation</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Plosives VI</td>
<td>p</td>
<td>t</td>
<td>c</td>
<td>k</td>
<td>?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Vd</td>
<td>b</td>
<td>d</td>
<td>j</td>
<td>g</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fricatives VI</td>
<td>f</td>
<td>s</td>
<td></td>
<td></td>
<td></td>
<td>h</td>
<td></td>
</tr>
<tr>
<td>Vd</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Affricates VI</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Vd</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nasals Vd</td>
<td>m</td>
<td>n</td>
<td></td>
<td>p(ny)</td>
<td>η</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pre-nasalised</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Stops VI</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>ηk</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Vd</td>
<td>mb</td>
<td>nd</td>
<td></td>
<td>nj</td>
<td>ηg</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lateral Vd</td>
<td>l</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Roll Vd</td>
<td>r</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Glides Vd</td>
<td>w</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>y</td>
</tr>
</tbody>
</table>
2.2.2. The phonemic vowel chart

As earlier said, Ndemli makes use of ten vowels at the phonetic level but at the phonemic level, “i” does not appear; it is derived by a rule as suggested by the following examples:

(5) a. nginj  season
    jinj  ground
    bàhùnj  earthenware

b. bàblí  wing
    ãjí  stick
    fùhùdí  feather

We observe from the above examples in (a) that “i” occurs before a velar nasal. We therefore propose that it is an allophone of the front high vowel “i” and that it is obtained by the following rule:

\[ i \rightarrow i / - - + \text{nasal} \]
\[ + \text{back} \]

The phonemic vowel chart is therefore

\[
\begin{array}{c}
\text{u} \\
\text{u} \\
\text{o} \\
\text{ø} \\
\text{ø} \\
\text{ø}
\end{array}
\]

We should also note that Ndemli makes use of vowel length as seen in these examples:
(6) a. bó:  tired
    bó  arm
b. dū:  old
dū  mouth
c. ji:  tree
    ji  sufficient

2.3. *Ndemli* tones.

Like most African languages, *Ndemli* is a tone language. Tone therefore plays a distinctive role, that is, a change in tone may result in a change in meaning. Tone is the relative pitch of a vocal sound. This implies that tone is contrastive because sounds are produced at different pitches. In *Ndemli*, pitch is also contrastive as seen in these examples:

(7) a. fârl  thigh
    fârl̩  diarrhea
b. fâmbó :palm
    fâmbó  blow, slap
c. fọ  tortoise
    fọ  cold

*Ndemli* is an underlyingly two-tone language, namely the high (H) and the low (L) tones. Although we find other tones like the mid (M) and contour tones at the phonetic level.

2.3.1. Phonetic Tone chart
At the phonetic level, Ndemli makes use of the following five tones which are found on the words below:

**Level tones:**

(8) High tone (H)  
-  dá  mouth

Mid tone (M)  
-  á-lò  arrow

Low tone (L)  
-  á-bò  dog

**Contour tones:**

Falling tone (HL)  
-  kwè  sky

Rising tone (LH)  
-  ñgwè  pig

The above can be summarized in the chart below:

The five phonetic tones in Ndemli are represented in the above chart where ̈ represents the high tone, ̇ represents the mid tone, \ represents the low tone, 〈 represents the falling tone, 〉 represents the rising tone.

2.3 Phonemic tone chart

The contour tones in Ndemli are derived at the phonetic level from floating tones docking to the following tone bearing unit. These floating tones come from vowels which devocalize into glides leaving their tones. The words below bear contour tones:

(9) cwè  
-  sun

kwè  
-  to lock

ñgwè  
-  larynx

ñgwàndà  
-  door
A number of mid tones in Ndemli are realized through default tone rules. They are therefore the default tones which are placed on vowels which are underlyingly toneless and on which no tone spreads from adjacent vowels. Like Mutaka (1994), we assume that the mid tones are derived from a combination of the features

\[
\begin{bmatrix}
\text{+upper} \\
\text{-raised}
\end{bmatrix}
\text{ or }
\begin{bmatrix}
\text{-upper} \\
\text{+ raised}
\end{bmatrix}
\]

We thus assume that tone in Ndemli is the combination of two features [Raised] and [Upper]. In combining the values of these features, we have the following tones:

\[
\begin{array}{cccc}
\begin{bmatrix}
\text{+R} \\
\text{+U}
\end{bmatrix} & \begin{bmatrix}
\text{+R} \\
\text{-U}
\end{bmatrix} & \begin{bmatrix}
\text{-R} \\
\text{+U}
\end{bmatrix} & \begin{bmatrix}
\text{-R} \\
\text{-U}
\end{bmatrix} \\
\text{H} & \text{M} & \text{M} & \text{L}
\end{array}
\]

In this work, we will show that mid tones are a combination of the features

\[
\begin{bmatrix}
\text{+upper} \\
\text{-raised}
\end{bmatrix}
\text{ or }
\begin{bmatrix}
\text{-upper} \\
\text{+ raised}
\end{bmatrix}
\]

The examples below are words with mid tones:

(10) címá    blood
díndí    name
bűrĩ    mat
bindí    breast
Chapter 3: The Noun Class System of Ndemi

3.0. Introduction

Nouns in Bantu languages have always been grouped into particular classes because of the fact that they possess identical prefixes (Mutaka and Tamanji 1995). The Ndemi noun class system is difficult to establish because when the nouns are combined with the possessive "my", the demonstrative "this", the associative marker "of" (in NOUN of NOUN), and the subject marker "he/she/it", we do not notice any changes. It is thus difficult to classify nouns into various classes on this basis.

Ndemi is a Bantu language and is thus a noun class language. It is therefore important to represent the noun class system of this language. By combining nouns with the possessive, the demonstrative, the associative and the attributive, we did not come up with any changes to help us classify the nouns into various classes. We were therefore obliged to classify these nouns considering the prefixes, suffixes and similarity to other noun class systems of other Bantu languages like Lamnso, Kom.

We came up with nine noun classes for Ndemi. These are: 1, 2, 7, 9, 10, 14, 16, 19.

3.1. Table of Ndemi noun class system

<table>
<thead>
<tr>
<th>Class</th>
<th>Prefix</th>
<th>Suffix</th>
<th>Example</th>
<th>Gloss</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>a-</td>
<td></td>
<td>á-binjàn</td>
<td>dancer</td>
</tr>
<tr>
<td>2</td>
<td>ba-</td>
<td></td>
<td>bà-binjàn</td>
<td>dancers</td>
</tr>
<tr>
<td>7</td>
<td>a-</td>
<td></td>
<td>à-mbà?</td>
<td>knife</td>
</tr>
<tr>
<td>9</td>
<td>Ø-</td>
<td></td>
<td>sọg</td>
<td>tooth</td>
</tr>
<tr>
<td>10</td>
<td>-bi</td>
<td></td>
<td>sọg-bi</td>
<td>teeth</td>
</tr>
</tbody>
</table>
3.2. The various noun classes of Ndemli

Here, we will look at the various noun classes that we have been able to come up with in Ndemli. It is worth noting that we considered the prefixes, the suffixes and the nature of the noun class systems of neighbouring languages to help us distinguish and establish these noun classes.

3.2.1. Noun class one.

This noun class is made up of mostly personal nouns. Words which belong to this class have the prefix “a-” as seen in the following examples.

\begin{itemize}
  \item á-bínjāŋ dancer
  \item á-nólō? drinker
  \item á-cōsī sower
  \item á-kūrī tale teller
\end{itemize}

3.2.2. Noun class two

Noun class two is the plural for class one. The following are the plural forms of the words above.

\begin{itemize}
  \item bō- bó-mbā? knives
  \item a- á-nò there
  \item ku- kū-èndà on the house
  \item si- sī-sā here, down here
\end{itemize}
bà-bínjáŋ  dancers
bà-nóló?  drinkers
bà-càsi  sowers
bà-kùrì  tale tellers

The prefix for class two is “ba-“ as seen above.

3.2.3. Noun class seven

It is a class for nouns with a singular “a-“ prefix. This is a class for animates and some inanimate nouns as seen in the examples below.

á-nù:  bird
á-fâh  spider
á-mbà?  knife
á-jí  stick

As pointed out by Williamson (1989), “a-“ is the class marker for class seven in some Grassfield languages like Kom as seen in á-báyn “fufu”. It is also worth noting that relics of an “a-“ prefix instead of “ki-“ are found as the noun prefix of class seven in all Mbam-Nkam and some Ring and Beboid (Noni), as well as some Bantu Zone A languages (Mutaka and Tamanji, 1995).

3.2.4. Noun class nine

This is a singular class for class ten. It is a zero prefix class. We classified nouns into this class because in some Bantu languages Ø- prefix may be the marker for class nine as is the case with Lamnso where we have
The examples of nouns which belong to this class in Ndembé are:

- wúm: egg
- sǒŋ: tooth
- tǔ́?: potato

Note that this class is made up of basically inanimate nouns.

3.2.5. Noun class ten.

Nouns which belong to class ten have the suffix "-bi”. It is a plural for class nine. Examples include:

- wán-bí: roots
- jú:-bí: trees
- sǒŋ-bí: teeths
- tón-bí: navels
- bámhò-bí: heels
- bàblí-bí: wings
- bό-bí: arms
- bón-bí: eggs
It is important to mention here that most Bantu languages do not often have suffixes in their class system. However, if there are any, they are found in class ten as in Lamnso and Kom where we have “-si” and “-si” respectively. Examples of nouns in Lamnso which belong to this class are:

wúm-sí eggs
sóp-sí teeth
tú?-sí potatoes

3.2.6. Noun class fourteen

This is a plural class. It is thus the plural for class seven and contains both animate and some inanimate nouns. These nouns have a prefix “bó” as seen below:

bó-fáh spider
bó-mbà? knives
bó-jí sticks
bó-nù birds

In Proto-Bantu, following Meeussen’s (1967) classification as stated in Mutaka and Tamanji (1995), “bu-” is the class prefix for class fourteen. Since some Bantu languages have “bu-“ as the prefix as observed by Meeussen, we can thus assume that the “u” of this prefix may have changed to “ó” or “o” thus giving the prefix we have for Ndemli above.
3.2.7. Noun class sixteen.

This is a noun class for locatives as seen in the following example:

á-nò there

The prefix for this class which is “pa-“ in Proto-Bantu is not a basic prefix. It however appears in the concordial system. An example of a Bantu language with this prefix is Swahili as in

pa-le there, at that place
(cf. ku-le (cl 17) there
    mu-le (cl 18) there (in there)

3.2.8. Noun class seventeen

It is also a class for locatives. In Meeussen’s classification, the prefix for this class is “ku-“. In Ndemli, we have the word “ku-e-nda” (on the house). As of now, we do not know what “e” in ku-e-nda represents but “nda” is “house”. Another Bantu language which has this prefix is Swahili as in

ku-le there (cf. ku-nyumba “on the house”)

3.2.9. Noun class nineteen

This class has the prefix “si-“ in Ndemli. Examples include:

si-sá here
si-sè under
si-sí many
Note that other Bantu languages have "fi-" (the Proto-Bantu "pi-") as the prefix for this class as seen in Kom where we have "fi-" observed in fi-tám "guava".

We will take sample nouns from some classes and combine them with the possessive "my", the demonstrative "this", the associative "of", the subject marker "he/she/it", the attributive to show that no changes are observed that can indicate the various noun classes. This is illustrated on the tables below:

<table>
<thead>
<tr>
<th>Word</th>
<th>Gloss</th>
<th>Possessive</th>
<th>Demonstrative</th>
<th>Associative</th>
</tr>
</thead>
<tbody>
<tr>
<td>á-bínjâŋ</td>
<td>dancer</td>
<td>yèm á-bínjâŋ</td>
<td>á-bínjâŋ lè</td>
<td>á-bínjâŋ yi</td>
</tr>
<tr>
<td>bà-bínjâŋ</td>
<td>dancers</td>
<td>yèm bà-bínjâŋ</td>
<td>bà-bínjâŋ lè</td>
<td>bà-bínjâŋ yi</td>
</tr>
<tr>
<td>wãŋ</td>
<td>root</td>
<td>yèm wãŋ</td>
<td>wãŋ lè</td>
<td>wãŋ yi</td>
</tr>
<tr>
<td>wãŋ-ô</td>
<td>roots</td>
<td>yèm wãŋ-ô</td>
<td>wãŋ-ô lè</td>
<td>wãŋ-ô yi</td>
</tr>
<tr>
<td>á-nû:</td>
<td>bird</td>
<td>yèm á-nû:</td>
<td>á-nû: lè</td>
<td>á-nû: yi</td>
</tr>
<tr>
<td>bô-nû:</td>
<td>birds</td>
<td>yèm bô-nû:</td>
<td>bô-nû: lè</td>
<td>bô-nû: yi</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Class</th>
<th>Word</th>
<th>Gloss</th>
<th>subject marker</th>
<th>the attributive marker</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>á-bínjâŋ</td>
<td>dancer</td>
<td>á-bínjâŋ mbi</td>
<td>á-bínjâŋ lêmi the dancer a big dancer dances</td>
</tr>
<tr>
<td>2</td>
<td>bà-bínjâŋ</td>
<td>dancers</td>
<td>bà-bínjâŋ bìbì</td>
<td>bà-bínjâŋ lêmi the dancers the big dance dancers</td>
</tr>
<tr>
<td>9</td>
<td>wãŋ</td>
<td>root</td>
<td>wãŋ bì</td>
<td>wãŋ lêmi</td>
</tr>
<tr>
<td></td>
<td>noun class</td>
<td></td>
<td>noun class</td>
<td></td>
</tr>
<tr>
<td>---</td>
<td>------------</td>
<td>---</td>
<td>------------</td>
<td>---</td>
</tr>
<tr>
<td>10</td>
<td>wáŋ-bí</td>
<td>roots</td>
<td>wáŋ-bí bí-bí</td>
<td>wáŋ-bí lěmí</td>
</tr>
<tr>
<td>7</td>
<td>á-nù:</td>
<td>bird</td>
<td>á-nù: bíi</td>
<td>á-nù: lěmí</td>
</tr>
<tr>
<td>14</td>
<td>bó-nù:</td>
<td>birds</td>
<td>bó-nù: bíi</td>
<td>bó-nù: lěmí</td>
</tr>
</tbody>
</table>

The above examples show that no matter the class to which the noun belongs, when combined with the possessive, the possessive marker “my” remains “yěm”, the subject marker “he/she/it/they” and the attributive (here the qualifying adjective “big”) do not also change. The use of the possessive, the demonstrative, the associative, the attributive and the subject marker cannot thus help us to associate nouns to specific classes in Ndemlí, unlike what is usually done in other Bantu languages.

### 3.3. Genders

A gender is formed when a singular and a plural noun class pair up. We came up with nine noun classes in Ndemlí. These noun classes consist of three singular and three plural classes with three other classes which are neutral forms. The singular and plural classes pair up to form three major genders. These include:

---

1 The nasal in the form mbil “dances” in ähltjág mbil (the dancer dances) seems to be marginal. We asked Catherine to repeat this word twice, and we had the impression that she was producing that nasal when the preceding word ends in a nasal. When we asked to repeat the two words separately, she pronounced [bil] for the form “dances”.

---

1 The nasal in the form mbil “dances” in ältjág mbil (the dancer dances) seems to be marginal. We asked Catherine to repeat this word twice, and we had the impression that she was producing that nasal when the preceding word ends in a nasal. When we asked to repeat the two words separately, she pronounced [bil] for the form “dances”.
3.3.1. Gender 1 / 2

Nouns in this gender contain mostly human nouns. Examples of such nouns are:

á-bínjàn / bà-bínjàn / dancer / dancers
jé / bà-jé / woman / women
á-nölò? / bà-nölò? / drinker / drinkers
á-còsì / bà-còsì / sower / sowers

3.3.2. Gender 7 / 14

In this gender, the nouns do not belong to any semantic group. It contains both animate and inanimate nouns like:

á-nù: / bó-nù: / bird / birds
à-jì / bó- jì / stick / sticks
à-fàh / bó-fàh / spider / spiders
à-mbà? / bó-mbà? / knife / knives

3.3.3. Gender 9 / 10

This gender contains assorted nouns and examples include:

wáŋ / wáŋ-bí / root / roots
jú: / jú-bí / tree / trees
bàblí / bàblí-bí / wing / wings
sōŋ / sōŋ-bí / tooth / teeth
bó / bó-bí / arm / arms
bóm / bóm-bí / egg / eggs
3.3.4. Gender 16

This is a gender which is alone. In fact, we found only one single noun to illustrate this class and it is the adverb “there”. This can thus be considered as a vestige of class 16 that no longer exists, productively, in Ndemli.

3.3.5. Gender 17

Gender 17, like gender 16, contains locatives. Here also, we have this single example from our data to illustrate this class:

kuenda “on the house”

3.3.6. Gender 19

It is also a locative. It includes the following forms:

si-sá  here
si-sè  under

The table of Ndemli noun class system presented earlier was obtained from the above analysis.
Chapter Four

Lexical Tone on Nouns.

4.0. Introduction.

Lexical tones are tones that can help distinguish meaning in segmentally identical words. Pike (1948) describes tone as relative pitch level. If pitch is lexical, it therefore implies that it brings about change in meaning.

Ndemli has two underlying tones which are mainly the High (H) and the Low (L) tones. To see how these tones bring about a change in meaning, we will contrast them in segmentally identical words. Consider the following minimal pairs:

(1) a. bàhà saucepan
    bàhá side
 b. bùú sheep
    bùù goat
 c. cáʔ bundle
    cáʔ salt
 d. fáʔi thigh
    fáʔi diarrhea
 e. fó cold
    fó tortoise
 f. fú empty
    fù blind

We clearly see from the above examples that tones in Ndemli play a lexical role since a change in tone results in a change in meaning. We
also realize that, although contour tones are derived from rules which will be discussed later, they are also contrastive at the surface level. Examples of a contrastive contour tone in Ndemli include:

(2) bò  wild
    bò  old

It is also quite interesting to point out that this language also has words which are segmentally and tonologically identical but differ in meaning. When we come across such cases, it is now the context that determines which particular word the speaker is actually referring to. Here are some examples of such words:

(3) a. bàhá      side
    bàhá      pot
b. bò:?       canoe
    bò:?      mortar
c. bùŋ        arm
    bùŋ       brown, red
d. hú         eye
    hú         grain
e. kú         corpse
    kú         death
f. lwè        bitter
    lwè       poison
g. nàmbí      grass
    nàmbí     garbage

The above illustrations show that context is contrastive.
4.1 Morphological structure of nouns.

The noun structure of Ndemli is very complicated. Some nouns consist of a prefix and a root but others have no prefixes. The nouns that consist of a prefix and a root are those which belong to class 1, 7. These particular nouns form their plural in class 2 with the prefix “ba-” or class 14 with the prefix “bo-” or “bo-”.

Having in mind that nouns in this language consist of two types, those with a prefix and those which have a zero prefix, considering the fact that they are made up of morphemes, we will define what a morpheme is. We will also look at the various morpheme structures in this language.

According to Pike (1947), a morpheme is a grammatically indivisible word or the smallest meaningful part of a word. These morphemes then come together to form words.

4.1.1. Monosyllabic morphemes.

In Ndemli, monosyllabic morphemes can present the following structure: V-CV, V-CVC for those with the prefix; and CV, CVC for those without prefixes. We will be separating syllables with dots in this work to ease understanding.

(4) i. Monosyllabic words with a prefix

a. V-CV

á-bò  dog
á-nù:  bird
á-ngwà  young girl
à-jì  stick
à-sì  hare
à-yì  denial
b. V-CV

á-fàŋ  passage
á-kòt  squirrel
á-mbòm  small
á-fâh  spider
á-mbá?  knife
á-túm  cane

ii. Monosyllabic words without a prefix.

a. CV

bá  millet
bé  hole
bó  arm
cé  basket
jè:  woman
jò:  bee
hò  foot
bù  mouth

b. CVC

báh  sour
bèh  iron
bóm  egg
bùŋ  red
bò?:  canoe
càm  testicle
jàŋ  party

From the above examples, we realize that monosyllabic morphemes have four structures: V-CV and V-CVC structures for those with a prefix and CV and CVC for those without a prefix.
4.1.2. Disyllabic morphemes

The data below present the disyllabic morpheme structure of Ndemli. This consists of two structures: the V-CV-CV and V-CV-CVC.

(5) a. V-CV-CV
   á-cɔ.si   sower
   á-kù.ri   tale teller.
   b. V-CV-CVC
   á-bí.njàŋ  dancer
   á-nó.lòʔ  drinker
   á-ló.mìn  brother-in-law

From the data above, we see that disyllabic morphemes have two structures.

4.1.3. Trisyllabic morphemes

Trisyllabic morphemes are mostly compound words which display two types of structures as seen below:

(6) a. V-CV.CV.CV
    á-hó.mi.ndì    stoop
    á-ŋgwá.pwā.jé   his sister

    b. V-CV-CV-CVC
    á-ŋgwá.pwā.lùm  his brother
The above data show two structures of trisyllabic compound morphemes.

4.2. Syllable structure of noun roots.

According to Wieseman et al. (1988), a syllable is a tone bearing unit. This definition suggests that each tone bearing unit should be considered as the nucleus of a syllable. The Oxford Desk Dictionary also defines a syllable as a unit of pronunciation forming the whole or part of a word and usually having one vowel sound. This suggests that the vowel is the peak of a syllable.

Another definition of a syllable proposed by phonologists is that a syllable consists of the following parts:
- the onset which is made up of a consonant
- the peak or nucleus made up of a vowel or a syllabic nasal “nd”
- the coda made up of a consonant (Pike 1947).

Considering these three definitions of a syllable, one can say that a syllable consists of a peak and a coda which make up its most important components and an onset which is optional. The structure of the syllable is thus (C ) V (C ) where the element between parentheses is optional.

Each language has its own unique syllable structure although it may be identical to that of other languages. It is important that when morphemes are combined to form words, the syllable structure should not be altered. However, if there are any alterations in the syllable structure, then phonological rules may be applied to re-instate the altered syllable structure.

Ndemli has its own unique syllable structure like any other language. This consists of four syllable types. Thus Ndemli is rich in syllable structure. The data examined below will reveal the four types of syllable structure found in the language.
4.2.1 The V-syllable type

The “V” stands for a vowel. As earlier said, Ndemli has a prefix “a” which marks some particular noun classes (classes 1, 7) and this prefix has its plural in classes 2 and 14. The only vowel which occupied this position is “a”. Consider the following examples:

(8) á-nü: bird
    à-sí  hare
    à-yí  denial
    á-bò  dog
    à-má  my mother

From the above examples, we realize that the prefix “a” or the “V-” carries both the high and low tones and is followed by any consonant.

4.2.2. The CV syllable type.

The “CV” stands for a consonant and a vowel. We thus have a consonant followed by a vowel. This syllable type occurs at word initial position as a prefix which marks the plural of words which belong to noun classes 1, 7. It also occurs as a root word initially, medially and word finally. This is clearly seen in the examples below:

(9) CV-
    bó-nü: birds
    bō-jī  sticks
    bó-lō  arrows
    bá-jè  women
We notice that in Ndemli when the CV- occurs as a prefix, the consonant must be "b", that is, the plosive "b" and the vowels must be "a", "o" and "ɔ".

Consider also the following forms where the CV is not a prefix.

**CV.CV**

- Ṣàrì diarrhea
- Fe.bɔ fingers
- Ci.má blood
- Bù.má umbrella
- Bò.sè descendant
- Bè.ní wound

**CV**

- Ḷọ: bee
- Hò foot
- Fé viper
- Cè basket
- Bù mouth
- Bò arm

The examples above show that any consonant can occupy the C- position and any vowel can occupy the V- position.

4.2.3. The CVC syllable type

In this syllable type, the syllable begins with a consonant, followed by a vowel and then it ends with another consonant. The examples illustrate this.
The initial “C” in the CVC structure can be occupied by any consonant, the “V” by any vowel and the final “C” by consonants like b, g, k, h, m, n, ng, ?, p, and t.

4.2.4. The CVCVC syllable type

This syllable type is made up of a consonant followed by a vowel, then we have another consonant followed by a vowel and then the last consonant. Consider the examples below:

(11) CVCVC

bō.kə̃h   ➔   hyena
ká.nyə̃ŋ   ➔   bad
mbō.ŋə̃ŋ   ➔   pestle
si.sə̃ŋ   ➔   pepper
nyi.nyə̃ŋ   ➔   mosquito

We notice that in the above structure, the syllable begins with a consonant and ends with a consonant.
4.2.5. The CVCVCV and CVCVCVCV structures

As earlier said, Ndemli is very rich in syllable structure. We thus have words with three and four syllables. The examples below will help portray it.

The CV CV CV structure

(12) bâ.ŋkâ.łô  room
bè.hê.nî   pumpkin
bô.bi.dû   lips
fû.hu.ři   feather
kà.mbè.li  chameleon

Some trisyllabic morphemes are compound words as seen in these examples:

(13) a. á-hó.mi.ndî  stoop
    á-ŋgwâ.pwâ.jé  his sister.
    b. hû.hu.mbô  shoulder
       kû.hí.bó.jî  branch
       lû.?ún.dâ  playground

The above examples depict syllables which begin with any consonant and are followed by any vowel. Then another consonant comes and is followed by another vowel which is in turn followed by another consonant and vowel. The syllables begin with a consonant and end with a vowel.
4.3 Contrastive tonal patterns in noun roots

In this section, we will look at the various tonal patterns in Ndemli noun roots. Ndemli makes use of a variety of tonal patterns from one noun root to another. We will look at these tonal patterns on each type of noun root. The tones that are marked in this section are phonetic, not phonemic tones. The examples will be arranged in order according to each tonal pattern.

4.3.1. Monosyllabic root words.

The tones which appear on monosyllabic words vary. They include tones like high (H), low (L), mid (M), rising and falling tones. The rising and falling tones are realized by rules which we will explain later in the sections that follow. Below are examples of the various tonal patterns on monosyllabic root words arranged in order, following their patterns.

(14) High (H)  V

a. High tone monosyllabic root words with a prefix

à- jì  stick
à-má  my mother
à-sí  hare
à-fāh  spider
à-yí  denial

b. High tone monosyllabic root words without a prefix

búm  belly
bűŋ  red
fűh  white
(15) Low (L) \( \tilde{V} \)

a. Low tone monosyllabic root words with a prefix.
   - á-bò: dog
   - á-kòt: squirrel
   - á-nù: bird

b. Low tone monosyllabic root words without a prefix
   - fò: tortoise
   - jè: woman
   - wà: child
   - wè: person
   - sà: fire
   - fù: blind
   - càm: testicle
   - bò?: mortar
   - mbàh: maize
   - ñgì: season
   - tôp: mud
   - tsì: louse

(16) Mid (M) \( \tilde{V} \) Monosyllabic words

a. With a prefix
   - á-lò: arrow
   - á-mbà?: knife

b. Without a prefix
nyĩŋ  earth
sāː  hearth
yɔ́  yesterday
swē  elephant
dū  cold

(17) Contour tones on monosyllabic words: Falling tone ũ (HL)
dī  spirit
bō  old age
wō  who
yāh  our

(18) Rising tone ũ (LH)
jš  snake
mbōm  forehead
ŋgwí  pig
tūŋ  ear

4.3.2. Disyllabic root words.

(19) HH CV CV
bí. bí  fight
fō. ūf  axe
hō. īf  stone
kō. rō  fence
jí. bí  medication
hū. hū  bone
(20) LL CV CV
  cì.mà      blood
  hà.hà      fear
  lɔ.lɔ      duck
  mà.nà      chief
  ngi.là      lion
  sà.nì      rat

(21) MM CV CV
  kā.rī      pillow
  wē.ndī      journey
  mbī.bi    war

(22) HL CV CV
  hō.sì      horse
  kū.sè      ancestor
  kâ.nà      bean
  ngwá.hà    breast
  sò.pì       soap

(23) LH CV CV
  bà.ngá      word
  bû.gá      place
  di.dú      sweat
  jù.hó      broom
  ntò.bì      fists
  fɔ: .mò      eight
(24) HM CV CV
bē.nī  sore
bō.ūī  year
bū.rī  mat
fā.nāā  wall
tō. bi  leaf
lō. bi  honey

Other tonal patterns are difficult to come by in this language. They include LM, MH, and ML.

4.3.3. Trisyllabic Root words.

In this language, although it is difficult to find three identical tones in a trisyllabic word, they do exist. However, most often, we find trisyllabic nouns with mixed tones. The data below will justify the above statements.

(25) Trisyllabic nouns with identical tonal patterns.

<table>
<thead>
<tr>
<th>HHH  CV CV CV</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>lō. ng5.hōŋ</td>
<td>bright day</td>
</tr>
<tr>
<td>ŋi.nā. bi</td>
<td>strength</td>
</tr>
<tr>
<td>tō.hō.bi</td>
<td>witchcraft</td>
</tr>
</tbody>
</table>

We should note that the last high of these words is super high. That is, it is pronounced at a higher level which exceeds that with which the preceding highs are pronounced.

---

1 Most trisyllabic morphemes are compounds.
b. LLL CV CV CV

kl.ka.ha armpit
kò.hò.ni hill
kò.bà.ŋngàŋ crocodile

(26) Trisyllabic nouns with mixed tonal patterns.

a. HLL CV CV CV

má.ngò.nò mango
ŋgi.kò.hò wild pig
wá:.ŋgi.là cub (lion)

b. HHM CV CV CV

kú.má.bǐ foreigners
jú.hú.rfi feather
nyúŋ.bí.tō hairs

c. LLH

bè.hè.ní pumpkin
mi.kwi.bǐ prices

4.3.4. Quadrisyllabic root words.

We realize that, in Ndemli, most of the quadrisyllabic root words are compounds and have mixed tonal patterns as seen in the following examples.

(27) a. L H H L

nyà.mbǐ.kwè monkeys
The above examples show that Ndemli makes use of a variety of tonal patterns with monosyllabic and disyllabic noun roots being the most productive.

4.4. Phonological processes within non-derived nouns.

We earlier saw that Ndemli has two underlying tones. These are the high tone and the low tone. Other tones appear at the phonetic level because of phonological processes. These tones include the mid and the contour tones. The contour tones are derived from a process which is known as glide formation. This is a process whereby two vowels come into contact and one changes into a glide. The effect of the floating tone left by the changed vowel is felt on the following tone bearing unit. We also have another process known as vowel deletion which produces contour tones. This is a situation where a vowel is deleted and it leaves its tone floating. This floating tone docks onto the preceding tone bearing unit. We thus realize that contour tones in Ndemli are produced by two phonological processes: gliding and vowel deletion.
4.4.1. Glide formation

Gliding is the process whereby a high vowel devocalizes into a semi-vowel or semi-consonant. These semi-vowels or semi-consonants are called glides. When situations like this occur, the tone which was on the devocalized tone bearing unit becomes floating and ends up docking onto either the preceding or the following vowel. This results into contour tones which can be rising or falling. The examples below clearly illustrate this.

(28) a. ŋgwĩ pig  
  b. ŋgwɛ larynx  
  c. kwɛ lock  
  d. cwɛ sun  
  e. ŋgwândã door

To justify the above assertion we will do some derivations.

(29) a. ŋgwĩ pig

\[
\begin{array}{l}
\text{UR} & /\text{Ngui}/ \\
| | & LH \\
\text{Nasal assimilation} & ŋgui \\
& LH \\
\hline
V \rightarrow w/ --V & ŋgwĩ \\
+hi & | \\
& LH \\
\text{Tone docking:} & \hline
V \rightarrow V & ŋgwĩ \\
& | /| /| \\
& LH LH LH
\end{array}
\]
b. cwē sun

UR       /cue /
    ||
   HL
V→ w/ --V  cwe
+hi       |
   HL
Tone docking:
V → V      cwe
    /|
   HL HL HL
PR       [cwē]

c. kwē lock

UR       /kue /
    ||
   HL
V→ w/ --V  kwe
+hi       |
   HL
Tone docking:
V → V      kwe
    /|
   HL HL HL
PR       [kwē]
As seen in the above examples, when the vowel “u” devocalizes into a “w”, the tone remains floating and affects the next tone bearing unit, thus creating what is known as contour tones.

4.4.2. Vowel deletion

As time goes on, there is evolution in the Ndemli language. Certain vowels disappeared. These vowels that disappeared left behind their tones which affect the following vowels, that is, the following tone bearing units. This can be justified in the fact that old people still use the old forms and also by the fact that you hardly find a vowel sequence in Ndemli although some words still retain them like bå̀ “goat”, fée “viper”. These vowels which disappear leave their tones behind.

<table>
<thead>
<tr>
<th>Old form</th>
<th>New form</th>
<th>Gloss</th>
</tr>
</thead>
<tbody>
<tr>
<td>dïï</td>
<td>dï</td>
<td>spirit</td>
</tr>
<tr>
<td>túuŋ</td>
<td>tûŋ</td>
<td>ear</td>
</tr>
<tr>
<td>jôô</td>
<td>jô</td>
<td>snake</td>
</tr>
</tbody>
</table>

We will now carry the derivation to show how these vowels disappear and how their tones dock to the next tone bearing unit.
Tone docking

\[ V \rightarrow V \quad \text{tun} \quad \text{di} \]

<p>| | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>HL</td>
<td>HL</td>
<td>LH</td>
<td>HL²</td>
</tr>
<tr>
<td>PR</td>
<td>[tun]</td>
<td>[di]</td>
<td></td>
</tr>
</tbody>
</table>

The above derivations show that Ndemli is basically a two tone language, that is, the high and the low tones. The contour tones are realized phonetically because of phonological processes like gliding and vowel deletion.

4.4.3 Mid tones.

Like Mutaka (1994), we assume that tone is the combination of two features: Raised and Upper. In combining the values of these features, the following tones are obtained:

- Raised + Raised - Raised - Raised
- Raised + Upper - Upper + Upper

H M M L

In this sub-section, we will show that the mid tones are thus a combination of the features [+Upper -Raised] or [-Upper +Raised]. The examples below have mid tones.

(37) a. bíndí breast
    bóbmbí speech
    búrì mat

\(^2\) The rule of tone docking concerns any floating tone. It thus applies in both forms although this is not clearly indicated in the rule. In order to apply the rule correctly, one should reverse the position of HL and read it as LH for the first word tun.
Consider first the word for breast, i.e. "bindi". Assuming the analysis in Mutaka (1994), this form could be derived as follows:

bindi  
+U +U  
+R  
bindi  
+U  
+R  
bindi  
+U -U  
+R +R  
PR bindi  
H M

As for the word for blood, i.e. címá, the first syllable has no underlying tone. The second one is underlingly H, that is, [+Upper +Raised]. The first syllable will get the default features, that is, [+Raised -Upper], which correspond to a Mid tone. For details about the motivation of this analysis, see Mutaka (1994).

4.4.4. Vowel Reduction

There are some vowels in Ndemli that tend to be reduced. They do not come out clearly like other vowels which are more pronounced. These reduced vowels occur mostly towards the end of the word. In the illustration that follows, the reduced vowels are between parentheses.
The above phenomenon of reduced vowels shows the inconsistency of vowel reduction. This is because some vowels which occur in the same environment (after “h”) are not reduced like the others. This can be seen in the examples that follow:

(32) njàh(à) = scissors
      fòhò = storm
      kòh(à)bi

(33) tòhòobi = witchcraft
      tòhò = six
      nyúhàbì = pain

Thus, although most of the reduced vowels occur after “h”, there are some vowels which do not get reduced in the same environment as seen above.

4.5 Phonological processes within derived nouns.

Derived nouns are nouns which have been realized through derivational processes, that is, when morphemes are combined to form words. When this happens, the segments of neighbouring morphemes become joined and sometimes undergo changes. Changes also occur in environments other than those in which two morphemes come together. This is seen in word initial and word final position or simply because of the position they hold in a word (Sanford 1973). Nouns are usually derived from processes like reduplication, nominalization, and compounding. Ndemi makes use of nominalization and compounding in deriving nouns.
and this results in phonological and tonological changes in the derived words.

4.5.1. Nominalization.

Nominalization is a process whereby other classes of words such as verbs and adjectives change into nouns. For nominalization to take place in Ndemli, both verbs and adjectives undergo some phonological and morphological processes. Certain segments of the verbs and adjectives change. When these changes take place, the verb or adjective is now nominalized and is thus considered a noun and it performs the function of nouns. Consider the data below:

(34) Verbs     Gloss       Nominalization       Gloss
bîndî    to dance  ábînjânj  dancer
kûrindî  to tell    ákûrî  tale teller
nôli     to drink    ánôlôy  drinker
kû       to die      kûsê  ancestor

The above examples show that, for some verbs to become nominalized, a prefix "a-" is assigned to these words. However, other verbs are nominalized by the addition of other morphemes to the verb as clearly seen above. These nominalized verbs can now function as nouns in this language. We will try to observe what happens to the nominalized words when these words are put in the plural form as will be seen in the data below.

(35) Singular      Gloss    Plural       Gloss
We realize that the prefix changes from “á“ to “bá” and the tone on the prefix which was at first high changes to low when the bilabial plosive “b” is introduced. We realize that “ba” still functions as a prefix, not as part of the root.

### 4.5.2 Nominalization of adjectives.

When nominalization of adjectives takes place, the adjectives that end with vowels and nasals take the suffix “-bi” to mark the change from adjective to noun but the adjectives that end with other consonants which are not nasals take the suffix “-li”. This can be seen in the examples below:

<table>
<thead>
<tr>
<th>(36) Adjective</th>
<th>Gloss</th>
<th>Noun</th>
<th>Gloss</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. lèm</td>
<td>heavy</td>
<td>lèmbi</td>
<td>heaviness</td>
</tr>
<tr>
<td>lùm</td>
<td>dumb</td>
<td>lùmbi</td>
<td>dumbness</td>
</tr>
<tr>
<td>sàm</td>
<td>rotten</td>
<td>sàmbi</td>
<td>rottenness</td>
</tr>
<tr>
<td>b. kàcàlì</td>
<td>small</td>
<td>kàcàlìbi</td>
<td>smallness</td>
</tr>
<tr>
<td>tànyì</td>
<td>hard</td>
<td>tànyìbi</td>
<td>hardness</td>
</tr>
<tr>
<td>c. sàk</td>
<td>deaf</td>
<td>sòklì</td>
<td>deafness</td>
</tr>
<tr>
<td>yáh</td>
<td>large</td>
<td>yáhlì</td>
<td>largeness</td>
</tr>
<tr>
<td>bàh</td>
<td>sour</td>
<td>bàhlì</td>
<td>sourness</td>
</tr>
</tbody>
</table>

From the above examples, we see that the adjective which ends with a nasal or a vowel takes the “bi” suffix while adjectives which end with other consonants take the “li” suffix.
4.5.3. Compounding

Compounding is when two or more nouns come together to create new words. When these nouns are juxtaposed, some phonological processes take place. Some sounds are inserted to make the compounds fit into the structure of the language. In Ndemli, when compounds are formed, there are some tonological processes like "high tone spreading" which take place. Below are some examples of compounds in Ndemli.

<table>
<thead>
<tr>
<th>1st noun</th>
<th>2nd noun</th>
<th>compound</th>
<th>Gloss</th>
</tr>
</thead>
<tbody>
<tr>
<td>lò&amp;má</td>
<td>nánlí</td>
<td>lò&amp;máñánlí</td>
<td>palm wine</td>
</tr>
<tr>
<td>wine</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ñgwáhá</td>
<td>ndá</td>
<td>ñgwáhándá</td>
<td>mother-in-law</td>
</tr>
<tr>
<td>nyàm</td>
<td>kwè</td>
<td>nyàmbkwè</td>
<td>monkey</td>
</tr>
<tr>
<td>meat</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>sähá</td>
<td>címá</td>
<td>sähácímá</td>
<td>blood clot</td>
</tr>
<tr>
<td>clot</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>titém</td>
<td>njé?</td>
<td>titèmbínjé?</td>
<td>black ant</td>
</tr>
<tr>
<td>ant</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Looking at the data above, we realize that a certain segment which is "-bi" is introduced or inserted when some compounds are formed. This can be explained by the fact that compounding in Ndemli takes place at different levels of word formation as will be seen in the examples below:

titèmbínjé?  black ant

Level 1 (Root) titém
Level 2 (Stem)  titèm (bi)
Level 3 (Word)  titëmbi (njé?)

nyàmbìkwé  monkey
Level 1 (Root)  nyàm
Level 2 (Stem)  nyàm(bi)
Level 3 (Word)  nyàmbi (kwé)

From the above data, we realize that at the first level we have the root, at the second level we have “bi” which is inserted as a linker and then we have level three where the last morpheme of the compound comes in and a new word is formed.

We should note that “bi” which is also the morpheme that marks the plural is inserted here not as a plural marker but as a linker. This can be explained by the fact that when the plural of these compound words are formed, the morpheme “bi” is repeated. Thus, one serves as the linker and another as the plural as shown in the examples below:

(38)  Singular  Plural  Gloss
nyàmbìkwé  nyàmbìbìkwé  monkeys
titèmbìnjé?  titëmbìbìnjé?  black ants

From the observation of the above data, we see that there are thus two “bi’s”, one which serves as the linker and another which serves as the plural morpheme.

Another thing that is worth noting as far as compounding is concerned in Ndemli is the fact that when some of these segments are juxtaposed to form new nouns, some tonological processes like “high tone spreading” occur as seen below:
From the above examples, we see that when compounding takes place, phonological and tonological processes occur. A word like "kwë" (sky) which formerly had a low tone now takes a high tone.
Chapter Five

Lexical tone on verbs and conjugation

5.0 Introduction.

In this chapter, we will look at the verb tonology of Ndemli, more specifically at the tonal pattern of Ndemli verbs, their structure, their syllable structure, and the conjugation of some of these verbs.

It would be proper to take note of the fact that tones on verbs do not only play a lexical role but also a grammatical role. Some grammatical aspects like tenses are expressed with the change of tone on the verb.

5.1. Morphological structure of verbs.

A morpheme is the most elemental unit of grammatical form. These morphemes come together to form words, so we will in this section look at the structure of morphemes in verbs. Verbs in Ndemli consist of a root and the infinitive marker. They do not have prefixes. This infinitive marker “li” is a suffix which has a high tone as seen in these examples:

(1) cê?-li to shine
din?-li to love
kô?-li to die
mâ?-li to throw
yê?-li to make
5.1.1. Monosyllabic morphemes.

Monosyllabic morphemes present two forms: CV and CVC followed by the suffix as seen in the examples below:

(2) a. CV-

bē-ľī  to cook
bī:-l ĭ  to dance
dī-ľī  to eat
kò:-ľī  to fall
là:-ľī  to join
lō:-ľī  to ripen
mē-ľī  to swallow

b. CVC-

bāʔ-ľī  to plait
wām-ľī  to jump
cēh-ľī  to break
sūŋ-ľī  to pull
tāŋ-ľī  to be heard
dib-ľī  to strike
hōm-ľī  to grow

Note that the final CV is occupied by the suffix “ľī” which is the infinitive marker.
5.1.2. Disyllabic morphemes

Verbs with disyllabic morphemes have two structures: the CVCV and the CVCVC followed by the CV of the suffix. These structures will be seen below.

(3) a. CV.CV-

<table>
<thead>
<tr>
<th>Verb</th>
<th>Meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td>bé.nà-lí</td>
<td>to despise</td>
</tr>
<tr>
<td>byè.hè-lí</td>
<td>to praise</td>
</tr>
<tr>
<td>cé.hé-lí</td>
<td>to split</td>
</tr>
<tr>
<td>dú.bà-lí</td>
<td>to believe</td>
</tr>
<tr>
<td>hò.hò-lí</td>
<td>to threaten</td>
</tr>
<tr>
<td>ké.gà-lí</td>
<td>to try</td>
</tr>
<tr>
<td>yá.nà-lí</td>
<td>to repulse</td>
</tr>
</tbody>
</table>

With the $C_1V_1C_2V_2$ structure, any consonant and vowel can occupy the C and the V positions respectively.

b. CVCVC

<table>
<thead>
<tr>
<th>Verb</th>
<th>Meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td>bá.bin-dí</td>
<td>to serve</td>
</tr>
<tr>
<td>cé.min-dí</td>
<td>to play</td>
</tr>
<tr>
<td>dí.hín-dí</td>
<td>to make</td>
</tr>
<tr>
<td>fá.làn-dí</td>
<td>to follow</td>
</tr>
<tr>
<td>já.?àn-dí</td>
<td>to cross</td>
</tr>
<tr>
<td>ná.nìn-dí</td>
<td>to put</td>
</tr>
</tbody>
</table>

The above examples show that the suffix “li” which marks the infinitive has changed to “di”. This happens only when the root ends with the nasal “n”, thus the coronal nasal of the root and the lateral of the suffix combine.
or assimilate to form “ndi” as seen above. We thus have the forms in A instead of those in B below:

c. A
   bá.bin-dī to serve
   cé.min-dī to play
   dī.hīn-dī to make
   fā.lān-dī to follow
   já.?ān-dī to cross

   B
   bá.bin-lī
   cé.min-lī
   dī.hīn-lī
   fā.lān-lī
   já.?ān-lī

This change from “lī” to “di” can be accounted for by this rule:

l → d / n –

This rule says: a lateral becomes a dental alveolar when it occurs after a coronal nasal. As illustrated in the data, this rule applies at the end of the root of a verb.

5.2. Syllable structure of verb roots

The syllable must consist of an onset and a vowel as compulsory elements and a coda which is an optional element. We will thus examine the various syllable structures observed in verb roots. It is worth noting that Ndemli verbs make use of a lesser variety of syllable structures than nouns.

5.2.1. The CV- syllable type.

The “CV” stands for a consonant and a vowel. It begins with a consonant followed by a vowel. This syllable type occurs at the initial and
final positions of verbs. The “CV” which is the structure of the root is followed by the suffix of the root, followed by the suffix “li”, that is, the infinitive marker, and which also has the structure “CV” as seen below.

5.2.2. The CVC- syllable type

<table>
<thead>
<tr>
<th>Verb</th>
<th>English Meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td>wám-lī</td>
<td>to jump</td>
</tr>
<tr>
<td>sūŋ-lī</td>
<td>to pull</td>
</tr>
<tr>
<td>sàʔ-lī</td>
<td>to go out</td>
</tr>
<tr>
<td>pāʔ-lī</td>
<td>to arrange</td>
</tr>
<tr>
<td>ndām-lī</td>
<td>to scold</td>
</tr>
<tr>
<td>lēm-lī</td>
<td>to hide</td>
</tr>
<tr>
<td>dīb-lī</td>
<td>to strike</td>
</tr>
<tr>
<td>cēh-lī</td>
<td>to break</td>
</tr>
</tbody>
</table>

The above examples show that the initial “C” is occupied by any consonant, the “V” by any vowel and the final “C” by any consonant.

5.2.3. The CV.CV- syllable type

In this syllable type, we have a consonant followed by a vowel, which is in turn followed by a consonant and then another vowel. The examples below depict this situation.

(6) a. CV.CV-

<table>
<thead>
<tr>
<th>Verb</th>
<th>English Meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td>kē.gā-lī</td>
<td>to try</td>
</tr>
<tr>
<td>yā.nā-lī</td>
<td>to repulse</td>
</tr>
<tr>
<td>dū.bā-lī</td>
<td>to believe</td>
</tr>
</tbody>
</table>
b. CV.CVC-
   bá.bin-dī to serve
   ná.njin-dī to put
   fá.lan-dī to follow

The forms in (6b) can only be obtained if the root of the verb ends with the coronal “n”. This nasal assimilates with the “l” of the suffix “li” to form “ndi” as observed in the examples in (6b).

5.3. Contrastive tonal patterns in verb roots.

Ndemli displays a variety of tonal patterns on its verb roots. We will look at tonal patterns on each root type and mark the phonetic tones.

5.3.1. Monosyllabic root verbs.

Monosyllabic root verbs have different tones. These tones vary from low to high and mid tones. The following examples exhibit these tones.

(7) a. H
   kóm-lī to chew
   tó-lī to pierce
   lóm-lī to bite
   kán-lī to roast
   náš-lī to drink
   bē-lī to cook
   cē?lī to shine
Note should be taken of the fact that “li” is the suffix which makes the infinitive form of the verbs.

5.3.2. Disyllabic root verbs.

Disyllabic verbs display three varieties of tonal patterns as observed from the data collected. Consider the following:

(8) a. HH
   bábá-li to ferment
   cēhē-li to split

b. LL
   hào-hào-li to threaten
   wèndi-li to walk
Considering the above examples, we realize that Ndemli verbs make use of a variety of tonal patterns. These tonal patterns can be summarized as follows: H, L, M, HH, LL, HL.

5.3.3. The tone on infinitive forms.

As was observed earlier, the infinitive marker “li” has a high tone when preceded by a verb with a low tone but when preceded by a verb with a high tone, it takes a mid tone. The illustrations below show this situation.

(9) a. kwét-ți to speak
    fô-ți to give
    lê-ți to dream
    kû-ți to die
b. sà:-ți to divide
    hêm-ți to grow
    dûm-ți to smell
    lê:-ți to look

From these illustrations, we realize that the forms in (9a) depict the suffix “li” which is the infinitive marker with a mid tone whereas those in (9b) depict it with a high tone. As earlier said, this suffix has a high tone underlyingly. While the mid tone is the default tone which is assigned the features [-Upper +Raised] or [+Raised -Upper]. As such the mid tone on
the forms in (9a) come about as a result of Meeussen’s Rule (Goldsmith 1979, 1984).

(10) Meeussen’s Rule

\[
\begin{array}{cc}
V & V \\
| & | \\
H & H \rightarrow \emptyset
\end{array}
\]

This rule states that when two tone bearing units are associated with high tones, the high tone on the second tone bearing unit deletes. The mid tone on the infinitive marker in (9a) is therefore as a result of the assignment of the default features to toneless tone bearing units after the application of Meeussen’s Rule. This is illustrated by the derivations in (11).

(11) léli to dream kúlî to die

| | | | | | | | |
| H H | H H | H H \rightarrow \emptyset | H H \rightarrow \emptyset

M’s Rule le-li ku-li

| | | | | |
| H -U | H -U | +R | +R

Default features le-li ku-li

| | | | | | | | |
| H -U | H -U | +R | +R

In these derivations, M’s Rule stands for Meeussen’s Rule, U for the feature Upper, R for the feature Raised. Not presented in this derivation is the tonal feature M which is the combination of the features [-Upper +Raised].
5.4 Phonological Processes in Phrasal Constructions.

When we talk of phrasal constructions, we refer to situations where words will be combined to form phrases. It is worth observing that when words are combined, some phonological processes like reduplication, high tone spreading, voicing of consonants and change of word order of some segments called “metathesis” take place. These processes result in change, both segmentally and tonologically. In some cases we will use level-ordered morphology to explain why some changes take place in certain stages or levels when these words are combined. As observed by Mutaka (1994), we will assume in this level ordered morphology that the analysis posits two lexical levels or strata. The first lexical stratum accounts for the stem level phonological processes and the second stratum (level) will be shown to be the level at which the rules apply. We will, however, begin this section by looking at the structure of the conjugated verb forms. This will be followed by an examination of the causative, the applicative, and the reciprocal to see if there are any vestiges of verbal suffixal extensions before we discuss other aspects mentioned above.

5.4.1. The structure of the conjugated verb forms.

Generally, the Bantu verb has the following structure:

SM - TM - OM - Rt - Ext(s) - FV

SM is the Subject Marker
TM is the Object Marker
TM is the Tense marker
Rt is the Root
EXT(s) stands for one or more extensions

FV is the Final Vowel.

The structure of Ndemli is however more simplified in that it does not contain the different elements mentioned above. It consists of a subject marker (SM), a tense marker (TM), and a verb stem (ST).

As is also observed in Mutaka (1994a), depending upon the tense used, the subject marker is morphologically determined. We thus have the following for the present and future tenses.

Mi I
wo you (singular)
be he
habe we
hinjbe you (plural)
bi they

For other tenses like the Immediate Past tense and Past tense, we have:

ma I
wa you (singular)
ke he
hage we
hinjage you (plural)
ba they

The structure of the conjugated verb in the present tense is thus as is discussed below. Note that we are representing the tones at the surface level.
(12) a. mǐ dī I am eating
   SM ST
   wǔ dī you are eating
   SM ST
   bē dī he is eating
   SM ST
   hábē dī we are eating
   SM ST
   hánbē dī you (plural) are eating
   SM ST
   bī dī they are eating
   SM ST

For the future tense, we have a floating tone which marks the future tense.

Below we have the conjugation of the verb “to open” in the future tense.

b. mǐ ̀ hūbī I will open
   SM TM  ST
   wǔ ̀ hūbī you (singular) will open
   SM TM  ST
   bē ̀ hūbī he will open
   SM TM  ST
   hábē ̀ hūbī we will open
   SM TM  ST
   hánbē ̀ hūbī you (plural) will open
   SM TM  ST
   bī ̀ hūbī they will open
   SM TM  ST

More will be said about the floating tone which marks the future tense later when discussing the conjugation of verbs in some tenses.
As far as the past tense is concerned, it has the following conjugated structure:

(13) a. mà tóm  I sent  
     SM  ST  
   wà tóm  you (sg) sent  
     SM  ST  
   kè tóm  he sent  
     SM  ST  
   hágè tóm  we sent  
     SM  ST  
   hìŋgè tóm  you (pl) sent  
     SM  ST  
   bà tóm  they sent  
     SM  ST

For the recent (immediate) past, we have the following:

b. mà - bó - dì  I have just eaten  
   SM  TM  ST  
   wà - bìo dì  you (sg) have just eaten  
   SM  TM  ST  
   kè - bó - dì  he has just eaten  
   SM  TM  ST  
   hágè - bó - dì  we have just eaten  
   SM  TM  ST  
   hìŋgè-bó- dì  you (pl) have just eaten  
   SM  TM  ST  
   bà - bó - dì  they have just eaten  
   SM  TM  ST
We assume that it is the change in tenses which accounts for the changes in these forms. It is also important to observe that for some tenses like the future, the tense marker is a floating low tone but for the immediate past, the tense marker is a morpheme "bo". We thus realize that, while the tense marker for the future is a floating tone which associates with the tone bearing unit of the subject marker, the tense marker for the immediate past is the morpheme "bo" which stands on its own.

5.4.2. Vestiges of verbal suffixal extensions.

In this language, we have been unable to uncover any vestiges of suffixal extensions. We will however discuss the causative, the applicative, and the reciprocal to illustrate the absence of any verbal suffixal extensions as seen below.

The causative

(14) a. dî-lî to eat
dîihnîndî to make (someone) eat
midîhînî wè I make (someone) eat
hâdîhînî wè we make (someone) eat

b. tômlî to send
mî yè ná bí wâ tôm I make (s.o.) send
I make that someone you send
hâ yè ná bí wâ tôm we make (s.o.) send
we make that someone you send
bé yè ná bí wâh(a)bhô tôm he makes (s.o.) send
he make that someone we send
As observed from the illustration above, the only verb that can possibly have extra morphemes that could be interpreted as extensions is: dili “to eat”. We find this in its form dîtîndî or dîhîndî. We tried to obtain the extension -hilin- or -hinin- with other verbs but it was not possible.

The applicative.

The applicative morpheme usually works with a verb if we add “to” to the verb followed by “at”, “in” or “on” as seen in these illustrations.

(15) dîlî ndà to eat in the house
dîlî tô tô wà to eat for the child
   (Literally: to eat for the head of the child)
mî dî tô tô wà I am eating for the child
   (Literally: I eat for the head of the child)

We realize that an applicative morpheme is not revealed in these forms. Ndemli speakers thus use circumlocutions to translate what Narrow Bantu languages use as applicative extension as seen in “to do something for the head of”.

The reciprocal

In this form, Ndemli speakers use circumlocutions instead of a morphological affix such as -an- as found in Narrow Bantu languages to convey the idea of reciprocity as seen below:

(16) mî -dî wvêm I eat myself (literally: I eat me)
wvê - dî wà you eat yourself (literally: you eat you)
hā - dî wâhâbă we eat ourselves (literally: we eat us)
The examples given above illustrate that we do not have any vestiges of verbal suffixal extensions in Ndemli which is contrary to what we find in Narrow Bantu languages.

5.4.3. High tone spreading in phrasal constructions.

High tone spreading refers to a situation where a tone bearing unit with a high tone is followed by that with a low tone and the high tone on the preceding vowel spreads to the tone bearing unit with the low tone. The examples and derivations which follow will clearly substantiate this point.

(17) a. sùŋlí to pull
    löm báloŋ sùŋ the man pulls the potato
    löm báloŋbi sùŋ the man pulls the potatoes

b. còlí to plant
    löm báloŋ cò the man plants the potato
    löm báloŋbi cò the man plants the potatoes.

We observe that, in the above examples, the low tone verbs “sùŋlí” and “còlí” follow the noun báloŋ (potato). The low tone on these verbs (sùŋlí “to pull” and còlí “to plant”) change to a high tone when preceded by a noun whose last vowel has a high tone like báloŋbi “potatoes.” The derivation below further illustrates this.

(18) löm báloŋ sùŋ löm báloŋbi sùŋ
    UR / lom balon sùŋ lom balon-bi sùŋ /
         |   |   |
    H   H L   L    H   H L   H L
Note that, in these derivations, the high tone spreads only from the noun to the verb. Note also the curious phenomenon that the direct object “the potato” is between the subject and the verb. In other words, this is a form of a SOV type (where S stands for Subject, O for Object, and V for verb).

5.4.4. Voicing of the consonant of the negative morpheme

Voicing occurs when a voiceless consonant becomes voiced because of the environment in which it occurs. This can be seen in the morpheme which marks the negative form in Ndemli. This morpheme alternates between “ka” and “ga” depending on where it occurs. When it occurs at the beginning of the sentence, it is realized as “ka” but if it occurs at the middle of a sentence between two vowels, it is realized as “ga” as seen in the following examples.

(19) a. kā tóm  
    don’t send  

    kā có:  
    don’t cut

b. mi gá tóm  
    I will not send
mì gá cè: I will not cut

The “k” of “ka” changes to “g” in examples (19b). This can be explained by this phonological rule:

\[ k \rightarrow g \ / \ V - V \]

This rule says: the consonant “k” changes in its voiced counterpart intervocalically.

As earlier stated in the introduction to this section, we will use level ordered morphology to explain this change. As observed by Mutaka (1994b), we will assume in this level ordered morphology that the analysis posits two lexical levels or strata. The first stratum accounts for the stem level and the second stratum is the level at which the rules occur. The first level is made up of the base and the final vowel which make up the stem while level two is where structural elements of the verb like the subject marker and the tense marker come in. The rules thus apply at level two when the subject marker is added to the stem as seen below:

(20)  
Level 1: kā tóm  
Level 2: mì kā tóm  
Voicing: g  
PR: mì gá tóm

The morpheme which marks the negative form thus alternates from “ka” to “ga” depending on where or the level on which it occurs.
5.4.5. Reduplication

As observed in Mutaka and Tamanji (1995), in some languages some strings of a word, a syllable, two syllables, a stem or a whole word may be repeated to provide some particular meaning to the word in a process called "reduplication." Although we have not uncovered the use of reduplication on a large scale in Ndemli, the following forms show that reduplication is not completely absent in this language.

(21) wà bò lú jà lű      the child who cried
    ándūūndūū      the child who cries a lot
    lôm bë dlài dlî      the man eats continuously
    jë bë cônà côn      the woman cuts continuously

These examples thus show that we do have vestiges of reduplication in this language though not on a large scale.

5.4.6. Word order in some verb phrases.

In this language (Ndemli), we observed that sometimes the verb phrase in some constructions take the normal SVO structure but at other times, it changes to SOV. The preferred structure is SVO but this does not cancel the fact that SOV structure is also used. When these changes occur, in some cases the meaning changes but in others, it remains the same. The examples below depict these situations.

(22) mi jë tôm à      I send the woman
    mí tôm jë à      I send the woman
    mí bàjôn tôm à    I send the slave
    mó tôm bàjôn à    I send the slave
These illustrations show that the change in word order does not bring about a change in meaning in these constructions. Consider also the following:

(23) mí húbí ngwândā bô wā
    mi ngwândā húbí bô wā
I open the door for the child
that I open the door for the child

In example (23), we observe that a change in word order does bring a change in meaning.

5.5. Conjugation of verbs in some tenses

We will examine the conjugational patterns and some tonal variations that occur when verbs are conjugated in some tenses. We will examine the passive form, the future and the past tense. The conjugation of verbs in some of these tenses portray tonological variations since the tense marker for some tenses are tones.

5.5.1. The future tense

Here, we will look at the conjugation of some high tone and low tone verbs in the future tense. The tense marker for the future tense is a floating low tone. This low tone associates with the vowel of the subject marker which has a high tone, thus producing the falling tone found on this subject marker. Using level ordered morphology, we will conduct some derivations to better explain this situation.

(24) mí húbí I will open
    mi tóm I will send
    mi - ô-hubi
    mi - ô - tom
This derivation illustrates the floating tone which marks the future tense and which associates with the subject marker as seen below. (In this derivation UAC stands for "Universal Association Convention" which determines the association of a floating tone to a free tone bearing unit from left to right as the default case. See Goldsmith (1976) about the UAC)

5.5.2. The past tense

In the conjugation of the past tense, we have not noticed any changes in tone either on the verbs or on the subject marker as seen below:

(25) a. tōm[ Long tone]

mā tōm    I sent
wā tōm    you (sg) sent
kē tōm    he sent
hágeh tóm  we sent
híngë tóm  you (pl) sent
bá tóm  they sent

b. có:li  to cut
má có:  I cut
wà có:  you (sg) cut
dè có:  he cut
hágeh có:  we cut
híngë có:  you (pl) cut
bá có:  they cut

We should take note of the fact that this was not the case with the future tense as was observed earlier.

5.5.3. The passive

Most Narrow Bantu languages use a passive extension such as -u- or -bu- to indicate the passive. This is not the case with Ndemli which uses a tone to convey the passive as shown below.

(26) a. tómlí  to send
mí tóm  I am sent
wó tóm  you (sg) are sent
bè tóm  he is sent
hábè tóm  we are sent
híngbè tóm  you (pl) are sent
bí tóm  they are sent
The marker for the passive form is a floating tone. As of now, we could not specify whether it is a low or a high tone. However, this tone associates with the subject marker to form the contour tones above.

5.5.4. The imperative

The imperative marker for some languages is a high tone. This is not the case with Ndemli as verbs in the imperative forms maintain their tones as seen below:

(27) Infinitive

   a. còːli to cut  còː cut
     cèhli to shine  cèh shine
     cùʔli to build  cùʔ build
     sàːli to divide  sàː divide

   b. wáʔli to throw  wáʔ throw
     lāːli to mix  lāː mix
     fáːli to close  fáː close

The change from the infinitive to the imperative does not bring about any change in the tones on the verbs as seen above.
GENERAL CONCLUSION

This work set out to examine a sketch outline of the phonology of Ndemli. In analysing the phonology of this language, we discovered that aspects like tones, morphology and syntax could not be left untouched. This is evident because they combine to constitute the architecture of the language. Our analysis illustrated by various derivations, examples and explanations are aimed at giving the reader a better appraisal of the phonology of Ndemli.

Drawing from our phonological analysis, one observes that certain sounds occur only in particular positions and that the language makes use of a large number of consonants (thirty one). We discovered that tones in Ndemli play a phonemic role and the morphological processes like nominalisation and compounding give detail knowledge of the structure of words and syllabic patterns exhibited by these words. These morphological processes also helped in identifying the tonological variations in this language. It was worth noting that the infinitive marker “li” changes to “di” depending on the sound which precedes this suffix. Our research has also shown that a change in word order may not necessarily bring about a change in meaning as it is the case with some languages.

Owing to the fact that very little has been done in the study of Ndemli, our interest has been to awaken linguists to the study of this language. Our opinion is therefore to set a base for further research work on this language. We therefore had to set the pace with the attempt on analysing the phonology of Ndemli. We therefore appeal to researchers in language to pick up such aspects of this language like its morphology, syntax, semantics and tonology which are still unexplored. Our appeal extends from the fact that this piece of writing can still be used by
researchers in trying to compare our discovery in the phonology of Ndemli to that of other languages.

We also wish to say that this work does not pretend to have covered all the aspects of the phonology of Ndemli. We hope that we have done as much as to bring forth the salient aspects of this language.

All along, it has not been easy to study a language on which almost nothing has been written. Consequently, most of the discoveries were uncovered by this researcher and more difficult was the source of the data. As all the informants were of French expression, this sometimes lead to translation difficulties.

Despite the shortcomings we observed, it is believed that this study will open the way to further serious linguistic studies on Ndemli.
Bibliography


Appendix

In this section, we will divide the data into nouns, verbs, and adjectives.

<table>
<thead>
<tr>
<th>Monosyllabic nouns.</th>
<th>Gloss</th>
</tr>
</thead>
<tbody>
<tr>
<td>Word</td>
<td></td>
</tr>
<tr>
<td>bò</td>
<td>dog</td>
</tr>
<tr>
<td>bá</td>
<td>millet</td>
</tr>
<tr>
<td>bóm</td>
<td>egg</td>
</tr>
<tr>
<td>bùn</td>
<td>red</td>
</tr>
<tr>
<td>có?</td>
<td>bundle</td>
</tr>
<tr>
<td>cê</td>
<td>basket</td>
</tr>
<tr>
<td>dú</td>
<td>mouth</td>
</tr>
<tr>
<td>fê:</td>
<td>viper</td>
</tr>
<tr>
<td>fím</td>
<td>wind</td>
</tr>
<tr>
<td>hò?</td>
<td>cheek</td>
</tr>
<tr>
<td>hú</td>
<td>eye</td>
</tr>
<tr>
<td>hò</td>
<td>foot</td>
</tr>
<tr>
<td>jê:</td>
<td>woman</td>
</tr>
<tr>
<td>jō</td>
<td>snake</td>
</tr>
<tr>
<td>ká?</td>
<td>shell</td>
</tr>
<tr>
<td>káp</td>
<td>bride wealth (price)</td>
</tr>
<tr>
<td>kôn</td>
<td>plantain</td>
</tr>
<tr>
<td>kų</td>
<td>corpse</td>
</tr>
<tr>
<td>lóm</td>
<td>language</td>
</tr>
<tr>
<td>löm</td>
<td>husband</td>
</tr>
<tr>
<td>mbô?</td>
<td>shoulder</td>
</tr>
<tr>
<td>mbúp</td>
<td>dust</td>
</tr>
<tr>
<td>ndá</td>
<td>house</td>
</tr>
<tr>
<td>ndôm</td>
<td>rat</td>
</tr>
<tr>
<td>ηgáp</td>
<td>antelope</td>
</tr>
<tr>
<td>ηgɔ ?</td>
<td>termite</td>
</tr>
<tr>
<td>ηgwà</td>
<td>tale</td>
</tr>
<tr>
<td>njò</td>
<td>debt</td>
</tr>
<tr>
<td>ntôn</td>
<td>mail</td>
</tr>
<tr>
<td>nyàm</td>
<td>animal</td>
</tr>
<tr>
<td>sê</td>
<td>soil</td>
</tr>
<tr>
<td>sō:</td>
<td>bag</td>
</tr>
<tr>
<td>Word</td>
<td>Gloss</td>
</tr>
<tr>
<td>------</td>
<td>---------</td>
</tr>
<tr>
<td>sóŋ</td>
<td>tooth</td>
</tr>
<tr>
<td>swé</td>
<td>elephant</td>
</tr>
<tr>
<td>tám</td>
<td>hole</td>
</tr>
<tr>
<td>tít</td>
<td>heart</td>
</tr>
<tr>
<td>tón</td>
<td>navel</td>
</tr>
<tr>
<td>tòp</td>
<td>mud</td>
</tr>
<tr>
<td>tùng</td>
<td>ear</td>
</tr>
<tr>
<td>wàː</td>
<td>child</td>
</tr>
<tr>
<td>wèː</td>
<td>person</td>
</tr>
<tr>
<td>yũŋ</td>
<td>side</td>
</tr>
</tbody>
</table>

**Disyllabic nouns**

<table>
<thead>
<tr>
<th>Word</th>
<th>Gloss</th>
</tr>
</thead>
<tbody>
<tr>
<td>báʔhí</td>
<td>matchet</td>
</tr>
<tr>
<td>bámhó</td>
<td>footsole</td>
</tr>
<tr>
<td>báhà</td>
<td>saucepan</td>
</tr>
<tr>
<td>bájón</td>
<td>slave</td>
</tr>
<tr>
<td>bálòŋ</td>
<td>potato</td>
</tr>
<tr>
<td>bíndì</td>
<td>breast</td>
</tr>
<tr>
<td>bútãł</td>
<td>umbrella</td>
</tr>
<tr>
<td>cèːmá</td>
<td>urine</td>
</tr>
<tr>
<td>didú</td>
<td>sweat</td>
</tr>
<tr>
<td>díndì</td>
<td>name</td>
</tr>
<tr>
<td>cîmá</td>
<td>blood</td>
</tr>
<tr>
<td>fándã</td>
<td>wall</td>
</tr>
<tr>
<td>fârí</td>
<td>thigh</td>
</tr>
<tr>
<td>fèːbô</td>
<td>diarrhea</td>
</tr>
<tr>
<td>fôːbî</td>
<td>fingers</td>
</tr>
<tr>
<td>húhú</td>
<td>bone</td>
</tr>
<tr>
<td>jibí</td>
<td>medicine</td>
</tr>
<tr>
<td>jôhô</td>
<td>broom</td>
</tr>
<tr>
<td>kôrô</td>
<td>fence</td>
</tr>
<tr>
<td>kînàŋ</td>
<td>peanuts</td>
</tr>
<tr>
<td>kônà</td>
<td>bean</td>
</tr>
<tr>
<td>kônlî</td>
<td>tail</td>
</tr>
<tr>
<td>lïndô</td>
<td>ring</td>
</tr>
<tr>
<td>lôbî</td>
<td>honey</td>
</tr>
<tr>
<td>lôlô</td>
<td>duck</td>
</tr>
<tr>
<td>mànà</td>
<td>chief</td>
</tr>
<tr>
<td>mbëyè</td>
<td>load</td>
</tr>
</tbody>
</table>
mbônji  flower
mbuñnyi  anus
nàmbí  grass
ndiðí  water
ŋgóbí  yam
ŋgúmá  oil
pôhó  bottle
sàmbà  seven
sànì  mouse
tàmbí  shoe
tàbà  tobacco
túbrí  excrement (faeces)
tûŋká  lamp
twesôn  worker
wälóm  boy
wëŋgâŋ  doctor
wëndëm  senior
wäjé  girl
wësë  thief
wilî  string
wëndî  journey

Trisyllabic nouns

Word  Gloss
bàŋkólś  room
bënábí  detester
bèhèńí  pumpkin
bilèŋbí  necklace
dibangá  crayfish
fûhûrî  feather
hûhmûbô?  shoulder
jàngâlí  pineapple
kâmbèlî  chameleon
kôhôni  hill
kikönyí  millipede
pômâlí  orange
tâmbîbí  shoes
tîtîni  kidney
tôhôbi  witchcraft
tûgundâ  hut
Verbs
Monosyllabic verbs

<table>
<thead>
<tr>
<th>Word</th>
<th>Gloss</th>
</tr>
</thead>
<tbody>
<tr>
<td>bám-lí</td>
<td>to rumble</td>
</tr>
<tr>
<td>bí-lí</td>
<td>to dance</td>
</tr>
<tr>
<td>bọt-lí</td>
<td>to soften</td>
</tr>
<tr>
<td>bọt?-lí</td>
<td>to break</td>
</tr>
<tr>
<td>byé-lí</td>
<td>to beget</td>
</tr>
<tr>
<td>câb-lí</td>
<td>to trample</td>
</tr>
<tr>
<td>cú?-lí</td>
<td>to build</td>
</tr>
<tr>
<td>cwáʔ-lí</td>
<td>to pound</td>
</tr>
<tr>
<td>dib-lí</td>
<td>to beat</td>
</tr>
<tr>
<td>díng-lí</td>
<td>to love</td>
</tr>
<tr>
<td>dí-lí</td>
<td>to eat</td>
</tr>
<tr>
<td>dùm-lí</td>
<td>to smell</td>
</tr>
<tr>
<td>cá-lí</td>
<td>to cut</td>
</tr>
<tr>
<td>cọŋ-lí</td>
<td>to point</td>
</tr>
<tr>
<td>ṭá:-lí</td>
<td>to close</td>
</tr>
<tr>
<td>fọ-lí</td>
<td>to give</td>
</tr>
<tr>
<td>fô:-lí</td>
<td>to borrow</td>
</tr>
<tr>
<td>fún-lí</td>
<td>to call</td>
</tr>
<tr>
<td>hàb-lí</td>
<td>to divide</td>
</tr>
<tr>
<td>hàn-lí</td>
<td>to refuse</td>
</tr>
<tr>
<td>hám-lí</td>
<td>to grow</td>
</tr>
<tr>
<td>hùŋ-lí</td>
<td>to grind</td>
</tr>
<tr>
<td>jé-lí</td>
<td>to kill</td>
</tr>
<tr>
<td>jà:-lí</td>
<td>to seize</td>
</tr>
<tr>
<td>jím-lí</td>
<td>to sing</td>
</tr>
<tr>
<td>jọ-lí</td>
<td>to buy</td>
</tr>
<tr>
<td>kám-lí</td>
<td>to chew</td>
</tr>
<tr>
<td>kọ:-lí</td>
<td>to fall</td>
</tr>
<tr>
<td>kú-lí</td>
<td>to die</td>
</tr>
<tr>
<td>lám-lí</td>
<td>to cook</td>
</tr>
<tr>
<td>hà-lí</td>
<td>to bite</td>
</tr>
<tr>
<td>nyùŋ-lí</td>
<td>to drink</td>
</tr>
<tr>
<td>sọ:-lí</td>
<td>to flow</td>
</tr>
<tr>
<td>tà-lí</td>
<td>to lean</td>
</tr>
<tr>
<td>tôŋ-lí</td>
<td>to cry</td>
</tr>
<tr>
<td>yé-lí</td>
<td>to make</td>
</tr>
</tbody>
</table>
Disyllabic verbs
bé?èn-di to take
bórán-di to begin
céhé-li to split
cǐndi-li to accumulate
fìlin-di to return
hòhò-li to fear
jáñán-di to cross
kégà-li to try
láhàn-di to forget
lárin-di to lick
lòhàn-di to take out
ngwànlà-li to deceive
nywlin-di to press
pòhè-li to choose
sàrin-di to tear
sìflàn-di to sift
sùjin-di to say
sòhò-li to wash
tàhà-li to stretch out
tùhù-li to spit
yìglàn-di to be slack
yáhà-li to widen

Trisyllabic verbs
bòhêmìn-di to be bent
bú?úbin-di to wake up
céhémin-di to climb
fù?úrin-di to cover
húhùrin-di to answer
jòhórìn-di to wipe off
kàhàmin-di to straighten
lòhórìn-di to deceive
sà?àrin-di to flow
tòhòlin-di to glide (to slide)
Adjectives

Monosyllabic Adjectives

bâh  sour
byâ  intelligent
bô:  tired
bô  old
bûn  red
fôh  cold
fü  white
jé?  black
jôm  dry
lâh  ripe
lûm  dumb
lwè  bitter
sâm  rotten

Disyllabic adjectives

byâbi  happy
dûbi  wet
fêfé  new
kûhî  few
kîkâh  unripe
kîkîm  sterile
lêmî  big
lômî  hot
sîsî  many
tânî  hard
tingû  short
tânhî  blunt

Trisyllabic adjectives

côhôngî  blunt
fôhôlâ  light