

**THE UNIVERSITY OF YAOUNDE 1
UNIVERSITE DE YAOUNDE 1**

**FACULTY OF ARTS, LETTERS
AND SOCIAL SCIENCES.**

**DEPARTMENT OF AFRICAN LANGUAGES
AND LINGUISTICS**

**FACULTE DES ARTS, LETTRES
ET SCIENCES HUMAINES**

**DEPARTEMENT DE LANGUES AFRICAINES ET
LINGUISTIQUE**



**A SKETCH OUTLINE OF THE
PHONOLOGY OF NDEMLI**

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

By

**NGORAN LOVELINE LENAKA
B.A. IN ENGLISH**

Supervised by :

**PROF. MUTAKA NGESSIMO
(Maître de Conference)**

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DEDICATION

I dedicate this work to:

my late father Mr. Ngoran Rudolf.

my mother Mrs. Ngoran Christiana Wirvem and

Ms. Mbiybe Miriam.

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List of Abbreviations and signs.

/	=	high tone
\	=	low tone
-	=	mid tone
v	=	rising tone
^	=	falling tone
UR	=	Underlying Representation
PR	=	Phonetic Representation
TBU	=	Tone Bearing Unit
HTS	=	High Tone Spreading
C	=	Consonant
V	=	Vowel
→	=	becomes or is realized as
VL	=	voiceless
VD	=	voiced
[]	=	phonetic transcription
//	=	phonological transcription
H	=	High
M	=	Mid
L	=	Low
+R	=	Plus Raised
+U	=	Plus Upper
-R	=	Minus Raised
-U	=	Minus Upper

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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, Ndontchonga, Bindjeng, Ndokbekot, Biyi, Bekong, Boumkoua. In Nkondjock subdivision, we have the following clans: Minjeng, Ndokita, Ndokiti I, II, III and Ndokban. 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.

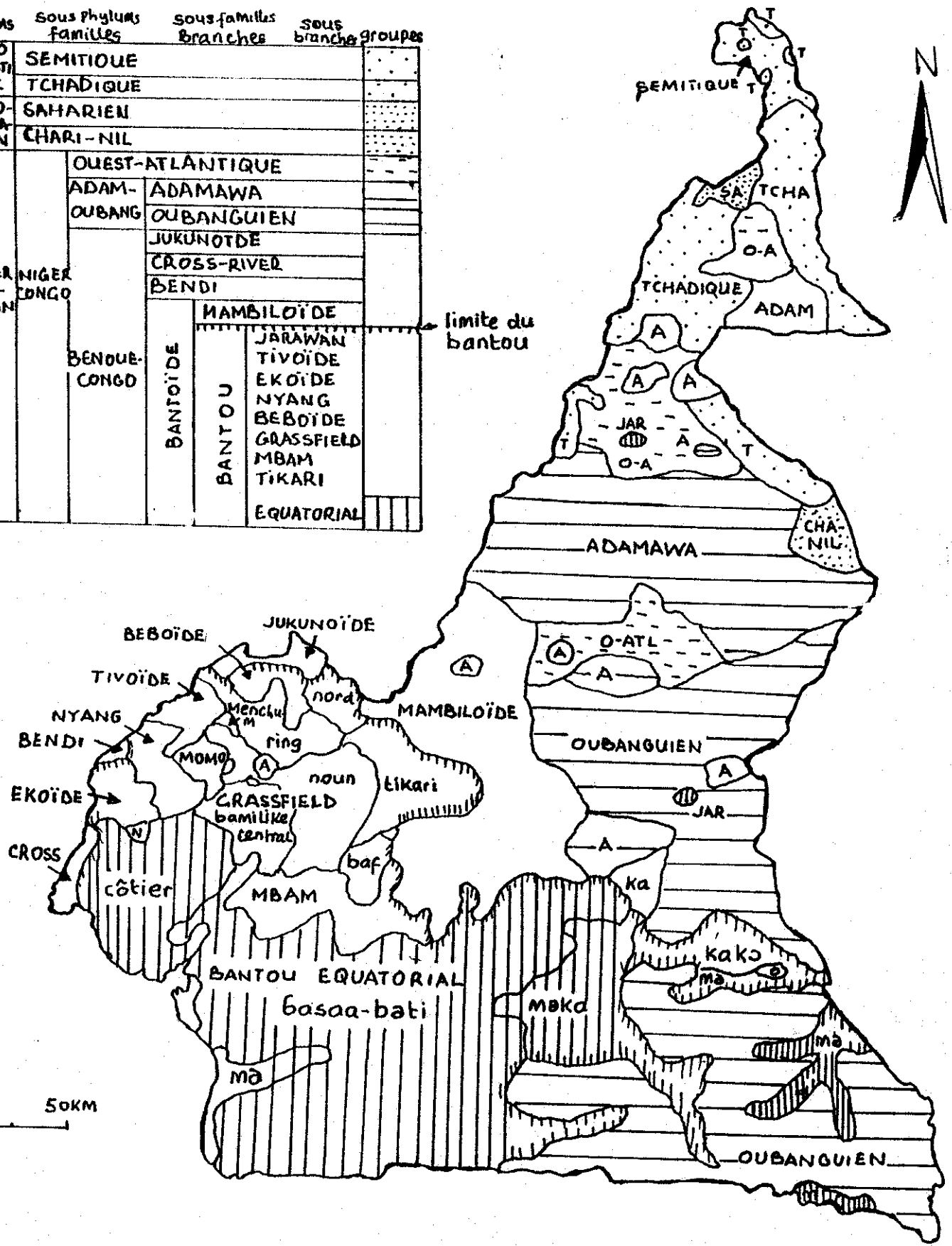
Ndemli is spoken by a population of about 10,000 people dispersed in different sections of Yabassi. The Bandem area experiences a tropical climate with two distinct seasons: the rainy season and the dry season. The climate is hot and thus temperatures are high. Agriculture is the main occupation of Bandem 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.

FAMILLES ET GROUPES LINGUISTIQUES AU CAMEROUN

Map No. 1.

phylums	sous phylums familles	sous-familles branches	sous branches groupes
AFRO ASIATIQUE	SEMITIQUE		
	TCHADIQUE		
NILO-SAHARIEN	SAHARIEN		
	CHARI-NIL		
NIGER-KORDOFAN	NIGER-CONGO	OUEST-ATLANTIQUE	
		ADAM- OUBANG	ADAMAWA
			OUBANGUIEN
			JUKUNOÏDE
			CROSS-RIVER
			BENDI
		BENOUÉ-CONGO	MAMBILOÏDE
			JARAWAN
			TIVOÏDE
			EKOÏDE
			NYANG
			BEBOÏDE
	BANTOU	GRASSFIELD	
		MBAM	
		TIKARI	
		EQUATORIAL	

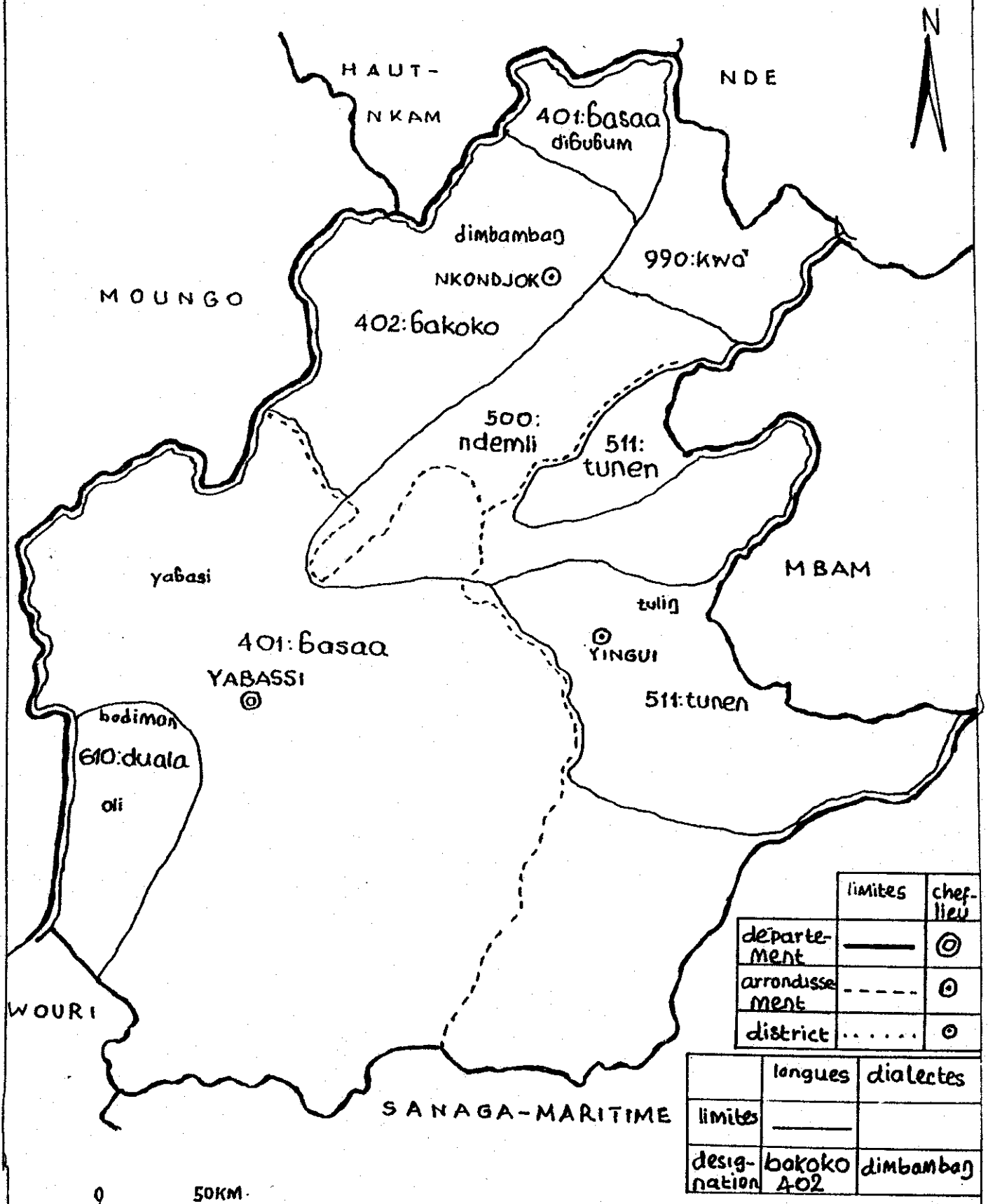
limite du bantou



50KM

Langues nationales: Département du NKAM (Littoral)

Map No. 2.



SOURCE: AFRIQUE NOUVELLE

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 Bando 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.

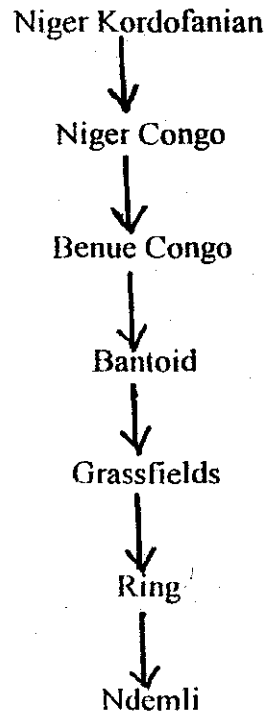
As pointed out by Williamson (1971), Ndemli belongs to the Ring languages of the Western Grassfields Bantu because of some characteristics that this language exhibits. Richardson (1957) observes that the Ring languages have noun class prefixes and suffixes unknown in Bantu. Ndemli exhibits these characteristics 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:

Ndemli	Lamnso	Gloss
tóŋ	tóŋ	navel
tím	tím	heart
táʔá	ntáʔ	chair
nyúŋ	nyúŋ	suck
ŋgóʔ	ŋgóʔ	termite
lómli	lúmri	to bite
kóŋli	kóŋ	spear
káŋli	káŋri	to fry
ká:rì	kár	head pad

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 subgroup 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:



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 ALCAM (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 Mbam-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 Yabassi" 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 Bandem 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, ŋ, ŋk, ŋg, nt, nd, ts, tʃ, dʒ, ɲ, mb, ʎ, ʔ, nj, a, i, e, ɛ, o, ɔ, u, ɯ, 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:

(1) b-	bàʔlí	matcher
c-	càʔ	salt
d-	dú	mouth
f	fím	wind
g	gwàndà	door
h	fúhúrí	feather
j	jè:	woman
k	káp	bride price

l	lálí	voice
m	mà: nà	chief
n	nāmbí	grass
p	pòmàlí	orange
s	sànà	rat
t	tám	hole
w	wè	person
y	yó:	yesterday
ŋ	jàn	party
ŋg	ŋgilà	lion
nt	ntò?	fist
nd	ndá	house
tʃ	cwèbí	song
ts	tsi:	louse
dʒ	dʒ,wì	cold
ɲ	ɲàyà	cow
mb	mbórí	cloth
nj	njó	debt

Consonants like γ and ? do not occupy the initial position as seen above.

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

(2) kôb	-b	cup
ndóng	-g	laziness
ndòndòk	-k	needle
àfáh	-h	spider
bóm	-m	egg
cícín	-n	tomorrow

bàjón	-ŋ	slave
álá:cò?	-?	lizard
còp	-p	tiger
àkòt	-t	squirrel

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

(3) b:	ábò	dog
c:	ácòsì	sower
d:	dìdú?	sweat
f:	àfáh	spider
g:	bùgá	place
j:	àjí	stick
k:	ákòt	squirrel
l:	álò	arrow
m:	cīmá	blood
mb:	àmbá?	knife
n:	ánù:	bird
nd:	bíndī	breast
ŋ:	sòŋò	grave
ŋk:	bàŋkóló	room
ŋg:	bàŋgà	word
r:	búrī	mat
s:	àsí	hare
t:	àtúm	cane
y:	mbèyè	load
ɣ:	nyàyà	cow
ʔ:	cwè?èrí	beard
ny:	kikōnyí	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

Place of articulation		Bilabial	Labio	Dental	Palato	Palatal	Velar	Glottal
			dental	alveolar	alveolar			
Plosives	VI	p		t	c		k	ʔ
	Vd	b		d	j		g	
Fricatives	VI	f		s				h
	Vd							
Affricates	VI			ts	tʃ			
	Vd				dʒ		ɣ	
Nasals	Vd	m		n		ɲ(ny)	ŋ	
Pre-nasalised								
Stops	VI			nt			ŋk	
	Vd	mb		nd		nj	ŋg	
Lateral	Vd			l				
Roll	Vd			r				
Glides	Vd	w				y		

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: fífí whole

i: ngìŋ	season
ɛ: wè	person
e: kàmbèlī	chameleon
o: hólī	foot
ɔ: hólī	spear
u: hùhù	bone
u: hú	eye
σ: cò?	salt

These vowels are presented on a chart as seen below

i	i	u	u
e	σ		o
ɛ			ɔ
	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 → -cons / ---V
+hi -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

Place of articulation		Bilabial	Labio dental	Dental alveolar	Palato alveolar	Palatal	Velar	Glottal
Manner of articulation								
Plosives	VI	p		t	c		k	ʔ
	Vd	b		d	j		g	
Fricatives	VI	f		s				h
	Vd							
Affricates	VI			ts	tʃ			
	Vd				dʒ,		ɣ	
Nasals	Vd	m		n		ɲ(ny)	ŋ	
Pre-nasalised								
Stops	VI			nt			ŋk	
	Vd	mb		nd		ɲj	ŋg	
Lateral	Vd			l				
Roll	Vd			r				
Glides	Vd	w				y		

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. ngìŋ season
 nìŋ ground
 bàhàŋìŋ earthenware
- b. bàblí wing
 àjí stick
 fúhúrí 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:

$$i \rightarrow i / \text{---} + \text{nasal} \\ \text{+ back}$$

The phonemic vowel chart is therefore

i		u	u
e		o	o
ɛ		ɔ	ɔ
	a		

We should also note that Ndemli makes use of vowel length as seen in these examples:

- (6) a. b́ó: tired
 bó arm
 b. dū: old
 dú mouth
 c. jí: tree
 jí 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. fárí thigh
 fàrì diarrhea
 b. fàmbó palm
 fámbó blow, slap
 c. fò tortoise
 fó 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)	dú	mouth
Mid tone (M)	á-lō	arrow
Low tone (L)	á-bò	dog

Contour tones:

Falling tone (HL)	kwê	sky
Rising tone (LH)	ngwĩ	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, v represents the rising tone).

2.3.2 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) cwê	sun
kwê	to lock
ngwê	larynx
ngwândā	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:

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

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) cīmá blood
 dīndī name
 būrī mat
 bīndī breast

Chapter 3: The Noun Class System of Ndemli

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 Ndemli 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.

Ndemli 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 Ndemli. These are: 1, 2, 7, 9, 10, 14, 16, 19.

3.1. Table of Ndemli noun class system

Class	Prefix	Suffix	Example	Gloss
1	a-		á-binjàŋ	dancer
2	ba-		bà-bínjàŋ	dancers
7	a-		à-mbáʔ	knife
9	∅-		sóŋ	tooth
10	-bi		sóŋ-bí	teeth

14	bɔ-	bó-mbà?	knives
16	a-	á-nò	there
17	ku-	kù-èndà	on the house
19	si-	sí-sà	here, down here

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.

á-bínjāŋ	dancer
á-nóló?	drinker
á-còsì	sower
á-kùrì	tale teller

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.

bà-bínjàŋ	dancers
bà-nólóʔ	drinkers
bà-còsì	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
à-fáh	spider
à-mbàʔ	knife
à-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 ā-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

wúm	egg
són	tooth
tú?	potato

The examples of nouns which belong to this class in Ndemli are:

wáŋ	root
jú:	tree
són	tooth
tón	navel
bámhò	heel
bàbí	wing
bò	arm
bóm	egg

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 “-bí”. It is a plural for class nine. Examples include:

wáŋ-bí	roots
jú:-bí	trees
són-bí	teeth
tón-bí	navels
bámhò-bí	heels
bàbí-bí	wings
bò-bí	arms
bóm-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
són-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 “bɔ” as seen below:

bó-fáh	spider
bó-mbà?	knives
bó-jī	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 “ɔ” 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:

sì-sá here

sì-sè under

sí-sī 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 fī-tàm “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:

Word	Gloss	Possessive “my”	Demonstrative “this”	Associative “of”
á-bínjàŋ	dancer	yèm á-bínjàŋ	á-bínjàŋ lè	á-bínjàŋ yì
bà-bínjàŋ	dancers	yèm bà-bínjàŋ	bá-bínjàŋ lè	bà-bínjàŋ yì
wáŋ	root	yèm wáŋ	wáŋ lè	wáŋ yì
wáŋ-bī	roots	yèm wáŋ-bī	wáŋ-bī lè	wáŋ-bī yì
á-nù:	bird	yèm á-nù:	á-nù: lè	á-nù: yì
bó-nù:	birds	yèm bó-nù:	bó-nù: lè	bó-nù: yì

Class	Word	Gloss	subject marker	the attributive
1	á-bínjàŋ	dancer	á-bínjàŋ mbìì the dancer	ábínjàŋ lémi a big dancer
2	bà-bínjàŋ	dancers	bá-bínjàŋ bíbìì the dancers	bábínjàŋ lémi the big dancers
9	wáŋ	root	wáŋ bìì	wáŋ lémi

			the	root	the big root
			dances		
10	wáŋ-bī	roots	wáŋ-bī bí-bìi	wáŋ-bī lémi	
			the	roots	the big roots
			dance		
7	á-nù:	bird	á-nù: bìi	á-nù: lémi	
			the	bird	the big bird
			dances		
14	bó-nù:	birds	bó-nù: bìi	bó-nù: lémi	
			the	birds	the big birds
			dance		

The above examples show that no matter the class to which the noun belongs, when combined with the possessive, the possessive marker “my” remains “yèm”, the subject marker “he/she/it/ they” and the attributive (here the qualifying adjective “big”) do not also change.¹ 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 Ndemli, 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 Ndemli. 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 mbii “dances” in á-bfjàng mbii (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 [bii] for the form “dances”.

3.3.1. Gender 1 / 2

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

á-bínjàŋ / bà-bínjàŋ	dancer / dancers
jé / bà-jé	woman / women
á-nóló? / bà-nólò?	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-jí / bó- jī	stick / sticks
à-fáh / bó-fáh	spider / spiders
à-mbá? / bó-mbà?	knife / knives

3.3.3. Gender 9 / 10

This gender contains assorted nouns and examples include:

wáŋ / wáŋ-bī	root / roots
jú: / jú-bí	tree / trees
bàblí / bàblí-bí	wing / wings
sóŋ / sóŋ-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:

sì-sá here

sí-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. bāhà	saucepan
bàhá	side
b. bàú	sheep
bùù	goat
c. cá?	bundle
cà?	salt
d. fārí	thigh
fàrì	diarrhea
e. fǒ	cold
fò	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) bǒ wild
 bô 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. bǒ:ʔ canoe
 bǒ:ʔ mortar
 c. búŋ arm
 búŋ 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-jí	stick
à-sí	hare
à-yí	denial

b. V-CV

á-fàŋ	passage
á-kòt	squirrel
á-mbòm	small
à-fáh	spider
à-mbá?	knife
à-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
béh	iron
bóm	egg
búŋ	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-cò.sì sower
 á-kù.rì tale teller.

b. V-CV-CVC

á-bí.njàŋ dancer
 á-nó.lò? 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.mì.ndī stoop
 á-ŋgwā.pwā.jé his sister

b. V-CV-CV-CVC

á-ŋgwā.pwá.lúm 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-nù: 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-nù: birds
 bò-jī sticks
 hó-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 “o”.

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

CV.CV

fà.rì	diarrhea
fé.bō	fingers
cì.má	blood
bú.má	umbrella
bò.sè	descendant
bé.ní	wound

CV

jò:	bee
hò	foot
fé	viper
cé	basket
bù	mouth
bó	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.

(10) CVC

hóʔ	cold
hóŋ	weather
jéʔ	black
kàp	bride price
lúm	dumb
mbúp	dust

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, ŋ, ʔ, 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

bǒ.kòh	hyena
ká.nyāŋ	bad
mbò.ròʔ	pestle
sì.sóŋ	pepper
nyí.nyíŋ	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) bà.ŋkó.ló	room
bè.hè.ní	pumpkin
bó.bì.dū	lips
fú.hú.rì	feather
kà.mbè.lì	chameleon

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

(13) a.	á-hó.mì.ndī	stoop
	á-ŋgwā.pwā.jé	his sister.
b.	hú.hú.mbò	shoulder
	kù.hí.bó.jī	branch
	lú.ʔú.ndà	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) \acute{V}

a. High tone monosyllabic root words with a prefix

à-jí	stick
à-má	my mother
à-sí	hare
à-fáh	spider
à-yí	denial

b. High tone monosyllabic root words without a prefix

búm	belly
búj	red
fúh	white

dú	mouth
bà	millet
cé	basket
bó	arm
jí:	tree

(15) Low (L) \bar{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
ngì	season
tòp	mud
tsì:	louse

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

a. With a prefix

á-lò	arrow
ā-mbā?	knife

b. Without a prefix

nyĩŋ	earth
sā:	hearth
yō	yesterday
swē	elephant
dū	cold

(17) Contour tones on monosyllabic words: Falling tone \hat{V} (HL)

dī	spirit
bô	old age
wô	who
yâh	our

(18) Rising tone \check{V} (LH)

jǒ	snake
mbǒm	forehead
ŋgwĩ	pig
tũŋ	ear

4.3.2. Disyllabic root words.

(19) HH C \acute{V} C \acute{V}

bí.bí	fight
fǒ.lí	axe
hó.lí	stone
kó.ró	fence
jí.bí	medication
hú.hú	bone

(20) LL CŪ CŪ

cì.mà	blood
hò.hò	fear
lò.lò	duck
mà.nà	chief
ngì.là	lion
sà.nì	rat

(21) MM CŪ CŪ

kā.rī	pillow
wē.ndī	journey
mbī.bī	war

(22) HL CŪ CŪ

hó.sì	horse
kú.sè	ancestor
kó.nà	bean
ngwá.hà	breast
só.pì	soap

(23) LH CŪ CŪ

bà.ngá	word
bù.gá	place
dì.dú	sweat
jò.hó	broom
ntò.bí	fists
fɔ: .mó	eight

(24) HM C[́] C[̄]

bé.nī	sore
bó.bī	year
bú.rī	mat
fá.ndā	wall
fó: .bī	leaf
ló.bī	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.¹

(25) Trisyllabic nouns with identical tonal patterns.

a. HHH C[́] C[́] C[́]

ló.ngó.hón	bright day
ńí.ná.bí	strength
tó.hó.bí	witchcraft

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 CŪ CŪ CŪ

- kì.kà.hà armpit
 kò.hò.nì hill
 kò.bà.ŋgàn crocodile

(26) Trisyllabic nouns with mixed tonal patterns.

a. HLL CŪ CŪ CŪ

- má.ŋgò.nò mango
 ŋí.kò.hò wild pig
 wá: .ŋgì.là cub (lion)

b. HHM CŪ CŪ CŪ

- kú.má.bī foreigners
 jú.hú.rī feather
 nyúŋ.bí.tō hairs

c. LLH

- bè.hè.ní pumpkin
 mì.kwī.bí 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.mbí.kwè monkeys

- b. H L H H
 tí.tê.mbí.jé? black ant
- c. H H L H
 sá.há.cì.má blood clot
- d. H M L L
 kó.nā.ŋkà.nà rice

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. ɲgwĩ pig
 b. ɲgwê larynx
 c. kwê lock
 d. cwê sun
 e. ɲgwândā door

To justify the above assertion we will do some derivations.

- (29) a. ɲgwĩ pig

UR /Ngui /

||

LH

Nasal assimilation ɲgui

LH

V → w/ --V ɲgwi

+hi |

LH

Tone docking:

V → V ɲgwi

| /| /|

LH LH LH

PR [ŋgwĩ]

b. cwê sun

UR /cue /

||

HL

V → w/ --V cwe

+hi |

HL

Tone docking:

V → V cwe

| /| /|

HL HL HL

PR [cwê]

c. kwê lock

UR /kue /

||

HL

V → w/ --V kwe

+hi |

HL

Tone docking:

V → V kwe

| /| /|

HL HL HL

PR [kwê]

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 bàà “goat”, féé “viper”. These vowels which disappear leave their tones behind.

Old form	New form	Gloss
dî	dî	spirit
tùúnj	túnj	ear
jòó	jǒ	snake

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

(30) túnj	ear	dî	spirit	<i>How do you... it... two... deleted... from... about... the... periphery...</i>
UR	/tuunj	dii /		
	LH	HL		
V→Ø/--V	t unj	d i		
	LH	HL		

Tone docking

V	→	V	tun	di
		/		/
HL		HL	LH	HL ²
PR			[tũŋ]	[dĩ]

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
+Upper	-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. bíndī breast
 bómbī speech
 búrī 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.

díndī	name
b. cīmá	blood

Consider first the word for breast, i.e. "bíndī". 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. cīmá, the first syllable has no underlying tone. The second one is underlyingly 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.

(32) ngwèh(ɛ)	cocoyam
wùh(ù)bī	fires
njàh(à)	scissors
fóhó	storm
kóh(ó)bí	

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:

(33) tóhóobí	witchcraft
tóhó	six
nyáhábí	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. Ndemli 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
bíndí	to dance	ábínjàṅ	dancer
kúrìndí	to tell	ákùrì	tale teller
nólí	to drink	ánólò?	drinker
kú	to die	kúsē	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
---------------	-------	--------	-------

ábínjàŋ	dancer	<u>b</u> ábínjàŋ	dancers
ákùrì	tale teller	bàkùrì	tale tellers
ánóló?	drinker	bànálò?	drinkers

We realize that the prefix changes from “á “ to “bà” 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:

(36) Adjective	Gloss	Noun	Gloss
a. lèm	heavy	lèmbí	heaviness
lúm	dumb	lúmbí	dumbness
sám	rotten	sámíbí	rottenness
b. kácàlī	small	kácàlibí	smallness
tànyí	hard	tànyíbí	hardness
c. sók	deaf	sóklì	deafness
yáh	large	yáhlì	largeness
báh	sour	báhlì	sourness

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.

(37)	1 st noun	2 nd noun	compound	Gloss
	lò?mā wine	ɲáŋlí palm	→ lò?máɲáŋlí	palm wine
	ɲgwáhà meat	ndá sky, on	→ ɲgwáhàndá	mother-in-law
	nyàm clot	kwè blood	→ nyàmbíkwé	monkey
	sáhá clot	címá blood	→ sáhácímá	blood clot
	títèm ant	ɲjé? black	→ títèmbíɲjé?	black ant

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:

títèmbíɲjé? black ant

Level 1 (Root) títèm

Level 2 (Stem) títèm (bi)
 Level 3 (Word) títèmbí (njé?)

nyàmbíkwé monkey
 Level 1 (Root) nyàm
 Level 2 (Stem) nyàm(bi)
 Level 3 (Word) nyàmbí (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.

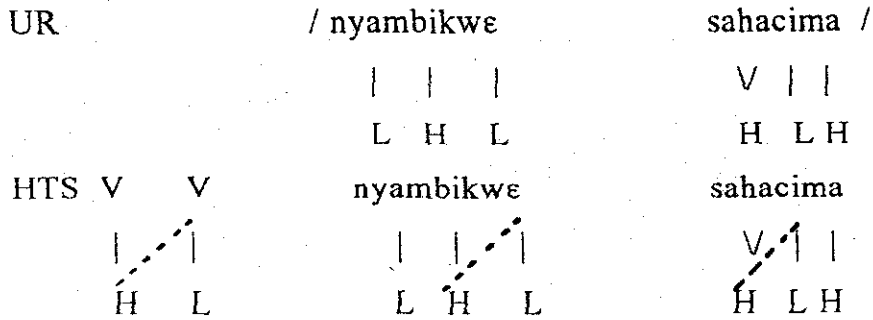
We should note that "bi" which is also the morpheme that marks the plural is inserted here not as a plural marker but as a linker. This can be explained by the fact that when the plural of these compound words are formed, the morpheme "bi" is repeated. Thus, one serves as the linker and another as the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

(38)	Singular	Plural	Gloss
	nyàmbíkwé	nyàmbíbíkwé	monkeys
	títèmbínjé?	títèmbíbínjé?	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:

(39) nyàmbík-wé monkey sáhácímá blood clot



PR [nyàmbík-wé sáhácímá]

From the above examples, we see that when compounding takes place, phonological and tonological processes occur. A word like "kwè" (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) céʔ-lí to shine
 dîŋ-lí to love
 kò:-lí to die
 màʔ-lí to throw
 yè-lí 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-

bé-lī	to cook
bí:-lī	to dance
dí-lī	to eat
kò:-lí	to fall
là:-lí	to join
lò:-lí	to ripen
mè-lí	to swallow

b. CVC-

bá?-lī	to plait
wám-lī	to jump
céh-lī	to break
sùŋ-lí	to pull
tàŋ-lí	to be heard
dìb-lí	to strike
hòm-lí	to grow

Note that the final CV is occupied by the suffix “li” 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-

bé.nà-lí	to despise
byè.hè-lí	to praise
cé.hé-lí	to split
dú.bà-lí	to believe
hò.hò-lí	to threaten
ké.gà-lí	to try
yá.ɲà-lí	to repulse

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

b. CVCVC

bá.bìn-dī	to serve
cé.mìn-dī	to play
dí.hìn-dī	to make
fá.làn-dī	to follow
já.ʔàn-dī	to cross
ná.ɲìn-dī	to put

The above examples show that the suffix “li” which marks the infinitive has changed to “dī”. 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		B
bá.bìn-dī	to serve	bá.bìn-lī
cé.mìn-dī	to play	cé.mìn-lī
dí.hìn-dī	to make	dí.hìn-lī
fá.làn-dī	to follow	fá.làn-lī
já.ʔàn-dī	to cross	já.ʔàn-lī

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

$l \rightarrow d / n -$

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

wám-lī	to jump
sùŋ-lí	to pull
sàʔ-lí	to go out
páʔ-lī	to arrange
ndám-lī	to scold
lèm-lí	to hide
đìb-lí	to strike
céh-lī	to break

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-

ké.gà-lí	to try
yá.ŋà-lī	to repulse
dú.bà-lí	to believe

b. CV.CVC-

bá.bìn-dī	to serve
ná.ḡìn-dī	to put
fá.làn-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
káḡ-lī	to roast
nó-lī	to drink
bé-lī	to cook
cé?-lī	to shine

b. L

cù?-lí	to build
cò-lí	to plant
fǝ:-lí	to borrow
hòm-lí	to grow
kòm-lí	to knock
jǝ:-lí	to boil

b. M

swī-lí	to pass wind
sēm-lí	to sell
tā-lí	to go
cūū-lí	to beat

Note should be taken of the fact that "lí" 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

báhá-lí	to ferment
céhé-lí	to split

b. LL

hǝhǝ-lí	to threaten
wëndí-lí	to walk

	byèhè-lí	to praise
	hàhà-lí	to stretch
c.	bábìn-dī	to serve
	cúmìn-dī	to add
	núlìn-dī	to fly
	sérìn-dī	to cut

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-lī	to speak
	fó-lī	to give
	lé-lī	to dream
	kú-lī	to die
b.	sà:-lí	to divide
	hòm-lí	to grow
	dùm-lí	to smell
	lè:-lí	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)	lélī	to dream	kúlī	to die
UR		/le-li/		ku-li/
		H H		H H
M's Rule		le-li		ku-li
		H H → ∅		H H → ∅
Default features		le-li		ku-li
		H -U		H -U
		+R		+R
PR		[lélī]		[kúlī]

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
 wɔ you (singular)
 be he
 habe we
 hiŋbe 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
 hiŋge 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.	mī dī	I am eating
	SM ST	
	wó dī	you are eating
	SM ST	
	bē dī	he is eating
	SM ST	
	hábē dī	we are eating
	SM ST	
	hǐnbē 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.	mí	húbì	I will open
	SM	TM ST	
	wó	húbì	you (singular) will open
	SM	TM ST	
	bé	húbì	he will open
	SM	TM ST	
	hábé	húbì	we will open
	SM	TM ST	
	hǐnbé	húbì	you (plural) will open
	SM	TM ST	
	bí	húbì	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	
	híngè tóm	you (pl) sent
	SM ST	
	bâ tóm	they sent
	SM ST	

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

b.	mà - bó - dī	I have just eaten
	SM TM ST	
	wà - b[ò dī	you (sg) have just eaten
	SM TM ST	
	kè - bó - dī	he has just eaten
	SM TM ST	
	hágè - bó - dī	we have just eaten
	SM TM ST	
	híngè-bó- dī	you (pl) have just eaten
	SM TM ST	
	bâ - bó - dī	they have just eaten
	SM TM ST	

As observed from the illustration above, the only verb that can possibly have extra morphemes that could be interpreted as extensions is: *dílí* "to eat". We find this in its form *díhíníndí* or *díhílíndí*. 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) *dílí ndà* to eat in the house
dílí tó tò wà to eat for the child
 (Literally: to eat for the head of the child)
mí dí tó tò 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) *mī -dī wòm* I eat myself (literally: I eat me)
 wò - dī wà you eat yourself (literally: you eat you)
 há - dī wáhábā 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 |
| | lóm bálòŋ sùŋ | the man pulls the potato |
| | lóm bálòŋbí sùŋ | the man pulls the potatoes |
| b. | còlí to plant | |
| | lóm bàlòŋ cò | the man plants the potato |
| | lóm bàlòŋbí cò | the man plants the potatoes. |

We observe that, in the above examples, the low tone verbs “sùŋlí” and “còlí” follow the noun bálòŋ (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 bálòŋbí “potatoes.” The derivation below further illustrates this.

- | | | |
|------|-----------------|--------------------|
| (18) | lóm bálòŋ sùŋ | lóm bálòŋbí sùŋ |
| UR | / lom baloŋ suŋ | lom baloŋ-bi suŋ / |
| | | |
| | H HL L | H HL HL |

HTS	lom baloŋ suŋ	lom baloŋ-bi suŋ
	H HL L	H HL HL
PR	[lóm bálòŋ sùŋ]	[lóm bálòŋbí súŋ]
	lóm bálòŋ cò	lóm bálòŋbí cò
UR	/ lom baloŋ cø	lom baloŋ-bi cø /
	H HL L	H HL HL
HTS	lom baloŋ cø	lom baloŋ-bi cø
	H HL L	H HL HL
PR	[lóm bálòŋ cò	lóm bálòŋbí cò]

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. kã tòm don't send
 ká cò: don't cut
- b. mì gá tòm I will not send

mì gá cò: 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 ká 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 bə lú jè lū	the child who cried
ándūūdūū	the child who cries a lot
lōm bé dí?ì díí	the man eats continuously
jè bé cóṅə cóṅ	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) mì jě tóm à	I send the woman
mí tóm jě à	I send the woman
mì bàjón tóm à	I send the slave
mó tóm bàjón 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 bō wǎ I open the door for the child
 mì ngwândā húbí bō wǎ 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 húbì I will open mí tòm I will send
 UR /mí - ø-hubi mí - ø - tom/

UR	/mi - σ -hubi	mi - σ - tom/
	H L HL	H L H
Level 1	hubi	tom
	HL	H
Level 2	mi - σ -hubi	mi - σ - tom
	H L HL	H L H
UAC	mi - σ -hubi	mi - σ - tom
	H L HL	H L H
L association		
V → V	mi - σ -hubi	mi - σ - tom
	HL HL HL HL	HL H
PR	[mî húbì	mî tóm]

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.	tóm ī	to send
	mà tóm	I sent
	wà tóm	you (sg) sent
	kè tóm	he sent

hágè tóm	we sent
híngè tóm	you (pl) sent
bâ tóm	they sent
b. cò:lí	to cut
mà cò:	I cut
wà cò:	you (sg) cut
kè cò:	he cut
hágè cò:	we cut
híngè cò:	you (pl) cut
bâ cò:	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. tómlī	to send
mĩ tóm	I am sent
wǒ tóm	you (sg) are sent
bê tóm	he is sent
hábê tóm	we are sent
híngbê tóm	you (pl) are sent
bī 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	Imperative
a. cò:lí to cut	cò: cut
cèhlí to shine	cèh shine
cù?lí to build	cù? build
sà:lí to divide	sà: divide
b. wá?lí to throw	wá? throw
lá:lí to mix	lá: mix
fá:lí to close	fá: 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.

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Appendix

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

Monosyllabic nouns.

Word	Gloss
bò	dog
bá	millet
bóm	egg
bún	red
có?	bundle
cé	basket
dú	mouth
fé:	viper
fím	wind
hó?	check
hú	eye
hò	foot
jè:	woman
jǒ	snake
ká?	shell
káp	bride wealth (price)
kòŋ	plantain
kú	corpse
lóm	language
lòm	husband
mbò?	shoulder
mbúp	dust
ndá	house
ndòm	rat
ngáp	antelope
ngó?	termite
ngwà	tale
njó	debt
ntòn	mail
nyàm	animal
sē	soil
só:	bag

sóŋ	tooth
swé	elephant
tám	hole
tím	heart
tón	navel
tòp	mud
tùŋ	ear
wà:	child
wè:	person
yún	side

Disyllabic nouns

Word	Gloss
bá?hí	matchet
bámhó	footsole
bàhà	saucepan
bájóŋ	slave
bàlòŋ	potato
bíndī	breast
búmá	umbrella
cè:má	urine
dídú	sweat
díndī	name
cīmá	blood
fándā	wall
fárí	thigh
fé:bō	diarrhea
fó:bī	fingers
húhú	bone
jíbí	medicine
jòhó	broom
kóró	fence
kìnàŋ	peanuts
kónà	bean
kónī	tail
lòndō	ring
lóbī	honey
lòlò	duck
mànà	chief
mbèyè	load

mbònjì	flower
mbùnyì	anus
nàmbí	grass
ndíbí	water
ngóbí	yam
ngúmá	oil
póhó	bottle
sàmbà	seven
sàni	mouse
támbì	shoe
tàbà	tobacco
túbri	excrement (faeces)
tùṅká	lamp
wè:són	worker
wàlóm	boy
wèṅgàṅ	doctor
wèndèm	senior
wājé	girl
wēsè	thief
wílí	string
wēndī	journey

Trisyllabic nouns

Word	Gloss
bàṅkóló	room
bénábí	detester
bèhèní	pumpkin
bílèṅbí	necklace
dìbàngá	crayfish
fúhúrí	feather
húhúmbò?	shoulder
jàngàlí	pineapple
kàmbèlí	chameleon
kòhòni	hill
kìkònyí	millipede
pòmàlí	orange
támbíbí	shoes
títìni	kidney
tóhóbí	witchcraft
túgundā	hut

Verbs

Monosyllabic verbs

Word	Gloss
bám-lī	to rumble
bí:-lī	to dance
bó:-lī	to soften
bú?-lī	to break
byé-lī	to beget
càb-lí	to trample
cù?-lí	to build
cwá?-lī	to pound
dīb-lí	to beat
dīng-lí	to love
dí-lī	to eat
dùm-lí	to smell
có-lī	to cut
còŋ-lí	to point
fá:-lī	to close
fó-lī	to give
fɔ:-lí	to borrow
fúŋ-lī	to call
háb-lī	to divide
hán-lī	to refuse
hóm-lī	to grow
hūŋ-lí	to grind
jé-lī	to kill
jà:-lí	to seize
jím-lī	to sing
jó-lī	to buy
kám-lī	to chew
kò:-lí	to fall
kú-lī	to die
lám-lī	to cook
hó-lī	to bite
nyúŋ-lī	to drink
sò:-lí	to flow
tà-lí	to lean
tóŋ-lī	to cry
yé-lī	to make

Disyllabic verbs

bé?èn-dī	to take
bórán-dī	to begin
céhé-lī	to split
cíndī-lí	to accumulate
fílin-dī	to return
hòhò-lí	to fear
jà?án-dī	to cross
kégà-lī	to try
láhàn-dī	to forget
lárìn-dí	to lick
lòhón-dī	to take out
ngwánlà-lí	to deceive
nywílin-dī	to press
pòhò-lí	to choose
sárìn-dí	to tear
sínlàn-dí	to sift
súnìn-dí	to say
sòhò-lí	to wash
tàhà-lí	to stretch out
tùhù-lí	to spit
yínlàn-dí	to be slack
yáhà-lí	to widen

Trisyllabic verbs

bòhómìn-dí	to be bent
bú?úbìn-dí	to wake up
céhémìn-dí	to climb
fú?úrìn-dí	to cover
húhúrìn-dí	to answer
jòhòrìn-dí	to wipe off
káhámìn-dí	to straighten
lòhòrìn-dí	to deceive
sá?árin-dí	to flow
tòhólìn-dí	to glide (to slide)

Adjectives

Monosyllabic Adjectives

báh	sour
byá	intelligent
bó:	tired
bô	old
búŋ	red
fóh	cold
fú	white
jé?	black
jóm	dry
lòh	ripe
lúm	dumb
lwè	bitter
sám	rotten

Disyllabic adjectives

byàbí	happy
dùbì	wet
fěfě	new
kùhí	few
kíkàh	unripe
kíkōm	sterile
lè:mí	big
lō:mí	hot
sísì	many
tàŋí	hard
tíŋgū	short
tàùnyí	blunt

Trisyllabic adjectives

cóhóŋgī	blunt
fòhòlā	light