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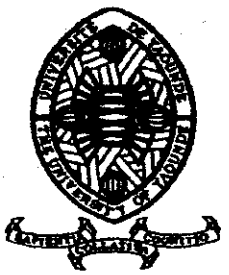

NOMINAL PHONOLOGICAL PROCESSES IN BABANKI

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

By

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Yaoundé, July 1999.

DEDICATION

I DEDICATE THIS WORK WITH DEEPEST LOVE TO

MY DEAR PARENTS

PAPA WUCHU PETER NKWI

AND

MAMA REGINA PHUBONG

ACKNOWLEDGEMENTS

I would like to sincerely convey my thanks to everyone who helped to make the writing of this dissertation possible.

My supervisor Prof. Ngessimo M. Mutaka acted both as a parent and a guardian. He initiated me into this project and his heavy financial sacrifices are responsible for my success. His untiring readiness to read and correct this work is highly appreciated. I thank you very much.

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ABBREVIATIONS AND SYMBOLS

[ ]	Phonetic transcription
/ /	Phonological transcription
[-rd]	Unrounded
[+rd]	Rounded
C	Consonant
V	Vowel
∅	Is deleted
N	Syllabic nasal
- #	Word final position
6	Syllable
UR	Underlying representation
PR	Phonetic representation
D	Derivation
P-Rule	Phonological rule
T-Rule	Tonological rule
/	Context/ environment
α	Alpha
H	High tone
M	Mid tone
L	Low tone
vl	Voiceless
vd	Voiced

V́	High tone
V̄	Mid tone
V̀	Low tone
V̂	Falling tone
V̌	Rising tone
↓	Downstep
----->	Becomes or is realised as

CHAPTER ONE

1.0 Introduction

This study attempts to describe in detail the Babanki phonology. The importance of the nominal phonology of any language cannot be over-emphasised; for through it, studies in other aspects of the language can be undertaken. This is especially significant in Babanki where the nouns exhibit alternations that this study seeks to explain. In order to achieve this aim, the work has been divided into five chapters with each chapter handling specific issues.

Chapter One situates the language geographically, gives the historical background of Babanki, gives its linguistic situation, identifies previous works done on the language, gives the purpose of the study, the methodology used, and the approach used in the study.

Chapter Two gives an inventory of the sounds, provides phonemic sounds, and ends up identifying and justifying the features used in the study.

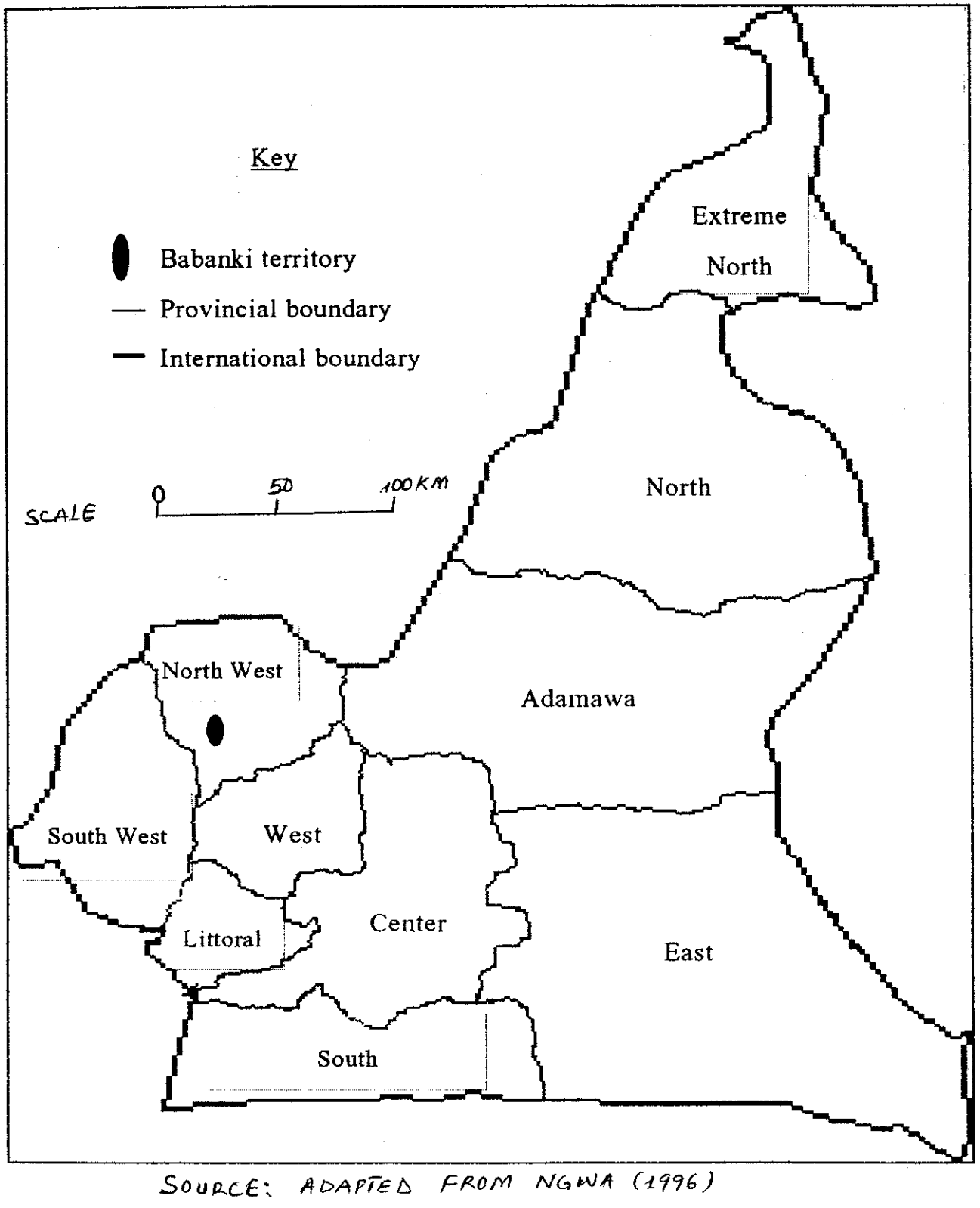
Chapter Three concentrates on the non-tonal phonological processes that occur within the Babanki nouns. Chapter Four on the other hand handles the tonal phonological processes that equally occur within these nouns.

Chapter Five concentrates on phrasal phonology and tonology and finally, a conclusion is given to overview the above points.

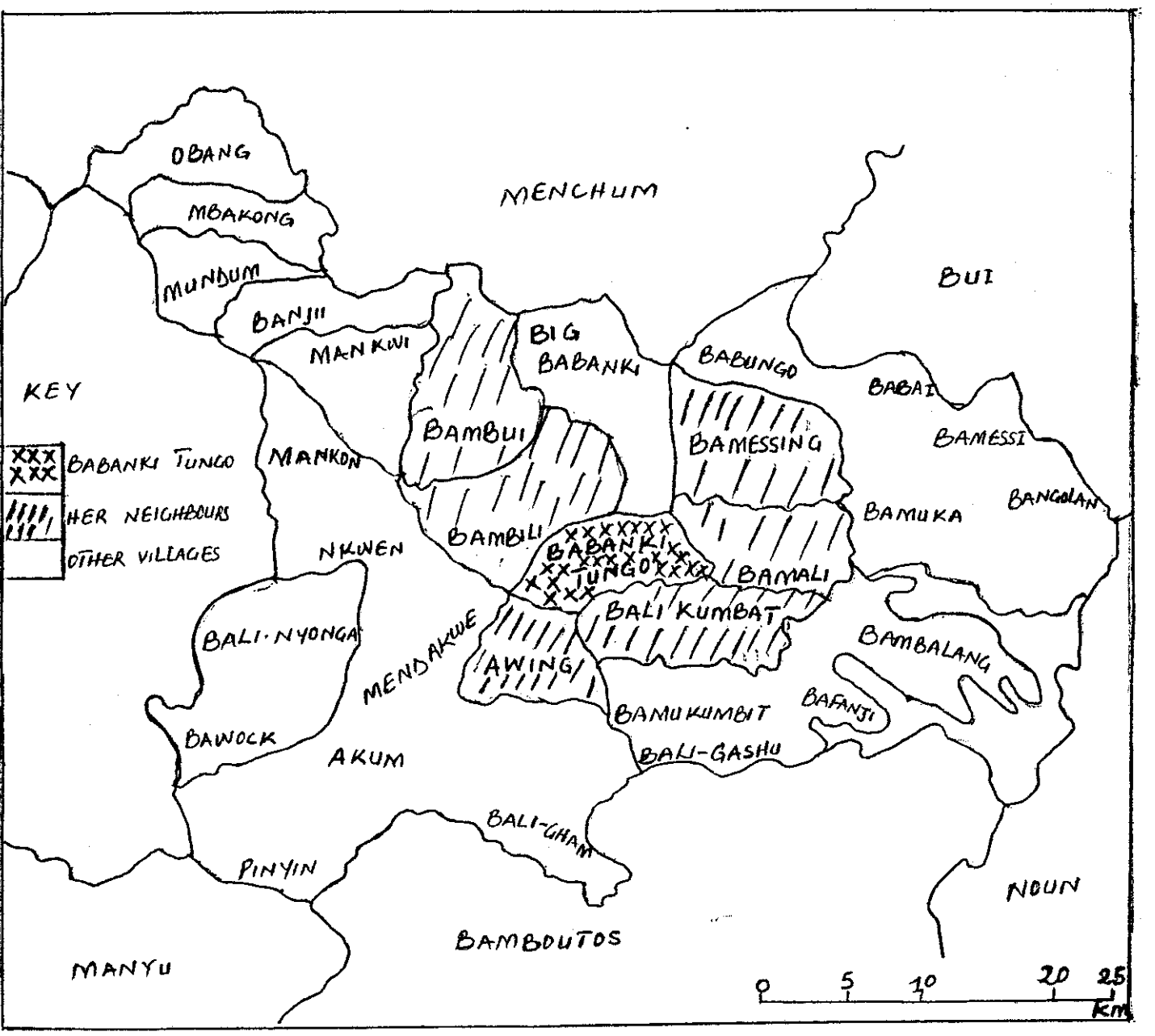
1.1 The Babanki People and their Language

1.1.1 Geographical Location

The Language Babanki is spoken in two villages. These are Babanki Tungo and Big Babanki. The two villages speak the same language with some negligible differences in sound that do not however disturb mutual intelligibility. This study is however focused on Babanki Tungo. It is situated some twenty kilometres south west of Bamenda in the Tubah Sub-division of the Mezam Division of the North west Province of the Republic of Cameroon. Seven villages border Babanki Tungo. These include Balikumbat to the South, Bamali to the South West, Bamessing to the East, Awing to the West, Big Babanki to the North, Bambili to the North West, and Bambui to the Far North. It gains its name from the fact that it is situated around three plateaux and Babanki Tungo actually means Babanki under a stone. It occupies an area of 192 square kilometres with a heterogeneous population of over 22.000 people. The soils are very fertile and this accounts for the fact that over 90% of the population are involved in farming. Cash crops such as coffee and cocoa are produced. Food stuffs like maize, beans, potatoes, and rice are mostly cultivated; other items like onions and vegetables are mostly distributed in Cameroon by Babanki Tungo. This not withstanding, they equally do mixed farming, rearing cattle, pigs, and goats in large numbers.



Map 1. Location of Babanki in Cameroon.



SOURCE: ADAPTED FROM TAMANJI (1987).

Map 2. Babanki Tungo and Her Neighbouring Villages.

1.1.2 Historical Background

As Tamanji (1987) reports, the Babanki people moved in from Northeast Cameroon along with the Tikar group. Due to hostilities from neighbours, the Tikar group was forced to split up into smaller groups which drifted South and East. The Bafuts, Koms, Nsos, and the Babankis were the last to arrive and settle in the Bamenda highlands.

The Babanki people later moved from there, travelled westwards and finally settled around Oku. Following a dispute over the ownership of Lake Oku, the Okus successfully fought the Babankis and they were forced to move off.

Meanwhile the Kom people had moved in and settled at Ashing. An intimate relationship developed between Kom and Babanki following the marriage between the Fon of Kom and a sister of the Babanki Fon. Due to cultural differences related to family succession, the two people again separated with Fon Kebeng leading the Babanki people to settle at Ku Wee and Kefem. The two Babankis later came to being during the reign of Awunti, Kebeng's grandson. It happened that during his reign, a prince (Tihsa) died shortly before the Babanki annual dance. Contrary to the custom which demanded that funerals related to the royal family be settled before the annual dance, Awunti went ahead and ordered the kick-off of the dance thereby postponing Tihsa's funeral to a later date. A disgruntled section of the people (40) decided to move off under the leadership of Aseh 1. This group finally settled in present day Babanki Tungo (Kedjom Ketinguh)

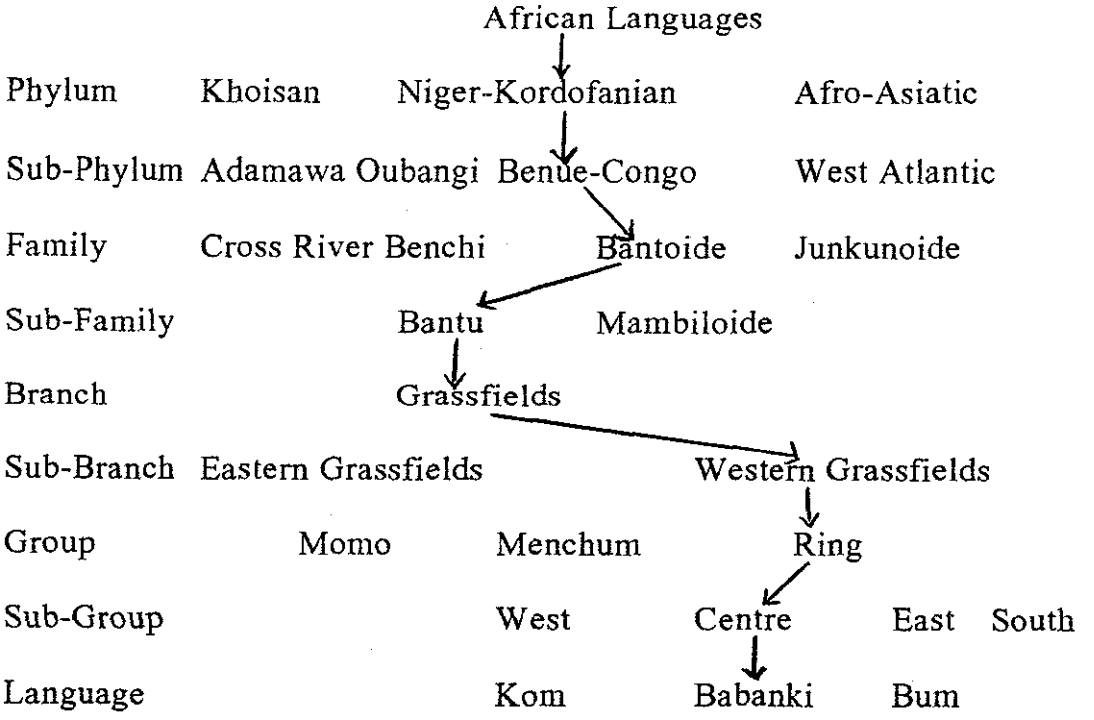
leaving behind Awunti and his supporters in present day Big Babanki (Kedjom Keku).

1.2 Linguistic Situation

The people call themselves the Kèjòm (people of Kedjom) and their language gá? kéjòm (language of the Kedjom).

The language belongs in the centre of the Ring group of the Western Grassfields Bantu branch. This branch is from the Bantu sub-family that in turn is from the Bantoide family. This family is from the Benue-Congo sub-phylum that is from the Niger-Kordofanian phylum of African Languages.

According to Greenberg's classification (Greenberg 1963), Babanki can be classified as follows:



1.3 Previous Linguistic Studies on Babanki

Not very much has been written about the Babanki language. The few linguistic works have been done by Thaddeus Menang (1981, 1983), Larry Hyman (1980), Hombert Jean-Marie (1979), and Tamanji Pius N. (1987).

The first work by Menang (1981) was titled 'A Special Language for a Special Speaker' (The case study of ''Sukwe'' the language of "Nakang''). In this study he analyses the language spoken by "Nakang'', a juju in Babanki. He illustrates the differences between this restricted dialect and the ordinary day to day language and exposes some of the connotative meanings that arise from this special usage.

In another article by the same author, 'Word Classes in Gá? kéjòm' (Menang 1983), he undertakes an elementary study of the word classes in Babanki paying attention on nouns and verbs along with their concord systems.

In addition to these two works, Menang started a study on the sounds of Babanki which he later abandoned. In this work, his purpose was to establish an alphabet for the language. He considered sounds as they occurred in isolation as graphemes that could be used in writing the language. He actually ended up identifying a good number of sounds but stopped the work uncompleted.

Tamanji (1987) reports that Hombert Jean-Marie (1979) published an article that touches on Babanki to a very slight degree. This study was a scientific analysis of the acoustic and perceptual elements of the vocalic

systems of Grassfields languages. As case study, he considered various languages among them Babanki.

Larry Hyman (1980) published 'Babanki and the Ring Group'. In this publication, he indicates the relationship between Babanki and other Ring languages. He considered the noun class system of these languages in his study.

Up till date, the most outstanding study on Babanki is that done by Tamanji (1987): 'Phonology of Babanki'. In his work, he treated the segmental and supra-segmental phonology and ended up proposing an alphabet and orthography for Babanki.

This shows that very little has been done on Babanki. The present study will add to the list and it is hoped that linguists will become interested in this language for it has a lot to offer for analysis.

1.4 The Purpose of this Study

The main aim of this study is to identify and explain the phonological changes that occur within the Babanki nouns. Even though a handful of studies have been done on this language, none has satisfied the enthusiasm of the people who wish to understand how their language works. It is hoped that by explaining these changes, a clearer view of the language will be provided. It is also hoped that this study will inspire other linguists to rush in and exploit other aspects of the Babanki language such as morphology, syntax etc. It is also aimed at contributing to linguistic theories and it is hoped that linguists will be able to classify Babanki along with other languages that exhibit similar phonological processes. We also hope to inspire the Babanki

people with this work so that they should sit up and establish a writing system for their language and subsequently standardise it.

1.5 Methodology

Most of the data used in this study have been provided by 48-year-old Ngong Blasius of Babanki Tungo. Documents like the previous works on Babanki also provided a limited part of the date. The rest of the data are simply the present researcher's ideolect.

1.6 The Approach

The approach adopted in this study is the generative approach. This was propounded by Noam Chomsky and Morris Halle (1968) The Sound Pattern of English. This approach seeks to give solutions to phonological problems from a more profound, rational and convincing perspective. Although this approach dominates the study, reference is also been done to the Structural approach wherever necessary for the two approaches can be complementary.

CHAPTER TWO

2.0 Babanki Sound Inventory and Features

2.1 Universal Phonetics.

According to Schane (1973), the quest for a universal phonetics should have as its principal goal three things:

a. It should be capable of accounting for any noise that a human being is capable of producing.

b. It should account for all sounds that are linguistically significant in some languages.

c. It should be able to account for those sounds that are linguistically significant in particular languages.

The study of (a) above will not actually be important to linguists, since it may go ahead to describe burps and belches, groans and grunts, hysterical laughter and sobs, which in spite of being socially important are of no significance to linguistic studies.

A study of (c) will equally be limiting since it may go ahead to describe sounds which are important in particular languages, yet are insignificant to other languages.

However, a study of (b) eliminates the insignificant human noises. It also goes ahead to describe sounds which may not be important in some languages but at the same time allows the possibility for human beings to select only the sounds that they need in their particular languages.

Following the advantage offered by (b) over (a) and (c), we shall undertake the study of only those sounds that are linguistically significant and important in the Babanki language. This corresponds to (b) but these sounds fall in line with the General Alphabet of Cameroonian Languages proposed by Maurice Tadadjeu and Etienne Sadembouo (1984). The sound inventory will therefore comprise both phonetic and phonemic consonants and vowels.

2.2 Phonetic Consonant Inventory.

Consonants have been generally described as sounds that are produced with some constriction in the vocal tract that impedes the free flow of air through the organs of articulation. They are usually very numerous in all human languages. Babanki is no exception with over thirty-seven phonetic consonants as attested below.

1) Bilabials

[b]	[bə̂m]	stomach
	[túbù]	jigger
	[bɔ́sá]	purse
[bh]	[bhɨ́]	dog
	[bhɨ̀]	angle
	[kə̀-bhɨ́]	ashes
[bw]	[bwá?]	tiredness
	[bwá?mə̀]	soft
	[fə̀-bwà?]	traditional marriage gift
[m]	[măŋ]	leopard

	[kə-mīŋ]	dirtiness
	[lâm]	light
[mw]	[mwì?]	swell
	[nə-mwìŋ]	truth
	[mwì?sə]	inflate
[w]	[wàìn]	child
	[wì?]	person
	[kə-wʉ́]	foot

Comment:

[b] occurs everywhere, [bh] occurs only before [ɨ]; and [bw] occurs only before [a]. [bh] and [bw] are therefore allophones of [b].

[ɱ] also occurs everywhere and [ɱw] occurs only before [i]. [ɱw] is therefore an allophone of [m].

2) Labio-dentals

[pf]	[pfó]	return
	[kə-pfəsə]	umbrella
	[pfʉ́]	death
[bv]	[kə-bvìm]	fig tree
	[m̀-bvɨ́]	fowl
	[bvəsə]	fail
[f]	[kə-fó]	thing
	[kə-fʉ́]	medicine
	[fáŋ]	remain

3) Alveolars

[t]	[tɔ́f]	intelligence
	[tóŋ]	navel
	[fə-tín]	yard
[ty]	[kə-tyú]	leader
	[tyú]	spit (verb)
[th]	[thì]	parent
	[kə-thì]	a quarter
[d]	[dəm]	play
	[kə-dədəm]	shadow
	[dì?]	cry
[dw]	[dwən]	old age
	[kə-dwən]	of old
[s]	[sáŋ]	corn
	[tə-sàs]	comb
	[fə-sɔ́s]	pepper
[z]	[záŋ]	palm fronds
	[kə-zòŋ]	thanks
	[zɔ̀ìn]	yesterday
[ts]	[tsòŋ]	thief
	[kə-tsɔ́?]	mud
	[tsíŋ]	tremble
[dz]	[dzàŋ]	read
	[dzəm]	back

	[fə-dzìŋ]	star
[n]	[kə-bén]	dance
	[bēnə̄]	also
	[nàìn]	happiness
[nw]	[nwì]	neck
	[kə-nwí]	stinginess
	[nwí]	refuse
[l]	[láín]	today
	[lò]	bridge
	[ŋàŋlə]	crawl
[lw]	[lwí]	nostril
	[lwíŋ]	he goat
	[kə-lwì]	bitterness
[ly]	[lyú?]	spoon
	[lyùn]	bamboo
	[kə-lyù]	pile of soil

Comment:

[t] occurs everywhere while [ty] occurs only before [u]; and [th] occurs only before [i]. [ty] and [th] are therefore allophones of [t].

[d] also occurs everywhere while [dw] occurs only before [ə]. [dw] is an allophone of [d].

[n] equally occurs everywhere while [nw] occurs only before [i]. [nw] is therefore an allophone of [n].

[l] occurs everywhere whereas [lw] occurs only before [i] and [ly] before [u]. [lw] and [ly] are therefore allophones of [l].

3) Palato-alveolars

[c]	[cû?]	mouth
	[cǒ?]	pass
	[kə-cú?]	head
[j]	[jì]	road
	[jɔ̀]	no
	[kə-jɔ́]	power
[sh]	[shì?]	hoe
	[kə-shí?]	place
	[shù?]	fish
[zh]	[zhù]	bee
	[kə-zhú?]	white yam
	[zhí?]	name

5) Palatals

[ny]	[nyàm]	animal
	[nyú?]	drink
	[kə-nyù]	something
[y]	[yès]	us
	[yèn]	see
	[yì]	that

6) Velars

[k]	[kóŋ]	pistle
	[kám]	squeeze
	[kákə́]	turn
[kh]	[kháŋ]	ceiling
	[kə̀-khá?]	leg
[kw]	[kwɔ́ŋ]	hand
	[kə̀-kwɔ́ŋ]	bone
	[kwâ?]	break
[g]	[gɨ́]	voice
	[kə̀-gə̀?]	jaw
	[gà?]	talk
[gh]	[ghàm]	mat
	[gháŋ]	root
	[kə̀-ghá̋f]	far
[ŋ]	[ŋàŋ]	force
	[bàŋ]	red
	[ŋàŋlə̀]	crawl

Comment:

[k] occurs everywhere while [kh] occurs only before [a]; and [kw] only before [ɔ]. [kh] and [kw] are therefore allophones of [k].

7) Glottal

[ʔ] [mùʔ] one

[tɔ́ʔ] bush

[kàʔ] four

The following phonetic consonant chart can be established from the consonants identified.

place of articlation / manner of articulation	Bilabial	Labio-dental	Alveolar	Palato-alveolar	Palatal	Velar	Glottal	Labio-velar
Stops vl			t,t^{h},t^{y}			k,k^{h},k^{w}	ʔ	
vd	b,b^{w},b^{h}		$d,\ d^{w}$			g		
Nasals	m,m^{w}		n,n^{w}		ny	ŋ		
Fricative vl		f	s	sh				
vd		v	z	zh		gh		
Affricates vl		pf	ts	c				
vd		bv	dz	j				
Laterals			l,l^{w},l^{y}					
Glides	w				y			w

Table 1. Babanki Phonetic Consonant Chart

This phonetic consonant chart reveals that contrary to other Bantu Languages that have one of the most common sounds [p], Babanki lacks it. We stress on this vacuum because its voiced counterpart occurs and is even labialised and aspirated. The absence of this sound is justified by the fact that there is no word in Babanki with the sound [p].

All Pidgin English words that contain [p] are pronounced by Babanki speakers of Pidgin as [b]. The following examples illustrate this assertion;

8)	Pidgin English	Babanki Speaker	Gloss
	wusa paul de	wusa baul de	where is Paul?
	peter don chop	biter don chop	Peter has eaten
	gime da pursa	gime da bursa	Give me that purse

2.2.1 Consonant Distribution

2.2.1.1 Word Initial Consonants

Of all the consonants identified in Babanki, only the glottal stop does not occur in word initial position. For examples, refer back to the phonetic consonant inventory. There, it is realised that all consonants except the glottal stop [ʔ] do occur in word initial position.

2.2.1.2 Word Medial Consonants

Apart from the palatal glide [y] and the glottal stop [ʔ] which occur only in word initial and in word final positions respectively, all the consonants of Babanki do occur in word medial position. Examples are found in the phonetic consonant inventory above.

2.2.1.3 Word Final Consonants

Contrary to the word initial and word medial positions where all the consonants except [y] and [ʔ] occur, the word final position is exceptional with only few consonants occurring there. Three sets of consonants can occupy this position. These are the glottal stop, the voiceless fricatives, and the nasals with the exception of the palatal nasal [ny]. The following examples illustrate this;

9) Glottal Stop

[bwá?] tiredness

[shì?] hoe

[zhí?] name

[nyú?] drink

[mù?] one

[tɔ́?] bush

10) Voiceless Fricatives

[tə-sàs] comb

[fə-sə́s] pepper

[tɔ́f] intelligence

[fwɔ́f] wind

[tɔ́sh] torch

[wàsh] watch

11) Nasals (except [ny])

[ǹtám] branch

[nyàm] animal

[dwən] old age

[fə-tín] yard

[bàŋ] red

[gháŋ] root

2.3 Phonetic Vowel Inventory

Generally, vowels are described as sounds produced with no obstruction to the airstream within the vocal tract. This permits the free flow of air through this tract. They are usually the most important parts of a syllable because they carry such intonational features as stress and pitch. Because of this they are known as the peak of the syllable. The phonetic vowels of Babanki are shown in the following examples:

12) [i] [vìʔ] come

[tín] cut

[byíʔ] goat

[e] [mbé] chisel

[byè] pear

[bén] dance

[ɛ] [jɛ̀] journey

[bwɛ́n] not

[yɛ́n] see

[ɛɛ] [lɛ́ɛ́m] yam

[fɛ́ɛ́m] sacred place

Note: [ɛɛ] occurs only before the bilabial nasal [m].

[ɨ] [bhí] dog

[m̀-bví] fowl

[kə̀-mīŋ] dirtiness

[ʉ] [pfʉ́] death

[kə̀-wʉ́] foot

	[kə-vɯ́]	hand
[ə]	[də́m]	play
	[kə-fɯ́]	medicine
	[dzə̀m]	back
[a]	[záŋ]	palm fronds
	[dzàŋ]	read
	[nyàm]	animal
[u]	[túbù]	jigger
	[nyú?]	drink
	[cû?]	mouth
[o]	[cǒ?]	pass
	[tsòŋ]	thief
	[tóŋ]	navel
[ɔ]	[tɔ́f]	intelligence
	[tɔ́?]	bush
	[jɔ̀]	no
[ɔɔ]	[bɔ́ɔ́ŋ]	pick
	[kə-tɔ̀ɔ̀ŋ]	opening

Note: [ɔɔ] occurs only before the velar nasal [ŋ]

From the vowels identified, the following phonetic vowel chart can be constructed.

	Front [-rd]	Central		Back [+rd]
		[-rd]	[+rd]	
High	i	ɨ	ʉ	u
Mid High	e	ə		o
Mid low	ɛ, ɛɛ			ɔ, ɔɔ
Low		a		

Table 2. Babanki Phonetic Vowel Chart

This chart reveals that Babanki has a 10-vowel pattern with the mid-low vowels having their long counterparts. According to Mutaka (1995) the description of vowels is based on the position of the tongue body, the shape of the lips, and the relative tension of the vowels. A vowel may thus be: high, low, back, depending on the position of the tongue body; it may be round or unround, depending on the shape of the lips, and it may be tense or lax as far as the relative tension is concerned. It is in this light that we shall describe the vowels of Babanki.

2.3.1 The Front Vowels

Front vowels are produced with the body of the tongue rising up in the front part of the mouth near the hard palate. They are produced with unrounded lips. The high and mid-high vowels are tense and the mid-low vowels are lax. The three front vowels occur between consonants, and in word final position. As stated earlier, [ɛɛ] occurs only before the bilabial nasal and is considered to be an allophone of [ɛ] that occurs everywhere. The following examples show the distribution of the front vowels.

13) [i] [vì?] come

[lwí] nostril

[e] [kə̀-bén] dance

[mbé] chisel

[ɛ] [bwɛ́n] not

[jɛ̀] journey

2.3.2 The Central Vowels

These can be described as vowels produced between front and back vowels. The tongue is in the middle position of the mouth during the production of such sounds. All the central vowels except [ʉ] are produced with unrounded lips. [ɨ] is capable of occurring between consonants, and also in word final position. [ʉ] can only appear in word final position. [ə] and [a] are capable of occurring in all environments of words. The following examples illustrate this distribution.

14) [ɨ] [sɨ́ŋ] commit suicide

[kə̀-tɨ́tɨ́] stick

[ʉ] [m̀-bvʉ́] fowl

[kə̀-vʉ́] hand

[ə] [ə̀-wúm] egg

[dəm] play

[bvəsə́] fail

[a] [à-ló?] home

[sáŋ] corn

[bósá] purse

2.3.3 The Back Vowels

Back vowels are produced with the back of the tongue pushing up in the back of the mouth near the soft palate. They are produced with rounded lips. The high and mid-high vowels are tense and the mid-low vowels are lax. The back vowels occur between consonants, and in word final position. As stated earlier, [ɔɔ] occurs only before the velar nasal and is considered to be an allophone of [ɔ] that occurs everywhere. The following examples show the distribution of the back vowels:

15)	[u]	[túbù]	jigger
		[shù?]	fish
	[o]	[cǒ?]	pass
		[kə̀-fó]	thing
	[ɔ]	[tɔ́f]	intelligence
		[jɔ̀]	no

2.3.4 The Long Vowels

As said earlier, only the mid-low vowels have long counterparts and it has been established that these are allophones of these mid-low vowels. [ɛɛ] has been found to occur only before [m] while [ɔɔ] occurs only before [ŋ]. The following examples further amputate the argument.

16)	[ɛɛ]	[lɛ́ɛ́m]	yam
		[fɛ́ɛ́m]	sacred place
	[ɔɔ]	[bɔ́ɔ́ŋ]	pick
		[kə̀-tɔ̀ɔ̀ŋ]	opening
		[ǹ-jɔ̀ɔ̀ŋ]	age group

2.4 Phonemic Consonant and Vowel Charts

2.4.1 Phonemic Consonant Chart

place of articulation / manner of articulation	Bilabial	Labio-dental	Alveolar	Palato-alveolar	Palatal	Velar	Glottal	Labio-velar
Stops vl			t			k	ʔ	
vd	b		d			g		
Nasals	m		n		ny	ŋ		
Fricative vl		f	s	sh				
vd		v	z	zh		gh		
Affricates vl		pf	ts	c				
vd		bv	dz	j				
Laterals			l					
Glides	w				y			w

Table 3. Babanki Phonemic Consonant Chart

2.4.2 Phonemic Vowel Chart

	Front [-rd]	Central		Back [+rd]
		[-rd]	[+rd]	
High	i	ɨ	ʉ	u
Mid High	e	ə		o
Mid low	ɛ			ɔ
Low		a		

Table 4. Babanki Phonemic Vowel Chart

2.5 Features

Features help in distinguishing sounds very clearly. This is so because even if segments belong to the same natural class of sounds, no two of them

can have the same value of features used in their description. Features also help in distinguishing natural from non-natural classes of sounds and features can easily capture changes in segments.

2.5.1 Justification of Features Used for Consonants

The following features have been used to describe in a distinct manner the consonants of Babanki.

Consonantal: The feature consonantal has been used to classify all the consonants into a single major class which excludes other sounds like glides, and all the vowels. Sounds in this class have been described as [+cons] and those excluded as [-cons]. This means that all consonants are [+cons] and all vowels and glides are [-cons].

Syllabic: The feature syllabic describes sounds that can stand as the nucleus or peak of a syllable. Generally, all vowels in languages are [+syll] while all consonants are [-syll]. However, at times, some liquids and nasals do play this role and are described as syllabic consonants. In Babanki, nasals can stand as the nucleus or peak of syllables and when they do so, they are referred to as syllabic nasals. Vowels and syllabic nasals are therefore described as [+syll] whereas other consonants are [-syll].

Nasal: The feature nasal describes sounds produced with the velum lowered to allow passage of air through the nasal cavity. In Babanki, all the nasals are [+nas] and all other sounds are [-nas].

Anterior: This feature groups all sounds produced from the palato-alveolar region back to the bilabials. They therefore include all bilabials, labio-

dentals, and alveolars that are described as [+ant] while the rest of the sounds are described as [-ant].

Coronal: This feature describes sounds produced with the blade of the tongue raised from its neutral position towards the hard palate. It therefore distinguishes alveolars and palato-alveolars that are [+cor] from other sounds that are said to be [-cor]

Low: The feature low has been used to describe sounds produced with the tongue resting below its neutral position. The glottal stop is described as [+low] and all other consonants are [-low].

Constricted glottis: This feature distinguishes sounds produced with a constriction at the level of the glottis from those produced without this constriction. The glottal stop is described as [+constr] and all other sounds are [-constr].

Back: It distinguishes all sounds that are produced with a retraction of the body of the tongue from those made without this retraction. Velars and the glottal stop are [+back] while other sounds are [-back].

2.5.2 Justification of Features Used for Vowels

Syllabic: As said earlier, this feature describes sounds that can function as the peak or nucleus of a syllable. These include all vowels and the syllabic nasals in Babanki.

High: This is used to differentiate sounds produced with the body of the tongue raised from those produced with the body of the tongue lowered.

Such vowels include [i], [ɨ], [ʉ], and [u] that are said to be [+hi] and the rest of the vowels are [-hi].

Low: This is opposed to the feature high and is used to describe sounds produced with the body of the tongue lowered. In Babanki, only [a] is [+low] and the others are [-low].

Back: The feature back has been used to describe all sounds produced after the position of the front vowels. These include all central and back vowels that are [+back] while the front vowels are described as [-back].

These definitions have been adapted from Chomsky and Halle (1968).

2.6 Consonant Feature Matrix

	syll.	cons.	ant	cor	nas	cont.	sonor	lat.	voice	back	low	constr
b	-	+	+	-	-	-	-	-	+	-	-	-
t	-	+	+	+	-	-	-	-	-	-	-	-
d	-	+	+	+	-	-	-	-	+	-	-	-
k	-	+	-	-	-	-	-	-	-	+	-	-
g	-	+	-	-	-	-	-	-	+	+	-	-
ʔ	-	+	-	-	-	-	-	-	-	+	+	+
m	-	+	+	-	+	-	+	-	+	-	-	-
n	-	+	+	+	+	-	+	-	+	-	-	-
ny	-	+	-	-	+	-	+	-	+	-	-	-
ŋ	-	+	-	-	+	-	+	-	+	+	-	-
f	-	+	+	-	-	+	-	-	-	-	-	-
v	-	+	+	-	-	+	-	-	+	-	-	-

	syll.	cons.	ant	cor	nas	cont.	sonor	lat	voice	back	low	constr
s	-	+	+	+	-	+	-	-	-	-	-	-
z	-	+	+	+	-	+	-	-	+	-	-	-
sh	-	+	-	+	-	+	-	-	-	-	-	-
zh	-	+	-	+	-	+	-	-	+	-	-	-
gh	-	+	-	-	-	+	-	-	+	+	-	-
pf	-	+	+	-	-	-	-	-	-	-	-	-
bv	-	+	+	-	-	-	-	-	+	-	-	-
ts	-	+	+	+	-	-	-	-	-	-	-	-
dz	-	+	+	+	-	-	-	-	+	-	-	-
c	-	+	-	+	-	-	-	-	-	-	-	-
j	-	+	-	+	-	-	-	-	+	-	-	-
l	-	+	+	+	-	-	+	+	+	-	-	-
w	-	-	+	-	-	+	+	-	+	-	-	-
y	-	-	-	-	-	+	+	-	+	-	-	-

Table 5. Consonant Feature Matrix

2.7 Vowel Feature Matrix

	syllabic	high	low	back	round	tense
i	+	+	-	-	-	+
e	+	-	-	-	-	+
ɛ	+	-	-	-	-	-
ɨ	+	+	-	+	-	+
ʉ	+	+	-	+	+	+
ə	+	-	-	+	-	-
a	+	-	+	+	-	-
ɔ	+	-	-	+	+	-
o	+	-	-	+	+	+
u	+	+	-	+	+	+

Table 6. Vowel Feature Matrix

CHAPTER THREE

NON TONAL PHONOLOGICAL PROCESSES

3.0 Introduction

This chapter will centre on the non-tonal phonological processes that occur within the Babanki nouns. These will reveal the various changes that these nouns undergo when they are either put together or apart. It will start by looking at the morphological structure of these nouns and also the derived nouns. The chapter will go further to examine the syllable structure of these nouns and shall end up looking at the various non-tonal phonological processes that the nonderived and the derived nouns undergo in Babanki

3.1 Morphological Structure of Nouns

According to Mutaka (1995) the structure of the Bantu noun may be as follows:

Prefix + stem

Augment + prefix + stem

Secondary prefix + prefix + stem.

The Babanki noun like in most Bantu languages consists of a prefix and a stem. Consider the following examples:

17)

Prefix-stem		Prefix-stem
fə-sés cl_{19}-stem	pepper	mə-sés cl_4-stem
ə̀-wúm	egg	à-wúm

cl_5 –stem		cl_6-stem
kə̀-kím	crab	ə̀-kím
cl_7-stem		cl_8-stem

In these forms, [fə̀-], [mə̀-], [ə̀], [à-], [kə̀-], [ə̀-] are all nominal prefixes grouped into singular and plural. Each prefix belongs to a specific class depending on its shape and the meaning it gives to the noun to which it belongs. Thus [ə́-] of [ə́-wúm] "egg'' is class five (cl_5) whereas [ə́-] of [ə́-kím] "crabs" is class eight (cl_8).

3.2 Syllable Structure of Nouns

A close look at the Babanki noun reveals that the noun root can have a cv or a cvc structure. As Peter Roach (1983) puts it, syllables are usually described as consisting of a centre which has little or no obstruction to airflow and which sound comparatively louder, before and after this centre, there will be greater obstruction to airflow and or less loud sound. To see this clearly, consider the following noun roots:

18)	Syllable pattern	Illustration	Gloss
		kú	forest
		sé	grave
		pfú	death
	CV	lò	bridge
		túbú	jigger
		kó	money

	sóŋ	tooth
	kə́-cú?	head
	sáŋ	corn
CVC	sɔ́?	hat
	bə̀m	stomach
	kə̀-làŋ	achu

These data above show clearly that the noun roots can have a CV syllable structure as well as a CVC syllable structure.

3.3 Phonological Processes Within Underived Nouns.

This part exposes the changes that occur within the nonderived nouns of Babanki. Here, such non-tonal phonological processes as vowel deletion, nasal assimilation, and devocalisation will be discussed.

3.3.1 Vowel Deletion

It is usually somehow uncertain to say whether a segment is deleted or inserted in an alternation. Following a critical and detailed analysis of the following data, a case of vowel deletion was established. Consider these data below in which the prefixes which are class markers are followed by the root (noun) as in the left column and in the right column the root is followed by the demonstrative, then the future tense marker and finally a verb.

19)

Nouns (plural forms)			Gloss
və-lám	lights	və-lám ví? á fəŋ	those lights will fall
və-sàŋ	months	və-sàŋ ví? á fəŋ	those months will fall
mə-tín	yards	mə-tín mí? á fəŋ	those yards will fall

à-sáŋ	corn	à-sáŋ yí? á mè?	this corn will finish
kə̀-làŋ	achu	kə̀-làŋ kí? á mè?	this achu will finish
mə̀-sés	pepper	mə̀-sés mí? á mè?	this pepper will finish

These data show how these words are combined to form the sentences as in the right column. However, consider the data in (20) where the words are taken from class ten (cl_{10}) of the noun classes of Babanki. The plural marker of this class alone is a suffix and all other classes have but prefixes or no morphemes marking their plurals. An example is (19) above.

20)	Nouns (plural)			Gloss
	m̀bàìn-sə́	fences	m̀bàìn-shì-sá fəŋ	those fences will fall
	zhú?-sə́	bees	zhú?-shì-sá vì?	those bees will come
	ǹyíŋ-sə́	beards	ǹyíŋ-shì-sá mé?	those beards will finish
	shí?-sə́	hoes	shí?-shì-sá mé?	those hoes will finish
	ǹjìsə̀?-sə́	teachers	ǹjìsə̀?-shì-sá ví?	those teachers will come
	jə́m-sə	dreams	jə́m-shì-sá mé?	those dreams will finish
	ǹdzíŋ-sə́	lies	ǹdzíŋ-shì-sá mé?	those lies will end
	ŋ̀k^{w}úŋ-sə́	holes	ŋ̀k^{w}úŋ-shì -sá l^{w}ìn	those holes will exhaust
	m̀b^{y}í?-sə́	bells	m̀b^{y}í?-shì-sá fəŋ	those bells will fall
	ŋ̀g^{w}ə́?-sə́	years	ŋ̀g^{w}ə́?-shì-sá mé?	those years will end
	ŋ̀gàìn-sə́	tales	ŋ̀gàìn-shì-sá mé?	those tales will end

Word for word translation

These data here show that the plural of the nouns is separated from them by the demonstrative. Unlike in (19), the sentence consists of the noun followed by the demonstrative, the plural marker, the future tense marker and finally the verb.

It is noticed therefore that the vowel of the plural morpheme [–sə́] is deleted because it is followed by another vowel in this case the future tense marker [á]. The following phonological rule can therefore be proposed to account for this process

P-Rule 1

Vowel Deletion

$$[ə] \text{------} > [\varnothing] / \text{--} [a] \qquad \begin{bmatrix} +\text{syll} \\ -\text{cons} \end{bmatrix} \text{---------} > [\varnothing] / \text{--} \begin{bmatrix} +\text{syll} \\ -\text{cons} \end{bmatrix}$$

A derivation can help illustrate this rule that states that a vowel is deleted if it occurs before another vowel.

D-1

	m̀bàìn-shì-sá fəŋ	jɔ́m-shì-sá mè?
UR/	m̀bàìn-shì-sə̀-á fəŋ	jɔ́m-shì-sə̀-á mè?/
	↓	↓
Vowel deletion	∅	∅
	PR[m̀bàìn-shì-sá fəŋ	jɔ́m-shì-sá mè?]

3.3.2 Nasal Assimilation

Another non-tonal phonological process that occurs within the underived nouns is named here nasal assimilation. Assimilation can be defined as a process by which a sound is modified in order to make it more similar to some other sound in its neighbourhood (Katamba 1995). This often results in smoother more effortless, more economical transition from one sound to another. Here, a consonant may take up the features of another consonant, a consonant may take up the features of a vowel or a vowel may influence another vowel or consonant. The first possibility is attested in Babanki. Here, we find a consonant assimilating the features of another consonant. It is very usual to find a nasal being homorganic with the following consonant. Thus the nasal often assimilates the place of articulation of the following consonant. Consider the data below for illustration.

21.a)	Nouns	Gloss
	m̀bàŋ	walking stick
	m̀bàìn	fence
	m̀b^{w}òŋ	palm maggot
	m̀b^{w}à?mə	peace
	m̀bà?	an insult
	m̀b^{w}á?	level land
	m̀bú?	product from groundnut
	m̀bù?	a person's name
	m̀bé	chisel

With the above data, one can propose the following phonological rule to explain this assimilation process.

Nasal assimilation

$$N\text{----------}>\begin{bmatrix}-cor\\+ant\end{bmatrix}/\text{---}\ \begin{bmatrix}-cor\\+ant\end{bmatrix}$$

A nasal takes the place of articulation of the bilabial stop it precedes.

21.b)	ǹtú?	pen
	ǹtàŋ	rope
	ǹtá?	reward
	ǹdòŋ	potatoe
	ǹdóŋ	cup
	ǹdòìn	badluck
	ǹsáŋ	tail
	kə̀-ǹsóín	frog
	kə̀-ǹtú?	fon' s house

The following phonological rule can be proposed to explain this process of assimilation

Nasal assimilation

$$N\text{----------}>\begin{bmatrix}+cor\\+ant\end{bmatrix}/\text{--}\ \begin{bmatrix}+cor\\+ant\end{bmatrix}$$

Here, a nasal becomes alveolar whenever it precedes an alveolar consonant.

21.c) ŋkáŋ corn beer

ŋk^{w}ùŋ hole

kə-ŋk^{w}ùŋ a hit on the head

ŋgù? stone

ŋgú? termite

ŋgàìn tale

ŋg^{w}ù? year

ŋg^{w}àìn cane

ŋgú hog

The phonological rule to explain this assimilation process can be formulated as follows;

Nasal assimilation

$$N \longrightarrow \begin{bmatrix} -cor \\ -ant \end{bmatrix} / \text{--} \begin{bmatrix} -cor \\ -ant \end{bmatrix}$$

A nasal becomes velar whenever it precedes a velar stop.

The above nasal assimilation rules can be collapsed into one since the three rules have a common feature that changes. As such, the following collapsed rule has been proposed.

P-rule 2

Collapsed Nasal Assimilation

$$N \longrightarrow \begin{bmatrix} \alpha cor \\ \alpha ant \end{bmatrix} / \text{--} \begin{bmatrix} \alpha cor \\ \alpha ant \end{bmatrix}$$

This means therefore that a nasal adopts the qualities or place of articulation of the consonant it precedes be it coronal, anterior, or not.

The following derivation illustrates this rule:

D.2

m̀bàŋ	ǹdòŋ	ǹsàŋ	ŋ̀gú?
UR/ N-bàŋ	N-dòŋ	N-sàŋ	N-gú? /

Collapsed nasal assimilation:

m	n	n	ŋ
PR[m̀bàŋ	ǹdòŋ	ǹsàŋ	ŋ̀gú?]

3.3.3 Devocalisation

Another non-tonal phonological process which obtains within the underived nouns of Babanki is what is called devocalisation. Here, in a sequence of two vowels, the first vowel becomes a glide if it is a high vowel. Consider the data below.

22.a)

/kə̀-béín/---------> [kə̀-béín]	a dance
/gháín/----------> [gháín]	visit
/kə̀-báín/ --------> [kə̀-báín]	fufu
/wàìn/----------> [wàìn]	child
/lɛɛm/----------> [lɛɛm]	yam

22.b)

/ŋkìè/----------> [ŋkyè] basket

/kìè/----------> [kyè] key

/nìè/----------> [nyè] cutlass

/nsíé/----------> [nsyé] ground

/bìè/----------> [byè] pear

/nìènə/----------> [nyènə] feather

/lìəŋ/----------> [lyəŋ] bamboo

/kíékíé/----------> [kyékyé] charcoal

/kə-nìənə/----------> [kə-nyənə] toe nail

From these data, the following phonological rule can be proposed to relate the phonological and the phonetic representations.

Devocalisation

$$\begin{bmatrix} +\text{syll} \\ +\text{hi} \\ -\text{bk} \end{bmatrix} \text{----------} > [\text{-syll}] \; /\text{--} \begin{bmatrix} +\text{syll} \\ -\text{cons} \end{bmatrix}$$

This rule states that the high front vowel [i] becomes a glide [y] whenever it is followed by another vowel. In 22.a, the first vowels do not devocalise because they are not high [+hi].

22.c) /ŋgòìn/----------> [ŋgòìn] pride

/ǹtòìn/----------> [ǹtòìn] pot

/fòìn/----------> [fòìn] fon

/kə-ǹsòìn/----------> [kə-ǹsòìn] frog

kə-ŋkòìn/----------> [kə-ŋkòìn] idiot

22.d) /nùì/----------->[nwì] neck

/gùà/----------->[gwà] leather

/lúí/----------->[lwí] nostril

/kúɜ́n/----------->[kwɜ́n] bed

/kúɔ́ŋ/----------->[kwɔ́ŋ] arm

/ŋ̀kùɜ̀n/----------->[ŋ̀kwɜ̀n] tail

/kɜ̀-kúɔ́ŋ/----------->[kɜ̀-kwɔ́ŋ] bone

/dùɜ̀n/----------->[dwɜ̀n] old age

/fúáín/----------->[fwáín] stream

In (22.c), the phonological and phonetic representations are similar unlike in (22.d) where they differ. The following rule explains this alternation.

Devocalisation

$$\begin{bmatrix} +\text{syll} \\ +\text{bk} \\ +\text{hi} \end{bmatrix} \text{-------} > [\text{-syll}] \; /\text{--} \; \begin{bmatrix} +\text{syll} \\ \text{-cons} \end{bmatrix}$$

This rule says a high back vowel [u] becomes a glide [w] whenever it occurs before another vowel.

These devocalisation rules can be collapsed into one for they have a common feature which is formed, the glide. Thus;

P-Rule 3

Collapsed Devocalisation

$$\begin{bmatrix} +\text{syll} \\ +\text{hi} \end{bmatrix} \text{----------} > [\text{-syll}] \; /\text{--} \begin{bmatrix} +\text{syll} \\ \text{-cons} \end{bmatrix}$$

This rule states simply that high vowels are devocalised whenever they precede other vowels.

A derivation will help illustrate how this rule works.

D-3

kyè	byè	nyènə̀	lwí	fwáín
UR/ kìè	bìè	nìènə̀	lúí	fúáín/

Collapsed devocalisation:

y	y	y	w	w
PR[kyè	byè	nyènə̀	lwí	fwáın]

3.4 Phonological Processes Within Derived Nouns

This part will expose the changes that occur within the derived nouns of Babanki. Here, such rules as Vowel Lowering, Glottal Stop Formation and Second Vowel Lowering will be discussed. These processes obtain simultaneously.

3.4.1 Vowel Lowering.

The data below reveals how a back vowel lowers by two degrees of aperture whenever it occurs before a nasal

23.a) Infinitive	Derived Noun	Gloss
tàŋ	wú-tó?	one who stays
sàŋ	wú-só?	one who dries
tsàŋ	wú-tsó?	one who displays
fãŋ	wú-fó?	one who remains

káŋ	wú-kó?	one who fries
dàŋ	wú-dó?	one who stretches
wáŋ	wú-wó?	one who sprays
dzáŋ	wú-dzó?	one who calls
làŋ	wú-ló?	one who puts medicine
bàŋ	wú-bó?	one who carves
dzàŋ	wú-dzó?	one who reads
táŋ	wú-tó?	one who counts

These data show a form of vowel lowering. It is realised that the vowel [o] is lowered by two degrees of aperture, as it becomes [a] whenever it occurs before the velar nasal [ŋ]. The following phonological rule can explain this change.

P-Rule 4

Vowel Lowering

[o]----------> [a]/--[ŋ]

That is $\begin{bmatrix} -hi \\ -lo \\ +bk \\ +ATR \end{bmatrix}$ -----> [+lo] /-- $\begin{bmatrix} +nasal \\ +bk \\ +low \end{bmatrix}$

This rule says that a back mid vowel becomes low whenever it precedes the velar nasal.

However, one could be tempted to say it is [a] which becomes [o] that is; [a]-----> [o]/--[?]

But forms like the following reveal that [a] cannot appear in the underlying representation.

23.b) Infinitive	derived nouns	gloss
só?	wú-só?	one who snatches
ló?	wú-ló?	one who pays
bó?	wú-bó?	one who opens
mó?	wú-mó?	one who throws
kó?	wú-kó?	one who tears

These forms reveal that when [ŋ] does not appear in the final position; [a] does not appear; showing that [a] is not underlying.

3.4.2 Glottal Stop Formation

Referring back to the data in (23.a) above, It is noticed that there is an alternation between [ŋ] and [?]. The root appears with [ŋ] usually when the preceding vowel is in its lowered form and with [?] when the vowel is still full (that is not yet lowered). This is why it is believed that vowel lowering occurs simultaneously with glottal stop formation for they feed each other.

It is suggested that it is the velar nasal that changes into the glottal stop. This alternation looks unusual but it is possible since both consonants share the feature low (+low) in Babanki.

This phonological rule will help explain the change.

P-Rule 5

Glottal Stop Formation

[ŋ]------>[?]/6--#

That is $\begin{bmatrix} +\text{nasal} \\ +\text{lo} \\ +\text{bk} \end{bmatrix} \text{----} > \begin{bmatrix} -\text{nasal} \\ +\text{constr} \end{bmatrix}$ /6--#

This rule states that the velar nasal becomes the glottal stop whenever it occurs at the final position of a syllable that is preceded by another syllable.

However, one could be tempted to say it is [ʔ] which becomes [ŋ] That is [ʔ]---------> [ŋ]/--#

But forms like those in (23.b) show that even the glottal stop appears at word final position of single syllable words so it is not possible to say it becomes the nasal whenever it appears in the final position of such words.

Consider the following data that confirms the vowel lowering and glottal stop formation rules.

24.a)	Infinitive	Derived Nouns	Gloss
	tóŋ	wú-túʔ	one who digs
	tsóŋ	wú-tsúʔ	one who steal
	kóŋ	wú-kúʔ	one who loves
	wóŋ	wú-wúʔ	one who brings rain
	lóŋ	wú-lúʔ	one who leaves
	bòŋ	wú-búʔ	one who is good
	tsóŋ	wú-tsúʔ	one who digs
	kóŋ	wú-kúʔ	one who gives
	tòŋ	wú-túʔ	one who blows

wóŋ	wú-wú?	one who spreads
bóŋ	wú-bú?	one who picks
bwòŋ	wú-bwú?	one who is freed
sóŋ	wú-sú?	one who sucks

These data here also demonstrate vowel lowering as stipulated in (23.a). Here, the vowel [u] lowers by one degree of aperture whenever it is followed by [ŋ].

The following phonological rule can help explain this change.

P-Rule 6

Second Vowel Lowering

[u]----------> [o]/-[ŋ]

$$\text{That is } \begin{bmatrix} +\text{hi} \\ +\text{bk} \end{bmatrix} \text{-------} > \begin{bmatrix} -\text{hi} \\ -\text{low} \end{bmatrix} / \text{--}[+\text{nasal}]$$

This states that a back high vowel becomes mid before the velar nasal

Equally, one could be thinking that it is [o] that becomes [u] but forms like the following reveal that [o] is not underlying

24.b) Infinitive	Derived Nouns	Gloss
tú?	wú-tú?	one who mixes
nú?	wú-nú?	one who excretes
tsú?	wú-tsú?	one who removes
lú?	wú-lú?	one who leaves

Here therefore, it is noticed that the formation of [o] depends on the nasal. Since there is no nasal, vowel lowering does not apply showing that [u] is the underlying vowel.

The set of data in (24.a) also confirms the glottal stop formation rule that obtains in (23.a).

In the set of data below, it will be demonstrated that only back vowels are involved in vowel lowering.

25.a) Infinitive	Derived Nouns	Gloss
tíŋ	wú-tí?	one who cuts
shíŋ	wú-shí?	one who descends
líŋ	wú-lí?	one who licks
dzíŋ	wú-dzí?	one who urinates
fíŋ	wú-fí?	one who mixes

These data are a clear indication that vowel lowering occurs only with back vowels. This is shown by the fact that the vowel [i] occurs in both roots even though one was expecting it to lower when it occurs before a nasal. What is remarkable in these data is only the alternation between [ŋ] and [?] which has been explained in (23.a).

That is [ŋ]----------> [?]/6--#

25.b) Infinitive	Derived Nouns	Gloss
béŋ	wú-bé?	one who dances
féŋ	wú-fé?	one who falls
tséŋ	wú-tsé?	one who fills

téŋ	wú-té?	one who pushes
léŋ	wú-lé?	one who perishes

The above set of data provides additional confirmation for the arguments in (25.a). Here, it is still shown that the front vowels fail to lower and only the glottal stop is formed as described above.

For a proper understanding of how these rules work, consider the following derivation

D-4

	wú-tó?	tàŋ	wú-bé?	féŋ
	UR/wú-tóŋ	tòŋ	wú-béŋ	féŋ/
Glottal stop formation	?	----	?	--
vowel lowering	--	a	---	--
	PR[wú-tó?	tàŋ	wú-bé?	féŋ]

This derivation shows that the glottal stop formation rule must be ordered before vowel lowering lest the vowel [o] of wú-tó? lowers if the rules are applied inversely. This is shown in the following derivation.

D-5

wú-tó?	tàŋ	wú-bé?	fé ŋ	
UR/wú-tóŋ	tòŋ	wú-béŋ	féŋ /	
vowel lowering	a a	--	--	
glottal stop formation	?	---	?	--
PR*[wú-tá?	tàŋ	wú-bé?	fén]	

SUMMARY

The chapter above has discussed the following rules within underived and derived nouns;

Vowel Deletion

Nasal Assimilation

Collapsed Nasal Assimilation

Devocalisation

Collapsed Devocalisation

Vowel lowering

Glottal Stop Formation

Second vowel lowering

CHAPTER FOUR

TONAL PHONOLOGICAL PROCESSES

4.0 Introduction

Like many Grassfields Bantu Languages, Babanki is a tone language. The chapter that follows is an attempt to provide a clear view of the tonal system of nouns in the Babanki language. It will therefore provide an inventory of the tones, give tone patterns and some tonal phonological processes that are attested within the nouns including the derived nouns of Babanki. This chapter shall equally provide tone rules to account for these tonal processes whenever they occur.

4.1 Tone Languages

Tone can be defined as a prosodic feature that represents the relative but significant height of the voice during the production of a syllable. In tone languages, tones have the same distinctive value as consonants and vowels. According to Pike (1945) a tone language is that which has lexically significant, contrastive but relative pitch on each syllable. Accordingly, any change in the syllable pitch leads to a change in the meaning of this syllable or word. This will explain why the difference in meaning of the following nouns in Babanki is brought about by a change in their pitches.

26) Nouns Gloss

ǹdóŋ	cup
ǹdòŋ	potatoe
sáŋ	corn
sàŋ	moon
káŋ	heaven
kàŋ	ceiling
shí?	eye
shì?	hoe
ŋ̀gú?	termite
ŋ̀gù?	stone
kóŋ	pistle
kòŋ	love
ŋ̀kó?	gap
ŋ̀kò?	firewood

However, Welmers (1959) considers tone to be morpheme borne. He says a tone language is any language in which pitch phonemes and segmental phonemes enter into the composition of some morphemes.

According to this definition, a word in Babanki like [kó?] "money" is composed of the segmental phonemes /k/, /o/, /?/ and also of the pitch phoneme /´/.

4.2 Tones in Babanki

In Babanki, two sets of tones exist. They are the level tones whose pitches remain invariable during the production of a syllable

and the contour tones whose pitches vary during the production of a syllable.

4.2.1 The Level Tones

There are three level tones in Babanki. These are represented below:

a) The High Tone /ˊ/=H as in the following words.

27) ǹdóŋ cup

sáŋ corn

káŋ heaven

shí? eye

ŋ̀gú? termite

kə̀-káŋ pan

ŋ̀gó? antelope

b) The Mid Tone /¯/=M as in the following words

28) m̀bàsə̄ soup

lámsə̄ orange

kə̀-kūm juju

lō? nest

tə̀-kūm boxes

bùshī cat

və̀wē they

c) The Low Tone /ˋ/=L as in the following words

29) ǹdòŋ potatoe

sàŋ moon

kàŋ ceiling

shì? hoe

ŋ̀gù? stone

wù-wì? woman

m̀bàŋ walking stick

The illustration of the various level tones in Babanki shows the distribution of these tones. While the high and low tones are capable of occurring in the initial, medial and final syllables of a word, the mid tone only appears in the final syllable. The mid tone is therefore limited in its distribution. This is contrary to Tamanji (1987) who thought that the mid tone was not limited in its distribution and said it could occur in all syllables of a word. As a native speaker and following close investigation, it was discovered that the mid tone appears only at the final syllable position.

.4.2.2 The Contour Tones

The contour tones as earlier said, are those whose pitches vary during the production of a syllable. In Babanki, only the level tones are underlying and the contour tones are derived through phonological processes. There exist two types of contours in Babanki as illustrated below:

a) The Falling Tone /^/=HL as in the following words

30) lâm light

bâm stomach

cû? mouth

kə̂ʔ face

zîŋ forehead

b) The Rising Tone /ˇ/=LH as in the following words

31) lyŭŋ guitar

cókwŭʔ rat

măŋ leopard

As mentioned above, contour tones have their origin from the convergence of two level tones following a phonological process.

The falling tone comes about as a result of the deletion of the final vowels of these words.

Historically, these words had a final vowel bearing a low tone but over time, it was deleted and because autosegments are more resistant than their bearing units, the tone remained floating and finally docked onto the preceding vowel to form this contour. The following data taken from a dialect of Babanki (kejom keku) spoken in Big Babanki show that this final vowel is still maintained in these nouns in this dialect.

32) lámə̀ light

bə́mə̀ stomach

cúʔə̀ mouth

kə́ʔə̀ face

zíŋə̀ forehead

One will attempt a derivation to show the movement from this original form to the present day Babanki falling tone.

D-6

	lâm	bə̂m	cû?
UR/	lamə	bəmə	cu?ə /
	| |	| |	| |
	H L	H L	H L
V--> [∅]/-#	lam	bəm	cu?
	|	|	|
	H Ⓛ	H Ⓛ	H Ⓛ
Tone docking	lam	bəm	cu?
	H L	H L	H L
PR[	lâm	bə̂m	cû?]

4.3 Function of Tones in Babanki

Tone in Babanki has both a lexical and a grammatical function.

4.3.1 Lexical Tone

When one talks of a lexical tone, it refers to that which is capable of distinguishing the meaning of words just as consonants and vowels. Consider the following examples where the difference in the meaning of each word is brought about by a change in its tone.

33) kòŋ love
kóŋ pistle

sàŋ month
sáŋ corn

shì? hoe
shí? eye

ǹdòŋ potatoe
ǹdóŋ cup

ŋ̀gù? stone
ŋ̀gú? termite

These examples show that the primary function of tone is lexical.

4.3.2 Grammatical Tone

A grammatical tone is usually floating and affects lexical tones when these are used in sentences. A floating tone refers to that which is not linked to any particular tone-bearing unit (Mutaka 1995). The following examples show that tone has a grammatical function in addition to its lexical function in Babanki.

First, some words with their tones in isolation are presented and then combined to see how these tones can perform their grammatical function.

34.) mà I

ghə̀ he

nyíŋ run

vì? come

dì? cry

35.a) ghə̀ nyí? he is running

ghə̀ vì? he is coming

mà vì? I am coming

mà dì? I am crying

35.b) ghɔ́ nyí? he will come

ghɔ́ vì? he will come

má vì? I will come

má dì? I will cry

These examples show a difference between the present continuous tense and the future tense through the tones on the pronouns. While the pronouns bear a low tone in the present continuous tense, they bear a high tone in the future tense. This shows that the tones have a grammatical function, that of marking tenses in Babanki.

4.4 Tone Distribution and Patterns

As said earlier, while the high and low tones occur in all positions of words, the mid tone is generally exclusively found on the vowel of the final syllable of the words as illustrated in data (28) above.

The Babanki nouns display a number of syllable patterns in their structure. For example there are monosyllabic and disyllabic nouns.

In the disyllabic nouns, the following tone patterns are attested: HH, HL, HM, LL, LH, and LM as shown in the examples below.

36) HH

pɔ́sá purse

káŋwá limestone

bɔ́lɔ́ŋ groundnut

37 HL

m̀fínə	darkness
b^{w}ótə	bottle

38) HM

lámsə	orange
ŋk^{w}únyām	pig
m̀básə	soup

39) LL

wùwì?	woman
nyìnə	feather
nyìŋgòŋ	God

40) LH

njì?sə́	teacher
nchì?sə́	lies (on head)
ŋk^{w}àŋk^{w}áŋ	container

41) LM

kəmīŋ	dirt
ǹdɔ̀bɔ̄	cigarette
wèǹtū?	prince.

The other tone patterns like MH, ML, MM do not occur simply because the mid tone appears exclusively at the final syllable as mentioned above. In this case, no tone comes after the mid tone and as such, these patterns mentioned above cannot be attested.

4.5 Different Tonal Processes

In a good number of languages, basic tones usually undergo peculiar modifications at the surface level due to various constraints. In other words, underlying tones are usually subjected to change during the emission of an utterance. These changes could be due to a phonetic motivation, a grammatical motivation or a morphophonemic motivation. This section takes a look at the few tonal changes that occur within the Babanki nouns

4.5.1Tonal Processes Within the Underived Nouns

4.5.1.1 High Tone Anticipation and Low Tone Delinking

High tone anticipation is attested mostly during the formation of the plural of nouns that take a suffix. In other words, the low tone nouns of class10 as earlier mentioned in section (3.3.1). There, it was said that the singular marker of this class is zero while the plural marker is the suffix [–sə] which carries a high tone. Consider the data in 42 (a & b) that demonstrate this high tone anticipation in Babanki:

42.a)	nyàm	animal
	dzàm	back
	ǹdzàm	axe
	m̀bɔ̀ʔ	cloud
	nyì	cutlass
	zhùʔ	bee
	nyìŋ	beard

shì?	hoe
jɔ̀m	dream
ǹdzɨ̀ŋ	lie
ŋ̀kwù̀ŋ	hole
m̀byì?	bell
ŋ̀gwù?	year

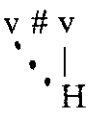
These nouns when combined with the suffix [–sə́] to mark the plurals give the following forms

42.b)	nyám-sə́	animals
	dzə́m-sə́	backs
	ǹdzám-sə́	axes
	m̀bɔ́?-sə́	clouds
	nyí?-sə́	cutlasses
	zhú?-sə́	bees
	nyíŋ-sə́	beards
	shí?-sə́	hoes
	jɔ́m-sə́	dreams
	ǹdzíŋ-sə́	lies
	ŋ̀kwúŋ-sə́	holes
	m̀byí?-sə́	bells
	ŋ̀gwú?-sə́	years

These data show high tone anticipation and low tone delinking resulting from it. The following rules can be formed to explain these processes.

T-Rule 1

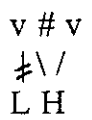
High Tone Anticipation



This rule says a high tone spreads backward (anticipates) to the preceding tone bearing unit.

T-Rule 2

Low Tone Delinking



This rule says a low tone is delinked when a high tone spreads to its tone bearing unit.

With the set of data above, one could be tempted to think that it is the high tone that becomes a low tone in isolation. However, when these nouns are combined with different suffixes, the low tone of the nouns does not change; this clearly shows that it is the high tone of the suffix [–sɔ́] that spreads to the preceding tone borne by the nouns which further delink the low tones, leaving a two high tone sequence.

The following data explain this argument;

43 nyàm yì that animal

dzàm yì that back

ǹdzàm yès our axe

m̀bɔ̀ʔ ghòm my cloud

These examples show that the low tones of the nouns do not change when they are combined with low tone suffixes like the demonstrative and the possessive.

A derivation will help illustrate the two T- Rules formed above

D-7

	nyám-sə́	jɔ́m-sə́	m̀bɔ́ʔ-sə́
UR/	nyam-sə	jɔm-sə	mbɔʔ-sə /
	| |	| |	| |
	L H	L H	L H
v # v	nyam-sə	jɔm-sə	mbɔʔ-sə
|	| |	| |	| |
H	L H	L H	L H
v # v	nyam-sə	jɔm-sə	mbɔʔ-sə
\ |	\ |	\ |	\ |
L H	L H	L H	L H
PR[	nyám-sə́	jɔ́m-sə́	m̀bɔ́ʔ-sə́]

4.5.1.2 Low Tone Dissimilation

This process obtains when two low tones occur side by side and the first one is delinked. It is called tone dissimilation because the

first low tone is found together with a high tone on a single tone-bearing unit.

So the contour tone is simplified by the low tone which leaves the part of the contour it occupied thereby leaving the high tone alone on the tone-bearing unit. Consider these data below for illustration.

44.a) ə̀-bû pumpkin

à-lyû palm bushes

ə̀-tô hut

When these words are combined with the demonstrative marker yì, The following is obtained;

44.b) ə̀-bú yì those pumpkins

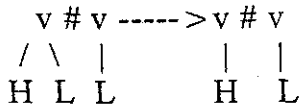
à-lyú yì those palm bushes

ə̀-tó yì that hut

The following tone rule can be formed to explain this dissimilation process.

T-Rule 3

Low Tone Dissimilation



This rule says a falling tone is simplified into a high tone whenever it is followed by a low tone.

Nevertheless, from these data above, one could possibly be tempted to think that it is the high tone that becomes the falling tone when the nouns are in isolation. This is not possible because when

these nouns are combined with high tone words, the falling tone is maintained. Consider these data below for a clear understanding.

45) ə̀-bû sím farm pumpkin

à-lyû sím farm palm bushes

ə̀-tô tɔ́? bush hut

The fact that these contour tones are maintained in these words because the following words have high tones shows that it is actually the contour which is simplified into the high tone because it is followed by a low tone

A derivation can help illustrate this dissimilation process stated above.

D-8

	ə̀-bú yì	à-lyú yì	ə̀-tó yì
UR/	ə-bu yi	a-lyu yi	ə-to yi /
	| /\ |	| /\ |	| / \ |
	L H L L	L H L L	L H L L
Low Tone Dissimilation	ə-bu yi	a-lyu yi	ə-to yi
	| /✕ |	| /✕ |	| /✕ |
	L H L L	L H L L	L H L L
PR	[ə̀-bú yì	à-lyú yì	ə̀-tó yì]

4.5.2 Tonal Processes within Derived nouns.

This part exposes the tonal change which occurs within the derived nouns of Babanki.

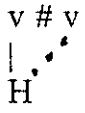
In a number of languages, it is typically the high tone that undergoes spreading. Spreading may be to the left or to the right. It may also be iterative or non iterative (Mutaka 1995). The following data present a case of left to right high tone spreading.

46).	Infinitive	Derived Nouns	Gloss
	kòŋ	wú-kú?	one who loves
	bòŋ	wú-bú?	one who is good
	tàŋ	wú-tó?	one who stays
	sàŋ	wú-só?	one who dries
	tsàŋ	wú-tsó?	one who displays
	làŋ	wú-ló?	one who puts medicine
	dzàŋ	wú-dzó?	one who reads

The tonal change which occurs here can be explained by the following tone rule

T-Rule 4

High Tone Spreading



This rule states that the high tone spreads to the following low tone-bearing unit. The low tone is delinked following T-Rule 2 formed above which said a low tone is delinked whenever a high tone spreads to its tone bearing unit.

y, one could be tempted to say it is the high tone of the derived noun that becomes a low tone in the verb. Yet when these verb are considered in their underived forms in other contexts, they are shown to appear with low tones. Consider these data below for illustration

ín yì — love that child
ild that

ìòm yì — dry that plantain
tain that

vàlî yì — read that book
k that

-sáŋ yì — put medicine on that corn
put medicine sing. corn that

(46), one equally notices a change in the vowels. This en explained in chapter three and the Vowel Lowering d the Second Vowel Lowering (P-rule 6) were formed se changes. Also, the alternation between [ʔ] and [ŋ] and the Glottal Stop Formation (P-Rule 5) was formed alternation.

tion could better illustrate how these rules work.

D-9

	wú-kú?	wú-tó?	tàŋ
	UR/wu-kuŋ	wu-toŋ	toŋ/
Glottal stop formation [ŋ]-->[ʔ]/6-#	ʔ	ʔ	--
Vowel lowering [o]-->[a]/-[ŋ]	--	--	a

High tone spreading

v # v	wu-ku?	wu-to?	--
H L	H L	H L	

Delinking

v # v	wu-ku?	wu-to?	--
H L	H L	H L	

PR[wú-kú? wú-tó? tàŋ]

Summary

The following rules have been discussed in this chapter:

High Tone Anticipation

Low Tone Delinking

Low Tone Dissimilation

High Tone Spreading

Glottal Stop Formation

Vowel Lowering.

CHAPTER FIVE

PHRASAL PHONOLOGY AND TONOLOGY

5.0 Introduction

This chapter handles the alternations which occur across word boundaries. A language speaker intuitively combines words to form phrases and sentences. In the course of combining these words, phonological as well as tonological changes do occur. This means that words and tones in isolation often change when they are put in larger constructions. In this part, unlike looking at the words and tones in isolation, as in the previous sections, they will be examined when put together with others to form phrases. However, the chapter will be in two sections. The first concentrates on phonological alternations and the second on tonal alternations both at the phrasal level.

5.1 Phrasal Phonology

This section considers the changes that words undergo when they are put in phrases.

Alternations occur within the nominal phonological phrase when nouns are combined with possessive pronouns. In the example that follows, the nouns are first of all presented in isolation before being combined with the possessive pronouns.

48)	Nouns	Gloss
	m̀bàŋ	walking stick

	ŋ̀káŋ	corn beer
	sáŋ	corn
	ǹtàŋ	rope
	ǹsáŋ	tail
	kə̀-làŋ	achu
49)	sóŋ	tooth
	ǹdòŋ	potatoe
	bòŋ	goodness
	kóŋ	pistle
	ghóŋ	war
50.a)	m̀bò? ghòm	my walking stick
	só? wén	his corn
	ŋ̀kó? wén	his corn beer
	ǹtò? və̀wé	their rope
	ǹsó? ghóm	my tail
	kə̀-ló? khóm	my achu
50.b)	sú? ghóm	my tooth
	ǹdù? wén	his potatoe
	bú? wén	his goodness
	kú? və́wé	their pistle
	ghú? ghóm	my war

The above alternations that these nouns undergo had been explained earlier in sections (3.4.1) and (3.4.2). There, one was able to

establish two rules to account for the changes in the vowels. P-Rule 4 (vowel lowering) stated that [o]-->[a]/-[ŋ]. That is, a tense back mid high vowel becomes low when it precedes a velar nasal. This same rule still applies in (48) above

The second vowel lowering rule (P-Rule 6) equally stated that[u]-->[o]/-[ŋ]. That is, the back high vowel becomes mid-high before the velar nasal. This rule accounts for the alternation in (49) above.

Thirdly, P-Rule 5 (Glottal Stop Formation) was formed to explain the alternation between [ŋ] and [ʔ]. The rule stated that [ŋ]-->[ʔ]/6-#. That is, the velar nasal becomes the glottal stop whenever it occurs in the final position of a syllable which is preceded by another syllable. However, this rule is not very adequate to explain the alternation in the data above. This is because the syllable in which the velar nasal becomes the glottal stop is not preceded by another syllable as stated above. Here, it is established that the syllable that follows is equally important in conditioning the change. The rule is therefore modified to state that the nasal could be followed by another syllable before it changes into the glottal stop:

That is [ŋ]-->[ʔ]/-6.

This is confirmed by the fact that only forms like those in the left column and not those in the right column in the data below are acceptable in the language.

51) plural forms

à-sáŋ	*à-só?
và-ŋ̀káŋ	*và-ŋ̀kó?
tà-ghóŋ	*tà-ghú?

But it must be mentioned that forms like those in the data below taken from data (23.a) above are also acceptable.

52)

wú-tó?	one who stays	cf tàŋ
wú-só?	one who dries	cf sàŋ
wú-tsó?	one who displays	cf tsàŋ
wú-fó?	one who remains	cf fàŋ

These forms show that P-Rule 5 (Glottal Stop Formation) is valid but applies only to the derived nouns as shown above. This means therefore that the second glottal stop formation rule should be able to explain the change in the phonological phrase. The following phonological rule can therefore be formed.

P-Rule 7

Second Glottal Stop Formation

[ŋ]-->[?]/-6

This rule adequately accounts for the data in (50.a) and in (50.b) for it states that the nasal becomes the glottal stop whenever it is followed by a syllable.

As argued earlier on, the following data confirmed that it is the nasal which is underlying since one was unable to prove phonetically that [ʔ]-->[ŋ]/-#

53)	Infinitive	Derived Nouns	Gloss
	só?	wú-só?	one who dries
	ló?	wú-ló?	one who pays
	bó?	wú-bó?	one who opens

This set of data shows that even the glottal stop occurs in word final position. It cannot therefore be said that the glottal stop becomes a nasal in word final position.

A derivation will better illustrate how these rules work.

D-10	só? wén	kà-ló? khóm	sáŋ	kóŋ
	UR/sóŋ wén	kà-lòŋ khòm	sóŋ	kúŋ/
Second Glottal Stop Formation [ŋ]-->[ʔ]/-6	so? wen	kə-lo? khom	---	--
Vowel Lowering [o]-->[a]/-ŋ	---	----	saŋ	--
Second Vowel Lowering [u]-->[o]/-ŋ	---	----	---	koŋ
	PR[só? wén	kà-ló? khóm	sáŋ	kóŋ]

5.2 Phrasal Tonology

Here, the focus is on the tonal changes that occur across word boundary or in phrasal constructions. Nouns will be presented with their tones in isolation and then put in the noun phrase to see if there are any tonal variations.

5.2.1 High Tone Anticipation.

This process had earlier been discussed in section 4.5.1.1 but it was limited to nouns of class10 whose plural suffix tones anticipated to their nouns and delinked their low tones. In the following data, it will be established that any high tone morpheme can anticipate its tone to the preceding low tone-bearing unit and afterwards, delinks its low tone.

Consider the data below for a clear understanding of this process. The tones are first presented in isolation.

54.a) kə̀-làŋ "cocoyam"

tàŋ "hill"

bòŋ "goodness"

kòŋ "love"

When these nouns are put with their tones together in larger constructions or phrases, the following is obtained.

54.b) kə̀-láŋ ké mè? lî "the cocoyam is finished"
sing cocoyam it finish past

táŋ yé tó "this hill is hard"
hill this hard

bóŋ yé ná mè? "this goodness will finish"
goodness this future finish

kóŋ yé mè? lì "this love is finished"
love this finish past

Here, it is noticed that when the low tone nouns are combined with other high tone morphemes like [ké] and [yé], the low tone changes into a high tone.

The following tone rule is capable of explaining this change

T-Rule 5

High Tone Anticipation

V # V
 •.. |
  H

This rule says the high tone anticipates to the preceding tone bearing unit

As argued in section 4.5.1.1, one could be tempted to think that it is the high tone that becomes the low tone in the nouns in isolation. However, when these nouns are combined with different words, the low tone of the nouns does not change; this clearly shows that it is the high tone of the following word that anticipates to the preceding nouns. Examples like the following illustrate this.

54.c) kə̀-làŋ kyì kò bòŋ "that cocoyam is not good"
sing cocoyam that neg. good

tàŋ yì kò bòŋ "that hill is not good"
hill that neg. good

kòŋ yì mè? lì "that love is finished"
love that finish past

A derivation could better illustrate the above process.

D-11

	táŋ yé tó	kóŋ yé mè? lì
UR/	taŋ ye to	koŋ ye me? li
	| | |	| | | |
	L H H	L H L L

High tone anticipation

	taŋ ye to	koŋ ye me? li
	| | |	| | | |
	L H H	L H L L

Delinking

	taŋ ye to	koŋ ye me? li
	≠ \ / |	≠ \ / | |
	L H H	L H L L

PR[táŋ yé tó kóŋ yé mè? lì]

5.2.2 Contour Formation

This is a situation where a level tone is modulated to form a contour. Here, when nouns are combined with noun compliments which are also nouns, the tone of the compliment is subjected to this modification. Consider the examples given below;

First, consider these words in isolation

55.a)

Nouns	Gloss
ǹyàm	"animal"
wàìn	"child"
màŋ	"fox"

tì "father"

lì "caterpillar"

55.b) compliments Gloss

kó "money"

tó "hut"

kú "forest"

cú "mouth"

ló "bridge"

They are further combined in order to see the tonal alternation.

55.c) /kó ǹyàm/----------> [kô ǹyàm] "animal's money"

/tó wàìn/----------> [tô wàìn] "child's hut"

/kú lì/----------> [kû lì] "caterpillar's forest"

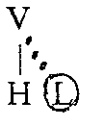
/cú màŋ/----------> [cû màŋ] "fox's mouth"

/ló tì/----------> [lô tì] "father's bridge"

From the examples, it can be discerned that there is a basic floating low tone existing between the noun and the compliment. This floating tone which is probably the associative marker, attaches itself to the tone of the noun compliment changing it to a falling tone. The following rule can explain this.

T-Rule 6

Contour Formation



This rule says a high tone is modulated into a falling tone whenever a floating low tone associates to it.

However, there is a possibility that it is the contour that became the high tone in isolation. Nevertheless, if it is considered that contour tones are not underlying, then the contour could only have been derived from the association of the floating low tone.

This explanation could also be supported by the fact that when the compliments are combined with high tone nouns, the same process still occurs. The following data shows this:

56) /kó sóŋ/----------> [kô sóŋ] "tooth's money"

/ló wóŋ/---------> [lô wóŋ] "market's bridge"

/kú búm/---------> [kû búm] "forest for hunting"

A derivation can better illustrate this rule

D-12

	kô ǹyàm / tô wàìn
UR/ko nyam / to wain/	
H L L / H L L	
Contour Formation ko nyam / to wain	
H Ⓛ L / H Ⓛ L	
PR[kô ǹyàm	tô wàìn]

5.2.3 Downstep

Downstep is described as a situation wherein in a sequence of two or more high tones the second is realised at a level a little lower than the preceding high but not at the level of a mid tone.

Downstep usually occurs because of the presence of a floating low tone which affects the neighbouring high tones and causes the following high(s) to be realised at a lower level than the preceding high. Consider the data below:

57)/kə̀-mbó khòm kə́n/--->[kə̀-mbó khóm ↓kə́n] "this my madness"

/kə̀-fó khòm kə́n/------>[kə̀-fó khóm ↓kə́n] "this my thing"

/à-kwé? ghòm yé/--->[à-kwé? ghóm ↓yé] "these my beans"

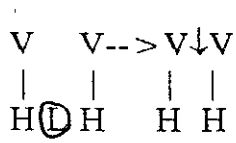
Here, a series of phonological processes occur; subsequently leading to downstep.

First, the high tone of the noun spreads to the possessive marker. This is in conformity with T –Rule 4 (High Tone Spreading) formed earlier on in sections 4.5.2. After this rule, T-Rule 2 (Low Tone Delinking) formed in section 4.5.1.1 also applies. When this low tone is delinked, it remains floating and causes the high tone following it to be down stepped.

The following rule will show how downstep happens:

T-Rule 7

Downstep



This rule says that in a sequence of two high tones, the second high is down stepped.

A derivation can illustrate how these rules work;

D-13	kə̀-mbó khóm ↓kán	kə̀-fó khóm ↓kán
	UR/kə-mbo khom kən	kə-fo khom kən/
	| | | |	| | | |
	L H L H	L H L H
High Tone Spreading	kə-mbo khom kən	kə-fo khom kən
	| | |	| | |
	L H L H	L H L H
Delinking	kə-mbo khom kən	kə-fo khom kən
	| \ ⫽ |	| \ ⫽ |
	L H L H	L H L H
Downstep	kə-mbo khom ↓kən	kə-fo khom ↓kən
	| \ / |	| \ / |
	L H Ⓛ H	L H Ⓛ H
	PR[kə̀-mbó khóm ↓kán	kə̀-fó khóm ↓kán]

Summary

In this chapter, the following rules which applied on phonological phrases were discussed:

Vowel Lowering

Second Vowel Lowering

Glottal Stop Formation

Second Glottal Stop Formation

High Tone Spreading

Low Tone Delinking

Contour Formation

Downstep.

CONCLUSION

The intention of this study has been focused mostly on the phonological processes that occur within the Babanki nouns. To realise this objective, phonetic consonant and vowel charts drawn from the sounds identified in the Babanki sound inventory have been presented. From the various distributions of these phonetic sounds, it has been realised that some of the sounds are complementary and that there are some basic phonemes that have allophones. This is how it came to be said for example that [b] is realised as [bh] before [i] and as [bw] before [a]. Haven presented such cases of complementary distribution, this part of the analysis has been concluded by proposing phonemic consonant and vowel charts.

The study has then proceeded to analyse the non-tonal phonological processes that occur within the Babanki nouns. It has started with the non-tonal phonological processes that occur within the underived nouns such as vowel deletion, nasal assimilation and devocalisation. It has been said that [ə] is deleted when it occurs before [a], that a nasal assimilates to the place of articulaton of the following consonant and that high vowels devocalise when they occur before other vowels in a sequence of two vowels. Phonological rules have been formed to account for all the above processes.

The work has then proceeded to discuss the non-tonal phonological processes that occur within the derived nouns. Here, vowel lowering and glottal stop formation that occur simultaneously have been identified. It has been established that back tense vowels lower by some degrees of aperture whenever they occur before the velar nasal and that the velar nasal becomes the glottal stop whenever it occurs at the final position of a word preceded by another syllable. Phonological rules have equally been formed to account for these processes.

The research has then concentrated on the tonal phonological processes. It has started by presenting an outline of the various tones and the tone patterns that could be found in this language. Three level tones and two contour tones have been identified. It has been argued that contour tones seem to be level tones that are realised as contours because of phonological processes. It has then moved ahead to discuss the tonal phonological processes that occur within the underived nouns. Here, high tone anticipation and low tone delinking, and low tone dissimilation have been discussed. It has been established that a high tone spreads backward to the preceding tone-bearing unit and causes the low tone of this tone-bearing unit to delink and that a falling tone is simplified into a high tone whenever it is followed by a low tone. Tonological rules have been presented to account for these processes.

following tone bearing unit and also delinks its low tone. A tonological rule has been formed to account for this process.

The study has then gone ahead to talk about the alternations that occur across word boundaries. Here, phrasal phonology and tonology have been treated.

With the phrasal phonology, it has been noticed that vowel lowering and glottal stop formation still occur across the word boundary. The glottal stop formation rule has however been modified and suggested that the velar nasal becomes the glottal stop whenever it is followed by a syllable. A new phonological rule has been formed to show this process.

With the phrasal tonology, high tone anticipation, contour formation and downstep have been identified. It has been reiterated that a high tone anticipates to the preceding tone bearing unit; that a high tone is modulated into a falling tone whenever a floating low tone associates to it and that in a sequence of two high tones, the second high is realised at a level a little lower than the first. Tonological rules have been formulated to account for these changes.

In all, seven phonological rules and six tonological rules have been formulated to account for the above nominal processes. In each case, a derivation has been presented to help show how the underlying representation is linked to the phonetic representation through rules.

It cannot in any way be claimed that the Babanki nominal phonological processes have been treated exhaustively. It is rather

held that this work is just a stepping stone to deeper research or projects on the Babanki nouns which will eventually provide far more reaching conclusions.

Considering that all human beings and their works are imperfect, the flaws in this study are accepted. Despite these flaws, it is wished that this study will serve as a guide to students and/or researchers who may want to study the Babanki phonology in particular and the Babanki language in general. It is highly hoped that this work will contribute in its own way to the development of the Babanki language.

It can be recommended as an area for further study the tonal system of the Babanki language. Not only has less been done on it, but also that as a tonal language, its intriguing nature demands much attention.

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Appendix

	Nouns	Gloss
1.a)	m̀bàŋ	walking stick
	m̀bàìn	fence
	m̀b^{w}òŋ	palm maggot
	m̀b^{w}à?mə	peace
	m̀bà?	an insult
	m̀b^{w}á?	level land
	m̀bú?	product from groundnut
	m̀bù?	a person's name
	m̀bé	chisel
	mbwí?	nail
1.b)	ǹtú?	pen
	ǹtàŋ	rope
	ǹtá?	reward
	ǹdòŋ	potatoe
	ǹdóŋ	cup
	ǹdòìn	badluck
	ǹsáŋ	tail
	kə̀-ǹsóín	frog
	kə̀-ǹtú?	fon's house
	kə̀-ǹtò?	cross
1.c)	ŋ̀káŋ	corn beer
	ŋ̀k^{w}ùŋ	hole
	kə̀-ŋ̀k^{w}ùŋ	a hit on the head
	ŋ̀gù?	stone
	ŋ̀gú?	termite
	ŋ̀gàìn	tale
	ŋ̀g^{w}ù?	year
	ŋ̀g^{w}àìn	cane
	ŋ̀gú	hog
	ŋ̀gwà?	seed
2.a)	ŋ̀kám	thousand
	sáŋ	corn
	káŋ	heaven
	shí?	eye
	ŋ̀gúf	driver
	kə̀-káŋ	pan
	ŋ̀gó?	antelope
	pósá	purse
	káŋwá	limestone

	bə́lə́ŋ	groundnut
	nchì?sə́	lies (on head)
	ŋkʷàŋkʷáŋ	container
	kó	money
	tó	hut
	kú	forest
	cú	mouth
	ló	bridge
	sím	farm
	tó?	bush
	sóŋ	tooth
	wóŋ	market
	búm	hunting
2.b)	m̀bàsə̄	soup
	lámsə̄	orange
	kə̀-kūm	juju
	lō?	nest
	tə̀-kūm	boxes
	bùshī	cat
	vəwē	they
	lámsə̀	orange
	ŋkʷúnyām	pig
	m̀básə̄	soup
	kəmīŋ	dirt
	ǹdɔ̀bɔ̄	cigarette
	wèntū?	prince.
2.c)	kə̀-ǹdɔ̀ŋ	neck
	sàŋ	moon
	kàŋ	ceiling
	shǐ?	hoe
	ŋkù?	a juju
	wù-wǐ?	woman
	shúkà	sugar
	m̀fínə̀	darkness
	bʷótə̀	bottle
	nyìnə̀	feather
	nyìŋgòŋ	God
	nyàm	animal
	dzə̀m	back
	ǹdzàm	axe
	m̀bɔ̀?	cloud
	nyì	cutlass
	zhù?	bee
	nyìŋ	beard

	shɨ̀ʔ	hoe
	jɔ̀m	dream
	ǹdzɨ̀ŋ	lie
	m̀byì?	bell
	tì	father
	lì	caterpillar
	kə̀-làŋ	cocoyam
	tàŋ	hill
	bòŋ	goodness
	kòŋ	love
	ŋ̀ghòm	plantain
2.d)	lâm	light
	bə̂m	stomach
	cû?	mouth
	kə̂?	face
	zîŋ	forehead
	à-bû	pumpkin
	à-lyû	palm bushes
	à-tô	hut
2.e)	lyŭŋ	guitar
	cókwŭ?	rat
	măŋ	leopard

3.a)	/ŋ̀kìè/	> [ŋ̀kyè]	basket
	/kìè/	> [kyè]	key
	/nìè/	> [nyè]	cutlass
	/nsíé/	> [nsyé]	ground
	/bìè/	> [byè]	pear
	/nìènə̀/	> [nyènə̀]	feather
	/lìəŋ/	> [lyəŋ]	bamboo
	/kíékíé/	> [kyékyé]	charcoal
	/kə̀-nìənə̀/	> [kə̀-nyənə̀]	toe nail
	/tíɔ́m/	> [tyɔ́m]	heart
3.b)	/nùì/	> [nwì]	neck
	/gùə̀/	> [gwə̀]	leather
	/lúí/	> [lwí]	nostril
	/kúɔ́n/	> [kwɔ́n]	bed
	/kúɔ́ŋ/	> [kwɔ́ŋ]	arm
	/ŋ̀kùən/	> [ŋ̀kwən]	tail
	/kə̀-kúɔ́ŋ/	> [kə̀-kwɔ́ŋ]	bone
	/dùən/	> [dwən]	old age
	/fúáín/	> [fwáín]	stream
	/m̀búí?/	> [m̀bwí?]	nail

	Infinitive	Derived Noun	Gloss
4.a)	tàŋ	wú-tó?	one who stays
	sàŋ	wú-só?	one who dries
	tsàŋ	wú-tsó?	one who displays
	fãŋ	wú-fó?	one who remains
	káŋ	wú-kó?	one who fries
	dàŋ	wú-dó?	one who stretches
	wáŋ	wú-wó?	one who sprays
	dzáŋ	wú-dzó?	one who calls
	làŋ	wú-ló?	one who puts medicine
	bàŋ	wú-bó?	one who carves
	dzàŋ	wú-dzó?	one who reads
	táŋ	wú-tó?	one who count
4.b	tóŋ	wú-tú?	one who digs
	tsóŋ	wú-tsú?	one who steal
	kóŋ	wú-kú?	one who loves
	wóŋ	wú-wú?	one who brings rain
	lóŋ	wú-lú?	one who leaves
	bòŋ	wú-bú?	one who is good
	tsóŋ	wú-tsú?	one who digs
	kóŋ	wú-kú?	one who gives
	tòŋ	wú-tú?	one who blows
	wóŋ	wú-wú?	one who spreads
	bóŋ	wú-bú?	one who picks
	bwòŋ	wú-bwú?	one who is freed
	sóŋ	wú-sú?	one who sucks
	fóŋ	wú-fú?	one who falls
4.c)	tíŋ	wú-tí?	one who cuts
	shíŋ	wú-shí?	one who descends
	líŋ	wú-lí?	one who licks
	dzíŋ	wú-dzí?	one who urinates
	fíŋ	wú-fí?	one who mixes
4.d)	béŋ	wú-bé?	one who dances
	féŋ	wú-fé?	one who falls
	tséŋ	wú-tsé?	one who fills
	téŋ	wú-té?	one who pushes
	léŋ	wú-lé?	one who perishes.