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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DEDICATION

I DEDICATE THIS WORK WITH Deepest Love To

MY DEAR PARENTS

PAPA WUCHU PETER NKWI
AND
MAMA REGINA PHUBONG
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.

My most invaluable thanks equally go to Ginger Boyd for her technical and manual efforts she put in play for the realisation of this project.

I sincerely thank my brother Mr. Wuchu Samuel Loh who never stopped taking care of me. I wish you will find in this work the fruits of your enormous financial sacrifices, moral encouragement and fatherly care which you always provided when need arose.

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**ABBREVIATIONS AND SYMBOLS**

| [ ] | Phonetic transcription |
| / / | Phonological transcription |
| [-rd] | Unrounded |
| [+ rd] | Rounded |
| C | Consonant |
| V | Vowel |
| Ø | 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 |
\[ \hat{\nu} \quad \text{High tone} \]
\[ \tilde{\nu} \quad \text{Mid tone} \]
\[ \breve{\nu} \quad \text{Low tone} \]
\[ \check{\nu} \quad \text{Falling tone} \]
\[ \dot{\nu} \quad \text{Rising tone} \]
\[ \downarrow \quad \text{Downstep} \]
\[ \longrightarrow \quad \text{Becomes or is realised as} \]
1.0 Introduction

This study attempts to describe in detail the Babanki phonology. The importance of the nominal phonology of any language cannot be overstressed; 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 notwithstanding, they equally do mixed farming, rearing cattle, pigs, and goats in large numbers.
Key

- Babanki territory
- Provincial boundary
- International boundary

Scale: 0 - 50 - 100 km

Source: Adapted from Ngwa (1996)

Map 1. Location of Babanki in Cameroon.
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 Kêjôm (people of Kedjom) and their language gâ? kéjôm (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:

```
African Languages
  Phylum  Khoisan  Niger-Kordofanian  Afro-Asiatic
  Sub-Phylum Adamawa Oubangi  Benue-Congo  West Atlantic
  Family  Cross River Benchi  Bantoide  Junkunoide
  Sub-Family  Bantu  Mambiloide
  Branch  Grassfields
  Sub-Branch  Eastern Grassfields  Western Grassfields
  Group  Momo  Menchum  Ring
  Sub-Group  West  Centre  East  South
  Language  Kom  Babanki  Bum
```
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 Babanki' (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.
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

[a] [bɔm] stomach
[b] [tubù] jigger
[b] [bɔså] purse
[bh] [bhσf] dog
[b] [bhσ] angle
[kɛ-bhσ] ashes
[bw] [bwà?] tiredness
[bwà?mɔ] soft
[fɛ-bwà?] traditional marriage gift
[m] [mæŋ] leopard
[kə-mîŋ] dirtiness
[lâm] light
[mw] [mwɪʔ] swell
[nə-mwîŋ] truth
[mwîʔsà] inflate
[w] [wàîn] child
[wiʔ] person
[kə-wá] foot

Comment:

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

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

2) Labio-dentals

[pf] [pfó] return

[kə-pfâsà] umbrella

[pfâ] death

[bv] [kə-bvim] fig tree

[m-bvi] fowl

[bvəsə] fail

[f] [kə-fó] thing

[kə-fá] medicine

[fâŋ] remain
### 3) Alveolars

<table>
<thead>
<tr>
<th>[t]</th>
<th>[tʰf]</th>
<th>intelligence</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>[tʰŋ]</td>
<td>navel</td>
</tr>
<tr>
<td></td>
<td>[ʃə-ʃɪŋ]</td>
<td>yard</td>
</tr>
<tr>
<td>[ty]</td>
<td>[kə-tyʊ]</td>
<td>leader</td>
</tr>
<tr>
<td></td>
<td>[tyʊ]</td>
<td>spit (verb)</td>
</tr>
<tr>
<td>[th]</td>
<td>[θɪ]</td>
<td>parent</td>
</tr>
<tr>
<td></td>
<td>[kə-θɪ]</td>
<td>a quarter</td>
</tr>
<tr>
<td>[d]</td>
<td>[dəm]</td>
<td>play</td>
</tr>
<tr>
<td></td>
<td>[kə-dədəm]</td>
<td>shadow</td>
</tr>
<tr>
<td>[diʔ]</td>
<td></td>
<td>cry</td>
</tr>
<tr>
<td>[dw]</td>
<td>[dəwən]</td>
<td>old age</td>
</tr>
<tr>
<td></td>
<td>[kə-dəwən]</td>
<td>of old</td>
</tr>
<tr>
<td>[s]</td>
<td>[səŋ]</td>
<td>corn</td>
</tr>
<tr>
<td></td>
<td>[tə-ʃəs]</td>
<td>comb</td>
</tr>
<tr>
<td></td>
<td>[ʃə-ʃəs]</td>
<td>pepper</td>
</tr>
<tr>
<td>[z]</td>
<td>[zəŋ]</td>
<td>palm fronds</td>
</tr>
<tr>
<td></td>
<td>[kə-zəŋ]</td>
<td>thanks</td>
</tr>
<tr>
<td></td>
<td>[zəin]</td>
<td>yesterday</td>
</tr>
<tr>
<td>[ts]</td>
<td>[tsəŋ]</td>
<td>thief</td>
</tr>
<tr>
<td></td>
<td>[kə-tsəʔ]</td>
<td>mud</td>
</tr>
<tr>
<td></td>
<td>[tsəŋ]</td>
<td>tremble</td>
</tr>
<tr>
<td>[dz]</td>
<td>[dzəŋ]</td>
<td>read</td>
</tr>
<tr>
<td></td>
<td>[dzəm]</td>
<td>back</td>
</tr>
</tbody>
</table>
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] [cʊ?] mouth
   [cʌ?] pass
   [kə-cʊ?] head

[j] [jɪ] road
   [jɔ] no
   [kə-jɔ] power

[ʃ] [ʃiʔ] hoe
   [kə-ʃiʔ] place
   [shuʔ] fish

[z] [zhû] bee
   [kə-zhûʔ] white yam
   [zhîʔ] name

5) Palatals

[ŋ] [ŋəm] animal
   [ŋuʔ] drink
   [kə-ŋuʔ] something

[y] [yəs] us
   [yən] see
   [yi] that

15
6) Velars

[k]  [kόŋ]  pistle
      [kάm]  squeeze
      [kάkό]  turn

[kh]  [khάŋ]  ceiling
      [kɔ-khά?]  leg

[kw]  [kwόŋ]  hand
      [kɔ-kwόŋ]  bone
      [kwά?]  break

[g]  [gi]  voice
     [kɔ-gά?]  jaw
     [gά?]  talk

[gh]  [ghάŋ]  mat
      [ghάŋ]  root
      [kɔ-ghάf]  far

[ŋ]  [ŋάŋ]  force
     [bάŋ]  red
    [ŋάŋlά]  crawl

Comment:

[k] occurs everywhere while [kh] occurs only before [a]; and [kw] only before [ɔ]. [kh] and [kw] are therefore allophones of [k].
The following phonetic consonant chart can be established from the consonants identified.

<table>
<thead>
<tr>
<th>manner of articulation</th>
<th>Bilabial</th>
<th>Labiodental</th>
<th>Alveolar</th>
<th>Palato-alveolar</th>
<th>Palatal</th>
<th>Velar</th>
<th>Glottal</th>
<th>Labio-velar</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stops</td>
<td>v, l</td>
<td>t, t', t''</td>
<td>d, d'</td>
<td>k, k', k''</td>
<td>g</td>
<td>?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>v</td>
<td>b, b', b''</td>
<td>d, d'</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nasals</td>
<td>m, m'</td>
<td>n, n'</td>
<td>ny</td>
<td>η</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fricatives</td>
<td>f</td>
<td>s</td>
<td>sh</td>
<td></td>
<td>gh</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>v</td>
<td>v</td>
<td>z</td>
<td>zh</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Affricates</td>
<td>p'</td>
<td>ts</td>
<td>c</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>v</td>
<td>bv</td>
<td>dz</td>
<td>j</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Laterals</td>
<td>l, l', l''</td>
<td>y</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>w</td>
</tr>
<tr>
<td>Glides</td>
<td>w</td>
<td></td>
<td>y</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>w</td>
</tr>
</tbody>
</table>

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
[shi?] hoe
[zhí?] name
[nyú?] drink
[mù?] one
[tó?] bush

10) Voiceless Fricatives
[tə-sás] comb
[fə-sás] pepper
[tóf] intelligence
[fwóf] wind
[tósh] torch
[wáš] watch

11) Nasals (except [ny])
[ńtám] branch
[ńyám] animal
[dwān] old age
[fə-tín] yard
[bāŋ] 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] [viʔ] come
   [tín] cut
   [byiʔ] goat
   [e] [mbé] chisel
   [byè] pear
   [bén] dance
   [ɛ] [jè] journey
   [bwén] not
   [yén] see
   [ɛɛ] [léɛm] yam
   [fɛɛm] sacred place

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

[i] [bhí] dog
[m-bví] fowl
[kə-míŋ] dirtiness
[u] [pfú] death
[kə-wú] foot
| [kɔ-vu] | hand     |
| [ə]    | play     |
| [kɔ-fu] | medicine |
| [dzəm] | back     |
| [a]    | palm fronds |
| [dzəŋ] | read     |
| [nyəm] | animal   |
| [u]    | jigger   |
| [nyʊʔ] | drink    |
| [cʊʔ]  | mouth    |
| [o]    | pass     |
| [tsəŋ] | thief    |
| [tɵŋ]  | navel    |
| [ɔ]    | intelligence |
| [tɔʔ]  | bush     |
| [jə]   | no       |
| [ɔɔ]   | pick     |
| [kə-tɔŋ] | opening |

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

From the vowels identified, the following phonetic vowel chart can be constructed.
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, [EE] occurs only before the bilabial nasal and is considered to be an allophone of [e] that occurs everywhere. The following examples show the distribution of the front vowels.
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 [u] are produced with unrounded lips. [i] is capable of occurring between consonants, and also in word final position. [u] can only appear in word final position. [ə] and [æ] are capable of occurring in all environments of words. The following examples illustrate this distribution.

14) [i] [síŋ] commit suicide
   [kɔ-ˈtʃí] stick
   [u] [ˈm-bvú] fowl
   [kɔ-ˈvʊ] hand
   [ə] [ə-ˈwʊm] egg
   [dɔm] play
   [bvoʊsə] fail
   [a] [ə-ˈlø?] home
   [sæŋ] corn
   [bɔsə] 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, [ɔ] occurs only before the velar nasal and is considered to be an allophone of [a] that occurs everywhere. The following examples show the distribution of the back vowels:

15) [u] [túbù] jigger
    [shù?] fish
    [ɔ] [cð?] pass
    [kɔ-fó] thing
    [ɔ] [tóf] intelligence
    [jɔ] 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] [lɛɛm] yam
    [fɛɛm] sacred place
    [ɔɔ] [bɔɔŋ] pick
    [kɔ-ɔɔŋ] opening
    [ɔ-ɔɔŋ] age group
2.4 Phonemic Consonant and Vowel Charts

2.4.1 Phonemic Consonant Chart

<table>
<thead>
<tr>
<th>place of articulation</th>
<th>Bilabial</th>
<th>Labiodental</th>
<th>Alveolar</th>
<th>Palato-alveolar</th>
<th>Palatal</th>
<th>Velar</th>
<th>Glottal</th>
<th>Labiovelar</th>
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Table 3. Babanki Phonemic Consonant Chart

2.4.2 Phonemic Vowel Chart

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<th></th>
<th>Front [-rd]</th>
<th>Central</th>
<th>Back [+rd]</th>
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<td>Mid low</td>
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<tr>
<td>Low</td>
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</tbody>
</table>

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], [ɪ], [u], and [ʊ] 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

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<tr>
<th></th>
<th>syll.</th>
<th>cons.</th>
<th>ant</th>
<th>cor</th>
<th>nas</th>
<th>cont.</th>
<th>sonor</th>
<th>lat.</th>
<th>voice</th>
<th>back</th>
<th>low</th>
<th>constr</th>
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Table 5. Consonant Feature Matrix
### 2.7 Vowel Feature Matrix

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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 non-derived 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:

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<th>Prefix-stem</th>
<th>Prefix-stem</th>
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<td>fə-sés</td>
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<td>mə-sés</td>
</tr>
<tr>
<td>ʒ-wʊm</td>
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<tr>
<td>cl₄-stem</td>
<td>a-wʊm</td>
</tr>
</tbody>
</table>
In these forms, [fa-], [m₃-], [₃], [₃-], [k₃-], [³-] 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 [₃-] of [₃-wũm] “egg” is class five (cl₅) whereas [₃-] of [₃-kím] “crabs” is class eight (cl₈).

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:

<table>
<thead>
<tr>
<th>Syllable pattern</th>
<th>Illustration</th>
<th>Gloss</th>
</tr>
</thead>
<tbody>
<tr>
<td>CV</td>
<td>lọ</td>
<td>bridge</td>
</tr>
<tr>
<td></td>
<td>túbú</td>
<td>jigger</td>
</tr>
<tr>
<td></td>
<td>kó</td>
<td>money</td>
</tr>
<tr>
<td>kú</td>
<td>forest</td>
<td></td>
</tr>
<tr>
<td>sé</td>
<td>grave</td>
<td></td>
</tr>
<tr>
<td>pfú</td>
<td>death</td>
<td></td>
</tr>
</tbody>
</table>

32
sôŋ tooth
ká-cúŋ head
sâŋ corn
sôʔ hat
bâm stomach
kâ-lâŋ 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) 

<table>
<thead>
<tr>
<th>Nouns</th>
<th>Gloss</th>
</tr>
</thead>
<tbody>
<tr>
<td>vâ-lâm</td>
<td>lights vîʔ á fâŋ</td>
</tr>
<tr>
<td>vâ-sâŋ</td>
<td>months vîʔ á fâŋ</td>
</tr>
<tr>
<td>mâ-tîŋ</td>
<td>yards mîʔ á fâŋ</td>
</tr>
</tbody>
</table>

those lights will fall
those months will fall
those yards will fall
| à-sâŋ  | corn      | à-sâŋ yi? á mè? | this corn will finish |
| kà-làŋ  | achu      | kà-làŋ ki? á mè? | this achu will finish |
| mà-sèś  | pepper    | mà-sèś mì? 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 (cl₁₀) 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.

<table>
<thead>
<tr>
<th>20) Nouns (plural)</th>
<th></th>
<th>Gloss</th>
</tr>
</thead>
<tbody>
<tr>
<td>mbàin-sâ</td>
<td>fences</td>
<td>mbàin-shì-sâ fàŋ</td>
</tr>
<tr>
<td>zhú?-só</td>
<td>bees</td>
<td>zhú?-shì-sâ vi?</td>
</tr>
<tr>
<td>ñyíñ-só</td>
<td>beards</td>
<td>ñyíñ-shì-sâ mé?</td>
</tr>
<tr>
<td>shf?-só</td>
<td>hoes</td>
<td>shf?-shì-sá mé?</td>
</tr>
<tr>
<td>ñjìsà?-só</td>
<td>teachers</td>
<td>ñjìsà?-shì-sâ vi?</td>
</tr>
<tr>
<td>jóm-sá</td>
<td>dreams</td>
<td>jóm-shì-sá mé?</td>
</tr>
<tr>
<td>ñdzìñ-sâ</td>
<td>lies</td>
<td>ñdzìñ-shì-sá mé?</td>
</tr>
<tr>
<td>ñkʷúŋ-sâ</td>
<td>holes</td>
<td>ñkʷúŋ-shì-sá lʷìn</td>
</tr>
<tr>
<td>mbî?f?-só</td>
<td>bells</td>
<td>mbî?f?-shì-sá fàŋ</td>
</tr>
<tr>
<td>ñgʷû?-sá</td>
<td>years</td>
<td>ñgʷû?-shì-sá mé?</td>
</tr>
<tr>
<td>ñgàin-sâ</td>
<td>tales</td>
<td>ñgàin-shì-sá mé?</td>
</tr>
</tbody>
</table>
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 [−sa] 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

\[
[ə]-----\rightarrow [∅]/-\{[a] \quad +\text{syll}\} \\
\quad -\text{cons}\quad \text{--------}\rightarrow [∅]/-\{[a] \quad +\text{syll}\}
\]

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

D-1

\[
\text{PR}[\text{mbâin-shí-sá fəŋ} \quad \text{jom-shí-sá mè?}] \\
\text{Vowel deletion} \quad ∅
\]

35
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 hamorganic 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

<table>
<thead>
<tr>
<th>Noun</th>
<th>Gloss</th>
</tr>
</thead>
<tbody>
<tr>
<td>ṃbāŋ</td>
<td>walking stick</td>
</tr>
<tr>
<td>ṃbāín</td>
<td>fence</td>
</tr>
<tr>
<td>ṃbwɔŋ</td>
<td>palm maggot</td>
</tr>
<tr>
<td>ṃbwɔ?mɔ</td>
<td>peace</td>
</tr>
<tr>
<td>ṃbá?</td>
<td>an insult</td>
</tr>
<tr>
<td>ṃbwɔ?</td>
<td>level land</td>
</tr>
<tr>
<td>ṃbú?</td>
<td>product from groundnut</td>
</tr>
<tr>
<td>ṃbù?</td>
<td>a person’s name</td>
</tr>
<tr>
<td>ṃbè</td>
<td>chisel</td>
</tr>
</tbody>
</table>
With the above data, one can propose the following phonological rule to explain this assimilation process.

Nasal assimilation

\[ N\rightarrow [\text{-cor}] \quad \text{[+ant]} /\rightarrow \quad [\text{-cor}] \quad \text{[+ant]} \]

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

21.b) ńtú? pen
ńtàng rope
ńtá? reward
ńdông potatoe
ńdón cup
ńdōìn badluck
ńsāŋ tail
kā-ńsoón frog
kā-ńtú? fon's house

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

Nasal assimilation

\[ N\rightarrow [\text{+cor}] \quad \text{[+ant]} /\rightarrow \quad [\text{+cor}] \quad \text{[+ant]} \]

Here, a nasal becomes alveolar whenever it precedes an alveolar consonant.
The phonological rule to explain this assimilation process can be formulated as follows:

Nasal assimilation

\[ N \rightarrow [ -\text{cor} ] [ -\text{cor} ] \]
\[ \rightarrow [ -\text{ant} ] / [ -\text{ant} ] \]

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

\[ N \rightarrow [ a\text{cor} ] [ a\text{cor} ] \]
\[ \rightarrow [ a\text{ant} ] / [ a\text{ant} ] \]
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

<table>
<thead>
<tr>
<th>mbəŋ</th>
<th>ndōŋ</th>
<th>nsəŋ</th>
<th>ngú?</th>
</tr>
</thead>
<tbody>
<tr>
<td>UR/N-bəŋ</td>
<td>N-dōŋ</td>
<td>N-səŋ</td>
<td>N-gú?</td>
</tr>
</tbody>
</table>

Collapsed nasal assimilation:

<table>
<thead>
<tr>
<th>m</th>
<th>n</th>
<th>n</th>
<th>ŋ</th>
</tr>
</thead>
</table>

PR[ mbəŋ | ndōŋ | nsəŋ | ngú?]

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)

/kə-béñ/ ----> [kə-béñ] a dance
/gháín/ ----> [gháín] visit
/kə-báñ/ ----> [kə-báñ] fufu
/wàñ/ ----> [wàñ] child
/leem/ ----> [leem] yam
From these data, the following phonological rule can be proposed to relate the phonological and the phonetic representations.

Devocalisation

\[
\begin{array}{c}
\text{[-syll]}

\text{[-cons]} \\
\text{+syll}
\end{array}
\]

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

Devocalisation

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

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

\[
\begin{bmatrix}
+\text{syll} \\
+\text{hi}
\end{bmatrix} \longrightarrow [+\text{syll}] /-\text{[-cons]}
\]
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

\[
\begin{array}{cccccc}
\text{kyè} & \text{byè} & \text{nyènò} & \text{lúf} & \text{fwàin} \\
\text{UR/ kiè} & \text{biè} & \text{niènò} & \text{lúf} & \text{fuàfn/}
\end{array}
\]

Collapsed devocalisation:

\[
\begin{array}{cccccc}
y & y & y & w & w \\
\end{array}
\]

PR\{kyè byè nyènò lwí fwaín\}

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.

\[
\begin{array}{ccc}
\text{23.a) Infinitive} & \text{Derived Noun} & \text{Gloss} \\
\text{tàn} & \text{wú-tó?} & \text{one who stays} \\
\text{sàn} & \text{wú-só?} & \text{one who dries} \\
\text{tsàn} & \text{wú-tsó?} & \text{one who displays} \\
\text{fàn} & \text{wú-fó?} & \text{one who remains}
\end{array}
\]
kán  wú-kó?  one who fries
dàn  wú-dó?  one who stretches
wán  wú-wó?  one who sprays
dzán  wú-dzó?  one who calls
lán  wú-ló?  one who puts medicine
bàn  wú-bó?  one who carves
dzàn  wú-dzó?  one who reads
tán  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

\[ [o] \longrightarrow > [a]/-[ŋ] \]

That is
\[
\begin{array}{c}
\text{-hi} \\
\text{-lo} \\
\text{+ bk} \\
\text{+ ATR}
\end{array}
\longrightarrow > \begin{array}{c}
\text{+ lo} \\
\text{+ nasal} \\
\text{+ bk} \\
\text{+ low}
\end{array}
\]

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;

\[ [a] \longrightarrow > [o]/-[?] \]
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 [ʔ]. The root appears with [ŋ] usually when the preceding vowel is in its lowered form and with [ʔ] 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]-----→[ʔ]/6-#
That is
\[
\begin{array}{c}
{[+\text{nasal}]}
\end{array}
\begin{array}{c}
{[+\text{lo}]}
\end{array}
\begin{array}{c}
{[+\text{bk}]}
\end{array}
\begin{array}{c}
{[-\text{nasal}]}
\end{array}
\begin{array}{c}
{[+\text{constr}]}
\end{array}
\end{array}
\begin{array}{c}
/6--\#
\end{array}
\]

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
---|---|---
tǒŋ | wú-túʔ | one who digs
-tsǒŋ | wú-tsúʔ | one who steal
-kόŋ | wú-kúʔ | one who loves
-wόŋ | wú-wúʔ | one who brings rain
-lόŋ | wú-lúʔ | one who leaves
-bòŋ | wú-búʔ | one who is good
-tsǒŋ | wú-tsúʔ | one who digs
-kόŋ | wú-kúʔ | one who gives
t-tǒŋ | wú-túʔ | one who blows
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

\[
[u] \rightarrow [o] \rightarrow [ŋ]
\]

That is \([+hi]\) \([-hi]\) \([+bk]\) \([-low]\) \([-[+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

<table>
<thead>
<tr>
<th>Infinitive</th>
<th>Derived Nouns</th>
<th>Gloss</th>
</tr>
</thead>
<tbody>
<tr>
<td>tú?</td>
<td>wú-tú?</td>
<td>one who mixes</td>
</tr>
<tr>
<td>nú?</td>
<td>wú-nú?</td>
<td>one who excretes</td>
</tr>
<tr>
<td>tsú?</td>
<td>wú-tsú?</td>
<td>one who removes</td>
</tr>
<tr>
<td>lá?</td>
<td>wú-lá?</td>
<td>one who leaves</td>
</tr>
</tbody>
</table>
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

<table>
<thead>
<tr>
<th>Infinitive</th>
<th>Derived Nouns</th>
<th>Gloss</th>
</tr>
</thead>
<tbody>
<tr>
<td>tʃŋ</td>
<td>wū-tʃ?</td>
<td>one who cuts</td>
</tr>
<tr>
<td>shʃŋ</td>
<td>wū-shʃ?</td>
<td>one who descends</td>
</tr>
<tr>
<td>lʃŋ</td>
<td>wū-ʃʃ?</td>
<td>one who licks</td>
</tr>
<tr>
<td>dzʃŋ</td>
<td>wū-dzʃ?</td>
<td>one who urinates</td>
</tr>
<tr>
<td>fʃŋ</td>
<td>wū-fi?</td>
<td>one who mixes</td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>Infinitive</th>
<th>Derived Nouns</th>
<th>Gloss</th>
</tr>
</thead>
<tbody>
<tr>
<td>bɛŋ</td>
<td>wū-bɛ?</td>
<td>one who dances</td>
</tr>
<tr>
<td>fɛŋ</td>
<td>wū-fɛ?</td>
<td>one who falls</td>
</tr>
<tr>
<td>tsɛŋ</td>
<td>wū-tsɛ?</td>
<td>one who fills</td>
</tr>
</tbody>
</table>
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:

\[
\begin{array}{cccc}
tēŋ & wū-tō? & \text{one who pushes} \\
lēŋ & wū-lē? & \text{one who perishes} \\
\end{array}
\]

This derivation shows that the glottal stop formation rule must be ordered before vowel lowering lest the vowel [o] of wū-tō? lowers if the rules are applied inversely. This is shown in the following derivation.
D-5

\[ wú-tóʔ \quad tāŋ \quad wú-béʔ \quad fēŋ \]

\[ \text{UR/wú-tóng} \quad tōŋ \quad wú-béŋ \quad fēŋ / \]

vowel lowering \( a \quad a \quad -- \quad -- \)

glottal stop formation \( ? \quad --- \quad ? \quad -- \)

\[ \text{PR*}[wú-táʔ \quad tāŋ \quad wú-béʔ \quad fēn] \]

**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.
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 [kóʔ] "money" is composed of the segmental phonemes /k/, /ol/, /ʔ/ and also of the pitch phoneme /ʔ/.

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 /ː/ = H as in the following words.

27) ãdòŋ  cup
    sàŋ  corn
    kàŋ  heaven
    shì?  eye
    ãgù?  termite
    kà-kàŋ  pan
    ãgó?  antelope

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

28) ìmbàsə  soup
    lámsə  orange
    kà-kùm  juju
    lò?  nest
    tò-kùm  boxes
    bùshì  cat
    ñìwì  they

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

29) ãdòŋ  potatoe
    sàŋ  moon
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
The Rising Tone /～/ = LH as in the following words

31) lyuŋ guitar
cókwu? rat
māŋ 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) lámə light
bámə stomach
cúʔə mouth
káʔə face
zǐŋə forehead

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

sànj month
sànj corn

shí? hoe
shí? eye
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
    ghè he
    nyìŋ run
    viʔ come
    diʔ cry

35.a) ghè nyìʔ he is running
    ghè viʔ he is coming
    mà viʔ I am coming
    mà diʔ I am crying
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.

35.b) ghó nyí?  he will come
        ghó vi?    he will come
        má vi?    I will come
        má di?    I will cry

36)       HH
        pósá    purse
        kánjwá   limestone
        bóláŋ   groundnut
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.

4.5.1 Tonal 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 class 10 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) nyàn̂ animal
dzən̂ back
ñdzən̂ axe
ímbə? cloud
nyî cutlass
zhû? bee
nyîŋ beard
<table>
<thead>
<tr>
<th>Noun</th>
<th>Plural Form</th>
</tr>
</thead>
<tbody>
<tr>
<td>shi?</td>
<td>hoe</td>
</tr>
<tr>
<td>jôm</td>
<td>dream</td>
</tr>
<tr>
<td>ńdzên</td>
<td>lie</td>
</tr>
<tr>
<td>ńkwunu</td>
<td>hole</td>
</tr>
<tr>
<td>Œmbyi?</td>
<td>bell</td>
</tr>
<tr>
<td>Œgwù?</td>
<td>year</td>
</tr>
</tbody>
</table>

These nouns when combined with the suffix [-só] to mark the plurals give the following forms:

42. b) nyâm-só    animals
   dzâm-só    backs
   ńdzâm-só    axes
   Œmbô?-só   clouds
   nyí?-só   cutlasses
   zhú?-só    bees
   nyíŋ-só   beards
   shi?-só   hoes
   jôm-só    dreams
   ńdzîŋ-só    lies
   ńkwûŋ-só    holes
   Œmbyi?-só   bells
   Œgwû?-só    years

60
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

\[
\begin{array}{c}
\text{H} \\
\text{v} \# \text{v} \\
\end{array}
\]

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

T-Rule 2
Low Tone Delinking

\[
\begin{array}{c}
\text{L} \\
\text{H} \\
\end{array}
\]

\[
\begin{array}{c}
\text{v} \# \text{v} \\
\text{\#/} \\
\end{array}
\]

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 [−s] 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;
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.

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) 3-bû pumpkin
     à-lyû palm bushes
     3-tô hut

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

44.b) 3-bû yi those pumpkins
     à-lyû yi those palm bushes
     3-tô yi that hut

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

T-Rule 3

Low Tone Dissimilation

\[
\begin{array}{c|c|c}
\text{v} & \# & \text{v} \\
/ & \| & \\
H & L & L & H & L
\end{array}
\]

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) ̀bù sìm  farm pumpkin
    ̀lyù sìm  farm palm bushes
    ̀tò tó  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

<table>
<thead>
<tr>
<th>à-bú yi</th>
<th>à-lyú yi</th>
<th>à-tó yi</th>
</tr>
</thead>
<tbody>
<tr>
<td>UR: à-bu yi</td>
<td>à-lyu yi</td>
<td>à-to yi /</td>
</tr>
<tr>
<td>L H L L</td>
<td>L H L L</td>
<td>L H L L</td>
</tr>
</tbody>
</table>

Low Tone

Dissimilation à-bú yi  à-lyú yi  à-tó yi

| | / \ | / \ |
| L H L L | L H L L | L H L L |

PR [ à-bú yi à-lyú yi à-tó yi ]

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

<table>
<thead>
<tr>
<th>Infinitive</th>
<th>Derived Nouns</th>
<th>Gloss</th>
</tr>
</thead>
<tbody>
<tr>
<td>kɔŋ</td>
<td>wú-kúʔ</td>
<td>one who loves</td>
</tr>
<tr>
<td>bɔŋ</td>
<td>wú-búʔ</td>
<td>one who is good</td>
</tr>
<tr>
<td>tɔŋ</td>
<td>wú-tóʔ</td>
<td>one who stays</td>
</tr>
<tr>
<td>sæŋ</td>
<td>wú-sóʔ</td>
<td>one who dries</td>
</tr>
<tr>
<td>tsæŋ</td>
<td>wú-tsóʔ</td>
<td>one who displays</td>
</tr>
<tr>
<td>lɔŋ</td>
<td>wú-lóʔ</td>
<td>one who puts medicine</td>
</tr>
<tr>
<td>dzæŋ</td>
<td>wú-dzóʔ</td>
<td>one who reads</td>
</tr>
</tbody>
</table>

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

T-Rule 4

High Tone Spreading

\[
\begin{array}{c}
v \# v \\
\mid \ast \\
H
\end{array}
\]

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.
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 verbs are considered in their underived forms in other contexts, they are shown to appear with low tones. Consider these data below for illustration.

<table>
<thead>
<tr>
<th>Verb</th>
<th>Underived Form</th>
</tr>
</thead>
<tbody>
<tr>
<td>in yi</td>
<td>love that child</td>
</tr>
<tr>
<td>hold that</td>
<td></td>
</tr>
<tr>
<td>horn yi</td>
<td>dry that plantain</td>
</tr>
<tr>
<td>burn that</td>
<td></td>
</tr>
<tr>
<td>wall yi</td>
<td>read that book</td>
</tr>
<tr>
<td>look that</td>
<td></td>
</tr>
<tr>
<td>osang yi</td>
<td>put medicine on that corn</td>
</tr>
<tr>
<td>put medicine sing. corn that</td>
<td></td>
</tr>
</tbody>
</table>

In (46), one equally notices a change in the vowels. This can be explained in chapter three and the Vowel Lowering and the Second Vowel Lowering (P-rule 6) were formed to account for these changes. Also, the alternation between [?] and [ŋ] and the Glottal Stop Formation (P-Rule 5) was formed to account for this alternation. This could better illustrate how these rules work.
Glottal stop formation
[ŋ]→[ʔ]/6-#

Vowel lowering --
[o]→[a]/-[ŋ]

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[ wū-kū?  wū-tō?  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

mbâŋ  walking stick
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]→[$\eta$]. 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]→[$\eta$]. 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 [$\eta$] and [?]. The rule stated that

[$\eta$]→[?]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 [$\eta$]→[?]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-sàŋ  *à-só?

và-ŋkàŋ  *và-ŋkó?

tà-ghòŋ  *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]→[ʔ]-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]−#

<table>
<thead>
<tr>
<th></th>
<th>Infinitive</th>
<th>Derived Nouns</th>
<th>Gloss</th>
</tr>
</thead>
<tbody>
<tr>
<td>só?</td>
<td>wú-só?</td>
<td>one who dries</td>
<td></td>
</tr>
<tr>
<td>ló?</td>
<td>wú-ló?</td>
<td>one who pays</td>
<td></td>
</tr>
<tr>
<td>bó?</td>
<td>wú-bó?</td>
<td>one who opens</td>
<td></td>
</tr>
</tbody>
</table>

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
so? wén kà-ló? khóm sàŋ kón
UR/soŋ wén kà-lõŋ khôm sòŋ kûŋ/

Second Glottal Stop Formation
so? wén kà-lo? khom --- --
[ŋ]→[ʔ]−6

Vowel Lowering
--- ---- sàŋ --
[o]→[a]/ŋ

Second Vowel Lowering
--- ---- --- kòŋ
[u]→[o]/ŋ

PR[só? wén kà-ló? khóm sàŋ kón]
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 class 10 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) kə-ląŋ “cocoyam”
    tąŋ “hill”
    bòŋ “goodness”
    kɔŋ “love”

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

54.b) kə-ląŋ ké mè? li sing cocoyam it finish past
    tąŋ yé tó hill this hard
    bòŋ yé ná mè? “this hill is hard”
    “this goodness will finish”

“the cocoyam is finished”

“this hill is hard”

“this goodness will finish”
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

\[ V \# V \]

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) kò̀-láng kyi kò̀ bóŋ
sing cocoyam that neg. good

60. t̀ nh yì kò̀ bóŋ
hill that neg. good

72. kòŋ yì mè̀ li
love that finish past

“that cocoyam is not good”

“that hill is not good”

“that love is finished”
A derivation could better illustrate the above process.

D-11  
D-I1 tāŋ yé tō  
kōŋ yé mē? li

UR/tāŋ yē to  
kōŋ yē mē? li

L  H  H  
L  H  L  L

High tone anticipation

tāŋ yē to  
kōŋ yē mē? li

|•••|•••|
L  H  H  
L  H  L  L

Delinking  
tāŋ yē to  
kōŋ yē mē? li

# \ / |
L  H  H  
L  H  L  L

PR[tāŋ yē tō  
kōŋ yē mē? li]

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

 hàyəm  “animal”

wàin  “child”

màŋ  “fox”
55.b) components Gloss

kō “money”
tō “hut”
ku “forest”
cú “mouth”
ló “bridge”

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

55.c) /kō ňàm/----------->[kō ňàm] “animal’s money”
/tō wàǐn/----------->[tō wàǐn] “child’s hut”
/kū lí/----------->[kū lí] “caterpillar’s forest”
/cú mán/----------->[cú mán] “fox’s mouth”
/ló ti/----------->[ló ti] “father’s bridge”

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

T-Rule 6

Contour Formation

\[
V \uparrow \downarrow 
\]

\[
H \uparrow 
\]
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) /kô sóŋ/--------->[kô sóŋ]  “tooth’s money”
    /lô wôn/--------->lô wôn]  “market’s bridge”
    /kû bûm/--------->[kû bûm]  “forest for hunting”

A derivation can better illustrate this rule:

<table>
<thead>
<tr>
<th>D-12</th>
<th>ko nyam</th>
<th>to wain</th>
</tr>
</thead>
<tbody>
<tr>
<td>UR/ko nyam</td>
<td>H L L</td>
<td>H L L</td>
</tr>
<tr>
<td>Contour Formation ko nyam</td>
<td>H L L</td>
<td>H L L</td>
</tr>
<tr>
<td>PR[ko nyam</td>
<td>to wain</td>
<td></td>
</tr>
</tbody>
</table>

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:

\[57/\text{kô-} \text{mbô khôm kôn/} \rightarrow [\text{kô-} \text{mbô khôm } \downarrow \text{kôn}] \text{ “this my madness”}\]
\[/\text{kô-} \text{fô khôm kôn/} \rightarrow [\text{kô-} \text{fô khôm } \downarrow \text{kôn}] \text{ “this my thing”}\]
\[/\text{à-kwé} \text{ ghôm yé/} \rightarrow [\text{à-kwé} \text{ ghôm } \downarrow \text{yé}] \text{ “these my beans”}\]

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 also applies. When this low tone is delinked, it remains floating and causes the high tone following it to be downstepped.

The following rule will show how downstep happens:

T-Rule 7

Downstep

\[
\begin{array}{c}
V \quad V \rightarrow V \downarrow V \\
| \\
H \square \ H \\
\end{array}
\]

This rule says that in a sequence of two high tones, the second high is downstepped.
A derivation can illustrate how these rules work:

<table>
<thead>
<tr>
<th>PR[kə-mbo khóm ↓kán]</th>
<th>kə-fó khóm ↓kán</th>
</tr>
</thead>
<tbody>
<tr>
<td>D-13 kə-mbo khóm ↓kán</td>
<td>kə-fó khóm ↓kán</td>
</tr>
<tr>
<td>UR/kə-mbo khom kən</td>
<td>kə-fó khom kən/</td>
</tr>
<tr>
<td>L H L H</td>
<td>L H L H</td>
</tr>
</tbody>
</table>

**High Tone**

**Spreading**

<table>
<thead>
<tr>
<th>ka-mbo khom kən</th>
</tr>
</thead>
<tbody>
<tr>
<td>L H L H</td>
</tr>
</tbody>
</table>

**Delinking**

<table>
<thead>
<tr>
<th>ka-mbo khom kən</th>
</tr>
</thead>
<tbody>
<tr>
<td>L H L H</td>
</tr>
</tbody>
</table>

**Downstep**

<table>
<thead>
<tr>
<th>ka-mbo khom ↓kən</th>
</tr>
</thead>
<tbody>
<tr>
<td>L H H</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>ka-fó khom ↓kən</th>
</tr>
</thead>
<tbody>
<tr>
<td>L H H</td>
</tr>
</tbody>
</table>
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]. Having 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 articulation 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.
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.


Appendix

1.a) Nouns

<table>
<thead>
<tr>
<th>Assorted Logograms</th>
<th>Gloss</th>
</tr>
</thead>
<tbody>
<tr>
<td>mbàŋ</td>
<td>walking stick</td>
</tr>
<tr>
<td>mbàin</td>
<td>fence</td>
</tr>
<tr>
<td>mb`dong</td>
<td>palm maggot</td>
</tr>
<tr>
<td>mb`a?mdà</td>
<td>peace</td>
</tr>
<tr>
<td>mbà?</td>
<td>an insult</td>
</tr>
<tr>
<td>mb`a?</td>
<td>level land</td>
</tr>
<tr>
<td>mbù?</td>
<td>product from groundnut</td>
</tr>
<tr>
<td>mbù?</td>
<td>a person's name</td>
</tr>
<tr>
<td>mbé</td>
<td>chisel</td>
</tr>
<tr>
<td>mbwil?</td>
<td>nail</td>
</tr>
</tbody>
</table>

1.b) Nouns

<table>
<thead>
<tr>
<th>Assorted Logograms</th>
<th>Gloss</th>
</tr>
</thead>
<tbody>
<tr>
<td>àtù?</td>
<td>pen</td>
</tr>
<tr>
<td>nàŋ</td>
<td>rope</td>
</tr>
<tr>
<td>nàʔ</td>
<td>reward</td>
</tr>
<tr>
<td>ndòŋ</td>
<td>potatoe</td>
</tr>
<tr>
<td>ndòŋ</td>
<td>cup</td>
</tr>
<tr>
<td>ndòn</td>
<td>badluck</td>
</tr>
<tr>
<td>nsàŋ</td>
<td>tail</td>
</tr>
<tr>
<td>kà-nsóin</td>
<td>frog</td>
</tr>
<tr>
<td>kà-ntù?</td>
<td>fon's house</td>
</tr>
<tr>
<td>kà-ntò?</td>
<td>cross</td>
</tr>
</tbody>
</table>

1.c) Nouns

<table>
<thead>
<tr>
<th>Assorted Logograms</th>
<th>Gloss</th>
</tr>
</thead>
<tbody>
<tr>
<td>ḥkáŋ</td>
<td>corn beer</td>
</tr>
<tr>
<td>ḥkʷung</td>
<td>hole</td>
</tr>
<tr>
<td>kà-ḥkʷǎŋ</td>
<td>a hit on the head</td>
</tr>
<tr>
<td>ḥgù?</td>
<td>stone</td>
</tr>
<tr>
<td>ḥgù?</td>
<td>termite</td>
</tr>
<tr>
<td>ḥgàin</td>
<td>tale</td>
</tr>
<tr>
<td>ḥgʷu?</td>
<td>year</td>
</tr>
<tr>
<td>ḥgʷàin</td>
<td>cane</td>
</tr>
<tr>
<td>ḥgù</td>
<td>hog</td>
</tr>
<tr>
<td>ḥgwà?</td>
<td>seed</td>
</tr>
</tbody>
</table>

2.a) Nouns

<table>
<thead>
<tr>
<th>Assorted Logograms</th>
<th>Gloss</th>
</tr>
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<tbody>
<tr>
<td>ḥkám</td>
<td>thousand</td>
</tr>
<tr>
<td>sàŋ</td>
<td>corn</td>
</tr>
<tr>
<td>káŋ</td>
<td>heaven</td>
</tr>
<tr>
<td>shfl?</td>
<td>eye</td>
</tr>
<tr>
<td>ḥgúf</td>
<td>driver</td>
</tr>
<tr>
<td>kà-káŋ</td>
<td>pan</td>
</tr>
<tr>
<td>ḥgóʔ</td>
<td>antelope</td>
</tr>
<tr>
<td>pósá</td>
<td>purse</td>
</tr>
<tr>
<td>kàŋwà</td>
<td>limestone</td>
</tr>
<tr>
<td>English</td>
<td>Yoruba</td>
</tr>
<tr>
<td>--------------</td>
<td>---------------------------------------</td>
</tr>
<tr>
<td>groundnut</td>
<td>bâlôj</td>
</tr>
<tr>
<td>lies (on head)</td>
<td>nchi?sô</td>
</tr>
<tr>
<td>container</td>
<td>nk'avânk'avâj</td>
</tr>
<tr>
<td>money</td>
<td>kó</td>
</tr>
<tr>
<td>hut</td>
<td>tó</td>
</tr>
<tr>
<td>forest</td>
<td>kú</td>
</tr>
<tr>
<td>mouth</td>
<td>cú</td>
</tr>
<tr>
<td>bridge</td>
<td>ló</td>
</tr>
<tr>
<td>farm</td>
<td>sím</td>
</tr>
<tr>
<td>bush</td>
<td>tóʔ</td>
</tr>
<tr>
<td>tooth</td>
<td>sóg</td>
</tr>
<tr>
<td>market</td>
<td>wóŋ</td>
</tr>
<tr>
<td>hunting</td>
<td>bûm</td>
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</table>

2.b) | mbâsâ | soup |
<table>
<thead>
<tr>
<th></th>
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<tbody>
<tr>
<td></td>
<td>lámsâ</td>
<td>orange</td>
</tr>
<tr>
<td></td>
<td>kâ-küm</td>
<td>juju</td>
</tr>
<tr>
<td></td>
<td>lôʔ</td>
<td>nest</td>
</tr>
<tr>
<td></td>
<td>tâ-küm</td>
<td>boxes</td>
</tr>
<tr>
<td></td>
<td>bûshî</td>
<td>cat</td>
</tr>
<tr>
<td></td>
<td>váwê</td>
<td>they</td>
</tr>
<tr>
<td></td>
<td>lámsâ</td>
<td>orange</td>
</tr>
<tr>
<td></td>
<td>nk'únyâm</td>
<td>pig</td>
</tr>
<tr>
<td></td>
<td>mbâsâ</td>
<td>soup</td>
</tr>
<tr>
<td></td>
<td>kàmiŋ</td>
<td>dirt</td>
</tr>
<tr>
<td></td>
<td>ndóbbô</td>
<td>cigarette</td>
</tr>
<tr>
<td></td>
<td>węntû?</td>
<td>prince.</td>
</tr>
</tbody>
</table>

2.c) | kâ-ndôn | neck |
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>sâŋ</td>
<td>moon</td>
</tr>
<tr>
<td></td>
<td>kàŋ</td>
<td>ceiling</td>
</tr>
<tr>
<td></td>
<td>shîʔ</td>
<td>hoe</td>
</tr>
<tr>
<td></td>
<td>nkùʔ</td>
<td>a juju</td>
</tr>
<tr>
<td></td>
<td>wû-wîtʔ</td>
<td>woman</td>
</tr>
<tr>
<td></td>
<td>shûkà</td>
<td>sugar</td>
</tr>
<tr>
<td></td>
<td>nhînà</td>
<td>darkness</td>
</tr>
<tr>
<td></td>
<td>b*ôtô</td>
<td>bottle</td>
</tr>
<tr>
<td></td>
<td>nyinâ</td>
<td>feather</td>
</tr>
<tr>
<td></td>
<td>nyîŋgôŋ</td>
<td>God</td>
</tr>
<tr>
<td></td>
<td>nyùm</td>
<td>animal</td>
</tr>
<tr>
<td></td>
<td>dzâm</td>
<td>back</td>
</tr>
<tr>
<td></td>
<td>ñdzâm</td>
<td>axe</td>
</tr>
<tr>
<td></td>
<td>mbôʔ</td>
<td>cloud</td>
</tr>
<tr>
<td></td>
<td>nyî</td>
<td>cutlass</td>
</tr>
<tr>
<td></td>
<td>zhûʔ</td>
<td>bee</td>
</tr>
<tr>
<td></td>
<td>nyîŋ</td>
<td>beard</td>
</tr>
</tbody>
</table>
hoe

2.d) light

bäm

mouth

kä?

face

ziŋ

forehead

ä-bū

pumpkin

ä-lyū

palm bushes

a-tô

hut

2.e) guitar

cókwù?

rat

māŋ

leopard

3.a) /ŋkîè/----------------->[ŋkyē]

basket

/kîè/----------------->[kyē]

key

/niè/----------------->[nyē]

cutlass

/pngîè/----------------->[npyē]

ground

/biè/----------------->[byē]

pear

/nièŋ/----------------->[nyēŋ]

feather

/liâŋ/----------------->[lyēŋ]

bamboo

/kîékîè/----------------->[kyēkyē]

charcoal

/kā-nîǹ/----------------->[kā-nyēŋ]

toe nail

/tîâŋ/----------------->[tyōŋ]

heart

3.b) /nû/----------------->[nwî]

neck

/gûa/----------------->[gwâ]

leather

/lû/----------------->[lwî]

nostril

/kûán/----------------->[kwân]

bed

/kûâŋ/----------------->[kwâŋ]

arm

/hûaâŋ/----------------->[âkwân]

tail

/kâ-kûâŋ/----------------->[kâ-kwâŋ]

bone

/dûn/----------------->[dwân]

old age

/fûâîn/----------------->[fwâîn]

stream

/îmbûf?/----------------->[îmbwîf?]

nail
<table>
<thead>
<tr>
<th>Infinitive</th>
<th>Derived Noun</th>
<th>Gloss</th>
</tr>
</thead>
<tbody>
<tr>
<td>tāŋ</td>
<td>wū-tōʔ</td>
<td>one who stays</td>
</tr>
<tr>
<td>sāŋ</td>
<td>wū-sōʔ</td>
<td>one who dries</td>
</tr>
<tr>
<td>tsāŋ</td>
<td>wū-tsōʔ</td>
<td>one who displays</td>
</tr>
<tr>
<td>fāŋ</td>
<td>wū-fōʔ</td>
<td>one who remains</td>
</tr>
<tr>
<td>kāŋ</td>
<td>wū-kōʔ</td>
<td>one who fries</td>
</tr>
<tr>
<td>dāŋ</td>
<td>wū-dōʔ</td>
<td>one who stretches</td>
</tr>
<tr>
<td>wāŋ</td>
<td>wū-wōʔ</td>
<td>one who sprays</td>
</tr>
<tr>
<td>dzāŋ</td>
<td>wū-dzōʔ</td>
<td>one who calls</td>
</tr>
<tr>
<td>lāŋ</td>
<td>wū-lōʔ</td>
<td>one who puts medicine</td>
</tr>
<tr>
<td>bāŋ</td>
<td>wū-bōʔ</td>
<td>one who carves</td>
</tr>
<tr>
<td>dzēŋ</td>
<td>wū-dzōʔ</td>
<td>one who reads</td>
</tr>
<tr>
<td>tāŋ</td>
<td>wū-tōʔ</td>
<td>one who count</td>
</tr>
<tr>
<td>tōŋ</td>
<td>wū-tūʔ</td>
<td>one who digs</td>
</tr>
<tr>
<td>tsōŋ</td>
<td>wū-tsūʔ</td>
<td>one who steal</td>
</tr>
<tr>
<td>kōŋ</td>
<td>wū-kūʔ</td>
<td>one who loves</td>
</tr>
<tr>
<td>wōŋ</td>
<td>wū-wūʔ</td>
<td>one who brings rain</td>
</tr>
<tr>
<td>lōŋ</td>
<td>wū-liʔ</td>
<td>one who leaves</td>
</tr>
<tr>
<td>bōŋ</td>
<td>wū-būʔ</td>
<td>one who is good</td>
</tr>
<tr>
<td>tsōŋ</td>
<td>wū-tsūʔ</td>
<td>one who digs</td>
</tr>
<tr>
<td>kōŋ</td>
<td>wū-kūʔ</td>
<td>one who gives</td>
</tr>
<tr>
<td>tōŋ</td>
<td>wū-tūʔ</td>
<td>one who blows</td>
</tr>
<tr>
<td>wōŋ</td>
<td>wū-wūʔ</td>
<td>one who spreads</td>
</tr>
<tr>
<td>bōŋ</td>
<td>wū-būʔ</td>
<td>one who picks</td>
</tr>
<tr>
<td>bwōŋ</td>
<td>wū-bwūʔ</td>
<td>one who is freed</td>
</tr>
<tr>
<td>sōŋ</td>
<td>wū-sūʔ</td>
<td>one who sucks</td>
</tr>
<tr>
<td>fōŋ</td>
<td>wū-fūʔ</td>
<td>one who falls</td>
</tr>
<tr>
<td>tīŋ</td>
<td>wū-tīʔ</td>
<td>one who cuts</td>
</tr>
<tr>
<td>shāŋ</td>
<td>wū-shīʔ</td>
<td>one who descends</td>
</tr>
<tr>
<td>līŋ</td>
<td>wū-līʔ</td>
<td>one who licks</td>
</tr>
<tr>
<td>dzīŋ</td>
<td>wū-dzīʔ</td>
<td>one who urinates</td>
</tr>
<tr>
<td>fūŋ</td>
<td>wū-fūʔ</td>
<td>one who mixes</td>
</tr>
<tr>
<td>bēŋ</td>
<td>wū-bēʔ</td>
<td>one who dances</td>
</tr>
<tr>
<td>fēŋ</td>
<td>wū-fēʔ</td>
<td>one who falls</td>
</tr>
<tr>
<td>tsēŋ</td>
<td>wū-tsēʔ</td>
<td>one who fills</td>
</tr>
<tr>
<td>tēŋ</td>
<td>wū-tēʔ</td>
<td>one who pushes</td>
</tr>
<tr>
<td>léŋ</td>
<td>wū-lēʔ</td>
<td>one who perishes</td>
</tr>
</tbody>
</table>

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