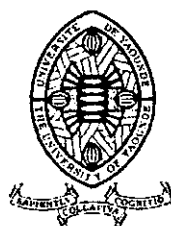


UNIVERSITE DE YAOUNDE I
UNIVERSITY OF YAOUNDE I

FACULTY OF ARTS, LETTERS AND SOCIAL SCIENCES
DEPARTMENT OF AFRICAN LANGUAGES AND LINGUISTICS



THE PHONOLOGY OF LUKUNDU **(BAKUNDU)**

A Dissertation Submitted in partial fulfilment of
the requirements for the award of a
Post-Graduate Diploma (Maîtrise) in Linguistics

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JUNE 1993.

D E D I C A T I O N

DEDICATED TO MY MOTHER : INOH MEKUMBE AND TO MY
BELOVED
YVONNE EYERE.

ACKNOWLEDGEMENT

The foundation of all my achievements and my very existence relies on the bountiful mercies of the Lord. That is why I will always lift up my eyes to the HILLS from where comes my help. My help comes from the Lord who made Heaven and earth. For this reason, I will employ my soul, spirit and body to bless His Holy Name. The Lord has been so gracious to me and has been renewing my youth like an eagle's.

This has been the thorniest undertaking that I have ever plunged myself into purely on academic goals. It has been a sacrifice for knowledge. Not that knowledge is not worthy of my sacrifice; but that a negative response as to the purpose of the work may ruin all intended goals. It is this dark side of the issue that caused me so much pain and discouraged me to the point of abandoning the work.

The work would not have been realised but for the encouragement I received from my lecturers and supervisors especially Mr. John OGWANA and Mr. BITJAKODY. Many thanks to them. My heart felt thanks also go to Mr. George FOGANG, Mr. AGBOR Joseph and ENO Macauley who supported me financially throughout this trying period.

Many thanks also go to all my informants especially Mr. NDOH MOTUBA. Thanks to all my friends, brothers and classmates who helped me in one way or the other to realise this work.

Inexplicable gratitudes go to my beloved sister NGOH TIFUH M. who is specially honoured for her brilliant work in typing the scripts despite all odds and inconveniences. May the Lord bless her richly.

EBONGKOME.

JUNE 1993.

LIST OF ABRIVIATIONS AND SYMBOLS

X Abbreviations

V	=	Vowel
C	=	Consonant
/..../	=	Phonemic data
[....]	=	Phonetic data
"....."	=	English gloss
→	=	Becomes, is realised as
~	=	Varies with
ALCAM	=	Atlas Linguistique Du Cameroun
P.T.	=	Past tense
+	=	Morpheme Boundary
⏏	=	Prefix Boundary
I.P.A.	=	International Phonetic Alphabet Chart
S.I.L.	=	Société Internationale de Linguistique
T.M.	=	Tense marker
Sing	=	Singular
Plu	=	Plural
Prep	=	Preposition
JWAL	=	Journal of West African Languages
DGRST	=	Délégation ^{générale} à la recherche scientifique et technique X
ISH	=	Institut des sciences humaines
MIT	=	Massachusetts Institute of Technology
SELAF	=	Société d'étude linguistiques et anthropologiques de France
DLAL	=	Département des langues africaines et linguistique
UY	=	University of Yaounde
PROPELCA	=	Programme ^{Projet} de recherche opérationnelle pour l'enseignement des langues au Cameroun

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CHAPTER ONE

1. 1. GENERAL INTRODUCTION

This first venture sets out to attempt a phonological description of Lukundu, a language spoken by the Bakundu people in the South West Province of the Republic of Cameroon.

The vitality and essences of the phonological description of any language cannot be overstressed because it is through such a study that distinctive sounds in the language are revealed and it is useful for analysing the structure of the language. The absence of any substantial literature in this language, just goes to confirm the necessity to carry out a phonological study of this language; for it will not only constitute the basis for most structural linguistic studies but also provide a wider area for more studies like morphology, noun class systems as well as syntax and also provide a framework for the development of its own writing system and the subsequent standardization of the language.

This study adopts the structuralist approach to phonological analysis. A special attention will be focused on the sound system of Lukundu, the segmental and pitch phonemes and the possible combination of sounds into syllables, morphemes and words. The unit of description throughout the study will be the WORD which is defined in various ways and manner by different authorities.

We are infact really concious of the fact that this study can neither be exhaustive nor definitive due to the handicap of time, ^{definitive} general uncertainty and the lack of motivation, ^{??} to which it is a victim. Because the scope of this study does not allow us to describe

simultaneously all the dialects, we will concentrate on just one of them namely Lower Bakundu. Much of what will be presented will be relevant beyond this dialect. At some points, we will include examples from different dialects to illustrate the differences.

However, we will be grateful if our efforts will open a gateway into greater and more profound studies in linguistics on Lukundu and hope that some young Bakundu people will take up the challenge and study in detail, different aspects of their own language.

The first chapter will concentrate on situating the people geographically and socio-economically. Secondly it will portray the language in relation to its classification, its usage in the society, as well as its relation to its neighbours. Finally the methodology and organisation of the study will be sketched out.

1. 1. 1. G E O G R A P H I C A L L O C A T I O N

Bakundu is located around the west, north and south of Kumba in Meme Division, South West Province of Cameroon. Bakundu actually consist of a string of villages and stranger quarters around Kumba central Sub-division. This makes the situation very complex around the Kumba area. Bakundu villages stretch westwards of Kumba along the road to Ekondo-Titi with some southward branching roads, and in a strip along the road south to Buea in a trail interspersed with Ekombe villages. Also north of Kumba, there is another trail of villages along the road to Mamfe interspersed with some Bafaw villages.

Globally, the people consider themselves as upper and lower Bakundus; Kumba being the centre of this division. Those from the north of Kumba that is, those along Mamfe road are considered as upper Bakundus;

while those from the south, that is, those found along the villages going to Ekondo-Titi and Buea road are considered as lower Bakundus. This division is notice^d only among the Bakundu people. X

1. 1. 2. HISTORICAL BACKGROUND

The Bakundu people are one of those ethnic groups who owe their origin to the great ancestor Ngoe (father) and Sumediang (mother). The lineage extends to most of Mungo division in the Littoral Province. Other people sharing the same ancestry are:- Aboh, Bafaw, Balong, Bakossi, Balondo, Bakem, Baneka, Muamenam, Mwangel, Mbo, Miamilo.

Ngoe is said to have lived around the Muaneguba lakes and his descendants migrated from there to the various areas occupied today. X Mukundu I, the fifth son of Ngoe's seven sons migrated and settled around the Ngolo area in a village called Boama near the Ndian river. Settling in this area, Mukundu I had a number of sons: Ngoe whom he named after his father, Mukundu II, whom he named after himself, Balue, Batanga, Ngolo, Mbonge, etc. These children also migrated and settled in different areas. X

Mukundu II left and settled in Itoki where he too had his own children. The most prominent of these children is Mbakwa. Present day Bakundus are all descendants of Mukundu II. They occupy a total of thirty-six villages in the north, south and west of Kumba. The largest of such villages are Mbakwa Supe and Banga Bakundu with over 3.500 indigenes.

1. 1. 3. SOCIO-ECONOMIC SITUATION

Socially Bakundu comprise of a heterogenous people who function harmoniously around a main figure - the chief. The chief is is at the top of the political set up and he rules with the close

collaboration of a traditional council. In most of their villages, few non-natives are incorporated into the council. When it comes to traditional matters, the people attach a high degree of importance to the relationship between the chief and the citizens. In their day to day activities, Unlike in most villages in the north west of Cameroon, there is no mark difference between the chief and his people, men and women. What exist here is that normal respect for seniors and submission to husbands or parents.

At the economic level, the economy of the Bakundu people is basically agriculturally oriented. Like 80% of Cameroonians, the Bakundu people derive their main stay from agricultural activities. This is seen in the cultivation of cash crops like cocoa, coffee, rubber and palm oil. Food crops such as plantains, cocoyams, cassava, yams, etc. are also cultivated. Cultivation of cash crops mostly rests with the men folk, while the women take care of the food crops. Apart from these, there is also little hunting done by men and extensive fishing activity carried out by women mostly in groups.

1. 1. 4. BAKUNDU AND THEIR NEIGHBOURS

The people are generally referred to as BAKUNDU. The Bakossi people call them "bekundε", the Bafaw call them "bawɔ", in Lombe they are referred to as "nkundu". In some books, authors refer to them as "kundu".

The Bakundus are one of the most dynamic people in the South West Province of Cameroon. They are dynamic in the sense that they consider their neighbours as fellow kinsmen as well as any well behaved stranger. They give their daughters for marriage easily to strangers.

To an extent one will not even know if there exist upper or lower Bakundus except you are told. This is because the relationship between them is very cordial.

As neighbours, the Bakundu people share boundaries with Mbonge, Ekombe, Balue, all for whom they share a large degree of mutual intelligibility in language. They also share boundaries with Bafaw and Bakossi who share little or no mutual intelligibility with them in terms of language.

1. 2. THE LANGUAGE

The language is referred to by the indigenes as LUKUNDU and is spoken with slight variations by the upper and lower Bakundus. Small variations in pronunciation occur between neighbouring villages and sometimes within the same village. The people are very conscious of dialect differences and make basic distinction as to lower or upper Bakundu. Dialect differences are mainly differences in consonants, vowel quality and at times differences in lexicon; but rarely differences in tone. Tone seems to be the most stable element. Despite the differences, the various dialects appear to be mutually intelligible.

Below is an illustration of this differences that exist in terms of consonants, vowel quality and lexicon. 8

Upper Bakundu	Lower Bakundu		English gloss
èwòngó	èpòngó	W/B	chair
pámábá	ṛiwésisḗ		to dry
mʸàná	mòtò		man
dìndā	lìndì		black
ṇàsó	ṇwàsó	ṇ/ṇ ^w	fork
s ò	sò	ò/ò	thatches
èbò	tòní		nail (use on wood)
mbódì	mbóli	d/i	goat
ngèngì	ngèngè		chest
màdíbá	màríbá	d/r	water

These variations were realized during data collection. Natives of upper Bakundu and lower Bakundu were often brought together during data collection and these variations surfaced.

As what concerns other languages used by the Bakundu people and which has impact on Lukundu; there is this situation of bilingualism. The official language used for instructions in the schools and sometimes in daily conversation is English. The second widely used language in the area is Pidgin. Some older people especially women, know little of English or Pidgin and prefer to use Lukundu exclusively.

Duala was introduced into the area by the Basel mission as the official church language and was used extensively in their schools.

But with the introduction of the English language into the school system in the early 1960s it has lost grounds considerably. Only few of the younger generation know Duala and it can only be heard rarely amongst older people in daily conversation. Its influence is still felt in the church through the use of the Duala hymn book and Bible. ✓

As a note of interest, in a number of villages there are some old people who still remember German from the German era over 80 years ago.

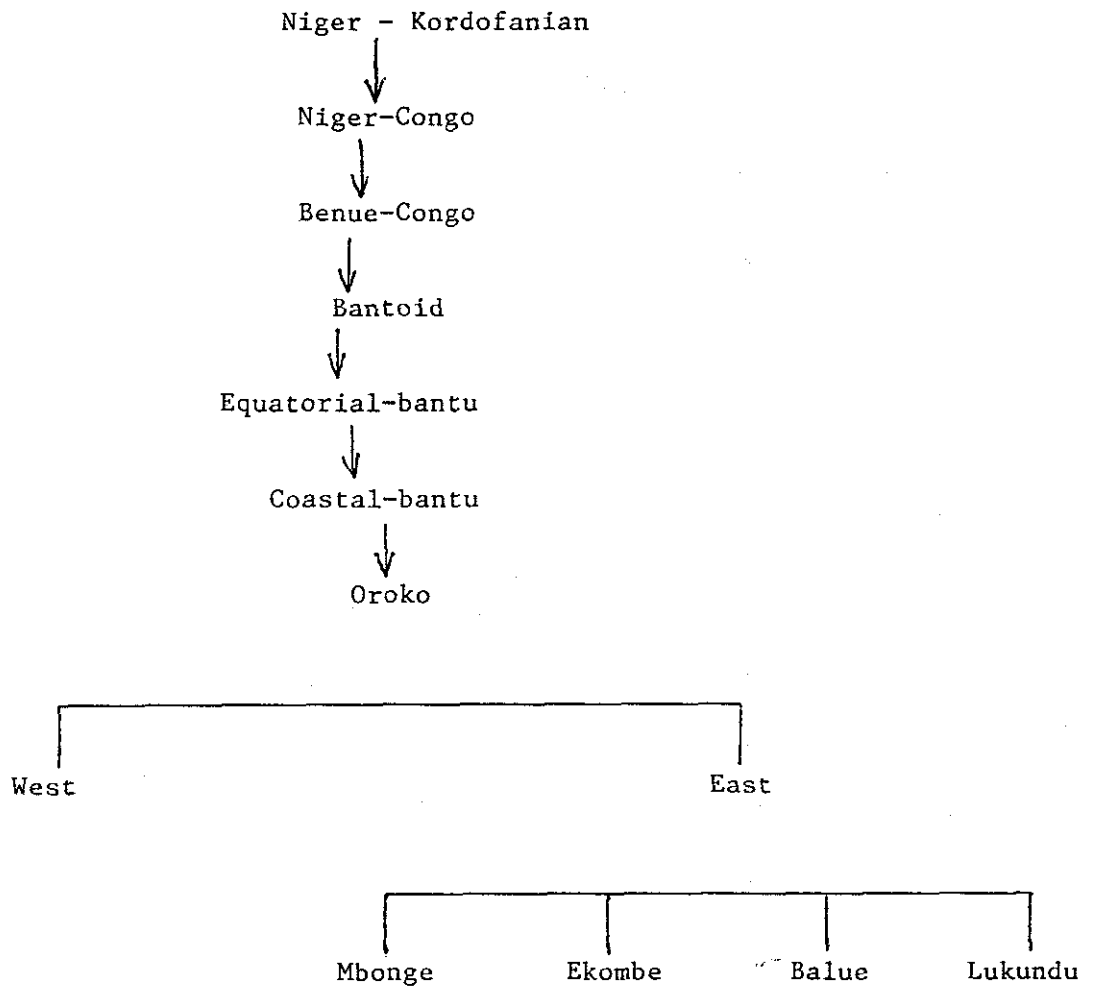
The attitude of the Bakundu people towards all these languages is varied. To the 60⁺ age group, everything should be in Lukundu, to the literate adults either in English or Lukundu, to the youths everything should be in Pidgin. Due to the presence of many languages in the community, the mother tongue has become "contaminated" with frequent loan words from English. It is common to hear a youth saying: "na ma di very tired", that is, "I am very tired". This is an alarming situation especially to the elders who express fear that the language will soon be "wiped out" if something is not done fast. (E.A. Lenya verbal interview 1992). ✓

1. 2. 1. C L A S S I F I C A T I O N

According to Greenberg (1963) Lukundu is an equatorial bantu language belonging to the Niger-Kordofanian family.

Equatorial bantu languages constitute a minor division of the Benue-Congo (a sub-classification of the Niger-Kordofanian family). Guthrie (1948), Welmers (1973), Greenberg (1963, 1970, 1974) and Williamson (1971) are those who have been very instrumental in the classification of these languages though, they have not always been in agreement with various classifications.

Kuperus (1979) describes Lukundu as a coastal bantu language, tracing its linguistic genealogy as follows:

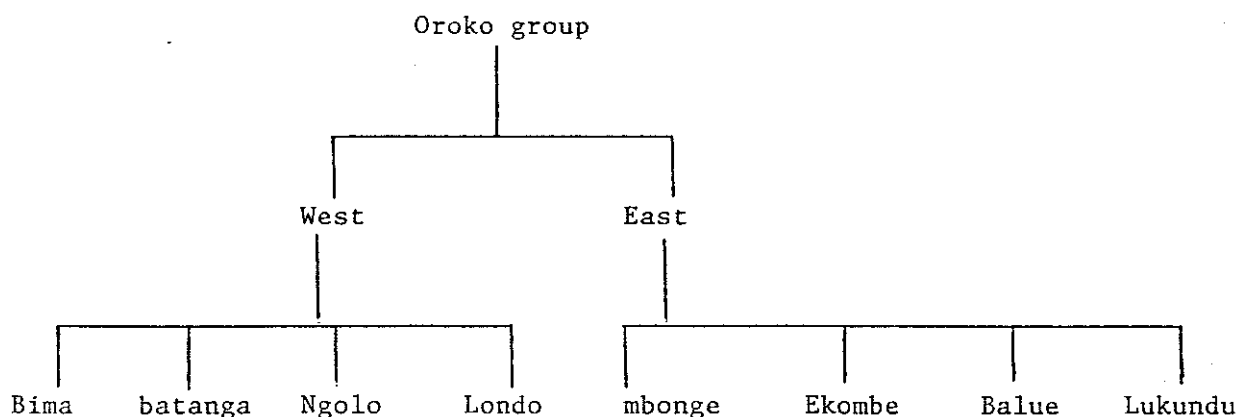


Variations in classification of African languages result because there has not yet been a very comprehensive and satisfactory classification exposing African languages.

In standard classification Guthrie (1953, 1967 - 71) lists Lukundu as A 11c, a member of the A 10 group, the most north-westerly group of narrow bantu languages, all situated in the south west province of Cameroon.

At any rate, Atlas Linguistique du Cameroun (ALCAM) seems to give a plausible classification of Lukundu. According to ALCAM, Lukundu falls under the code number 632 group, Zone 6 A10 of African languages.

In a terminology which is common in the south west province of Cameroon, and which is used in local languages, radio programmes, for instance by speakers of the relevant languages, Lukundu and seven other languages or dialects are referred to, as the OROKO GROUP. The term comes from a greeting common to these languages (kuperus 1979).



1. 2. 2. L I T E R A T U R E R E V I E W

Lukundu has so far not been an object of much devoted linguistic exploration. This might probably be due to the fact that some neighbouring coastal bantu languages like akɔɔse, Londo, Bafaw, etc. attracted the attention of linguists. Thus, the linguists preferred to devote enough time on an adequate analysis of these languages before breaking into new fields. So far, the little linguistic work on Lukundu can be seen through sociological, historical and religious comments from

Newspapers and cultural journals. Mention again is made about the language in pure linguistic works only when authors are discussing certain aspects or characteristics of general coastal bantu languages.

In Languages of the World : Ethnologue by Barbara F. Grimes (editor) (1984) the classification of Lukundu is given, as well as the relationship that exist between this language and other Oroko languages. Here also we are able to learn that "...Ekombe do not want to be classified with or as Bakundu".

Juliana Kuperus (1985). The Londo Word : Its phonological and morphological structure, also gives us the classification of Lukundu. In this work, she gives the geographical location of Lukundu in the Kumba central Sub-division.

In Atlas Linguistique du Cameroun (ALCAM), we are not only given the classification of Lukundu as a coastal bantu language; but also here we are given the different names of appellation of Lukundu as known in other neighbouring tribes and even some writers.

From the above we can notice that, there is virtually little about the Lukundu language. This goes to confirm the fact that a phonological study in this language is very necessary.

1. 3. P U R P O S E A N D M E T H O D O L O G Y O F W O R K

1. 3. 1. P U R P O S E

This dissertation is based on a phonological study of the Lukundu language, the main aim behind it being to reveal distinctive sounds of this language and how useful this may be in analysing the structure of the language.

The work will also take care of the establishment of a kind of alphabet for the language. Although a little has been done on Lukundu, a phonological study will lead to the establishment of a writing system for the language and will lay a foundation stone for the study of the structure of Lukundu. Another reason will be that, it will open for the enthusiastic, more detailed studies on the language like all the other aspects of grammar. ✓

1. 3. 2. M E T H O D O L O G Y

This study bases its attention on the sound system of the language and great attention is paid to the analysis of minimal pairs in order to come out with distinctive sounds in the language. We will take into consideration, the pitch phonemes as well as the possible combination of sounds to form larger units.

The approach to be adopted will be the structuralist approach to phonological analysis. This approach expounded upon by X Wiesemann, Sadembouo and Tadjieu (1983) demands a gradual step by step analysis. A list of the phonetic sounds of the language will first be established from which we will obtain another list of similar pairs of sounds. Next we will look for minimal pairs containing each pair of similar sounds and examine their opposition and or their distribution in these words. Through this method, we will be able to identify the segmental and supra-segment^{al} phonemes as well as their variants and or allophones. ✓

Our target therefore will be the phoneme which is defined by Wiesemann et al (1983) as:

- A minimal distinctive sound unit representing only one reality in the mind of the native speaker. It is the smallest sound unit which signals meaning differences between similar words.

It can be realized from this definition that a phoneme is that unit of sound capable of distinguishing meaning in a language. Also it will be realized from the definition that some phonemes have allophones, sounds existing in complementary distribution and occurring in mutually exclusive environments.

The primary unit of description in this study will be the WORD defined by Webster in PEI (1966) as:

- A speech sound or a series of speech sounds symbolizing and communicating meaning without being divisible into smaller units capable of independent use; a linguistic form that is a minimal¹ free form.

At times too, we will consider as a unit of description the phrase which to Palmer (1975) is:

- A group of elements found in an utterance; but smaller than a sentence and having similar characteristics. Such groups may be: noun phrases containing nouns and their modifiers or verb phrases containing verbs and their modifiers...

1. 4. THE SOURCE OF DATA

This study is based on a corpus of about 920 words and sentences collected through the help of 4 informants namely:

- 1) Miss Ndoh Bertha, 3rd year student in the faculty of law, native speaker of Lukundu from Banga-Bakundu.
- 2) Mr Etana Lawrence 3rd year student faculty of law, native speaker of Lukundu from Kake-Bakundu.
- 3) Rev. Mudika Aaron Mokwe, president of The Apostolic Church in Cameroon, resident in Kumba, native speaker of Lukundu from Mabonji-Bakundu.
- 4) Mr. Lenya Andrew Etinge, retired headmaster Lukundu native speaker from Mbakwa Supe.

These informants were required to translate orally words from English. In the course of these translations, I had the following advantages:

- 1) The informants were drawn from the two Bakundus. Also from the lower Lukundu where we based our studies, the informants came from different villages - two of them from the largest Bakundu villages - Banga and Mbakwa Supe. This gave us the opportunity of obtaining the vocabulary variations between the two Bakundus;
- 2) The informants in Yaounde were often brought together during working sessions and this helped a lot for, before the translation of any word was given, they discussed (argued) among themselves and as we believed often came out with the accepted version.

Some information about the history of the people was given by Mr. Lenya Andrew Etinge, retired headmaster resident in Mbakwa Supe. We were made to understand that he is the first and oldest literate Bakundu person.

The data was partly verified by Rev. Mudika Aaron Mokwe (mentioned above) and Mr. Bitjaa Kody of the faculty of letters, department of African languages and linguistics.

1. 5. OUTLINE OF WORK

This study contains five major chapters which for convenience sake have been sub-divided into various sections. Chapter one, the introductory chapter, attempts, as indicated earlier, to situate the people of Bakundu geographically, historically and socio-economically. The language is situated in relation to its usage in the community, and its linguistic classification.

Chapter two, which is the core of the study hence the longest chapter will be treating segmental phonology. Adopting a structuralist approach, we will analyse possible minimal pairs or near minimal pairs with the aim of bringing out distinct sounds in the language. This will involve both consonants and vowels.

Chapter three which is considerably short, is out to examine and explain the few problems that one can encounter in the course of analysing some rather complex sound segments in the language.

The fourth chapter will be treating supra-segmental phonology. Here we will be examining the various syllable, morpheme and word structures existing in the language, which phonemes fit into what position of which pattern. Also we will undertake a close study on how vowel length as well as tone can have an influence on the language. We will also examine the status of some attested prosodic features that exist in the language.

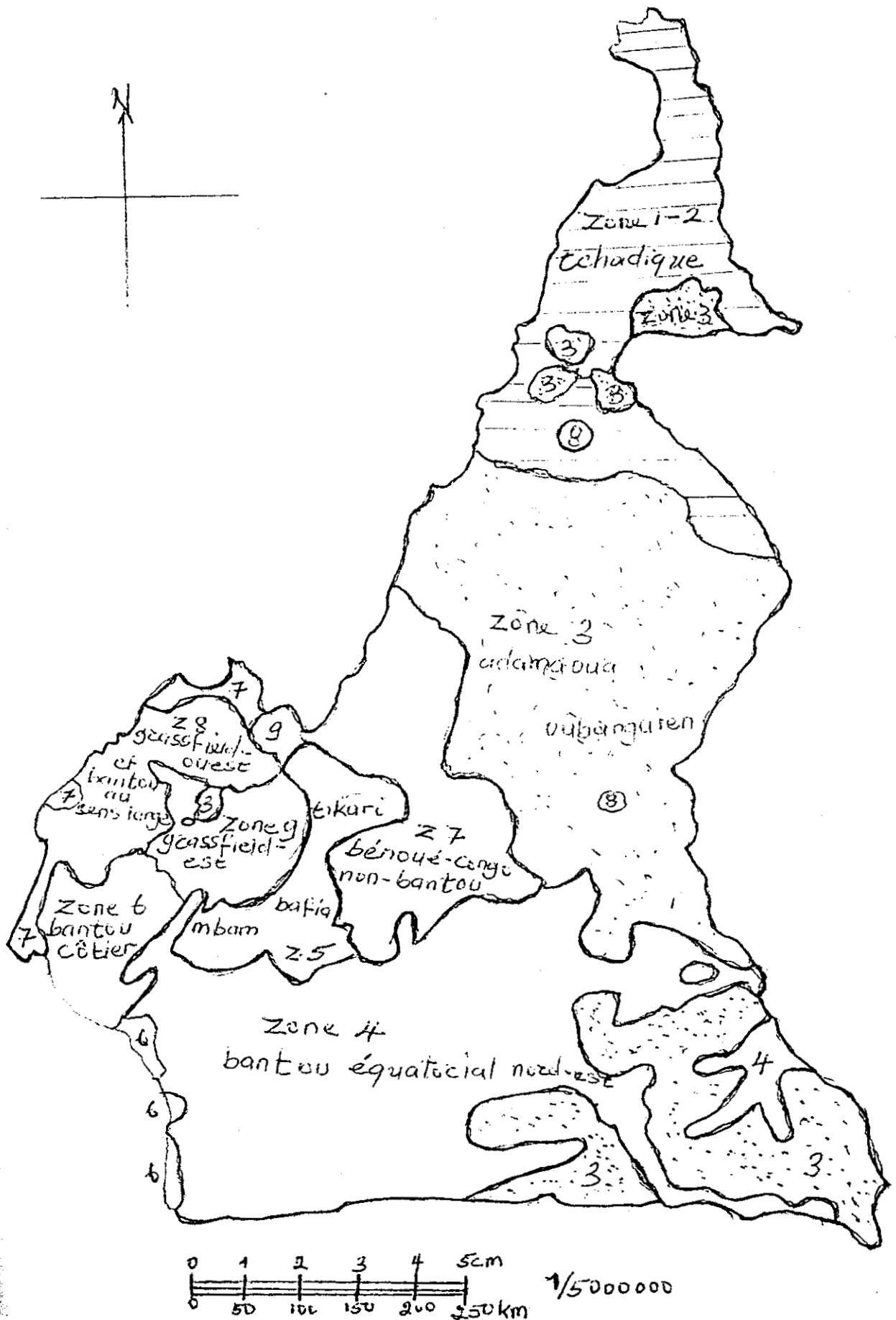
The fifth and last chapter will highlight a proposed alphabet as well as orthographic principles of Lukundu. This chapter will be concluding the study by presenting an illustrative text of the writing system of the language.

The transcription system in this study has been adapted from the International Phonetic Chart (I.P.A.). The graphemes used at the end of the study has been adapted from the General Alphabet of Cameroon Languages (Tadajeu and Sadembouo 1979).

M A P S U P L E M E N T

- 1) Map showing major Language zone of Cameroon (ALCAM P 370)
- 2) Map showing languages of the South West of Cameroon (ALCAM P 405)

MAJOR LANGUAGE ZONES OF CAMEROON





CHAPTER TWO

2. SEGMENTAL PHONOLOGY

This chapter is the core of the study in this work. We will focus our attention mainly in bringing out the sounds that are distinctive or relevant in this language. In other words, our concern will be turned towards the establishment of sounds that have phonemic status. In this case, we will examine pairs of words that are similar in all respect but for one phonetic difference. We will examine pairs of similar sounds as they contrast in identical contexts to establish them as phonemes. If this proves insufficient, then we will examine their opposition in analogous contexts. When this too proves inadequate in spelling out distinctive sound units, we will examine their general distribution in the words in which they occur to see if they exist in complementary distribution, so as to establish them as allophones of the same phoneme.

Lukundu is a language having a sound system of over 40 phonetic consonant and 11 phonetic vowel sounds. The phonemic analysis is therefore deemed very useful for the general tendency is that not all these phonetic sounds will be distinctive in the transmission of messages in the language. Since the writing system of a language needs to be as simple as possible, it is necessary to eliminate redundant sounds through phonemic analysis.

2. 1. C O N S O N A N T S

Out of all these over 40 consonant sounds, it will be realized from the section of phonemic analysis that some of these consonant sounds constitute distinctive units of sounds in the language

whereas others simply ~~as~~ allophones of other phonemes, in other words, environmental variants of the same phonemes.

2. 1. 1. PHONETIC INVENTORY

The chart which follows, contains all the phonetic consonant sounds attested in Lukundu. These sounds are classified according to place and manner of articulation and they include palatalized, labialized and aspirated consonants. The chart contains groups of suspicious sounds which exhibit phonetic similarities of one type or the other and which therefore call for a close analysis in order to bring out the real qualities of their apparent similarities.

CONSONANT PHONETIC CHART

- 21 -

Place of articulation manner of articulation	Bilabials	Alveolars	Retroflex	Pre-palatals	Palatals	Velars	Labio-velars
voiceless STOPS	p ph	t c d dw				k kw kɰ	kp
voiced	b bʷ bj	s sw sj					
voiceless FRICATIVES	β						
voiced							
voiceless AFFRICATES				tʃ tʃʷ dʒ			
voiced							
NASALS	m mʷ mʲ	n			ɲ	ŋ ŋʷ	
voiceless PRE-NASALIZED STOPS							
voiced	mb mbʷ	nd		ndʒ ndʒʲ		ŋɖ ŋɖʷ	ŋɖb
voiceless PRE-NASALIZED AFFRICATE							
voiced							
LATERALS		l					
FLAP			ɽ ɽʷ ɽʲ				
GLIDES	w				j		

Table one.

2. 1. 2. S U S P I C I O U S P A I R S O F S O U N D S

(P,b), (P,ph)
 (b,b^w), (b,b^j), (b,β), (b,m)
 (m,mb), (m,n), (m,m^w) (m,m^j)
 (mb,w), (mb,mb^w), (mb,b)
 (w,τ), (w,j), (nd,ŋg)
 (t,d), (t,τ), (t,t^f), (t,t^j)
 (d,nd), (d,d^w), (d,n), (d,τ), (d,l)
 (s,t), (s,s^w), (s,s^j), (τ,l), (τ,τ^w)
 (n,τ), (n, nd), (nd,mb), (nd,ρ), (τ,τ^j)
 (t^f,d^z), (t^f,t^f^w), (d^z,nd^z), (nd^z,ρ), (j,ρ)
 (k,ŋ), (k,k^w), (k,k^j), (k,k^h), (ŋ,ŋg), (ŋg,ŋg^w)
 (ŋ,ŋ^w), (ŋ,ρ), (ŋg,nd^z), (kp,k), (kp,p), (kp,ŋgb)
 (ŋgb,b)

There is a high degree of phonetic similarities between the above listed pairs of sounds. Below will be a phonemic analysis to spell out the actual relationship that exists between these pairs of sounds.





2. 1. 3. P H O N E M I C A N A L Y S I S

LABIALS : The sound P

<u>P/b</u>	Pándá	"anus"	bándá	"press"
	kápà	"money"	kápà	"big - gown"

P/ph P and ph exist in free variation. That is, P can be used in the place of ph without any alteration in meaning.

ILLUSTRATIONS

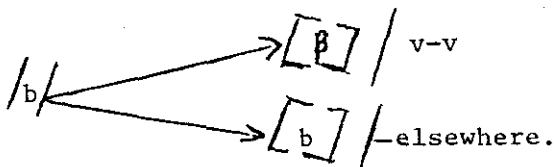
Pó		phó	"rat"
Púpɛ		phúpɛ	"white"
Pónda		phónda	"time"
Pánda		phánda	"anus"

The Sound b

<u>b/m</u>	bɔ́	"them"	mɔ́	"he/she"
	bo'to	"night"	mo'to	"head"
	batò	"people"	matò	"ears"
	bandá	"press"	mandà	"homestead"
	bòyèmbà	"witchcraft"	mòyèmà	"heart"

b/p See P/b

b/β b is realised as the voiced bilabial
when it appears between vowels and remains a voiced
bilabial elsewhere.

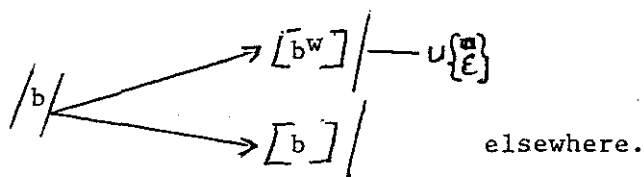


Hence, they are allophones of the same phoneme.

ILLUSTRATION

/kúbā/	→	[kúpā]	"fowl"
/èbǒngó/	→	[èpǒngó]	"chair"
/sìbá/	→	[sìpá]	"jump"
/èbòkó/	→	[èpòkó]	"penis"
/bòrā/	→	[bòrā]	"make"
/bàtò/	→	[bàtò]	"people"
/bésùsù/	→	[bésùsù]	"claws"

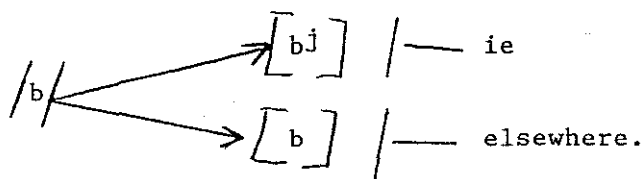
b/b^w b is labialised when it precedes two sequences of vowels, the first being u and the second being a or ɛ. In any other situation, it remains a bilabial plosive. Hence the two sounds are allophones of the same phoneme.



ILLUSTRATION

/bùɛ/	→	[b ^w ɛ]	"poverty"
/bua/	→	[b ^w â]	"birth"
/bánà/	→	[bánà]	"children"

b/bj b is palatalised when it precedes two sequences of vowels, the first being i and the second being e. It remains a bilabial plosive in any other situation. Hence these two sounds are allophones of the same phoneme.



ILLUSTRATION

/ɾibíè/	→	[ɾibjê]	"sense"
/bàtò/	→	[bàtò]	"people"

From the data available this is the only word that exhibits this process of palatalisation.

The opposition existing between b and the above listed sounds establishes its status as a phoneme in Lukundu. It is realised

as a voiced bilabial oral plosive in all environments, except when it occurs between a vowel, then it becomes a voiced bilabial fricative. b also functions in marking the distinction between singular and plural forms of nouns, for example:

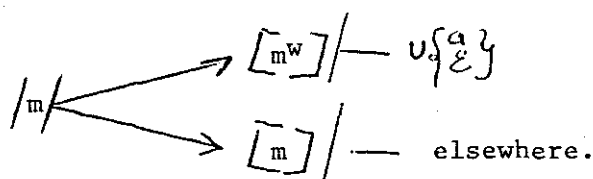
<u>Singular</u>		<u>Plural</u>	
mòtò	"somebody"	bàtò	"people"
èpàpé	"cloth"	bèpàpé	"clothes"
ètámí	"shoe"	bètámí	"shoes"

The Sound m

m/b see b/m

<u>m/mb</u>	mòrò	"head"	mbòrò	"banana"
	mòrèmà	"heart"	bòrèmà	"witchcraft"
<u>m/n</u>	màngà	"smell"	nàngà	"sleep"
	màngò	"nations"	nàngò	"take"

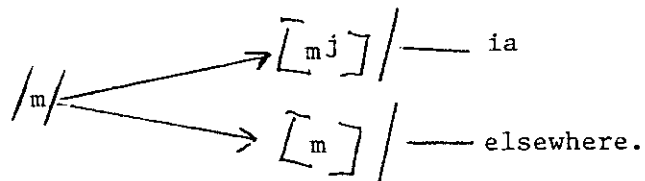
m/m^w m is labialised when it precedes two sequences of vowels, the first being U and the second being a or ɛ. In any other situation it remains a bilabial nasal. Hence the two sounds are allophones of the same phoneme.



ILLUSTRATION

/mùé/	→	[m ^w é]	"friend"
/múà/	→	[m ^w â]	"fire"
/mókè/	→	[mókè]	"stranger"
/múmí/	→	[múmí]	"husband"

m/m^j m is palatalised when it precedes two vowel sequences, the first being i and the second being a. In any other instance it remains a bilabial nasal. Hence they are allophones of the same phoneme.



ILLUSTRATION

míà'í	mjá'í	"urine"
míángó	mjángó	"news"
mìs'	mìs'	"eyes"

m is one of the most frequent consonants in this language. Its status as a phoneme is established through contrast with the above listed sounds. It is realised as a bilabial nasal, it functions in marking the distinction between the singular and plural forms of nouns.

<u>Singular</u>	<u>Plural</u>	
dìs'	mìs'	"eye(s)"
dító	màtó	"ear(s)"
ʔísóngá	màsóngá	"tooth" "teeth"
ʔìbóngó	màbóngó	"knee(s)"

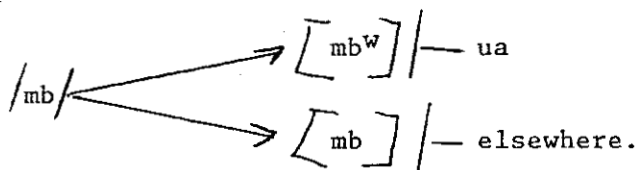
The Sound mb

mb/m see m/mb

<u>mb/b</u>	mbókà	"village"	bókà	"veranda"
	mbwâ	"rain"	bwâ	"birth"
	kàmbá	"wrap"	káßà	"big gown"

<u>mb/nd</u>	èkómbó	"general"	èkóndó	"world"
	màmbá	"it would have been me".	màndà	"homestead"
	kámbà	"fold"	kándá	"shout"
	kúmbà	"proud"	kùndá	"fall"

mb/mb^w mb is labialised when it precedes two vowel sounds of which the first is u and the second being a. This assertion is as far as the data is concerned. Since the occurrence of mb^w is predictable, we can say that it is an allophone of the phoneme mb.



ILLUSTRATION

/mbúà/	→	[mb ^w â]	"rain"
/mbólì/	→	[mbólì]	"goat"
/tàmbá/	→	[tàmbá]	"cap"

The status of mb as a phoneme in this language is established through contrast with other sounds like m, b, nd. It occurs both initially and medially.

ALVEOLARS : The Sound t

t/d

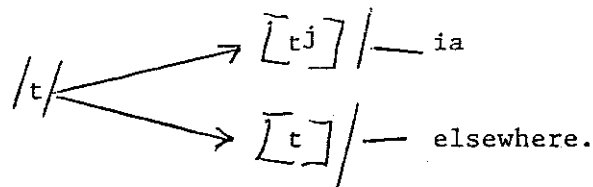
téngá	"to put across"	déngá	"announce"
tìngá	"knit"	dìngá	"like"

t/s

tángá	"pay"	sàngá	"contribute"
ètángó	"fine"	sángó	"master"
mùtángó	"quarrel"	mùsángò	"peace"

t/tj

t is palatalised when it precedes two vowels, the first one being i and the second being a. In any other instance, it remains an alveolar plosive. Hence the two sounds are allophones of the same phoneme.



ILLUSTRATION

/tútjà/	→	[tútjâ]	"near"
/dító/	→	[dító]	"ear"

The status of t as a phoneme is established through the contrast with sounds like d, s. It occurs both initially and medially in this language.

The Sound d

d/t see t/d

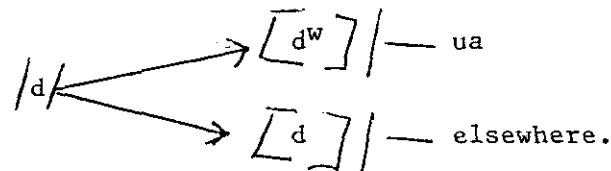
d/n dínà "name" nínà "today"

d/ɹ dípɛ "liver" ɹípɛ "breast"

d/nd dókò "bathe" ndòndòkì "needle"

d/s dòsà "play" sòsá "wash"
 dò "nose" sò "thatches"

d/d^w d is labialised when it precedes two vowels, the first being u. This is probably due to glide formation process, where the underlying d is followed by two vowels of different qualities, where V1 is the vowel u which becomes a glide w on the surface.



ILLUSTRATION

/dúà/ → [d^wâ] "faeces"
 /dá/ → [dâ] "eat"

d is realised as a voiced alveolar oral plosive and its status as a phoneme is established through its contrast with t, n, ɹ, nd, and s. It occurs both initially and medially. It also functions in making the distinction between singular and plural forms of nouns.

Singular

Plural

ìwɔ́

dòwɔ́

"cutlass(es)"

ìnɔ́

dònɔ́

"bird(s)"

ìtɕó

dòtɕó

"firewood(s)"

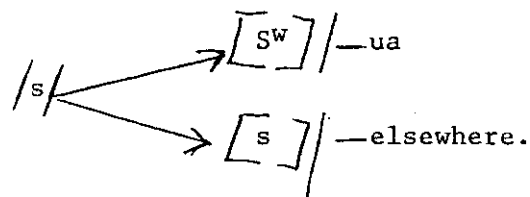
The Sound s

s/t see t/s

s/d see d/s

<u>s/tʃ</u>	ésé	"bone"	étʃè	"soft"
	ìsɔ́	"shame"	ìtɕó	"firewood"

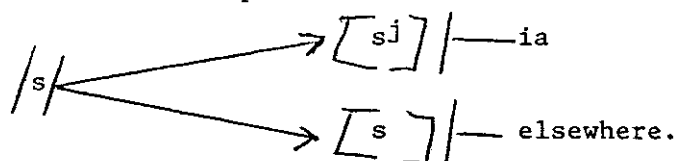
s/s^w s is labialised when it comes before two vowels of which the first is u and the next being a. Hence these two sounds are allophones of the same phoneme.



ILLUSTRATION

/móʃuà/	→	[móʃʷa]	"oil"
/móʃá/	→	[móʃá]	"mushroom"

s/s^j S is palatalised when it precedes two vowels of which the first is i and the next being a. These two sounds therefore are allophones of the same phoneme.



ILLUSTRATION

/sía/	→	[s ^h jà]	"grind"
/mìsɔ́/	→	[mìsɔ́]	"eyes"

The establishment of s as a distinct phoneme in this language is seen from the contrast with the above listed phonemes. It is realised as a voiceless alveolar fricative.

The Sound n

<u>n/m</u>	see m/n			
<u>n/d</u>	see d/n			
<u>n/nd</u>	bánà	"children"	bándá	"press"
<u>n/ɬ</u>	nòŋɔ́	"take"	ɬòŋɔ́	"brain"
<u>n/ɸ</u>	nòŋɔ́	"take"	ɸòŋgi	"anxiety"
<u>n/ŋg</u>	ɾònè	"finger"	ɾòŋgé	"life"
	toni	"nail"	èòŋgi	"choir"

This phoneme n is realised in all environments as the alveolar nasal. Its contrast with the above listed sounds establishes its status as a phoneme in Lukundu.

The Sound nd

<u>nd/n</u>	see n/nd
<u>nd/mb</u>	see mb/nd
<u>nd/d</u>	see d/nd

nd/ng

ngàndó	"crocodile"	ngàngò	"umbrella"
kándá	"shout"	me-kàngá	"ribs"

nd/ɲ

ndóngá	"pepper"	ɲòngá	"marketing"
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The sound nd is realised as a pre-nasalised stop in all environments. Its establishment as a phoneme is based on the contrast it has with the above sounds.

The Sound l

<u>l/ɛ</u>	mòlòngá	"bucket"	mòʔó	"head"
	mòlòngá	"bucket"	mbòʔó	"banana"
<u>l/n</u>	ɲá alá	"swim"	jána	"bring"
	əkòlòndò	"new"	kòndò	"sing"

l is realised as the alveolar lateral in all environments. Its status as a phoneme is established through contrast with the above sounds. In this language it occurs both initially and medially. It is one of those phonemes which causes differences in pronunciation from village to village in this language.

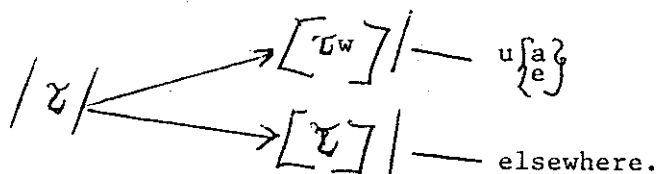
RETROFLEX SOUNDS

The Sound ɽ

<u>ɽ/l</u>	see	l/ɽ
<u>ɽ/n</u>	see	n/ɽ
<u>ɽ/d</u>	see	d/ɽ

ɹ/ɹʷ

ɹ is realised as ɹʷ when it precedes two vowels of different qualities where VI is the vowel U which becomes a glide on the surface. ɹʷ is an allophone of the phoneme ɹ.

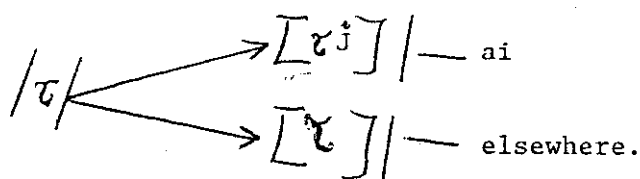


ILLUSTRATION

/bóɹúà/	→	[bóɹʷā]	"kill"
/èɹùé/	→	[èɹʷě]	"fly"
/èɹúbé/	→	[èɹúbé]	"respect"
/búɹúkà/	→	[búɹúkà]	"marriage"

ɹ/ɹʲ

ɹ is palatised when it occurs before two vowels, the first being i and the second being a.



ILLUSTRATION

/ɹíasè/	→	[ɹʲásè]	"twin"
/èɹíá/	→	[èɹʲjá]	"call"
/èɹíngí/	→	[èɹʲíngí]	"mirror"
/ɹíkàná/	→	[ɹíkàná]	"parable"

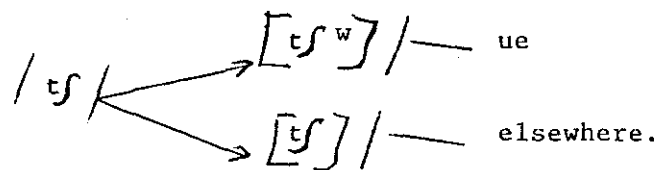
ʈ remains a retroflex flap and its status as a phoneme is established as a result of the contrast that exist with other sounds as listed above.

PRE-PALATALS

The Sound ʈʃ

<u>ʈʃ/dʒ</u>	ʈʃánà	"tomorrow"	dʒànga	"pineapple"
<u>ʈʃ/i</u>	ʈʃánà	"tomorrow"	jáná	"bring"
	ìʈʃó	"firewood"	ìjɔ̃	"asleep"
	ètʃá	"leaf"	ìjà	"mother"

ʈʃ/ʈʃ^w ʈʃ is realised as ʈʃ^w when it precedes two vowels of different qualities, where V1 is U which becomes a glides on the surface. The occurrence of ʈʃ^w is predictable hence an allophone of the phoneme ʈʃ.



ILLUSTRATION

/ètʃ úè/	→	[ètʃ ^w wê]	"waist"
/ètʃ è/	→	[ètʃ è]	"soft"

The opposition between ʈʃ and other consonant sounds provide evidence that it is a distinct phoneme which occurs both initially and medially in Lukundu. It is realised in all positions as the voiceless prepalatal affricate.

The Sound dz

dz/tʃ see tʃ/dz

dz/ndz dzàngá "pineapple" ndzá "who"

dz is one of those rare sounds in Lukundu. However its contrast with other consonant phonemes like tʃ and ndz establishes its status as a distinct phoneme in Lukundu. The sound occurs mostly at word initial position. It is realised as a pre-palatal voiced affricate in all environments of its occurrence.

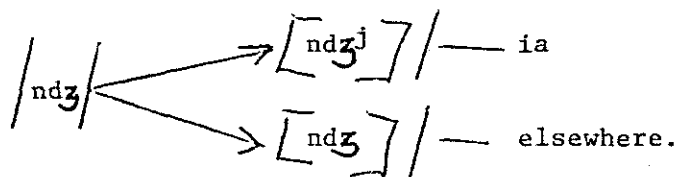
The Sound ndz

ndz/dz see dz/ndz

ndz/ŋg ndzìmlì "reason" ŋgòmò "drum"
sàndzà "lointh" sàŋgá "constitute"

ndz/ɾ ndzà "hunger" ɾà "louse"

ndz/ndzʲ ndz is palatalised when it precedes two vowels, the first being i and the next being a. This makes these two sounds to be allophones of the same phoneme.



ILLUSTRATION

/ndzìá/ → [ndzʲǎ] "road"
/ndzà/ → [ndzà] "hunger"

The contrast that exists between ndz and the above listed sounds establishes it as a distinct phoneme in this language. It is

realised as a voiced palato-aveolar pre-nasalised affricate. It occurs in both initial and medial positions in words of this language.

PALATALS

The Sound ɲ

ɲ/nd see nd/ɲ

ɲ/ndʒ see ndʒ/ɲ

ɲ/ɟ ɲà "louse" ɲá "drink"

ɲ/ɟg ɲàngó "mistress" ɲgàngò "umbrella"

ɲ/n ɲòngá "marketing" nàɲgá "sleep"

The sound ɲ is realised as a palatal nasal in all environments. It is a sound which occurs initially as well as medially in a word. Its establishment as a distinct phoneme is seen from the opposition it has with other consonant sounds as listed above.

VELARS

The Sound k

k/ɲ kándá "shout" ɲánà "child"

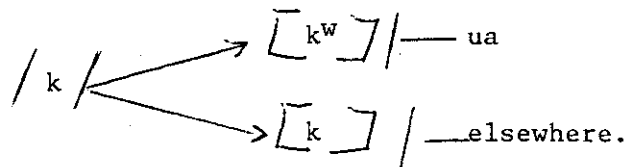
k/kp kɔ́ nɔ́ "sing" kpɔ́ndɔ́ "leave"

íkà "ganary" èkpà "bag"

kàmbá "wrap" màkpàmbà "cassava"

k/k^w

k is labialised when it occurs before the vowels u and a in which case it becomes labialised through the process of glide formation. Hence these two sounds are allophones of the same phoneme.

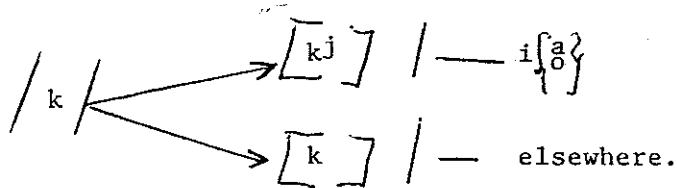


ILLUSTRATION

/íkúá/	→	[ík ^w á]	"salt"
/èkúá/	→	[èk ^w á]	"study"
/íkà/	→	[íkà]	"cover"
/kɔ́nɔ́/	→	[kɔ́nɔ́]	"sing"

k/k^j

k is palatalised in a situation where it precedes two vowels, the first being i and the next being either a or o. This makes the two sounds to be allophones of the same phoneme.



ILLUSTRATION

/màkíá/	→	[màk ^j ǎ]	"blood"
/ʒíkíó/	→	[ʒík ^j ó]	"in-law"
/mòsákí/	→	[mòsákí]	"dance" (noun)
/ìkì/	→	[ìkì]	"a fly"

In all environments k is realised as a voiceless velar plosive. It occurs in both initial and medial positions in Lukundu. Its status as a distinct phoneme is established through its contrast with the above listed sounds.

The Sound ŋ

ŋ/k see k/ŋ

ŋ/ɾ see ɾ/ŋ

ŋ/j ɣánà "child" jáná "bring"

ŋ/ŋg ɣìrà "run" ɣgíà "power"

ŋ/ŋw

ŋ exists in free variation with its labialised counterpart in the sense that where ŋ^w occurs, ŋ can be used without any change in the meaning of the word.

ILLUSTRATION

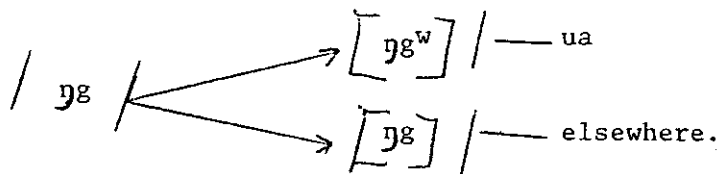
ɣwáɾánà	~	ɣáɾánà	"woman"
ɣwàsó	~	ɣàsó	"flock"
ɣwánà	~	ɣánà	"child"
ɣwánáb ^w à	~	ɣánáb ^w à	"brother"

The status of ŋ as a phoneme in this language is established through its contrast with the above listed sounds. In all instances it is realised as a velar nasal.

The Sound ɲg

<u>ɲg/ɲ</u>	see	ɲ/ɲg
<u>ɲg/ndʒ</u>	see	ndʒ/ɲg
<u>ɲg/ɾ</u>	see	ɾ/ɲg
<u>ɲg/n</u>	see	n/ɲg
<u>ɲg/nd</u>	see	nd/ɲg
<u>ɲg/ɲg^w</u>		

ɲg is labialised in a situation where it precedes two vowels of different qualities, mostly u and a. Hence the two sounds are allophones of the same phoneme.



ILLUSTRATION

/ɲgùá/	→	[ɲg ^w ǎ]	"pig"
/ʈɪpɔŋgùà/	→	[ʈɪpɔŋg ^w à]	"stitch"
/ɲgùdì/	→	[ɲgùdì]	"strong"

ɲg is marked out as a phoneme in this language through its contrast with all of the above sounds except ɲg^w which is its modified form. ɲg is realised as a voiced velar pre-nasalised stop. It occurs in word initial as well as medial positions.

LABIO-VELARS

The Sound kp

<u>kp/k</u>	see	k/kp		
<u>kp/p</u>	èkpà	"bag"	èpàpé	"cloth"
<u>kp/ɲgb</u>	mà-kpàmbà	"cassava"	ɲgbâ	"dog"

The sound kp exists only in very few words in this language, as far as the data is concerned. Its status as a phoneme is based on the contrast that has been established between the sound and other sounds as listed above. It occurs initially in words and it is realised as a voiceless labio-velar plosive in all environments of its occurrence.

The Sound ɲgb

<u>ɲgb/kp</u>	see	kp/ɲgb		
<u>ɲgb/ɲg</u>	ɲgbî	"corn"	ɲgíà	"power"
	ɲgbâ	"dog"	ɲgàndó	"crocodile"
<u>ɲgb/b</u>	ɲgbâ	"dog"	bàtò	"people"
	ɲgbâ	"dog"	bánda	"press"

This sound also falls among those rare sounds in Lukundu as far as this data is concerned. We realised that gb does not exist in this language, except when preceded by a nasal ɲ. This may be due to the fact that g is not existing in this language. Consequently gb has to be preceded by a velar nasal. ɲgb exist as a phoneme due to its contrast with other sounds as shown above.

It is a voiced labio-velar pre-nasalised stop. It occurs only initially.

GLIDES

The Sound w

<u>w/ɸ</u>	wɸgɔ'	"fear"	ɸòngɔ' .	"brain"
<u>w/j</u>	ɪwɔ'	"cutlass"	ɪjɔ	"asleep"
	èwá	"air"	ɪjà	"mother"
	èwá	"air"	èjàɸà	"word"
<u>w/l</u>	wà	"die"	bòlá	"do/make"
	èwɛtè	"hut"	mbɛlè	"blame"

w is established as a phoneme in this language through its contrast with ɸ, j and l. It is realised as a bilabial glide in all environments of occurrence.

The Sound j

<u>j/w</u>	see	w/j		
<u>j/ɸ</u>	jána'	"bring"	ɸála	"swim"
<u>j/ɸ</u>	èjòngá	"friendship"	èɸúngá	"basket"

j is realised as a palatal glide in all environments of occurrence. Through contrast with the above listed sounds, it is established as a phoneme. It occurs both at word initial and medial position.

2. 1. 4. PHONEMIC INVENTORY

Following the methods outlined at the beginning of the chapter, we have finally come out with 22 phonemic consonant sounds out of 40 phonetic ones. These phonemic consonants are grouped into stops, fricatives, affricates, nasals, pre-nasalised stops, pre-nasalised affricates, lateral, flap and glides. Most of the phonetic consonants emerged as phonemes probably due to the fact that, these sounds occupy the same position (onset position) of syllables. A majority of the consonants contrasted with each other in identical contexts and some in analogous contexts. There was no need to consider the functioning of symmetry, since the sounds were either phonemes or free variants or allophones of the same phoneme.

Table 2 below indicates all the distinctive sounds in Lukundu.

CONSONANT PHONEMIC CHART

Place of Articulation Manner of Articulation	Bilabials	Alveolars	Retroflex	Pre-Palatals	Palatals	Velars	Labio- velars
voiceless STOPS	p	t				k	kp
voiced	b	d					
voiceless FRICATIVES		s					
voiced							
voiceless AFFRICATES				ʧ			
voiced				dʒ			
NASALS	m	n			ɲ	ŋ	
voiceless PRE-NASALISED STOP							
voiced	mb	nd				ŋɡ	ŋɡb
voiceless PRE-NASALISED AFFRICATE							
voiced				ndʒ			
LATERAL		l					
FLAP			ɾ				
GLIDE	w				j		

TABLE 2

2. 2. V O W E L S

Our concern in this section as was the case with the consonants, will be to establish which of these vowel sounds are phonemic and which are simply allophones or environmental variants.

2. 2. 1. P H O N E T I C I N V E N T O R Y

The eleven phonetic vowel sounds in Lukundu are classified according to position of lips, height of tongue, passage of air and movement of tongue. Out of these eleven vowels, we have three front, five back and three central. Table 3 below shows all the vowel sounds in the language.

P H O N E T I C V O W E L C H A R T

Position : of tongue and lips Height of tongue	Front Unrounded	Central Unrounded	Back Rounded
HIGH	i		u uu
MID	e	ə	o oo
LOW	ɛ	a aa	ɔ

T A B L E 3

2. 2. 2. PHONEMIC ANALYSIS

The procedure for analysing the vowels will be the same used for analysing consonants. From table 3 above, we obtain suspicious pairs of vowel sounds and use the very methods used for the consonants to establish the distinctive vowels sounds in Lukundu. The following suspicious pairs emerge from the chart.

SUSPICIOUS PAIRS

(i,e), (e,ɔ), (e,ɛ)

(ɛ,a), (a,aa), (ɛ,i)

(u,o), (u,uu), (u,ɔ)

(o,ɔ), (o,oo)

THE SOUND i

<u>i/e</u>	ikwà	"salt"	ék'wá	"study"
	itfó	"firewood"	èt'fá	"leaf"
	ijɔ	"asleep"	èjɔ	"broom"
	ijémè	"tongue"	èjómì	"dry season"
	pímbá	"throw"	pémbé	"chalk"
<u>i/ɛ</u>	pánì	"plate"	pánè	"sucide"

i is realised as the high front unrounded vowel in all environments of its occurrence. Its contrast with the above listed vowels establishes its status as a phonemic vowel.

The Sound e

e/i see i/e

e/ɛ

ésé	"bone"	ìsɛ́	"us /we"
bòtɛmbà	"witchcraft"	mótɛmbà	"ghost"
bébɛ	"two"	bɛ́kɛ́	"give"
díbɛ	"liver"	bébɛ	"two"
èwété	"lizard"	ɛ̀wɛ̀tɛ̀	"hut"

e/ə e exist in free variation at word initial position with ə; in the sense that where ə occurs, e can be used without any change in the meaning of the word. It should be noted that ə occurs only at word initial position.

ILLUSTRATION

èpòngó	~	ə̀pòngó	"chair"
èkoké	~	ə̀koké	"feast"
èxúbé	~	ə̀xúbé	"respect"
èjàrà	~	ə̀jàrà	"word"
èkòsàní	~	ə̀kòsàní	"gathering"

e is realised as a mid-high front unrounded vowel. It is considered as a phoneme on the basis of its contrast in identical and analogous contexts with other vowels as listed above.

The Sound ɛ

ɛ/i see i/ɛ

ɛ/e see e/ɛ

<u>ɛ/a</u>	m ^w ɛ̃	"friend"	m ^w â	"fire"
	mbɛ̃lɛ̃	"blame"	mbálɛ̃	"truth"
	bɛ̃kɛ̃	"give"	ákáká	"go"
	wɛ̃	"put"	wà	"die"

ɛ is realised as the front unrounded mid-low vowel and its opposition with i, e and a spells out its status as a distinct phoneme.

The Sound a

a/ɛ see ɛ/a

a/aa These two sounds occur in free variation with each other. There exist no contrast in the words in which they occur. The modification of a through lengthening is a stylistic phenomenon in this language.

ILLUSTRATION

bánà	~~~~~	báánàà	"children"
ḡánáb ^w à	~~~~~	ḡáánaáb ^w à	"brother"
dáá	~~~~~	dá	"eat"
wàà	~~~~~	wà	"die"




a is realised in all environments as the low unrounded central vowel. It is established as a phoneme in this language through its opposition with other vowel sounds as seen above.

The Sound u

<u>u/o</u>	Àṣṣgà	"hair"	Àḍḡgá	"marketing"
	mútùtù	"smoke"	mótóté	"everybody"
	dǔ	"death"	dò	"nose"
	kúndá	"fall"	kóndá	"arm-chair"
	Àṣṣgù	"sand"	Àḍḡgó	"mistress"
	kǔbà	"fowl"	Ẹ̀lìkòbá	"door"

u/uu This is another case of vowel lengthening in Lukundu. These two sounds occur in free variations, hence, there exist no contrast between them.

ILLUSTRATION

múútùùtù		mútùtù	"smoke"
kuúnda		kúnda	"fall"
mbúú		mbú	"ash"
dùú		dǔ	"death"

<u>u/ɔ</u>	dǔ	"death"	dò	"laughter"
	ìkú'á	"sleeping room"	ìkò	"wealth"

The sound u is realised in all environments as the high back rounded vowel. The contrast it has with other vowels establishes its status as a phoneme.

The Sound o

o/u see u/o

o/ɔ

èpòkó	"penis"	ìpòkò	"plait"
sò	"thatches"	ìsò	"shame"
dò	"nose"	dò	"laughter"
kó	"rat mole"	kò	"hate"
ngàndó	"crocodile"	ngòndó	"groundnut"

o/oo like in the other cases of vowel lengthening, these two sounds exhibit no contrast. These two sounds occur in free variation. There is no change in the meaning in which they occur.

ILLUSTRATION

tòòkò	~	tòkò	"spoon"
mbòòtò	~	mbòtò	"banana"
mòòté	~	mòté	"stick"
ndòòndí	~	ndòndí	"fish"
òbóókà	~	òbókà	"outside"

o is realised as the back rounded mid-vowel in all environments of occurrence. Its contrast with the above listed vowels establishes it as a phoneme in this language.

The Sound ɔ

ɔ/u see u/ɔ

ɔ/o see o/ɔ

ɔ/a

ìjɔ̀	"asleep"	ìjà	"mother"
dɔ̀	"laughter"	dá	"eat"
nɔ̀gɔ̀	"take"	nàgá	"to sleep"
gàndó	"crocodile"	gɔ̀ndɔ̀	"groundnut"

ɔ is a phoneme in Lukundu whose phonemic status is marked by its contrast with the above vowel sounds. It is one of the most frequent sounds in this language.

2. 2. 3. PHONEMIC INVENTORY

Of the eleven phonetic vowels identified, seven emerged as phonemes. The schwa and the lengthened vowels turned out to exist in free variation during the analysis. Below will be a table which indicates all the vowel phonemes along side their articulatory characteristics.

PHONEMIC VOWEL CHART

Position and state of lips Height of tongue	Front unrounded	Central unrounded	Back rounded
HIGH	i		u
MID	e		o
LOW	ɛ	a	ɔ

T A B L E 4

At the end of our analysis, we have ended up with 29 phonemic sounds instead of the original 51 phonetic sounds attested in Lukundu. These phonemes (vowels and consonants) occupy various positions of the word or syllable as will be seen later.

CHAPTER THREE

I N T E R P R E T A T I O N P R O B L E M S

In most languages in the world, there exist a certain number of sounds which are open to diverse interpretation depending upon the structure of the language in question. In analysing any language, one comes across ambiguous cases which can only be interpreted following the internal organisation of the language under study. Some of such ambiguous cases which we are going to consider hereafter include:

- Sounds which can be interpreted as vowels or consonants.
- Those that can be interpreted as constituting a single unit or a sequence of two or even more units.
- And those that can be considered as phonemic or not.

Our attention here will be based on the interpretation of the afore mentioned ambiguous situation, in the most part based on Pike's methodology (1947), in order to render the phonemic analysis which comes immediately after more comprehensive.

3. 1. V O W E L S / C O N S O N A N T S

Sounds that are likely to be interpreted as vowels in some situations or as consonants in others include units which possess at the same time characteristics that are appropriate to vowels and those that are appropriate to consonants. This has to do with a situation where one symbol can stand for two separate classes of sounds depending on the context of occurrence.

Example of such sounds include the high vowels i and u as well as the glides j and w. It is realised that these vowels are articulated with the tongue raised very high, hence are phonetically similar to the palatal and bilabial glides j and w. On the other hand, since glides are articulated in a manner that resembles the articulation of some vowel sounds, in language analysis therefore, a j can be considered as occupying the v position in some cases and or the c position in other cases. In the same light j and w can be interpreted as constituting syllable nuclei in some situation and or syllable coda or onset in others.

~~In~~ Lukundu like many other languages contain these four sounds. From the data, we could realise that the structure of Lukundu does not permit a vv sequence where the v1 is of a different quality from v2. More to this, a nonsyllabic element at syllable onset in every suspicious instance is a consonant. By analogy therefore, words like;

wóngo	"fear"
wédì	"to die"
jána	"bring"
jàkà	"come"

should be interpreted as having the structure CVCV and not VVCV.

In other words, when j and w is neither preceded nor followed by consonants, they should be interpreted as sounds with the full characteristics of consonants. The occurrence of j and w in situations where they are preceded by consonant sounds will be treated in detail under heterorganic sequences.

3. 2. S O U N D S S E Q U E N C E S

In languages in general, there often exist sound units which are either interpreted as single sound units or sequences of two or more sounds. Such instances involves both consonants and vowels where two sounds with different qualities are interpreted in some languages as single sound segments and in others as separate sound units.

3. 2. 1. V O W E L S E Q U E N C E S

There are a number of vowel sequences attested in Lukundu in which v1 is often of a different quality from v2. These set of vowel sequence which is attested is vowel+i which gives vi. This segment should not be interpreted in Lukundu as a case of diphthong because of the following reasons. In the first place, the existence of these two vowel sounds together is as a result of collocating roots and affixes or compounding words. Secondly, the words in which they occur can be broken up into parts and meaning assign to each part.

Example:

Vowel sequence	Illustration	English gloss
ɔi	mɔ́ití	"himself"
ai	mbáití	"myself"
ɛi	wɛ́ití	"yourself"

If we have to break up say mʃítí into two parts and assign a meaning to mʃ and a different meaning to íí, we will realise that we will be considering diphthong as two vowels existing in close proximity due to collocation of two different morphemes. Since this is the case, we will be too far from the point if we conclude here that we are instead dealing with the case of diphthong in Lukundu. So we realise that mʃ means "him", while íí is the suffix for the reflexive pronoun "self", so the structure will be cv + vcv. These structure exist in the language, both in monosyllabic words and bisyllabic words. This will be treated more in the next chapter.

3. 2. 2. CONSONANT SEQUENCES

Just as in the case of vowels, the following set of consonant clusters are attested in Lukundu in which c1 is different from c2. This cluster is kp. This sound should be interpreted as constituting a single sound segment, for example:

kpókóŋó	"table"
màkpàmbà	"cassava"
èkpàtàkò	"pant"

Looking at the above examples one will easily postulate that the word structure, say for the first word is, cc v-cvcv. Since this language does not allow a cc sequence, we will thus have a structure as cvcvcv for the word. In this light then kp is to be considered as a single sound unit.

3. 3. CONSONANT PRENASALISATION

It usually happens in speech production that an oral sound can be emitted preceded by a nasal sound. As far as such sounds are concerned, it is often important to determine whether they are single or separate sound units. This situation often varies with language, for some people will consider it a case of consonant prenasalisation and other as homorganic nasalisation. It is realised that in most situations in Lukundu where two consonants come together, it is that of consonant prenasalisation. The following words in Lukundu will have the following structures to illustrate this:

^{AAC} mbèjá	cv.cv	"pot"	443 mbèé
mbóli	cv.cv	"goat"	kembéé
nda ^{Bo}	cv.cv	"house"	nda ^{Bo} - o
ndzàsù	cv.cv	"scissors"	ndzàsò
ngùdì	cv.cv	"strong"	ngùdì
ngòmò	cv.cv	"drum"	ngòm- o

3. 4. HETERORGANIC SEQUENCES

A heterorganic sound is one produced with the superimposition of a secondary articulation. It often involves consonants produced with an accompanying vowel articulation. Such cases as attested in Lukundu include labialisation, palatalisation and aspiration.

3. 4. 1. LABIALISED CONSONANTS

In general, labialisation involves the superimposition of the vowel quality of lip-rounding on a consonant during emission. In Lukundu, it appears that consonant sounds are labialised through the process of glide formation. It would appear that the consonants which are labialised at the surface level occur in a context at deep structure, where they precede two successive vowels of different qualities. In other words, the underlying word structure is cvv (c) which is realised at the surface level as c^wv (c). A general rule for this process will be stated thus: / u / \longrightarrow [w] / - v . This process is more of glide formation than labialisation, because the context of the occurrence of the labialised consonants are not natural since the labialised consonants all precede back and front vowels.

ILLUSTRATION

/dúà/ \longrightarrow [d ^w ā]	"cry"
/mbúà/ \longrightarrow [mb ^w ā]	"rain"
/ékúá/ \longrightarrow [ék ^w á]	"study"
/ètúé/ \longrightarrow [èt ^w ě]	"fly"
/ètúé/ \longrightarrow [èt ^w ē]	"waist"

These labialised consonants should be considered in this language as single sound units and not as sequences of two separate segments because; elsewhere in non-suspicious instances, we do have the above consonants preceding the vowel i. Since we do not have cases of v₁ v₂ sequences, we will represent u by the glide w and term it a modified element of the preceding consonant.

3. 4. 2. PALATALISED CONSONANTS

Consonants are usually palatalised when they are pronounced with the super-imposition of the articulatory qualities of a high front vowel. Just like labialised consonants, palatalised consonants equally exist in Lukundu due to glide formation. This involves a situation where at the underlying representation, a consonant precedes a sequence of two vowels where y is the high front vowel i and at the surface level, this vowel is realised as the glide j. Thus a general rule for this is:

$$/i/ \longrightarrow [\bar{j}] / - \text{v}$$

ILLUSTRATION

/màkiá/	→	[màkjǎ]	"blood"	mā-c' é!?? mā-c'è
/ɕikíó/	→	[ɕikjó]	"in-law"	
/ɕibíè/	→	[ɕibjê]	"sense"	
/ɕútíà/	→	[ɕútjá]	"near"	
/sǎ/	→	[sjǎ]	"grind"	

These palatalised consonants should be interpreted as single sound segments for the same reasons advanced for labialised consonants in 3. 4. 1.

3. 4. 3. ASPIRATION

In aspiration consonant sounds are emitted with an accompanying pop sound. In most cases, aspirated consonants are liable to be interpreted as two separate sound units or one sound segment. In Lukundu, aspirated consonants should be considered

as a single sound segment for the following reasons:-

- The language does not contain the fricative h.

As a result, it will be illogical to conclude that a word like $p^h o$ "rat" has the pattern ccv. In the second place the structure of Lukundu does not permit the cc sequence, as such, p^h will be considered as one sound unit.

Examples:

$p^h o$	"rat"
$m o p^h a$	"slave"
$d i p a p^h a$	"paper"

In a general sense, however, since the structure of Lukundu does not permit a consonant, to stand alone as a syllable, and the sequences cc or vv are not permitted at the surface level of the language, labialised, palatalised and aspirated consonants should be considered as single sound segments that have been subjected to modification.

This chapter has been out to interpret complex or ambiguous sound segments in Lukundu and emphasis has been laid on the fact that the structural pattern of the language does not permit either a cc or vv sequence. This has thus led us to interpret most of our homorganic and heterorganic sound sequences as single sound units.

3. 5. LONG VOWELS

There are some vowels in Lukundu which are modified through lengthening. This phenomenon is attested in both verbs and nouns. The vowels that are liable to this modification are a, u and o.

ILLUSTRATION

báánàà	"children"
dáá'	"eat"
mbúú	"ash"
kuúnda'	"fall"
tòòkò	"spoon"

Our main concern here in this aspect of vowel length as far as this chapter is concerned is that, we should not consider long vowels as two separate sounds; for if so considered, then it will be illogical for we will hardly find a vowel standing alone as a syllable at the final position of a word. This language does not permit a vv sequence. In the light of the native speaker intuition, long vowels will be considered as constituting a single sound unit.

This chapter has been concentrated to interpret ambiguous sound segments of Lukundu and emphasis has been laid on the fact that the structural pattern of the language does not permit either of a cc or vv sequence. This explains the fact that homorganic and heterorganic sound sequences are single sound units.

CHAPTER FOUR

4. S U P R A - S E G M E N T A L P H O N O L O G Y

Tone, duration (vowel and consonant length) are often claimed to be properties of supra-segmental units, as well as the syllable, morpheme, word and nasalisation. Sometimes vowel harmony is included under this heading (Firth 1948). The term supra-segmental is used to refer to both phonological and grammatical units larger than the segment.

Phonological supra-segmentals which is our area of concern in this study are those which are defined in terms of the sound segments of which they are comprised. After having established the phonemes of this language, the next step will be to examine in some details the various aspects of phonological supra-segmentals - syllable structure, morpheme, word structure and tones - existing in Lukundu with the general aim of examining the phonemes which occur in the various positions of the attested patterns. This exercise will help us confirm the conclusions we arrived at during the interpretation of ambiguous sound segments and phoneme analysis.

4. 1. S Y L L A B L E S T R U C T U R E

According to Wieseemann, Sadembouo and Tadadjeu (1983), the following constitute a syllable;

- " on peut définir la syllabe dans une langue par le noyau (qui peut être une voyelle ou une consonne syllabique)".

- "on peut la définir par le ton qu'elle porte".
- "on peut la définir par la durée d'émission de la séquence de son".

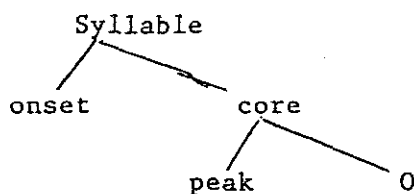
Peter Roach (1983) also said this on the syllable:

- Syllables are usually described as consisting of a centre which has little or no obstruction to airflow and which sounds comparatively louder; before and after this centre; there will be greater obstruction to airflow and or less loud sound.

Our analysis reveals that all of our consonant sounds in the language appear initially, medially and none at word final position. This is because the language is an open syllable language. If the distribution of consonants were varying in the word, then we would have come out with a good number of cases of sounds in complementary distribution. Thus our analysis show that Lukundu is an open syllable language with a pattern like this:

$$\left\{ \begin{array}{c} v \\ cv \end{array} \right\}$$

As stated by Malmberg (1963) a syllable consisting of a consonant plus a vowel represents one which is general in all languages. For the purpose of this study, we shall have a single division for our syllable pattern.



This division (Pike and Pike, 1947) shows that a cv syllable thus has a core with a zero coda.

In a situation where a syllable is made up of the nucleus only, the vowel or syllabic nasal will have no accompanying marginal consonant element. The segments that stand alone as syllable in Lukundu are the vowels e, a and o. The following syllable structure patterns are attested in Lukundu.

Syllable Pattern	illustration	Gloss	Word Pattern
V	ô	"for"	v
	ó-nà	"plant"	v-cv
	ò-pàsè	"God"	v-cv.cv
	è-sángí	"it is shining"	v-cv.cv
	ǎ	"he/she"	v
CV	pó	"rat"	cv
	mɔ́	"he/she"	cv
	kúɓà	"fowl"	cv.cv
	wángísè	"burn"	cv.cv.cv
	kándá	"shout"	cvcv
	mè-kàngá	"ribs"	cv-cv.cv

T A B L E 5

The consideration of homorganic consonants as single sound units make it virtually impossible to have complex patterns like ccv or ccv which are common in other languages.

4. 1. 1. ELISION OF SEGMENT

In Lukundu like in many coastal bantu languages, adjacent vowels elide frequently. This occurs most often during rapid or fluent speech exercise. Some of these vowels which undergo elision are illustrated below:

a + o → o jáná màríbá + óngô → [jánámàríbóngô]
bring water + here bring water here

ɽíkúndá + ósè → [ɽíkúndósè]
to fall + down to fall down

ɛ + ɛ → ɛ

ndʒá tʃó mɛ̃ + ɛ̃ngé → [ndʒatʃ omɛ̃ngé]
what something is this what is this ?

ɛ + e → e

ndʒá tʃó mɛ̃ + ètʃó → [ndʒátʃómètʃó]
what something is + that what is that ?

ɔ + ɛ → ɛ

sò sò + ɛp ɛ pón dá' → [sò sɛp ɛ pón dá']
 say again time say it again

We tend to realise that this elision does not take place when the vowel in the next word is i. The segments remain the same.

ILLUSTRATION

a + i → ai

dô nà + ɪj ɔ'kɔ' → [dônàɪjɔ'kɔ']
 twenty and one twenty one

mbá + ɪtí → [mbáɪtí]
 me self myself

ɔ + i → ɔi

mɔ' + ɪtí → [mɔ'ɪtí]
 he/she self himself/herself

ɛ + i → ɛi

wɛ + ɪtí → [wɛɪtí]
 you self yourself

In a situation like this we cannot consider this as a case of diphthong because, the existence of these two vowels together

is as a result of collocating roots and suffix, secondly we can break up the words and meaning assign to it.

4. 1. 2. RESYLLABIFICATION

Looking at elision from the point of view of syllable, we could talk of resyllabification. The following can be taken as examples:

cv +v → cv

jáká + óngô → [jáká_ongô]
come here come here

jáká + ó + sùmámè → [jáká_osùmámè]

come for sit down come and sit down

Since there is no c v c pattern in this language, the c v c + c v is not attested.

4. 2. MORPHEME STRUCTURE

Generally, a morpheme is described as a minimal distinctive unit at the level of morphology. It is the smallest unit of meaning. John Lyon (1984) refers to them as simply "minimal forms which can either be free or bound".

In many ways, the morpheme is very similar to the syllable for, just like the syllable, it comprises of a sound or a sequence of sounds some of which can be assigned full lexical meaning. Here we will be examining the distribution of vowel and consonant phonemes in the various morpheme structures. The morpheme pattern identified in this language include:

v
cv
cv.cv
cv.cv.cv

These patterns constitute prefixes and roots of nouns and verbs.

<u>Word</u>	<u>gloss</u>	<u>root structure</u>
pó	"rat"	cv
sò	"thatches"	cv
wà	"die"	cv
ḡá	"drink"	cv
ṛà	"louse"	cv
mbú	"ash"	cv
mátó	"ears"	cv~cv
dòwǝ	"cutlasses"	cv~cv
mìsǝ	"eyes"	cv~cv

v

<u>word</u>	<u>gloss</u>	<u>root structure</u>
ónà	"plant"	v-cv
ésé	"bone"	v-cv
ìndò	"bird"	v-cv
ètángó	"fine"	v-cv.cv
èkò lò nò	"new"	v-cv.cv.cv.

c v.cv

<u>word</u>	<u>gloss</u>	<u>root structure</u>
púpè	"white"	cv.cv
tàtà	"father"	cv.cv
kándá	"shout"	cv.cv
tìngá	"knit"	cv.cv
sángó	"master"	cv.cv

cv.cv.cv.

<u>word</u>	<u>gloss</u>	<u>root structure</u>
mòkóní	"song"	cv-cv.cv
màkpàmbà	"cassava"	cv-cv.cv
sùmámá	"sit"	cv-cv.cv
bòrèmbà	"witchcraft"	cv-cv.cv
Ẹ̀lkaḃa	"to share"	cv-cv.cv

The most predominant among all these structures are

cv and cv.cv.

4. 3. WORD STRUCTURE

Words are different from morphemes in that generally, words have full lexical meaning attached to them; while the morphemes do not necessarily have such full lexical meanings. In addition to this, words are generally larger than morphemes and consist of roots, affixes and other morphological units, whereas morphemes can be made up of only one of these word components.

Below are the patterns that have emerged from the word of this language.

cv

vcv

cv.cv

v.cv.cv

cv.cv.cv

v.cv.cv.cv

Mono syllabic words

cv

pó	"rat"
sò	"thatches"
ko'	"rat mole"
wà	"die"
ja'	"drink"
da'	"eat"
ndzá	"hunger"

Bisyllabic words

vcv

ìnò	"bird"
ìjà	"mother"
ìkà	"cover"
ìsò	"shame"
ènè	"see"
ónà	"plant"
ék'wá	"study"
ìk'wá	"salt"
èwá	"air"
ésé	"bone"

cv.cv

mòtò	"man"
bàtò	"people"
púpè	"white"
kúpà	"fowl"
tátá	"look"
mbòtò	"banana"
nṅgò	"take"
ṅgòṁṁ	"drum"
ṅgàngò	"umbrella"
ndápò	"house"

Trisyllabic words

v.cv.cv.

èpòngó	"chair"
ètámí	"shoe"
èpàpé	"cloth"
èpéré	"zinc"
ákáká	"go"
ìjòndò	"axe"
èpókó	"penis"
ìpòkò	"plait"
èsùndzù	"odour"
èróngì	"choir"

cv.cv.cv.

mòsákí	"dance"
mòkóní	"song"
mòsìngà	"thread"
wàngísè	"burn"
búzúká	"marriage"
sùmámá	"sit"
tètèlì	"star"
bósáné	"ready"
bélálò	"three"
kpókó'zó	"table"

Four syllable word

v.cv.cv.cv.

ètúníká	"lamp"
èk)l)nǝ	"new"
èkósànt	"gathering"
èkpàtàkò	"pant"

The most predominant structure is the cv.cv and cv.cv.cv. The latter structure is predominant in prefixes when verbs or nouns are to be generated. The four syllable word is very rare in this language.

4. 4. PHONEME DISTRIBUTION IN ROOT MORPHEME

Generally in a language, there is often a pattern of distribution in morphemes and words. Here as in syllable dissection, we are going to examine the position of the morpheme that each phoneme can occupy. The following table shows the possible combination of single consonants in syllable onset and vowels in syllable peak.

Table 6

" + " indicates an attested combination.

" - " indicates the lack of such combination

	Vowels in syllable Peak						
	i	e		a	u	o	
Consonants in Syllable onset	p	+	+	+	+	+	-
	b	-	+	+	+	+	+
	m	+	+	-	+	+	+
	mb	-	+	-	+	+	-
	w	-	-	+	+	-	+
	t	+	+	+	+	+	+
	d	+	+	-	+	+	+
	s	+	+	+	+	+	+
	n	+	+	-	+	-	+
	nd	+	+	+	+	+	+
	l	+	-	+	+	+	+
	ʎ	+	+	+	+	+	+
	tʃ	-	+	+	+	+	-
	dʒ	-	-	-	+	-	-
	ndʒ	-	-	-	+	+	-
	ɾ	-	-	-	+	+	-
	j	-	+	-	+	+	+
	k	+	+	+	+	+	+
	ŋ	+	-	-	+	-	-
	ŋg	+	+	-	+	+	+
	kp	-	-	-	+	+	-
	ŋgb	+	-	-	+	-	-

TABLE 6

Prefixes

Vowels in syllable Peak

Consonant in syllable onset		i	e	ɛ	a	u	o	ɔ
b		-	+	-	+	-	+	-
m		+	+	-	+	+	+	-
d		+	-	-	-	-	+	-
ɾ		+	-	-	-	-	-	-
̄N		-	-	-	-	-	-	-

T A B L E 7

From table 6, it can be seen that the most regular vowel which follows all consonants at syllable onset is the central vowel /a/.

Putting the two tables under observation, one will notice that certain combinations can occur both in roots and prefixes. These are be, ba, mi, ma, me, do, mu and ɾi.

4. 4. 1 V O W E L S

In monosyllabic root morphemes of the form cv; there is a wide range of both consonants and vowels that can occupy the consonant and vowel positions (cv) see 4.2.

In the case of bisyllabic roots of the form cv.cv, almost all the vowels of the language can occupy the vl position. Below is an illustration of this.

bèké	"give"
ṣìrà	"run"
múmí	"husband"
sòsá	"wash"
dókò	"bathe"
kátá	"tie"
kémà	"monkey"

In some words, cases of reduplications occur in which v₁ re-occurs as v₂ in the same word.

ILLUSTRATION

dókò	"bathe"
kónḡ	"sing"
jáná	"bring"
mòrò	"head"
mútùtù	"smoke"
bèké	"give"
tòkò	"spoon"

In general, vowel distribution in Lukundu is not particularly restricted as might be the case with other languages.

4. 4. 2. C O N S O N A N T S

As must have been noted by now, there is no consonant that occurs at morpheme or word final position. Nearly in all occasions, the consonants occupy the morpheme or word initial and medial position. The table below deals with the distribution of consonants in morphemes.

- The first column deals with consonants at morpheme initial position.
- The second deals with consonants at prefix initial position.
- The third concerns consonants appearing between vowels.
- The last deals with consonants at morpheme final position.

(see table)

CONSONANT - PHONEME DISTRIBUTION CHART

Consonants	+ -	# -	v -v	- +
p	+	-	+	-
b	+	+	+	-
m	+	+	+	-
mb	+	-	+	-
w	+	-	+	-
t	+	-	+	-
d	+	+	+	-
s	+	-	+	-
n	+	-	+	-
nd	+	-	+	-
l	+	-	+	-
ɾ	+	+	+	-
tʃ	+	-	+	-
dʒ	+	-	-	-
ndʒ	+	-	+	-
ɹ	+	-	+	-
j	+	-	+	-
k	+	-	+	-
ŋ	+	-	+	-
ŋg	+	-	+	-
kp	+	-	+	-
ŋgb	+	-	-	-

TABLE 8

From the table it becomes clear that not all consonants appear at prefix initial position though all occur at morpheme initial position. Also that there exist some consonants which do not occur intervocalically. Finally, that no consonant occurs at morpheme final position.

4. 5. T O N E S

Generally speaking, tones refer to the relative height of the voice during an utterance of a sound. When this relative height of the voice has a distinctive function in language that we call it a tone language. Pike, (1948) defines as tonal any language "having significant, contrastive, but relative pitch on each syllable". From these stand points, we consider Lukundu (a typical coastal bantu language) as a tonal language. There exists four different types of tones - high, low, rising and falling.

In monosyllabic words, we notice all the above mentioned tones.

L	Low \
H	High /
R	Rising v
F	Falling ^

Examples:

<u>Tones</u>	<u>Word</u>	<u>gloss</u>
L	wà	"die"
	sò	"thatches"
	dǔ	"laughter"
	dò	"nose"
	wè	"you"
H	gá	"drink"
	wé	"put"
	dá	"eat"
	kó	"rat mole"
	dó	"voice"
R	kǔ	"hate"
	m ^w é	"friend"
	dǔ	"death"
	d ^w ǔ	"cry"
	b ^w é	"poverty"
F	dô	"twenty"
	d ^w â	"faeces"
	m ^w â	"fire"
	mb ^w â	"rain"
	ɲgbâ	"dog"
	ɲgbî	"corn"

Also in more than one syllable words, we realise the following combinations:-

LL	Low, Low
LH	Low, High
HH	High, High
HL	High, Low
LR	Low, Rising
LF	Low, Falling
HF	High, Falling

The list below illustrates these possible combinations.

Combination

<u>LL</u>	<u>Word</u>	<u>gloss</u>
	mòtò	"man"
	bàtò	"people"
	ìjà	"mother"
	tòkò	"spoon"
	mbòrò	"banana"
<u>LH</u>	ndòndí	"fish"
	ìwó	"cutlass"
	ètá	"leaf"
	tàmbá	"cap"
	ṣàsó	"fork"

HH	ákáká	"go"
	jána'	"bring"
	kándá	"shout"
	ṛóngá	"marketing"
	ék'wá	"study"
HL	kúḃà	"fowl"
	mbó/ì	"goat"
	ḡáránà	"woman"
	púpè	"white"
	ḡgíḡà	"power"
LR	ṛíkǎ	"hatred"
	à'wě	"to fly"
	màkjǎ	"blood"
LF	sòkwè	"crab"
	ṛìbjè	"sense"
	ètswè	"waist"
HF	mǒswā	"oil"
	béní	"four"
	bó'wā	"kill"
	ṛútjā	"near"

4. 5. 1. PHONEME TONE CONTRAST

It is noted always that, in tone languages, tones play a great role in the distinction of meaning Fromkin (1978). In this section we are going to see how these distinctions are made. The phonemic status of the four mentioned tones are justified by the following contrasts.

High/Low contrast

ḡá	"drink"	ḡà	"year"
dó	"voice"	dò	"nose"
wé	"put"	wè	"you"
tátá	"look"	tàtà	"father"
ṛá	"tear"	ṛà	"louse"
ndzá	"who"	ndzà	"hunger"

High/Falling contrast

dó	"voice"	dô	"twenty"
dá	"eat"	d ^w â	"faeces"
mósá	"mushroom"	mós ^w â	"oil"

Falling/Rising contrast

d ^w â	"faeces"	d ^w â ^Y	"cry"
èt ^w ê	"waist"	èt ^w ê ^Y	"fly"
m ^w â	"fire"	m ^w ê ^Y	"friend"
kô	"snail"	kô ^Y	"hate"

High/Rising contrast

kó	"rat mole"	ký	"hate"
dá	"eat"	dwa	"cry"
dú	"hearth"	dǔ	"death"

Low/Falling contrast

dò	"nose"	dô	"twenty"
----	--------	----	----------

The five distinctions in tone makes it possible for us to conclude that these tones are phonemic in nature. Their ability to distinguish meaning in items makes them to be called "lexical tones". A lexical tone is one that occurs on lexical items and plays the role of bringing out a difference in meaning between items. Looking at the above, we realise that this is what these tones have achieved.

4. 5. 2. FUNCTIONS OF LEXICAL TONES

Besides the ability in distinguishing meaning between words of the same class that are identical at the segmental level, lexical tones in Lukundu also function in marking out the difference between nouns and verbs that are segmentally identical. The illustration below will show this difference.

A		B	
<u>nouns</u>		<u>verbs</u>	
ɲà	"year"	ɲá	"drink"
wɛ̀	"you"	wé	"put"
ɾà	"louse"	ɾá	"tear"
tàtà	"father"	tátá	"look"
íkʷà	"salt"	ékʷá	"study"
íkà	"ganary"	íkǎ	"cover"
dʷà	"faeces"	dʷǎ	"cry"
kɔ̃	"snail"	kǔ	"hate"

The high and rising tones on the words in "B" function to mark the differences between this class of words (verbs) from the words in "A" (nouns).

had formulation

4. 5. 3. ELISION OF TONES

In a good number of languages, basic tones most often than not undergo elision at the surface level due to certain constraints. In other words, underlying tones are usually subjected to change during the emission of an utterance; Hedinger (1977). Below is an illustration of this tone elision in Lukundu.

$H + H \longrightarrow H$ $jáná \text{ mà } \underline{z'í}bá + \underline{ó}ngô \longrightarrow [jáná \text{ mà } \underline{z'í}b\underline{ó}ngô]$
 bring water here bring water here.

$L + L \longrightarrow L$ $s\grave{s}s\grave{s} + \underline{z'}p\underline{é} \text{ pón}d\acute{a} \longrightarrow [s\grave{s}s\grave{s}\underline{p}é \text{ pón}d\acute{a}]$
 say again time say it again

In labialised or palatalised consonants, the tone on the underlying u or i merges, with that of the following vowel at the surface level. This process can either change the tone if they were of different qualities, or it remains the same if they were identical.

Examples:

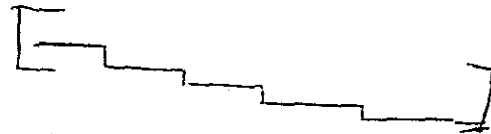
/mùé/	→	[m ^w ɛ̃]	"friend"
/múà /	→	[m ^w â]	"fire"
/mbúà/	→	[mb ^w â]	"rain"
/ékúá/	→	[ék ^w á]	"study"
/dúá /	→	[d ^w ǎ]	"cry"
/màkíá/	→	[màkǎ]	"blood"
/ɽíkíó/	→	[ɽíkǎ]	"in-law"
/síà /	→	[sǎ]	"grind"

4. 5. 4. D O W N D R I F T

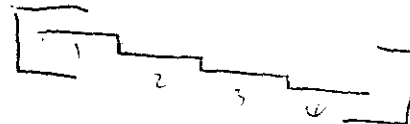
Downdrift is the automatic lowering of a high tone after a low one. This lowering does not just involve a specific tone but is rather a lowering of the main one, that is, the tone range of high and low tones. Fromkin (1978). This process is manifested in Lukundu as utterances are made. During speech, there is a slight gradual lowering of the basic high tone as one moves from the first to the last syllable.

ILLUSTRATION

/ bá mà ká ó bókǎ / → [bá ! mà ! ká ! ò ! bókǎ]
 They Tense go to outside They have gone outside.



/ tǎngǎ tʃómǎ ó bókǎ / → [tǎngǎ ! tʃómǎ ! ó ! bókǎ]
 carry something to outside carry something outside.



This data illustrates that at the underlying level, all the tones are high but at the surface level, these tones are slightly lowered but not to the extent that they can become mid or low.

CHAPTER FIVE

5. ALPHABET AND ORTHOGRAPHY

The development and eventual standardisation of any language emanates from the preliminary establishment of a writing system for that language. After doing the phonological analysis, our attention in this final chapter will be focused on the establishment of a writing system for Lukundu. The working method used is adapted from Wieseemann (1981). The establishment of the alphabet and the orthographic principles are principally based on pedagogical and topographical considerations. This means that, for any symbol to be postulated as a letter using that symbol as well as its availability on a typewriter key-board will be taken into consideration. On the other hand, for any principle of orthography to be postulated, native speaker intuition and simplicity will be taken into account.

5. 1. THE ALPHABET

Taking into account the phonological structure of Lukundu described in this study, the following alphabet has been proposed for Lukundu. The arrangement and order will be similar to that of the English alphabet: a, b, ⁺c, d, e, _~g, i, j, k, l, m, n, _~o, _~p, _~s, t, u, w, y. In addition to these monographs, the language will also have the following digraphs: bw, by, cw, dw, kp, kw, ky, mb, mbw, mw, nd, ng, ngb, ngw, nj, _~w, _~y, sw, sy, ty.

From the above list, one will immediately realise that some symbols which occurred as phonemes are absent and in their place we have strange symbols which did not even appear during the analysis. Also we notice the featuring of labialised and palatalised sounds in the alphabet graphemes. This has been done to show the distinction between these consonants and their unmodified counterparts.

Below is a table containing the phoneme symbols, their orthographic counterparts and illustrative words. The phoneme symbol that has been used throughout this study is adapted from the I.P.A. The alphabet graphemes have been selected to suit with the Cameroon alphabet sound symbols. So the table below will indicate the equivalent I.P.A. and Cameroon alphabet graphemes.

<u>Phoneme symbol</u>	<u>Alphabet grapheme</u>	<u>Illustrating word</u>	<u>English gloss</u>
a	a	dá	eat
b	b	bàtò	people
b	b	kùbà	fowl
tʃ	c	cánà	tomorrow
d	d	dò	nose
e	e	ècè	soft
ɛ	ɛ	béké	give
i	i	ìkì	housefly
dʒ	j	jàngá	pineapple
k	k	kándá	shout
l	l	lóbà	sun
m	m	mòró	head
n	n	nínà	today
ŋ	ñ	ñá	drink
o	o	ónà	plant
ɔ	ɔ	ngòndò	groundnut
p	p	pó	rat
ʒ	ʒ	ʒòngó	brain
s	s	sò	thatches
t	t	tómbà	pass
u	u	du	hearth
w	w	wòngó	fear
j	y	yáná	bring
b+ɰ	bw	bwé	poor

b+y	by	ɔ̃byê	sense
t ^s +w	c ^w	èc ^w ê	waist
d+w	d ^w	dwâ	faeces
kp	kp	kpɔ̃mdɔ̃	leave
k+t	k ^w	ik ^w á	salt
k+y	ky	màk ^y á	blood
mb	mb	mbú	ash
mb+t	mb ^w	mbwâ	rain
m+y	my	myà	stomach
m+t	m ^w	m ^w ɛ̃	friend
nd	nd	ndòndí	fish
ndz	nj	njà	hunger
ɲ	n ^y	nyà	louse
ŋg	ng	ngɔ̃mɔ̃	drum
ŋgb	ngb	ngbí	corn
ŋg+t	ng ^w	ngwâ	pig
ɕ+w	ɕ ^w	èɕ ^w e	fly
ɕ+y	ɕ ^y	ɕyásɛ̃	twin
s+t	s ^w	mós ^w â	oil
s+y	sy	sýâ	grind
t+y	t ^y	ɕútyâ	near

5. 2.

CHOICE OF GRAPHEMES

The Grapheme y

The symbol representing this grapheme is j. Considering the fact that many people who might be interested in learning to read

and write the language would have been used to the grapheme y, it will be convenient to use this instead of j which might be taken for the sound dz.

The Grapheme c and j

These two symbols have been used in order to facilitate the learning of the language. The symbol representing these two graphemes are tf and d3 respectively. Another reason for the choice of these graphemes is because tf and d3 are not easy to come by on a typewriter keyboard.

The Graphemes nj and ny

The symbols representing these two graphemes are nd3 and ŋ respectively. For the purpose of learning how to read and write this language, these graphemes have been chosen for this convenience. Also these graphemes are similar to those used in the English language, hence it will facilitate reading and writing.

The Graphemes ñ and ng

Because of the "strangeness" of y and yg, it is thought convenient to use ñ and ng respectively which is easy to come by on the typewriter keyboard. These graphemes will even be familiar to the learner of the language.

The Grapheme b

This grapheme represents two symbols in this language - b and ~~b~~. In spite of the fact that ~~b~~ does not occur as a phoneme in the

language, it will be used in the writing system of the language in order to facilitate the learning process. This is so because, if the phoneme of which it is an allophone b is used in its place, it will be difficult for learners to know that between vowels b is pronounced as ɸ and not b. The symbol ɸ and not β is used in order to distinguish I.P.A. symbols from the Cameroon alphabet grapheme as earlier pointed out.

Labialised and Palatalised Graphemes

Though these appear as allophones of their unmodified phoneme counterparts, it will be used in the writing system of the language in order to ease learning process. This is done, in order to dispel any ambiguity that might exist between these labialised and palatalised graphemes with their unmodified grapheme counterpart.

5. 3. T O N E S

The normal symbols for marking tones are:

(ˊ ˋ ˊˋ and ˊˊ). The low tone which is very frequent in the language, and when words are put in collocations, will not be marked on the words.

Tones will not also be marked on prefixes, since the prefix morphemes derive their tones from the nouns or items with which they are put in a collocation.

5. 4. WORD DIVISION

It is not very easy to work out the details of the necessary word divisions. This is so because many lexical grammatical items in the language usually undergo varying modifications like the deletion or insertion of sound units following the contexts in which they are put.

One of the principles that was helpful in word division was that of Pike (1977). This principle holds that morphemes are to be considered separate words if the two can be separated by a word. The two morphemes yáná + maṣíba' (bring water) will consequently constitute two separate words for they can be further separated by another word like mbá.

yáná mbá maṣíba' "bring me water"

Another helpful principle in word division is that, if two morphemes can be separated such that each can be collocated with quite a different morpheme giving birth to a new meaning, then, those two morphemes will be considered two separate words. (Chumbow: class lectures, May 1992). Having this in mind, the preposition o will be separated from the nouns they designate.

ILLUSTRATION

tata a wédi ô ndikó not tata a wédiô ndikó
father P.T. die pre. bush father died in the farm

5. 5. I L L U S T R A T I V E T E X T

Below is a short text aimed at illustrating some of the postulated alphabet graphemes and orthographic principles. As will be noticed from the length of the text, not all the alphabet graphemes nor orthographic principles can be illustrated.

TEXT

Etana a mu were bá'ána bá'be

Etana P.T. he marry women two

Etana married two wives,

a mu dínga w'k' dibúka óne

P.T. he like one more than other

He liked one more than the other.

Wínya w'k' a mu bó'wā mbóli a n'ng'

day one P.T. he kill goat P.T. sake

one day he killed a goat and took

bekya a Pendelē o mya dimeže díná'á

intestine P.T. put on stomach to show as if

the intestine and put them on his stomach pretending

bá' bó'we m'

they kill P1 him

that they have killed him.

ñá'ána o we wa dinga a wéya ô

woman his own whom he like P.T. return from

The woman he liked returned from the

ndikó a ine owe múmí bá'na a nangá

farm P.T. see her husband as he P.T. sleep,

farm and saw her husband as he slept,

a n'ngó bozi w'ósusu a kána o

P.T. take wealth all P.T. carry to

she took all the wealth and carried it to

ndábo cá s'ángwe

house of father

her father's house.

di botya wínya boco, Etana a d'inga ñá'ána

Prog. T. start day from Etana P.T. like woman

starting from that day, Etana liked the woman

óco wa a mot

one he P.T. hate

whom he hated

It will be of prime importance, if the alphabet and the orthographic principles proposed in this study will have to be discussed and tested with the native speakers. This is a necessary exercise because, there are some sounds which a linguist or an analyst can consider as allophones. Secondly, the absence of these

sounds will not be acceptable to the native speaker. Finally some sounds can constitute variants and a test of the alphabet will reveal which of these variants will be accepted in the writing system. The choice between the variants will depend on the ease with which one of them can be taught, learnt and used.

It is only after this test and discussion that this proposed alphabet and orthography can be postulated as a writing system for Lukundu.

5. 6. C O N C L U S I O N

Having arrived at the end of this study, we deem it necessary to pinpoint some observations gathered in the course of the work and also to situate the work in the frame of its future validity.

The principal objectives of the study had been to study the sound system of Lukundu, to get the pertinent sounds in the language and also to establish a writing system for the language. Before achieving these objectives, we had a number of questions to answer.

Firstly we had to situate Lukundu in general. The second step was a close analysis of data collected on the field. At this stage of the analysis, the syllable structure was examined in which it was realised that Lukundu has basically two syllable patterns. Interpretation problems were also examined and it emerged that the structure of the language hardly admits a

a cc or a vv sequence. At the phonological stage, 29 phonemic sounds were obtained in the language after all the analysis. Prosodic features of tone and vowel were also examined. And lastly, we concentrated on the proposal of an alphabet.

It should be noted that, this study has strickly dealt with phonology, but, there are still a good number of areas of the language which call for further study and analysis. Here we are thinking of morphology and syntax, topics on which much has been done in various coastal bantu languages. Our wish is that, this study should open a gateway to the study of these and more aspect of linguistics in this language.

B I B L I O G R A P H Y

Anderson, Stephen R. (1974). The Organisation of Phonology.

111 Fifth Avenue, New York Academic Press. U.S.A.

Chafe, Wallace. (1970). Meaning and Structure of Language.

University of Chicago Press Ltd U.S.A.

Dieu, Michel; et al (eds) (1983). Atlas Linguistique du Cameroun

DGRST: ISH Yaoundé

Fromkin, A. Victoria (ed) (1978). Tone: A Linguistic Survey.

Academic Press

Goldsmith, John A. (1976). Autosegmental Phonology.

Indiana University Linguistic Club

Grime, Barbara F. (ed) (1984). Languages of the world: Ethnologue.

(10th Edition)

Dallas Texas, Wycliffe, Bible Translators.

Greenberg, Joseph. (1963). Languages of Africa.

Bloomington Ind. Indiana University Press

Guthrie, Malcom. (1967 - 71). Comparative Bantu: An Introduction to

the Comparative Linguistic and Prehistory
of the Bantu Languages.

Gregg Press Vol. 4

Hedinger, Robert. (1983). A Comparative - Historical study of
the Manenguba Languages.

J W A L

Hedinger, Robert; Sylvia, Hedinger. (1977). Phonology of Akòsè (Bakossi).

SIL Yaoundé

Hyman, Larry M. (1975). Phonology: Theory and Analysis.

Hotl Rhinehart and Winston.

Konhouet, Nkouandou B. (1989 - 90). Description Phonologique de
Bafaw (Parler de Kumba).

Memoire d'une maîtrise de Linguistique.

DLAL: University of Yaounde

Kuperus, Juliana. (1985). The Londo Word. Its Phonological and
Morphological Structure.

SELAF: Paris

Lehiste, Ilse (1970). Supra - Segmentals.

Cambridge M I T Press

Lyons, John (1981). Language and Linguistics.

Cambridge University Press

Palmer, Frank (1975). Grammar

Penguin books Ltd. Harmondsworth,

Middlesex England.

Pei, Mario. (1966). Glossary of Linguistic Terminology,

Columbia University Press. New York.

Pike, Kenneth L. (1947). Phonemics: A Technique for Reducing
Language to writing.

12th Printing 1971. University of Michigan Press

Roach, Peter (1983). English Phonetic and Phonology,

Cambridge University Press

Tadajeu, Maurice; et al (1979). General Alphabet of Cameroon Languages.

Bilingual Edition 1984. Propelca series

N° 1

Voeltz, F.K. Erhard (ed) (1980). The Languages and Dialects of the

South - West Province of Cameroon

Wiesemann, Ursumar; et al (1983). Guide Pour le Developpement Des

Systemes D'Ecriture Des Langues

Africaines.

Collection propelca N° 2