DEDICATION

To my parents who taught me never to give up in my studies, even during the most challenging times.

ACKNOWLEDGMENTS

So many people deserve our cordial appreciation for their direct and indirect assistance in the realization of this dissertation. We would like to thank those who spent their time and sharedtheir knowledge to help us complete this research with a better quality. Our sincere apology to those we have failed to keep in mind in these lines!

Huge thanks are due to Professor Philip NGESSIMO MATHE MUTAKA, our supervisor. From the beginning he has been a source of good advice and encouragement. He has been patient with our lack of progress or understanding. He accepted, without complaint, the burden of reading long and often incoherent sections of this essay, and suggesting ways to get out of the confusion. His help has been invaluable and we are very proud today to refer to him as our spiritual father in the field. May he find here the expression of our most sincere gratitude.

Our deepest gratitude also goes to all our mentors of the Department of African Languages and Linguistics at the University of Yaounde I (Cameroon). Professors Philip MUTAKA, Sammy Beban CHUMBOW, Edmond BILOA and Pius TAMANJI are the incredible mentors who trained us, as an undergraduate student, at the earlier stage of our academic adventure in linguistics to become a curious and passionate student in generative grammar. We also owe a cordial gratitude to all the lecturers of this Department, due to the incommensurate knowledge they transmitted to us during our training in that Department.

Our heartfelt thanks also goes to Doctor Jeff GOOD of the University at Buffalo (USA), for his help in directing us during the data elicitation and for his availability every time we had yet another question about this work. He also provided us with all the means we needed for this research. Besides, we were able to make many improvements because of the informal discussions with him. His drive and his commitment in reading and making comments on this thesis are a constant source of encouragement and inspiration.

Thanks to Jesse LOVEGREN, a graduate student of the University at Buffalo who helped us start our data elicitation by guiding us how to check certain aspects of phonology and organize the data in a way a good phonologist should do.

Thanks too to Doctor Pierpaolo DI CARLO, an anthropologist from the University at Buffalo who studied and mastered all the sociocultural aspects of the Languages of Lower Fungom. He was willing to read and comment on the sociolinguistic part of this work.

Our deepest appreciation also goes to our spiritual family, especially to Pastor Pierre Loti NZEUSSEU, our spiritual father and family (Ma. Germaine NSAH, Narcisse Parfait BISSO, Ivonne BISSO, Raymond BILLE, Ma. Nicole NZEUSSEU) who have been the rock of our life in any thing we intended to do with respect to our education as well as personal ambitions. They guided us and treated us the best way they could possibly do to make us a stronger and better person. There are no words to thank them. We take this opportunity to convey to them our warmest admiration.

Beyond any doubt, my wife is one of the persons who have borne the brunt of this exercise. She has been very loving and understanding as I spent countless hours in front of books and the computer that I would far rather have spent with her. Thank you, Mehethabeel, for your steadfast love, patience and encouragement as I struggled to see the Fáŋ patterns and understand their implications.

We also express our sincere gratitude to our linguistic consultants, especially BAH Jacob MUNYA, VUMBONG Elias KUM, VUMBONG Dorothy TSENE, MBAM John NTUH and the entire Fa̋ŋ community who made themselves available to provide us much information as needed. Thanks to NGONG George BWEI KUM whose support of our research has been invaluable. He was not only our guide when trekking to the Fáŋ village, but he also helped us in finding good consultants.

We are also very grateful to PA ATTIA and his family for their heartfelt hospitality which made our stay in Wum a pleasant and comfortable one.

We also appreciate the interesting contribution of our mate NGANGEP TCHIEMOUO Carine whose research work entitled *The Morphosyntactic Aspects of Fang*, was carried concomitantly with the present one.

Above all, we are very grateful to the ETERNAL GOD for having inspired and sustained us during this work. We must confess, nothing would have been possible without the ALMIGHTY GOD.

ABSTRACT

This work is entitled Aspects of the phonology of Fáŋ, a language which is spoken in the Menchum subdivision, in the North-West Region. Our main preoccupation was to do a descriptive study of the phonology of this language. Nevertheless, this dissertation has as a starting point, a sociolinguistic study of Fáŋ which reveals that this non-coded language belongs to zone 8 of the languages of Cameroun and to the Niger-congo sub-phylium. The data on which this analysis stands have been collected from the native speakers of Fáŋ who stay in Fang for some of them and in Wum and Yaounde for the others.

In this study, we have used many theoretical approaches to analyse the different segments and the phonological phenomena that occur in Fáŋ. We have thus used a structuralapproach to analyse sounds and tones. The autosegmental phonology has been adopted to represent tones whereas the generative phonology model was used to analyse phonological and tonological processes. This permitted us to better capture segments (consonants and vowels), tones, the syllable structure, the phonologicaland tonologicalrulesof Fáŋ.

We retain that Fáŋ has a phonic system that exhibits thirty-height (38) consonants among which there are thirty-two (32) phonemes on the one hand, and, on the other hand, eleven (11) vowels among which there are eight (08) with their equivalent eight (08) long vowels. In addition, we have come across five (05) syllabic structures in this language namely: V, CV, CVC, CGV and CGVC. Further, in Fáŋ, we have noticed the intervention of phonological processes such as: glides formation, vocalicelision, glide deletion, nasal deletion, vocalic insertion, nasal assimilation, vowel lengthening, vowel shortening, vowel rounding, vowel truncation, vowel highring, aspiration. Furthermore, the analysis of tones reveals that in Fang, we have three underlying tones: the high tone, the low tone, and the mid tone. The other tones (high-low, low-high, high-mid and mid-high) are considered as the result of tonological processes (gliding and vocalic elision) or through the intervention of a floating tone. The super high tone in its turn is a result of phonetic implementations. In sum, these contour tones are made up from the specific tonological processes of Fáŋ. The tonological rules that characterise this language are as follows: high tone insertion, high tone substitution, tone spreading, contour tone formation, tone docking, tone simplification, the stray erasure principle, the process of default mid, and finally, the delinking.

RESUME

Ce travail est intitulé Aspects de la phonologie du Fáŋ, langue parlée dans le Département de la Menchum, Région du Nord-Ouest. Notre principale préoccupation était alors de faire une étude descriptive de la phonologie de cette langue. Cependant, ce document présente au préalable une étude sociolinguistique du Fáŋ qui révèle que cette langue non codée jusqu'ici, appartient à la zone 8 des langues du Cameroun et au sous phylum Niger-Congo. Les données sur lesquelles porte cette analyse ont été recueillies auprès des locuteurs natifs du Fáŋ résidant à Fang pour certains, à Wum et Yaoundé pour d'autres.

Dans cette étude, nous avons eu recours à plusieurs approches théoriques pour analyser les différents segments et les phénomènes qui interviennent en Fáŋ. Nous avons ainsi utilisé une approche structuraliste pour analyser les sons et les tons. Le modèle de la phonologie autosegmentale a été adopté pour représenter les tons et le modèle de la phonologie générative pour analyser les processus phonologiques et tonologiques. Ceci nous a permis de mieux cerner les segments (consonnes et voyelles), les tons, la structure syllabique, les règles phonologiques et tonologiques de la langue Fáŋ.

Nous retenons que le Fáŋ a un système phonique qui exhibe trente-huit (38) consonnes dont trente-deux (32) phonèmes d'une part et onze (11) voyelles dont huit (08) phonèmes et leurs correspondantes voyelles longues, d'autre part. En plus, cinq (05) structures syllabiques ont été inventoriées dans cette langue à savoir: V, CV, CVC, CGV et CGVC. Par ailleurs, en Fáŋ, on note l'intervention des processus phonologiques tels que: la formation des glides, l'élision vocalique, l'effacement nasal, l'effacement de la glide, la troncation vocalique, l'insertion vocalique, l'aspiration, l'allongement vocalique, l'assimilation nasale, l'abrègement vocalique, l'arrondissement vocalique. En outre, l'analyse des tons révèle qu'en Fáŋ nous avons trois tons sous-jacents: le ton haut, le ton bas et le ton moyen. Le ton supra haut est considéré comme étant le résultat des implémentations phonétiques. Les autres tons (haut bas, bas haut, haut moyen et moyen haut) sont issus des processus tonologiques (la formation des glides et l'élision vocalique) ou par un ton flottant. En somme, ils sont issus des processus tonologiquesspécifiques à la langue Fáŋ. Les règles tonologiques qui caractérisent cette langue sont: l'insertion du ton haut, l'assimilation tonale, la propagation du ton, la formation des tons modulés, le tone docking, la simplification tonale, l'effacement tonal, l'association du ton flottant moyen et le détachement tonal.

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ABBREVIATIONS AND SOME SYMBOLS

Abbreviations

(UAC): Universal Association Convention

(UR): Underlying Representation

ALCAM: Atlas linguistique du Cameroun

AM: Associative marker

Ant: Anterior

Asp.:Aspiration

ATR: Advanced tongue root

C: Consonant

Cd: coda

CDC (Cameroon Development Cooperative)

CLC: Cameroonian Languages and Cultures

Cons: Consonantal

Const: Constricted

Cont: Continuant

COS: Cameroonian Orthographic Symbols

D.H.T.: Default high tone

D.L.T.: Default low tone

D.M.T.: Default mid tone

F: Feature

F1: Future 1

Fig.: Figure

G.Del.: Glide delition

G: Glide

GLID FOR : Glide formation

Glid.: Gliding

H.T.S: High tone spreading

H: High tone

HL: Falling tone

HM: high-mid tone

IPA: International Phonetic Alphabet

L: Low tone

LAB: Labial

Lat: Lateral

LH: Rising tone

M: Mid tone

MH: Mid-high tone

MT: Mother Tongue

N.Assim.: Nasal assimilation

N.Del.: Nasal delition

N: Nasal

n: nucleus

N2: Second noun

Nas: Nasal

NGOs: Non-Governmental Organizations

O: Onset

OCP: Obligatory Contour Principle

P0: Presnt tense

P: Past

PR: Phonological representation

R: Rime

R1: Rule one

R2: Rule two

S.E.: Stray Erasure

SH: Super-high tone

Son: Sonorant

SPE (Sound Pattern of English)

Strid: Strident

Syll: Syllabic

TBU: Tone Bearing Unit

T.DOCK: Tone Docking

T.SIM: Tone Simplification

UR: Underlying representation

V. Del.: Vowel delition

V. Rais.: Vowel Raising

V.Inser.: Vowel insersion

V. Leng.: Vowel lenghening

V. Round.: Vowel rounding

V.Short.: Vowel shortening

V.Trunc.: Vowel truncation

V: Vowel

V_1: First vowel in a syllable

V_2: Second vowel in a syllable

Symbols

[ ]: Phonetic representation

/ **/:** Phonological representation

/: or

□ : Association line

↔: Transliteration

+: Plus

_: Minus

±: Plus or minus

=: Boundary between phonological words in compounds

⟶ : Becomes

/ : In the context of

( ): Brackets for features

——: Sound position

Ø: Zero

#: Word boundary

CHAPTER I: GENERAL INTRODUCTION

I-0. Introduction

The purpose of this dissertation is to discuss as the title indicates, *aspects of the phonology of Fáŋ*, a language spoken in North-West Cameroon. No extensive analysis of this language has previously been undertaken, so this stands out as the initial work that presents the fundamental characteristics of the language. This introductory chapter begins by a presentation of the objectives and motivation of this study, the geographical, socio-cultural situations and the historical background of the language as well as the linguistic situation. It further exposes the previous works done on the language, the theoretical framework and the methodology used in this work. It ends up with an overview of the rest of the chapters of the study.

I-1. Purpose

Phonology, as a part of linguistics, presents its own importance as it deals with the sound systems of languages. Through a phonological study, one can give the structure of a language. It is only through a phonological study of a language that one can possibly determine pertinent sounds or distinctive sounds.

Since no deep linguistics work has so far been done on Fáŋ, this attempt of its phonology will hopefully provide a wider area for more studies on the language. This can also serve as a foundation for the development of the writing system of the language thus providing Cameroon with a written language added to its existing list of written languages.

I-2. Motivation

I-2-1. Scientific motivation

The choice of this topic emanated from the fact that up till now, the Fáŋ language has not undergone any deep linguistic study (except some sociolinguistic investigations). We have chosen to start with a descriptive work since it is necessary for any other further research to be carried out in this language.

I-2-2. Practical motivation

From purely academic and scholarly perspective, this work is designed as a contribution to the study of Cameroonian languages. By establishing a writing system, we will hopefully contribute to the development of Fáŋ and to the literacy of the native speakers since these are very important as

far as the cultural identity of a people is concerned. In fact, through the present analysis, we are contributing to the establishment of a stable grammar and orthography in the language in question.

We were equally motivated by the fact that, nowadays, there is a possibility of teaching local languages (national or Cameroonian languages) in schools, and even in adult literacy classes. This can however not be done without a thorough and concrete analysis of the languages. Textbook writers, didactic material elaborators, teachers, etc. need to understand the nature of a language before they can carry out their various tasks. They can only do so if linguists on their part carry out their own duty of analyzing a language in all its aspects. With a detailed analysis, in this language of the different aspects of phonology evoked in the overview (the last part of the present chapter), textbook writers, didactic material elaborators, teachers and all those involved in literacy will find it easier to carry out their respective tasks. This work can thus be seen as a relevant input to the development of this language. Thus, this study contributes to the promotion of Cameroonian languages which are the tools par excellence in the process of valorization and perpetuationof the cultural and the linguistic patrimony. In doing so, this research is an answer to the call of the Cameroonian government on the use, the teaching of the national languages in the educational system and moreover,the preservation of minor languages.

I-3. Geographical location

Fáŋ is a Cameroonian language spoken in the North-West Region, especially in a village called Fang. This village is situated in Wum subdivision, in an area known as Lower Fungom and at about 7 km from Aba. Fang people seem to be among the most recent people to have moved to this area (Pierpaolo 2011: 79-80). Fáŋ is spoken only by the Fáŋ people (Féŋə́): *(It is a one-village language spoken in the southeastern part of Lower Fungom. This is a completely separate language from the variety known as Fang associated to the Beti language cluster, which comprises Narrow Bantu languages spoken in southern Cameroon and bordering countries, and the name overlap appears to be coincidental"* (Jeff Good et al., 2011).

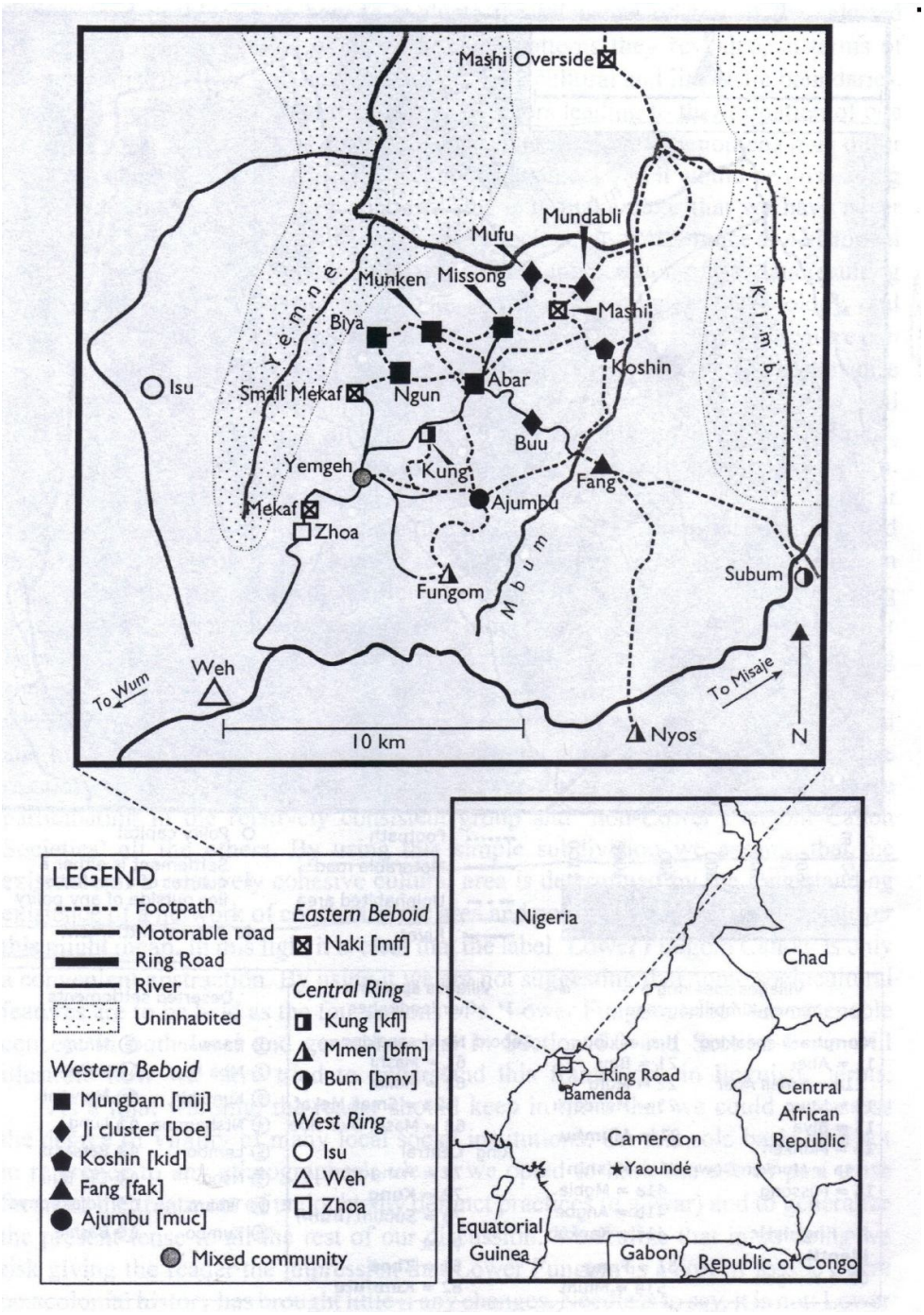
According to Pa Mba John Ntuh, one of the patriarchs of the Fang community, this language is also largely spoken (by Fang people) in the South-West region especially in Koumba (new town), in Buea, in Tiko, in Limbe and in Moyuka (Owe quarter). In fact, many Féŋə́ decided to settle there in order to seek for a job when the CDC (Cameroon Development Cooperative) started functioning in the place.

Important groups of Féŋɔ́ are also found in the littoral Region, precisely in Lung, Mbanga, Kompenja, Suza and in Bikoko.

In the Fang village, the population (Fang speakers) has been estimated in 1987 at 6000 (Hamm et al., 2002: 6). But according to Pa Mbam John Ntuh, this population has increased running up to about 10, 000 speakers of the language. Again, he estimates the entire fang population of Cameroon at about 20, 000 speakers. Therefore, *"Fang is, by far, the most populous village in Lower Fungom as well as the most spoken language"*(Jeff Good et al., 2011).

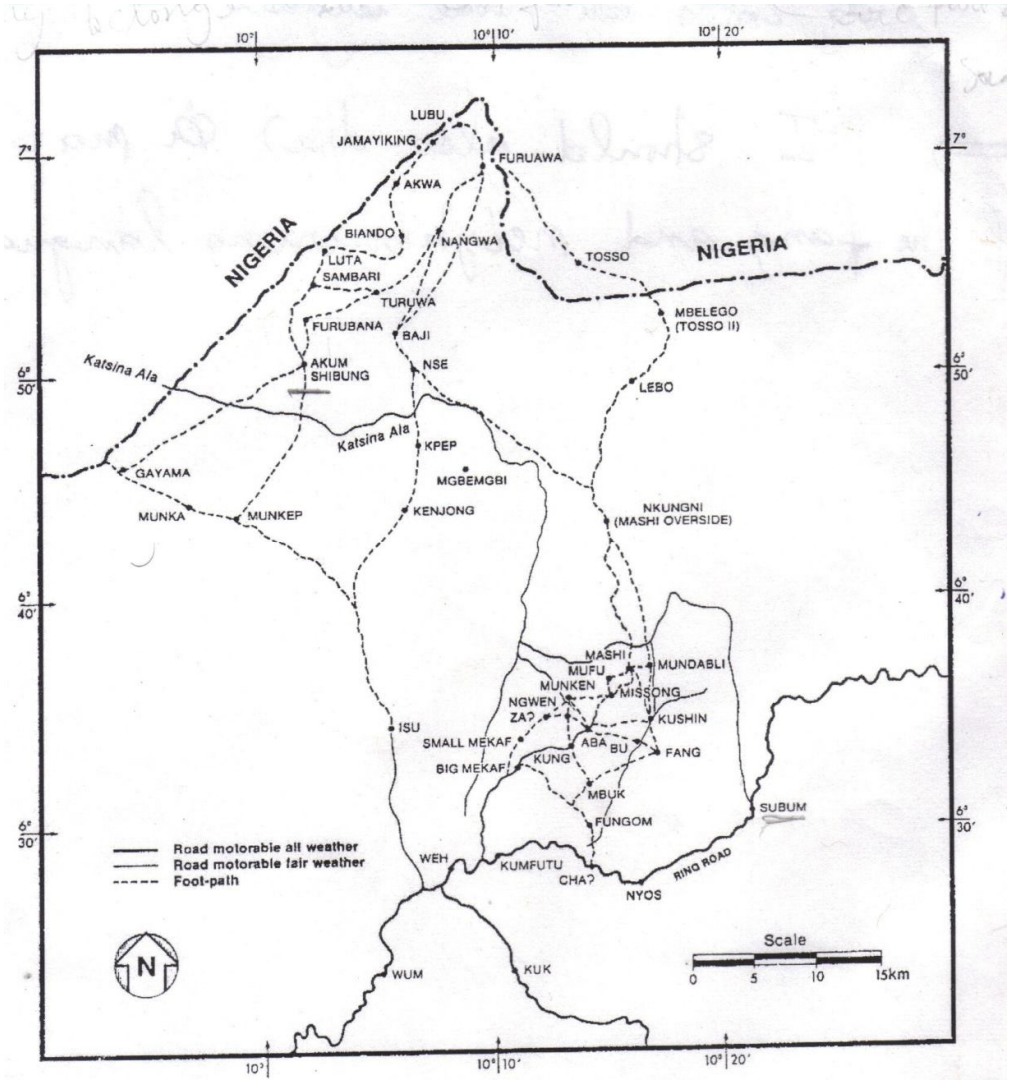
The Fang language cohabits with other languages (*Mbu, Naki, Bu, Missong, Koshin* …), especially with *Koshin*. Indeed, some fang people claim to understand few words in Koshin. This led some to treat Fáŋand Koshin as varieties of the same language. Yet, *"while there is at least one prominent grammatical connection between them in the Lower Fungom context- the present of a noun class that can be associated whith class 13- it would be premature to suggest any specific close connection between the two"*(Jeff Good et al., 2011). The following maps give an account of the location of Fang within the Wum-Subdivision.

Fig1



(Source: P. Di Carlo 2011: 57)

Fig 2



(Source: Jeff Good and Jesse Lovegren 2009)

Moreover, the languages Fáŋ cohabits with are indicated with their codes on figures 3 and 4 bellow:

Fig 3

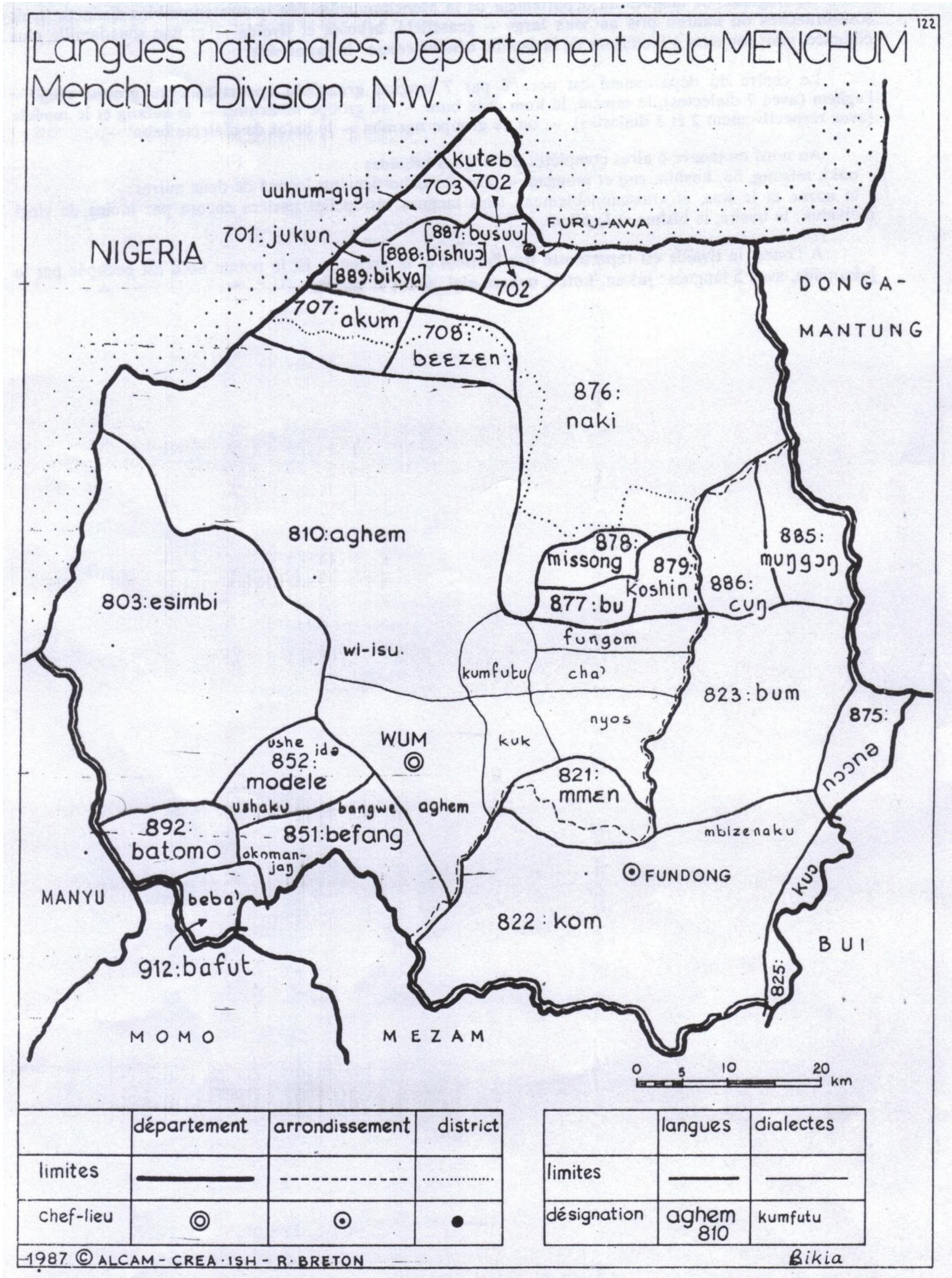
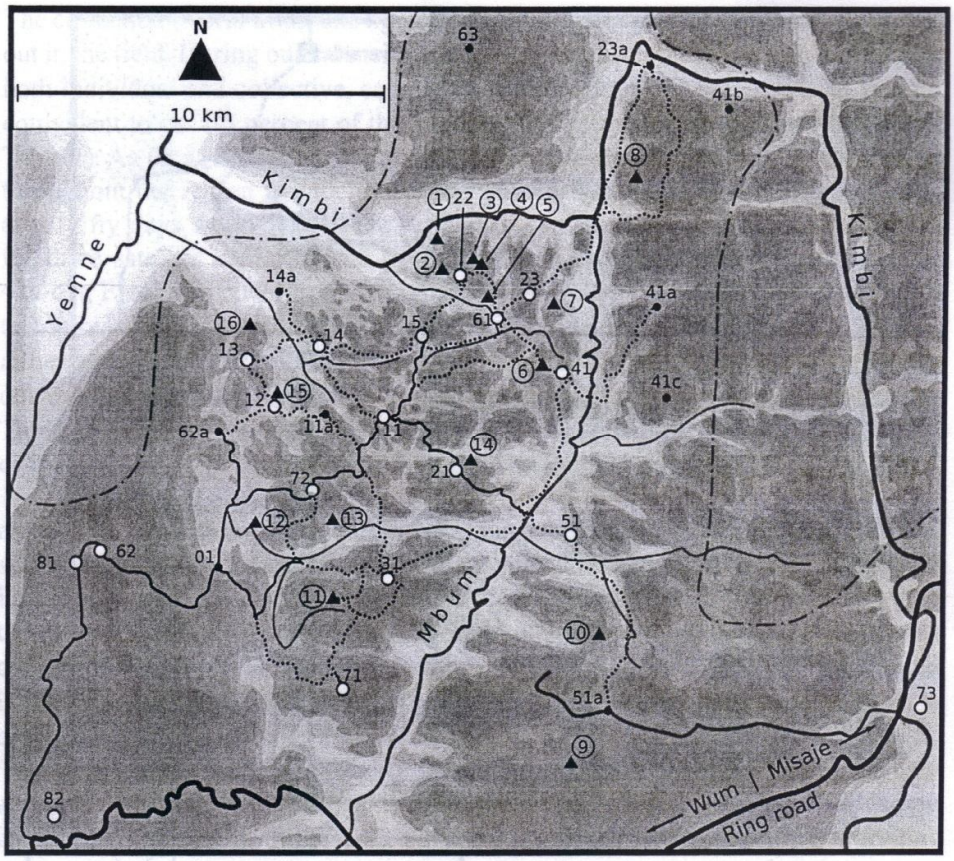

122
Langues nationales: Département de la MENCHUM
Menchum Division N.W.
NIGERIA
kuteb
703
702
uuhum-gigi
701: jukun
[887: busuu]
FURU-AWA
[888: bishu]
[889: bikya]
702
DONGA-
MANTUNG
707: akum
708: beezen
876: naki
810: aghem
878: missong
879: koshin
885: muŋgɔŋ
886: cuŋ
877: bu
803: esimbi
fungom
wi-isu.
kumfutu
cha'
823: bum
nyos
875: əccu
ushe
ida
852: modele
WUM
kuk
821: mmɛn
ushaku
bangwe
aghem
892: batomo
851: befang
mbizenaku
okoman-
jaŋ
FUNDONG
MANYU
beba'
kuɔ
822: kom
BUI
912: bafut
825:
MOMO
MEZAM
0 5 10 20 km
département
arrondissement
district
limites
chef-lieu
langues
dialectes
limites
désignation
aghem 810
kumfutu
1987 © ALCAM - CREA - ISH - R. BRETON
Bikia

Fig 4



(Source: P. Di Carlo 2011: 58)

I-4. Historical Background

According to the Fang patriarch Pa Mbam, the Fang and Befang communities of Cameroon originated from Bafang (West region). Because of war, they had to leave and settle in Widikum (North West region) which they left at a given period. Then theyall settled in the present Befang. This tradition is somehow shared by Pierpaolo (2011: 79-80). Fang people decided to leave again because of the insecurity caused by the Second World War. So, passing through Wum, they trekked up to Kungfutu and Bafmen whose name was ***ísýɛ̀*** those days. As the minority, Fang people were being tormented by the ***ísýɛ̀*** people who considered them as their slaves.

So they left there and settled at the top of a hill named ákʰú (meaning "town" in English). Moreover, according to Abre Charles Undjidi (2003:7), *"one of befang's brothers called fang moved to the high hills towards Wum. He founded a place in Lower Fungom known as fang (meaning **forest**)"*.But the Bafmen people continued searching where Féŋɔ́ settled to torment them again. So they had once more to leave after the alarm given to them by their *mystical stone*. And then, they reached the present Fang village which was still a big forest those days. They lived there in security, since they were protected by two rivers (Kedzume and Mbum) which surrounded the village. From the information collected from the patriarch, Pa Jacob Bah Munya, women constitute the majority of the Fáŋ community.

I-5. Socio-Political Organization

Fang people constitute only one and one community. As far as the organization of Fang people is concerned, the community is administered at two different levels: the traditional level and the official level. At the traditional level there is a traditional chief, the təm or the ntol[1]belonging to a special family known as Kúlə∫ún. The latter is the one taking decisions and giving orientations within the Fang community. One should notice that the first traditional ruler of the people in question was a woman called Kembanya. But instead of holding a traditional broom, she, as woman, held a symbolic tree of peace.

At the official level, there is an official chief who is in charge of the external affairs. He himself receives from the traditional chief orders which he should obey scrupulously. The

[1] See Pierpaolo (2011: 80).

latter is the one managing and arguing for the village affairs out of the village. The first Fang official chief was called Chief Joh the first.

There are also some notables who are just the representatives of the chief within the different headquarters which make up the Fang village. But there is a special notable known as ***Ntchinda.*** He receives orders from the chief and transmits them to the villagers. That is, he is the chief's messenger. According to Pierpaolo (2011: 80), *"Fang quarters do not coincide with exogamous units since members of any given lineage live scattered among quarters; in Fang, quarters are more of an administrative than a kinship-based kind and this determines that the office of quarter heads is not hereditary but rather elective."* He states again that *"the most apparent sociocultural differences are that, in Fang, each lineage owns a hunting lodge (Fang fəbwɔ) whose seat is an externally peculiarly decorated house of ritual located in the lineage head's compound and the kwifon seems more closely related with the exercise of political power by the chief."*

From a socio-economic point of view, the Fang people practice farming. They generally grow corn and groundnut even if few people grow Bambara groundnut and traditional carrot just for local use. They also produce palm oil for a commercial goal. But few people rear sheep, goats, pigs and fowl for eating or selling and for some traditional ceremonies.

With regard to the culture of this people, it is worth noting that the Fang people, like many African communities, usually practice death celebration and other traditional events like traditional wedding. During such celebrations, they practice some traditional dances namely tàsɔ́ŋ, fùmbwán, kàŋgàŋ,... But the main traditional dance that the Fang people practice is Kàfánà notably during the harvesting celebration. This ceremony, which gathers Fang people of many places and which is celebrated by the traditional chief, takes place every year in the Fang village, before the 15th of October.

I-6. Linguistic classification

The classification of African languages has been done by several linguists among whom are Guthrie (1948), Welmers (1973), Greenberg (1963,1970, 1974) and Williamson (1973). In this study we will consider Greenberg*'s* classification and ALCAM. According to ALCAM, languages found in the Wum sub-division fall under zone 8 of the languages of Cameroon. That is the languages spoken in the North West region of Cameroon. This is re-iterated by Mutaka and Tamanji (2000:15) when he states that Zone 8 is made up of " *north of south-west province and west of*

north-west province.It consists of the Bantu languages that are neither Narrow Bantu (Zone A of Guthrie) nor East Grassfields (former Mbam-Nkam. It includes Grassfields languages of the Momo, Menchum and Ring groups and also other languages that are considered Bantu although theyexhibit many differences with the central Bantu: *Tiv, Ejagham, Njwandɛ, Esimbi,(…), Naki, Bu, Missong, Koshin,…*" Moreover, Watters (1989) treated the languages of Lower Fungom as part of the higher-level Semi-Bantu grouping conventionally referred to as Bantoid. These languages are therefore placed into the Beboid subgroup which is considered as part of a South Bantoid group which contains Narrow Bantu and its closest relatives including the Grassfield Bantu languages (Hombert 1980, Schadeberg 2003, Troyer et al. 1995). Beboid itself is conventionally broken into two branches, Eastern Beboid and Western Beboid which is restricted to the zone of Lower Fungom, Naki being the excepted language[2] (Hombert 1980, Brye 2002, Hamm et al. 2002). But, it should be mentioned here that Fáŋ is not yet among the languages coded by Dieu (1983) though it is a language of this area as one can see on the above figures. Greenberg's genealogical classification traces the origin of a language from the phylum, family, the branch and even its group. This leads us to propose a genealogical classification of Fáŋ as follows:

[2]Naki is treated by these authors as an Eastern Beboid language found in Lower Fungom and spoken in the villages known as Mashi and Mekaf.

The genealogical classification of fáŋ

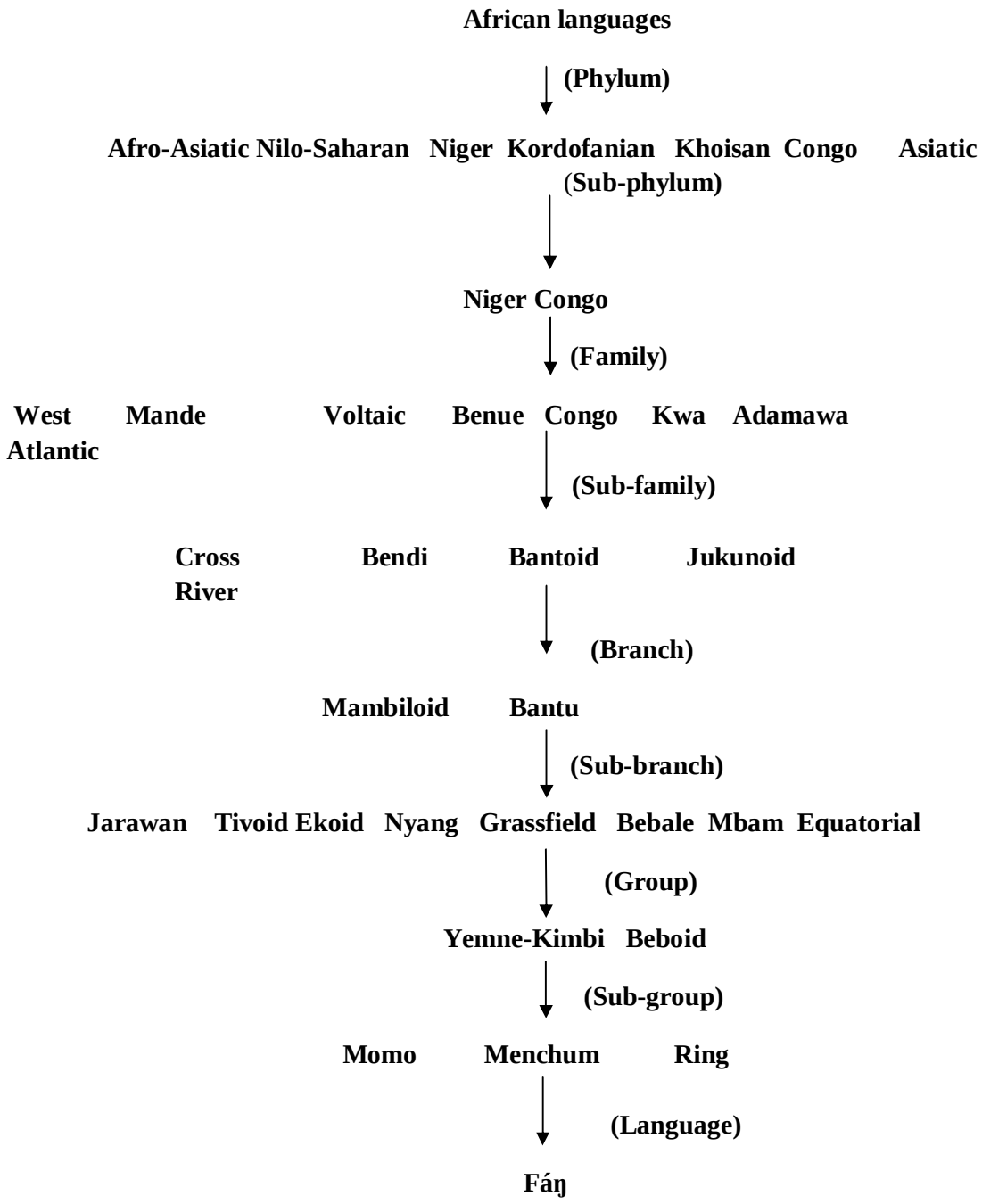
Nevertheless, Jeff Good et al. (2011: 8) propose to revise the above classifications by treating the languages of Lower Fungom as the languages of the Yemne-Kimbi group (see the maps in figures 1 and 4):

" Despite the widespread adoption of Beboid as a classifactory label, no publication has ever presented evidence for the group in terms of shared innovations, or even

lexicostatistics. Personal communication with Jean-Marie Hombert, who proposed the group in Hombert (1980) has not revealed any further evidence for it, and he has not tried to defend the grouping. Therefore, while proposal was quite valuable as an initial hypothesis, in particular clearly delineating a group of non-Grassfield languages at the family's northern periphery, its repeated use as a referential label in recent decades is presumably better understood as the result of lack of detailed investigation into the matter rather than acceptance of the subgroup as proven. [...] the research reported here has not resulted in any substantiating evidence for either a Western Beboid subgroup or a close affinity between "Western Beboid" and "Eastern Beboid" languages. Thus, we abandon here the label Western Beboid- along with its associated genetic hypotheses- and instead propose the name Yemne-Kimbi for this group of languages which references two rivers that are found at the western and eastern borders of the Lower Fungom region between which all of the relevant languages are spoken. If this naming convention becomes more widely adopted, then Eastern Beboid could simply be termed Beboid since it would no longer be associated with a Western Beboid group, and we refer to this group as Beboid here…"

Therefore, the revised genetic classification of **Fáŋ** will look like the following one:

The genealogical classification of fáŋ



I-7. Corpus and informants

Our study is based on an inventory of words and expressions collected through interviews; informants articulated verbs, names of things, places, events; these words were immediately transcribed.

Many informants, all native speakers of Fáŋ, contributed enormously in the collection of the data. The following table provides information about the informants:

Table1: Table of informants

N°	Name	Age	Born in	Occupation	Place of residence	Languages spoken
1	BAH Jacob MUNYA	82	Fang	Former-teacher	Fang	Fáŋ, English and Pidgin
2	VUMBONG Elias KUUM	65	Fang	House wife	Wum	Fáŋ, Kom Wimbum, English and Pidgin
3	NTU Joseph MBAKIBO	64	Fang	Retired civil servant	Wum	Fáŋ, Kom,Aghem, English and Pidgin
4	VUMBONG Dorothy TSENE	63	Fang	House wife	Wum	Fáŋ, Kom, Weh and Pidgin
5	BAH Gabril KEYACHE	52	Fang	Former-army officer	Yaounde	Fáŋ, English and French
6	MBAM John NTUH	51	Fang	Former-army officer	Yaounde	Fáŋ, English and French
7	SORH Michel	47	Fang	Notable	Fang	Fáŋ, Pidgin and English
8	YAMA Richard	43	Fang	Notable	Fang	Fáŋ, Pidgin and English
9	KOH SONKEY Lydia	42	Fang	House wife	Wum	Fáŋ, Pidgin and English
10	MAFOR John NTOH	40	Fang	Traditional vice chairman	Fang	Fáŋ, Pidgin and English

11	MBAM Gladys	40	Fang	House wife	Yaounde	Fáŋ, English and French
12	KIMBI Charity SHENTE	20	Fang	Student	Wum and Fang	English, Fang; also hears Kung, Kuk, Aghem, Bafmen and Koshin
13	KUMATANG Valorine SHENTE	19	Fang	Student	Wum and Fang	English, Fang; also hears Abar and Koshin

I-8. Literature review

Fáŋ is among the numerous Cameroonian languages that are not yet studied. We are not aware of any literature concerning this language except the sociolinguistic study and the wordlist (about the languages of Lower Fungom) found in Hamm et al. (2002: 30- 32). There is also the article written by Jeff Good et al (2011). The paper in question offers an overview, especially the grammatical overview on the languages of Lower Fungom. Here, relevant, background information on the languages of Lower Fungom is given, including some basic grammatical information on Fáŋ (Jeff Good et al. 2011: 132-137). Equally, in Pierpaolo (2011: 79-80) one can find some information about Fáŋ. This paper deals with the linguistic diversity and the historical development of Lower Fungom standing on some colonial documents (Hawkesworth 1927:5, Smith 1929: 42-43) and archaeological evidence. Therefore, since no deep research has been carried out on this language, we deemed it necessary to undertake a descriptive study on it, especially in the domain of phonology. That is why our study is entitled *"Aspects of the phonology of Fáŋ"*.

I-9. Theoretical framework

This work will be within three theoretical frameworks, namely, the structural phonology, the generative phonology and the autosegmental phonology. A word about each of these frameworks is in order here.

I-9-1. Structural phonology

The sound system of Fáŋ falls within the aim of this work. So we will analyze words in minimal pairs, sounds in contrastive distribution, complementary distribution and free variation in order to bring out pertinent sounds in this language. Pitch phonemes as well as

possible combination of sound into larger units will be taken into consideration. All these aspects are better analyzed through the structuralist theory.

The structural approach to phonological analysis has a good number of prominent ideas postulated by the fathers of modern linguistics Ferdinand de Sausure and also Troubetzkoy. Some parts of the structuralist principles we will use can be found in Martinet (1970) and others. These principles consist in working from a phonetic inventory to a phonic chart. They are also well elaborated in Essono (1998).

I-9-2. Generative phonology

In the 1940's and the 1950's, the emphasis on phonology was on phonemics (taxonomic or classical). This approach was not inadequate in accounting for certain aspects in languages but dealt mostly with phenomena such as minimal pairs, free variation, suspicious pairs, etc. This led to the development of generative phonology. While classical phonemics recognizes only one level of presentation i.e, what occurs on the surface, Standard Generative Phonology on its part recognizes two levels of representation, i.e; the systematic phonemic and the systematic phonetic levels. It looks at speech more or less as a horizontal stream that is segmented into a linear sequence of units. This theory accounted in a better way for some segmental processes relative to classical phonemics but failed to provide sufficient answers to questions posed by some tone phenomena. This weakness calls for a different approach to be used in handling tone in the Fáŋ language. The autosegmental approach comes in therefore to solve this problem.

I-9-3. Autosegmental Phonology

This is one of the most influential developments in phonology. This approach was initially motivated by the desire to explain properties of tones. The basic premise of autosegmental phonology is that tones are represented on a line (or tier) parallel to that of consonants and vowels and are synchronized with the units that bear them (such as syllable and mora) by means of association lines. This is why autosegmental phonology is also called "*Tiered phonology"*as itis shown below:

Diagram 1: Autosegmental tiers

CV CV (Segmental tier)

 (Association line)

H B (Tones tier)

Goldsmith consequently developed the autosegmental theory in 1976. This theory provided insight that proved efficient in handling tonal processes. It asserts that segments exist in autonomous tiers unlike the principle of Absolute Slicing Hypothesis assumed by Standard Generative Phonology. He therefore showed that it is more adequate to represent tones in term of tiers not in a linear way as the SPE (Sound Pattern of English) was doing it. According to him, the Underlying Representation (UR) is a multilinear tier from which tones are associated with respect to the Universal Association Convention (UAC).

Many researches have been done to trace principles in assigning tones on TBU: William (1971), Goldsmith (1976), Leben (1973), Clement & Ford (1979), Pulleyblank (1983), Yip (1988). In this study, we will stand on the version of Pulleyblank (1983) for our tone analysis:

Universal Association Convention (UAC)

In connection with this, Pulleyblank (1983) says:

"I *propose therefore that, the universal aspect of tones mapping Rules and the Well-formedness condition are as follows:*

Association Convention

Map a sequence of tones onto a sequence of tone bearing units,

(a) From left to right

(b) In a one to one relation

Well-formedness condition

Association lines do not cross."

With regard to this, the three approaches will therefore be used in this work.

I-10. Methodology

The methodology used is the time honored classical method used by descriptive linguistics for languages with no previous linguistics description. The analysis consists of (a) informant (native speaker) assisted data elicitation, (b) data organization and classification (computer assisted), (c) data analysis, and (d) real formulation based on one or more

theoretical frameworks. In this respect, the data (word lists, phonological phrases) were collected with the aid of Fáŋ speakers.

Two stages of the data elicitation were done in Wum where many native speakers of Fáŋ are living, and another stage was done in the Fáŋ village not only to verify the faithfulness of the data but also to live the realities of the life of the people. We also consulted many Fang people who live in Yaoundé.

For the effective treatment of these data, the sound system is studied in order to determine the different phonemes of Fáŋ and its alphabet. Frames are further constituted in order to understand the behavior of segments and tones in various contexts. This involves creating particular slots through which various sets of data are parsed.

Finally it should be noted that the analysis and rule formulation are carried out by an eclectic use of the linguistic theoretical frameworks presented below as deemed necessary. This is so because each of them handles specific issues in a more insightful manner than the others, thus permitting the work to explain phenomena that would otherwise be difficult to analyze.

I-11. Overview

The segmental phonology of Fáŋ is presented in this dissertation in chapter 2 where various aspects of the phonology are discussed. These include the consonant and vowel systems as well as features that are used in the study. The phonological processes that these sounds undergo are presented in chapter 3.

An overview of the tonological system of this language is provided in chapter 4. The phonetic and the phonemic inventories of tones and the classification of tonemes are outlined here. A presentation of tone groups of this language is also part of this chapter.

Chapter 5 concentrates on the autosegmental phonology of Fáŋ. It therefore handles some tonological processes involved in the Fáŋ language.

A general conclusion is given in chapter 6 where findingsof the whole thesis, the difficulties we faced during this work and some recommendations for further research works on this language and for the promotion of Fáŋare provided.

CHAPTER II: THE SOUND PATTERN OF FÁŋ

II-0. Introduction

It is well known that tone languages consist of at least three kinds of phonological units, namely consonants, vowels, and tone. This chapter is devoted to the phonetic and the phonemic characterization of Fáŋ sounds. A presentation or an exhibition of consonant and vowel systems is found in this chapter. The tone system in turn will be presented in chapter four. The present chapter also presents features that are used in this work together with their defining feature matrices.

II-1. Sound and Inventory

II-1-1. Phonetic inventory

The word *Phonetics* was given a clear-cut definition by the famous linguist Ferdinand de Saussure who drew relevant distinction between what he called *langue* (language) and *parole* (speech). In his theory, Ferdinand de Saussure claims that *Phonetics* falls within the framework of speechwhereas Phonology belongs to the domain of language. From this challenging innovation in linguistics, one can define Phonetics as the study of sounds of the human language. It is concerned with bringing every perceptible difference that may contrast sounds, regardless of their membership in any language (Essono, 2006). Notice that the transcription of sounds in this study assumes the symbols of the International Phonetic Alphabet (IPA). The following correspondence can be made with the Cameroonian Orthographic Symbols (COS) proposed by Tadadjeu and Sadembouo (1979) if the orthography of Fáŋ, which is beyond the scope of this work, is being developed.

Table 2: **Table of correspondence between API sounds and COS**

IPA	Cameroonian Alphabet	Examples
ʃ	**sh**	ʃú↔**s**hú “untie”
ʧ	**c**	ʧùm↔ **c**ùm “fish”

ʤ	**j**	**dʒí** ↔ **j**í "wear"
ɲ	**ny**	**ɲ**ú́ ↔ **ny**ú́ "knee"
j	**y**	**j**ú ↔ **y**ú "house"

II-1-1-1. Consonants

Consonants are sounds of speech that are produced with the airstream channel being either completely blocked or narrowed. They are, in fact, sounds that are produced with some constriction in the vocal tract that impedes the free flow of air through the organs of speech. They are numerous in a human language and Fáŋ in no exception. In what follows, the various phonetic consonants will be presented and analysed in order to determine which of them are contrastive.

a)- Stops

According to Katamba (1989), stops are sounds during the articulation of which "*the articulators come together and completely cut offthe flow of air momentarily, then they separate abruptly*". Stops are also referred to as plosives. The stops used in Fáŋ include:

[p]: voiceless oral bilabial stop as in:
Word initial position: pàlûm "parlour"
Word medial position: tàpálùm "parlours"; wàspítà "hospital"

[b]: voiced oral bilabial stop as in:
Word initial position: bɛ́ "build"; búwə́lə́ "rain"
Word medial position: kàbíkē "bad"

[t]: voiceless oral alveolar stop as in:
Word initial position: tín "cut"; tíyə́ "horn"
Word medial position: kàlɛ́tə̄ "wide"

[d]: voiced oral alveolar stop as in:
Word initial position: dúŋ "sit"; dùwàlə́ "star"
Word medial position: kàdíyə̄ŋ "tall"

[k]: voiceless oral velar stop as in:

Word initial position: kê “see”; kófə́ “bone”; kí “know”

Word medial position: tàkú “heads”; tókó “night”; líkə́ “run”

[g]: voiced oral velar stop as in:

Word initial position: gǐ “come”; gúwàn “feather”

Word medial position: kàgààsâŋ “red”

[kp]: voiceless oral labio-velar stop as in:

Word initial position: kpú “dieing”; kpɛ̀ “burn”

Word medial position: məkpéŋ “woman”

[gb]: voiced oral labio-velar stop as in:

Word initial position: gbúŋ “mountain”

Word medial position:tàgbú “ash”

b) - Prenasalised stops

The production of these sounds begins with the production of a nasal which is followed by the articulation of an oral stop. As such, the velum is initially lowered and then raised so as to produce respectively the nasal and the stop.

[^{m}b]: voiced bilabial prenasalised stop as in:

Word initial position:^{m}bī “earth”; ^{m}bálə́ “type of fish”

Word medial position: fù:^{m}búwə́n “type of dance”

[^{n}t]: voiceless alveolar prenasalised stop as in:

Word medial position: fə̀:^{n}táŋ “seed”; tí:^{n}tənə́ “chop”

[^{n}d]: voiceled alveolar prenasalised stop as in:

Word medial position: dʊ̀bə̀:^{n}dɔ́ŋ “goat”

[^{ŋ}k]: voiceless velar prenasalised stop as in:

Word initial position:^{ŋ}kùm “belly”

Word medial position: kə̀:^{ŋ}kúwásə̀ “type of dance”

[^{ŋ}g]: voiced velar prenasalised stop as in:

Word initial position:^{ŋ}gíyə́m “water”; ^{ŋ}gə́fə́ “root”

Word medial position: fə̀:^{ŋ}kə̀lə̀:^{ŋ}gúwá “louse”; kə̀:^{ŋ}gə̀ŋ “type of dance”

[ᵑkp]: voiceless labio-velar prenasalised stop as in:

Word medial position: púnùwàtiːᵑkpàlə “drum”

c) - Aspirated stops:

Aspirated sounds are sounds which result from the superimposition of a raised voiceless glottal fricative ([h]).

[k^h]: voiceless velar palatalised stop as in:

Word initial position:k^hɛ̄ “dance”

Word medial position:bə̀k^hɛ́mə̀ “crabs”

[g^h]: voiced velar palatalised stop as in:

Word initial position: g^hú̧ “fire”

d) – Nasals

According to Katamba (1989), nasals are produced with the velum lowered so as to enable the air stream to escape partly through the nasal cavity. Nasals in fáŋinclude the following:

[m]: bilabial nasal as in:

Word initial position: mú “drink”; mū “one”

Word medial position: kúmɔ́ŋ “silent”; mɔ́msə́ “act”

Word final position: lúm “bite”; təm “shoot”

[ŋm]: labio-velar nasal as in:

Word initial position:ŋmə̀ “person”; ŋmɛ́m “children”; ŋmú “drink”

[n]: alveolar nasal as in:

Word initial position: nɛ̂ “mother”

Word medial position: nə́nə́ “go”

Word final position: tán “jump”

[ɲ]: palatal nasal as in:

Word initial position:ɲú “knee”; ɲàm “meat”

Word medial position:

[ŋ]: velar nasal as in:

Word medial position: féŋə́ “fang people”;fənsiŋə̀ “ring”

Word final position: gùŋ “sleep”; kɔ̀ŋ “love”; túwɔ́ŋ “ear”

e) - Fricatives

Fricatives are produced with the articulators coming together but leaving a very narrow airstream channel through which the air forces its way out. As a result of the narrowing of this air passage, a hissing noise is produced, hence the term “fricative”.

[f]: voiceless oral labio-dental fricative as in:

Word initial position: fú “hair”; fənə̂n “bird”

Word medial position: kəfənə̀ “type of dance”; kófə́ “bone”

[v]: voiced oral alveolar fricative as in:

Word initial position: víyə́n “tail”; výə́ “moon”

Word medial position: mbɛ̌vú “grand mother”

[s]: voiceless oral alveolar fricative as in:

Word initial position: sìm “hear”; sí “burn”; sɛ̌ “sand”

Word medial position: kúwə́sə́ “wipe”; wə́sə̄ “eye”

[ʃ]: voiceless oral palato-alveolar fricative as in:

Word initial position:ʃű “untie”; ʃí “down”

Word medial position: kúlə̄ʃú “traditional family”

[ʒ]: voiced oral palato-alveolar fricative as in:

Word initial position: ʒí “eat”

Word medial position:jùfəʒì “church”

f) - Prenasalised fricatives

These refer to sounds whose articulation involves the combination of a nasal and a fricative. Here are the prenasalised fricatives of Fáŋ:

[^{m}f]: voiceless labio-dental prenasalised fricative as in:

Word medial position:kə̀:^{m}fù̱n “hut”

g) - Affricates

Affricates involve more than one manner of articulation. They are produced with air pressure building up behind a complete closure and realised gradually giving the sounds qualities of a stop and a fricative.

[ʧ]: voiceless oral palato-alveolar affricate as in:

Word initial position: ʧùm “fish”; ʧù “sun”

[dʒ]: voiced oral palato-alveolar affricate as in:

Word initial position:dʒí “wear”;dʒíyə́ “mouth”

Word medial position:gîdʒùwàn “egg (of a hen)”;bədúʒwɔ̄m “goods”

[dz]: voiced oral palato-alveolar affricate as in:

Word initial position:dzì “elephant”;dzə̀ŋ“hunger”; dzɔ̌ŋ “be good”

[ts]: voiceless oral alveolar affricate as in:

Word initial position: tsé “stone”; tsí “live”

Word medial position: kətsə́sə̀ “yesterday”; tsətsá “fifteen”

h) - Prenasalised affricates

These refer to sounds whose articulation involves the combination of a nasal and an affricate.

[nʧ]: voiceless palato-alveolar prenasalised affricate as in:

Word medial position:kə̀:nʧù “cloud”

[nts]: voiceless alveolar prenasalised affricate as in:

Word initial position: ntsə̀ŋ “neck”

i) - Liquids

Also known as laterals, liquids are produced with the air from the lungs being obstructed by the contact between the tongue and the alveolar ridge. The air therefore flows out through the two sides of the tongue.

[l]: alveolar lateral as in:

Word initial position: lí “enter”; lìm “tongue”

Word medial position: lələ́ “stand” ; kəlɔ́fə́ “knife”

Word final position:

j) - Glides

Also known as approximants, they involve an articulation in which one articulator is close to another, but without the vocal tract being narrowed to such an extent that a turbulent airstream is produced.

[w]: voiced labiovelar approximant as in:

Word initial position: wân “leaf”; wósə̀ “eye”

[j]: voiced palatal approximant as in:

Word initial position: jân “teeth”; jú “house” ; júwə́ “snake”

During our data analysis, we observed that in the Fáŋ language, consonants do not occur in word final position except nasal sounds. All the same, we have found that the labiodentals nasal [ɱ] and the palatal nasal[ɲ] solely occur in word initial position while the velar nasal [ŋ] does appear only in word medial and word final position.

Again, we have come to see that there is a phenomenon of consonant clusters in the Fáŋ language, as the following data show it:

Example 1

1-a-	mɔ́msə́	“act”
1-b-	sə̀mnə́	“play”
1-c-	jə́glə́	“teach”
1-d-	fə̀nsiŋə̀	“ring”

But, this occurs only in surface forms where it is attested that there is a deletion of an underlying mid-low central unrounded vowel ([ə]) between the two consonants which stand together. This seems to happen with some but not all kinds of consonants as it is shown in the following data:

Example 2

2-a- téblə̀ “table”

ndìblə̀ “Mundabli, a neighbouring language”

2-b- fə̀kə̀lə̀gúá “lice”

mànátàlà “I threw”

We will come back to this phenemenon in chapter three.

The above sounds are summarized in the following phonetic chart:

Table 3: **Table of phonetic consonants**

	Bilabial	**Labio-dental**	**Inter-dental**	**Alveolar**	**Palato-alveolar**	**Palatal**	**Velar**	**Labio-velar**
Stop	p b		t d				k g	kp gb
Prenasalised stop	ᵐb		ⁿt ⁿd				ᵑk ᵑg	ᵑkp
Aspirated stop							kʰ gʰ	
Nasal	m		n			ɲ	ŋ	ŋm
Fricative		f v		s z	ʃ ʒ			
Prenasalised fricative		ᵐf						
Affricate			ts	dz	tʃ dʒ			
Prenasalised affricate			ⁿts		ⁿʧ ⁿdʒ			
Liquid			l					
Glide						j		w

II-1-1-2. Vowels

Vowels are defined broadly as sounds produced with a relatively free air passage. i.e. with little or no constriction at all anywhere along the vocal tract. They are specified in terms of height of tongue, position of tongue in the mouth and shape of lips.

- **Short vowels**

[i]: high front unrounded short vowel as in:
Word medial position: tín “cut”; kàbikə̄ “bad”
Word final position:kí “knowing”; bɔ́kí “bucket”

[ɨ]: high front unrounded short vowel as in:
Word final position:mbɨ̄ “earth”

[ɨ]: high central unrounded short vowel as in:

Word medial position: dɨm “dream”; “”

Word final position: fɨ “cause” ; fəʒɨ “God”

[u]: high back rounded short vowel as in:

Word medial position: lùm “bite”; gūŋ “sleep”

Word final position:kpú “mortar, dieing” ; jú “house”

[ụ]: high back rounded short vowel as in:

Word medial position:dụ̀bə̀ndɔ́ŋ “gaot”; tụ̀wò “toilet”

Word final position:ghú “fire”; ʃû “pot”

[o]: mid-high back rounded short vowel as in:

Word medial position: nókō “for”; tókó “night”

Word final position:bô “father” ;

[ɔ]: mid-low back rounded short vowel as in:

Word medial position:sɔ́m “palm”

Word final position:kúmɔ̀ “ten”; mbɔ̀ “loud”

[e]: mid-high front unrounded short vowel as in:

Word medial position: dèkɛ́ “stop”; féŋə́ “Fang people”

Word final position: fé “two, seeing”: kə̀kê “chair”

[ɛ]: mid-low front unrounded short vowel as in:

Word medial position: wɛ̂bô “aunt”

Word final position: bɛ̄ “build”

[ə] : mid-low central unrounded short vowel as in :

Word initial position:ə́ “to”

Word medial position: wân “leaf”; fə̀nə̂n “bird”

Word final position: kúmə́ “paint”; kófə́ “bone”

[a]: low central unrounded short vowel as in:

Word initial position:á “at, in”

Word medial position: fə̀ntáŋ “seed”; mbálə̀ “soup”

Word final position: bə̀gà “bed”; fə̀mə́sá “cat”

- **Long vowels**

[aː]low central unrounded long vowel as in:

Word medial position: kəgàːsàŋ “red”

[əː]mid-low central unrounded long vowel as in :

Word medial position: təːtə “six”

[iː]high front unrounded long vowel as in:

Word medial position:púnùwətiːᵑkpəlá “drum”

[uː]high back rounded long vowel as in:

Word medial position:kùːtə “soon”

[eː]mid-high front unrounded long vowel as in:

Word medial position:təwéːsá“culverts”

[oː]mid-high back rounded long vowel as in:

Word medial position:kòːtá “meet”

[ɛː]mid-low front unrounded long vowel as in:

Word medial position:mɛ̀ːsə́ “final”

[ɔː]mid-low back rounded long vowel as in:

Word medial position:kəwɔ̀ːⁿtə “book”

The above data shows that the Fáŋ language does not use vowels in the initial position. However, the exception can be seen with themid-low central unrounded vowel: [ə] and the low central unrounded vowel [a]. We refer respectively to the infinitive marker (á“to”) andthe preposition (**á** “at, in”).

Example 1

1-a-á já “t o give”

á lîkə́ “to run”

ə̀ nə̀nə́ “to go”.

1-b- á sɔ́kə̀lə̀ “in the evening”

in evening

It will be worth noticing from the above data that two short vowels occur in initial and final position (where no long vowel occurs). Also, we observed that the highest short vowels /į/, /ɨ/ and /ų/ do not have their equivalent or corresponding long vowels in Fáŋ. Moreover, there is also a phenomenon of gliding which occurs in Fáŋ. In fact, high and mid vowels glide in Fáŋ as illustrated below:

Example 2

2-a- júə́ → júwə́ “snake”

2-b- bə̀dúʒùɔ̄m → bə̀dúʒùwɔ̄m “goods”

2-c- víə́n → víyə́n “tail”

2-d- ᵑgíə́m → ᵑgíyə́m “water”

But, one should notice that the phenomenon of gliding will deeply be analysed in chapter three.

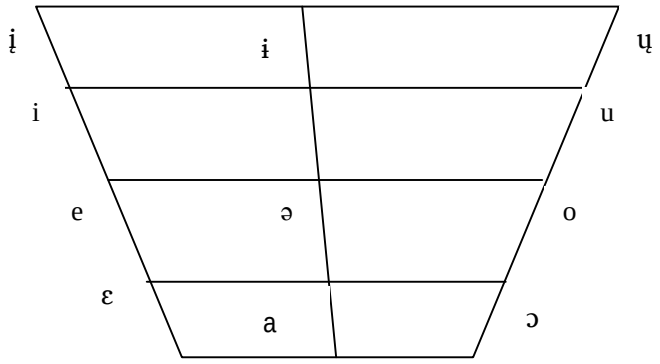
The phonetic vowel chart is therefore presented as follows:

Table 4: **Table of phonetic vowels**

		Front unround		Central unround		Back round	
		Short	Long	short	long	short	Long
High	Higher	į		ɨ		ų	
	Lower	i	i:			u	u:
Mid	Higher	e	e:	ə	ə:	o	o:
	Lower	ɛ	ɛ:			ɔ	ɔ:
Low				a	a:		

Now we deem it important to insist on the difference in terms of phonetic realisation between these vowesl, especially high vowels. Let us therefore exhibit in the chart bellow, the phonetic realisation of the above vowels in relation to the IPA canonical vowel.

Table 5: Phonetic realisation of Fáŋ vowels in relation to the IPA canonical vowel.



II-1-2. Phonemic inventory

This section is concerned with bringing out the different phonemes attested in Fáŋ. In the previous section, we made an inventory of the phones used in this language. The basic goal of this part is to come out with a systematic phonological analysis which aims at determining whether phonetically similar segments refer to the same phonological unit or not. Note that a phoneme can be viewed as a functional unit within a language that can help in bringing semantic contrast between segments (Essono, 2006).

II -1-2-1. Consonants

In a primary analysis, let us list out suspicious pairs, that is, phonetically similar sounds, both in terms of place of articulation and manner of articulation.

Table 6: Table of suspicious pair (consonants)

	Bilabial	Labio-dental	Inter-dental	Alveolar	Palato-alveolar	Palatal	Velar	Labio-velar
Stop	P b		t d				k g	kp gb
Prenasalised stop	ᵐb		ⁿt				ᵑk ᵑg	ᵑkp
Aspirated stop							kʰ gʰ	
Nasal	m		n			ɲ	ŋ	ŋm
Fricative		f v		s z	ʃ ʒ			
Prenasalised fricative		ᵐf						
Affricate			ts	dz	tʃ dʒ			
Prenasalised affricate			ⁿts		ⁿtʃⁿdʒ			
Liquid				l				
Glide						j		w

[p-b];[t-d];[k-g];[kp-gb];[ᵐb-ⁿt];[t-ⁿt] ;[b-ᵐb] ;[ᵑk-ᵑg];[ᵑk-k];[ᵑg-g];[m-ŋm];[m-n];[n-ɲ]; [ɲ-ŋ];[m-b];[ŋm-b];[ŋ-g];[f-v];[s-z];[z-n]; [ʃ- ʒ]; [kʰ-gʰ];[kʰ-k];[gʰ-g];[z-l];[j-ɲ];[ⁿʃ-ʃ]; [ts-t];[ⁿts-ts];[tʃ-dʒ];[tʃ-ⁿtʃ];[j-w], etc.

As we can observe, from the above cited phones one can bring out an important number of suspicious pairs. As a matter of fact one can point out other phonetically similar sounds from the phones listed above. Nevertheless, we deemed it not necessary to overload our analysis with the list of all these suspicious pairs.

In this consonant phonemic inventory, the second step is that of analyzing minimal pairs in order to contrast sounds in identical environments and to come out with distinct phonemes as inspired by Essono (2006). Note that we talk of minimal pairs when two segments are similar in all respects except in one sound. Therefore, phonemes in Fáŋ include:

[w-j] are opposed in word initial position as in:

wân"leaf" and jân"teeth"

Conclusion: /w/ and /j/ are distinct phonemes.

[t-ts] are opposed in word initial position as in:

tùm “land” and tsùm “fish”
Conclusion: /t/ and /ts/ are distinct phonemes.

[t-d] are opposed in word initial position as in:
dálə́ “forgetful” and tālə́ “swim”; dì “cry” and tí “palm kernel”
Conclusion: /t/ and /d/ are distinct phonemes.
[ʤ-d] are opposed in word initial position as in:
ʤí “feed” and dì “cry”
Conclusion: /ʤ/ and /d/ are distinct phonemes.

[ʤ-dz] are opposed in word initial position as in:
ʤí “feed” and dzì “elephant”
Conclusion:/ʤ/ and /dz/ are distinct phonemes.

[ʤ-ts] are opposed in word initial position as in
ʤí “roads” and tsí “early”
Conclusion:/ʤ/ and /ts/ are distinct phonemes.

[k-gb] are opposed in word medial position as
tə̀kú “heads” and tə̀gbú “ashes”
Conclusion: /k/ and /gb/ are distinct phonemes.
[k-kp] are opposed in word initial position as in:
Kú “head” and kpu “dieing”
Conclusion: /kp/ and /k/ are distinct phonemes.

[s-ts] are opposed in word initial position as in:
sū“wash” and tsù “day”
Conclusion: /s/ and /ts/ are distinct phonemes.

[s-ʃ] are opposed in word initial position as in:
sū“wash”; sû “soap” and ʃú “untie”
Conclusion: /s/ and /ʃ/ are distinct phonemes.

[s-ʒ] are opposed in word initial position as in:

sǐ“spend” and ʒí “eat”
Conclusion: /s/ and /ʒ/ are distinct phonemes.

[n-l] are opposed in word initial and in word medial positions as in:
nànə́ “go”, nánə̄ “draw” and nálə̄ “hide”; tánə̄ “collapse” and tálə̄ “throw”
Conclusion: /n/ and /l/ are distinct phonemes.

[t- n] are opposed in word initial position as in:
tēlə́ “stay” and nɛ́lə̄ “hide”
Conclusion: /t/ and /n/ are distinct phonemes.

[j- ɲ] are opposed in word initial position as in:
júə́ “house” and ɲúə́ “loose”
Conclusion: /j/ and /ɲ/ are distinct phonemes.

[ʃ- ʧ] are opposed in word initial position as in:
ʃű “untie”; ʃū “full” and ʧù “sun”
Conclusion: /ʃ/ and /ʧ/ are distinct phonemes.

[m-n] are opposed in word initial position as in:
mɛ́ “mould” and nɛ̂ “mother”
Conclusion: /m/ and /n/ are distinct phonemes.

[b-m] are opposed in word initial position as in:
bɛ́ “build” and mɛ́ “mould”
Conclusion: /b/ and /m/ are distinct phonemes.

[g-k] are opposed in word initial position as in:
gí “come” and kí “know”
Conclusion: /g/ and /k/ are distinct phonemes.

[m-ɲ] are opposed in word initial position as in:
ɲű “knee” and mű “drink”

Conclusion: /m/ and /ɲ/ are distinct phonemes.

[j-ʃ] are opposed in word initial position as in:
jú “house” and ʃú “untie”
Conclusion: /j/ and /ʃ/ are distinct phonemes.

[dʒ-ts] are opposed in word initial position as in:
dʒí́ “wear” and tsí́ “live”
Conclusion: /dʒ/ and /ts/ are distinct phonemes.

[ʒ-dʒ] are opposed in word initial position as in:
ʒí́ “eat” and ǧí́ “wear”
Conclusion: /ʒ/ and /dʒ/ are distinct phonemes.

[f-s] are opposed in word medial position as in:
fəfə́ “fly” and fəsə́ “remove”
Conclusion: /f/ and /s/ are distinct phonemes.

[mb-b] are opposed in word initial position as in:
mbɨ̄ “earth” and bī “walk”
Conclusion: /mb/ and /b/ are distinct phonemes.

[ŋm-m] are opposed in word initial position as in:
ŋmə̀ person and mə̀ I
Conclusion: /ɱ/and /m/are distinct phonemes.

[m-ŋ] are opposed in word final position as in:
ŋkúŋ“chief” and ŋkùm“belly”
Conclusion: /m/ and /ŋ/ are distinct phonemes.

The opposition of these sounds in identical or quasi identical environments has enabled us so far to bring out several phonemes. However it should be noted that there are still some sounds that were not attested as phonemes. Our present concern is to say, in the light of relevant arguments, whether they should all be considered as phonemes or not.

- **[v] versus [w]**

During our data collection we noticed that in the set [v-w], two sounds were involved in a free variation relationship. In fact, we observed that some words were pronounced either with [v] or with [w] by the Fáŋ native speakers without bringing any semantic disparity between the words in question. Some of those words include:

Example 1

1-a-	víyə́n	"tail"'
1-b-	wíyə́n	"tail"
1-c-	víyə́	"moon"
1-d-	wíyə́	"moon"
1-e-	víyə́ŋkə̀	"thirsty"
1-f-	wíyə́ŋkə̀	"thirsty"
1-g-	mbɛ̌vú	"grand mother"
1-h-	mbɛ̌wú	"grand mother"

From this set of words, it can be understood that the sound [v] can be replaced by the sound [w] both at initial and medial position without conveying any semantic difference. However, our major concern here is to determine which of the two sounds should surface on the phonemic chart. The following set of words brings a way out of the worry.

Example 2

2-a-	wósə̀	"eye"
2-b-	* vósə̀	"eye"
2-c-	wên	"leaf"
2-d-	* vên	"leaf"
2-e-	wé	"we"
2-f-	* vé	"we"

2-g- wám “shout”

2-h- *vám “shout”

Our main concern here is to choose one phone from each set that will stand for both sounds on the phonemic chart. It is worth mentioning that classical phonemics happens not to be efficient in solving such a problem since it fails to give any interpretation in this type of situation. Given the limit of classical phonemics in stating the standard phoneme in free variation, let us examine this issue in the light of Generative Phonology which offers a more relevant solution of the problem.

From the words listed above, one can assume that all the words originally pronounced with [w] become meaningless when they are rather articulated with a [v]. This gives the sound [v] a very limited distribution and given the fact that [w] has been opposed to [j] in identical context and attested as a phoneme, we deem it logical to maintain [w] as the standard phoneme rather than [v] which exclusively occurs in free variation with some restricted distributions.

- **Prenasalised sounds**

Let us consider the set of prenasalised consonants namely [^{n}t], [^{n}d], [^{ŋ}k], [^{n}g], [^{n}kp] [^{ŋ}kp], [^{m}f], [^{n}ts], [^{n}ʧ] and [^{n}ʤ]. Although it had not been possible for us to oppose these sounds to others in identical or quasi identical context, we have come to notice that they all occur both in word initial and medial position as it is the case with /mb/ which has been attested a phoneme above. By analogy with [^{m}b], /^{n}t/., /^{n}d/, /^{ŋ}k/, /^{n}g/, /^{n}kp/, /^{ŋ}kp/, /^{m}f/, /nts/ and /nʧ/ can be viewed as distinct phonemes.

Besides, while there are good reasons to believe that the above segments can be viewed as two separate sounds, we will argue that they are single units that consist of two separate segments. According to Catford (1977) too, prenasalized segments are single units. It is moreover very important to point out that in Fáŋ, nasals are not syllabic, since they are not tone-bearing units (in contrast to other Grassfield languages). Again, the large majority of words with prenasalized sounds are nouns. The few verbs which seem to occur with these segments are often transparently serial verbs (verbs made up via the combination of two different verbs. The first constituent verb may have a final nasal). Let us exemplify this in the data bellow.

a- á- ʧin "to cut"

á-tànà "to see somebody off"

á-sān "to shift"

á- ʃɨ "to go down"

á-jàn "to go"

á-tálā "to throw"

b- tín + tànà = á-tíntànà "to chop"

sān + ʃɨ = á-sānʃɨ "to lower"

jàn + tálá = á-jàntálá "to slice"

As said before, the examples in b- seem to exhibit the fisrt sound of the second component verb as being prenasalized when making up a serial verb. But this is not the case here, it rather shows that the sound in question is not prenasalized. This therefore demonstrates that Fàŋ does not use prenasalized sounds in verbs.

- **[p] vs [b]**

We have come to see that the sound [p] is absent within natural words in Fáŋ. Meanwhile, it is used only in borrowing or loan words. Nevertheless, given the fact that /b/ has earlier been attested as a phoneme, we therefore choose it as the reference phoneme which will appear on the phonemic chart.

- **[k^h] vs [k] and [g^h] vs [g]**

Again, from the suspicious pairs [k^h-k] and [g^h-g], we can also trace a complementary distribution relationship that relate [k^h] to [k] on the one hand and [g^h] to [g] on the other hand. This will equally be discussed in detail in the chapter which deals with phonological rules. Nevertheless, given the fact that /k/ and /g / have earlier been attested as phonemes, we therefore choose them as the reference phonemes which will appear on the phonemic chart.

- **[s] vs [z]**

From the suspicious pair [s-z]**,** we have to mention that during our data analysis we did not come across any minimal pair that opposes [s] to [z]. Nevertheless, given the fact that /s/ has earlier been attested as a phoneme, we therefore choose it as the reference phoneme which will appear on the phonemic chart.

The above analysis leads us to the following phonemic consonant chart of fáŋ:

Table 7: Table of phonemic consonants

	bilabial	Labio-dental	Inter-dental	alveolar	Palato-alveolar	palatal	velar	Labio-velar
Stop	b		t d				k g	kp gb
Prenasalised stop	ᵐb		ⁿt				ᵑk ᵑg	ᵑkp
Nasal	m		n			ɲ	ŋ	ŋm
Fricative		f		s	ʃ ʒ			
Prenasalised fricative		ᵐf						
Affricate			ts	dz	ʧ ʤ			
Prenasalised affricate			ⁿts		ⁿʧ ⁿʤ			
Liquid				l				
Glide						j		w

II -1-2-2. Vowels

As we did with the consonants, we will rely on minimal pairs in order to determine the vocalic phonemes of Fáŋ. This way of doing is sustained by Mutaka and Tamanji (2000: 37) when they state that *"An easy way to elicit the difference in quality between two vowels is the use of minimal pairs."*Therefore, let us list out suspicious pairs.

Table 8: Table of suspicious pair (vowels)

		Front unround		Central unround		Back round	
		Short	Long	Short	Long	short	Long
High	Higher	ị		ɨ		ụ	
	Lower	i	i:			u	u:
Mid	Higher	e	e:	ə	ə:	o	o:
	Lower	ɛ	ɛ:			ɔ	ɔ:
Low				a	a:		

[u-i];[e-i];[ə-ɔ]; [a-i]; [a-ɔ];[ụ-i]; [ị-a]; [i- ị]; [u- ɨ]; [i-ɨ]; [u- ụ]; [i-ụ]; [ị- u]; [o-ɔ];[ɛ-a];[e-ɛ]; [e-o] ;[ɛ--ɔ];[u-o];[o-ɔ];[ə-a];[e-ə];[ə-o];[ɛ:--ɔ:];[ə:-a:];[e:-ɛ:],etc.

- **Opposition in identical and quasi identical environments:**

  [u-i] are opposed in word medial position as in:

  lùm “bite” and lìm “tongue”

  Conclusion: /u/ and /i/ are distinct phonemes.

  [e-i] are opposed in word final position as in:

  ké “seeing” and kí “knowing”

  Conclusion: /e/ and /i/ are distinct phonemes.

  [ə-ɔ] are opposed in word final position as in:

  kúmə̀ “paint” and kúmɔ̀ “ten”

  Conclusion: /ə/ and /ɔ/ are distinct phonemes.

  [ə-a] are opposed in word medial position as in:

  ə́ “to” and á “and”; lə̄ŋ “welcome” and laŋ̄ “curse”; jə́ “sounds” and jā “give”

  Conclusion: /ə́/ and /a/ are distinct phonemes.

  [ɛ-ɔ] are opposed in word medial position as in:

  jɛ̃ “pains” and jɔ̃ “querel”

  Conclusion: /ɛ/ and /ɔ/ are distinct phonemes.

  [i-ɛ] are opposed in word medial position as in

  Límə̄ “blood” and lɛ́mə̄ “grow”; lēm “turn fufu” and līm “work”

  Conclusion: /i/ and /ɛ/ are distinct phonemes.

[u-o] are opposed in word final position as in
Wú“hear” and wō “up”; lū “refuse” and lō “fear”
Conclusion: /u/ and /o/ are distinct phonemes.

From the above analysis, we have brought out a good number of phonemes through the opposition of sound in identical and quasi identical contexts. However, there are still certain sounds that were not attested as phonemes. We now have to state, with the help of relevant arguments, whether they should all be given a phonemic status or not.

- **[i] vs [ɨ] or[u] vs [ɨ]**

From the suspicious pairs [i- ɨ] and [u- ɨ], we have to mention that during our data analysis we did not come across any minimal pair that opposes [i] to [ɨ] or [u] to [ɨ].Nevertheless, given the fact that /i/ and /u/ have earlier been attested as phonemes, we therefore choose them as the reference phonemes which will appear on the phonemic chart.

- **The phonemic status of [į] and [ų]**

The super-high vowels [į] and [ų] are the only sounds left and that have not yet gotten any phonemic status. Since we could not oppose these sounds to any other one in identical or quasi identical environments, that is, there is not any minimal pair which can enable us to establish [į] and [ų] as phonemes by contrasting it with other sounds. Also, they have a very limited distribution in the sense that they solely occur in word initial position and have no complementary relationship with /i/ and /u/ respectively. Moreover, when analysing the data, we have come to see that these vowels occur generally in monosyllabic verbs and grammatical morphemes like my, your, this and so on. But they rarely appear in nouns. Thus, these vowel are considered in this work as being a result of phonetic implementation as they solely occur in monosyllabic verbs (monosyllabicity is an environment in this language which let the pronounciation of sounds be very tense). Therefore, [į] and [ų] will not be considered as distinct phonemes in Fáŋ.

The phonemic status of long vowels

During our analysis, we have come to realized that the existing long vowels in this language appear solely in penultimate position which is not a relevant one for these sounds to

be considered as distinctive phonemes. Thus, this seems to be a good reason to believe that long vowels are not underlying in Fáŋ. For Mutaka and Tamanji (2000: 38) state that, *"allophonic length is sometimes manifested in penultimate position as in Swahioli, Chichewa, Kinande. Length is not contrastive in this position. This penultimate length is interpreted as the manifestation of stress in such languages."* Meanwhile, there are many other words in this language which do not have a penultimate long vowel. We will therefore have to consider these long vowels as marginalized phonemes, since their occurrences are very few in Fáŋ. This is illustrated in the following words:

Example 1

1-a-	təwé:sə́	"culverts"
	kəgà:sàŋ	"red"
	nə̀:nə̀	"eigth"
	kù:tə̀	"soon"
1-b-	nə̀nə́	"go"
	nánə̄	"draw"
	nálə̄	"hide"
	tánə̄	"colaps"
	tálə̄	"throw"
	dèkɛ́	"stop"
	kúmə̀	"paint"
	kúmɔ̀	"ten"
1-c-	kəwɔ̀:ntə̀	"book"
	kə̀:ntʃù	"cloud"
	kə̀:ᵑkúwásə̀	"type of dance"

From the above data, we deem it more relevant to consider that there is a case of compensatory lengthening in Fáŋ, especially before the prenasalized sounds as shown in **1-c-**. This will naturally be explored in chapter three. Besides, we also have to recall that we previously observed that the highest short vowels /ị/, /ɨ/ and /ụ/ do not have their equivalent or corresponding long vowels in Fáŋ. This may be another reason why these high vowels are not treated as underlying vowels in this language.

Here is the phonemic vowel chart of Fáŋ:

Table 9: Table of phonemic vowels

- **Short vowels**

		Front unround	Central unround	Back round
High	higher			
	lower	i		u
Mid	higher	e	ə	o
	lower	ɛ		ɔ
Low			a	

- **Long vowels**

		Front unround	Central unround	Back round
High	higher			
	lower	i:		u:
Mid	higher	e:	ə:	o:
	lower	ɛ:		ɔ:
Low			a:	

II-2. Distinctive Features Matrices and Justification

This part is concerned with the distinctive features matrices of the various sounds that are used in Fáŋ. This aims at bringing out properties that the sounds used in Fáŋ have in common on the one hand and those which distinguish them on the other. This task is achieved following the Standard Generative Phonology framework which happens to be the more appropriate tool for it. Note that the term “distinctive feature” refers to the different sound properties that make sounds with respect to each other: Philip Carr (1993:305) speaks of them in terms of *Feature Specifications.*

II-3-1. Consonants

The consonant distinctive feature matrix used in Fáŋ is presented as follows:

- Sonorants :

Sonorants are [± cons] and [±syl]

Table 10: Table of sonorants

	Cons.	Syll.	Cont.	Nas	Lat	Ant.	Cor.	Back
m	+	-	-	+	-	+	-	-
ɱ	+	-	-	+	-	+	-	-
n	+	-	-	+	-	+	+	-
ɲ	+	-	-	+	-	-	-	-
ŋ	+	-	-	+	-	-	-	+
l	+	-	+	-	+	+	+	-
j	-	-	+	-	-	-	+	-
w	-	-	+	-	-	-	-	+

- **Obstruents**

In Fáŋ like in other languages, obstruents are [+ cons.], [- son] and [- syll].

Table 11: Table of obstruents

	Voice	Cont.	Ant.	Cor.	Back	Constr.	Strid
p	-	-	+	-	-	-	-
b	+	-	+	-	-	-	-
t	-	-	+	+	-	-	-
d	+	-	+	+	-	-	-
k	-	-	-	-	+	-	-
g	+	-	-	-	+	-	-
f	-	+	+	-	-	-	-
v	+	+	+	-	-	-	-
s	-	+	+	+	-	-	+
z	+	+	+	+	-	-	+

ʃ	-	+	-	+	-	-	+
ʒ	+	+	-	+	-	-	+
dʒ	+	+	-	+	-	-	+
ts	-	-	+	+	-	-	+

II-3-2. Vowels

Vowels are [+ syll], [+ son] and [-cons]

Here is the distinctive feature matrix of the vowels attested in fáŋ :

Table 12: Table of vowels

	High	**Low**	**Back**	**Round**	**ATR**
į	+	-	-	-	+
i	+	-	-	-	-
ɨ	+	-	-	-	+
ụ	+		+		+
u	+	-	+	+	-
e	-	-	-	-	+
ə	-	-	-	+	+
o	-	-	+	+	+
ɛ	-	-	-	-	-
ɔ	-	-	+	+	-
a	-	+	-	-	-
i:	+	-	-	-	+
u :	+	-	+	+	+
e :	-	-	-	-	+
ə:	-	-	-	+	+
o:	-	-	+	+	+
ɛ:	-	-	-	-	-
ɔ :	-	-	+	+	-

a :	-	+	-	-	-

II-3-3. Justification for distinctive features

Consonantal [± cons]: this feature permits to distinguish between consonants, glides and vowels.

Syllabic [± syll]: this feature brings out the disparity between consonants and vowels.

Sonorant [± son]: this feature aids in regrouping vowels, approximants, nasals and liquids under the same label.

Continuant [± cont]: this feature permits to distinguish fricatives and other nasalised sounds and exclusively oral sounds.

Nasal [± nas]: this characteristic enables to bring out the difference between nasals or nasalised sounds and exclusively oral sounds.

Lateral [± lat]: this is used to refer to the lateral liquid [l].

Anterior [±ant]: this quality enables to range labial and alveolar sounds in a natural class.

Coronal [±coronal]: this captures alveolar, palato-alveolar and palatal sounds into the same natural class.

High [± high]: this trait is relevant in the distinction between high vowels and other vowels.

Back [±back]: this property enables to distinguish front and back vowels.

Constricted [± const]: this permits to capture implosives into a natural class.

Strident [± strid]: this helps in regrouping labio-dentals, alveolar and palato-alveolar fricatives in the same class.

Round [±round]: this feature enables to distinguish between round and unrounded vowels.

Long [±long]: this quality permits to bring out the difference between long and short vowels.

ATR [±ATR]: this feature aids in distinguishing between tense and lax vowels.

Low [±low]: this feature permits to differentiate low vowels from other vowels.

Voice [±voice]: this property enables to distinguish between voice and voiceless consonants.

Conclusion

In this chapter, our main concern was to study the sound patterns of the Fáŋ language. In doing so, we came out with the various phones and phonemes that are attested in Fáŋ. These sounds were later described in terns of distinctive features matrices. In the following chapter, we will be dealing with the syllabic structure of Fáŋ and the different phonological processes that this language exhibits.

CHAPTER III: THE PHONOLOGICAL PROCESSES

III-0. Introduction

The present section aims at analyzing the different phonological processes that are observed inFáŋ in the light of Standard Generative Phonology. In doing so, we intend to come out with phonological rules which will be given both prose and formal statements. Other aspects such as rule ordering and sample derivation will also be discussed in this part. Nevertheless, it is worth noting that "there are phonological processes and/or constraints which take the syllable as their domain of application" (Mohanan, 1995). However, there has been increasing evidence that the exclusion of the syllable is a serious omission in generative phonology and that many phonological rules only receive appropriate formulation in terms of this notion. Since this analysis of phonological processes demands relevant information about the syllabic structure of the language in study, let us explore the syllable structure of Fáŋ.

III-1. The syllable structure

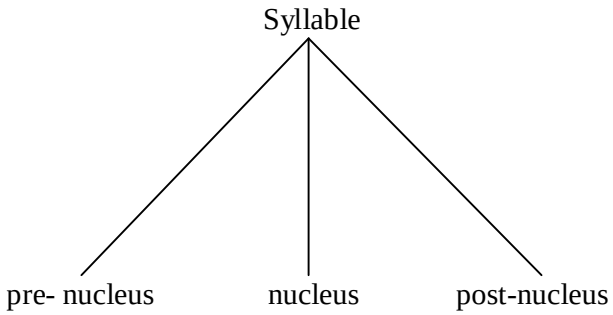
The syllable is defined according to the different branches of linguistics namely, phonetics, phonology, morphology and syntax.

As far as phonology is concerned, the syllable is defined in accordance with the different elements which constitute it. Indeed, it is a linguistic unit which is larger than the sound and shorter than the word. Thus, the syllable is generally referred to as an acceptable combination of sounds in a given language. Technically, this combination bears the name of phonotactics. It is made up of three major parts:

- The pre-nucleus
- The nucleus
- The post-nucleus

This is shown in the following diagram:

Diagram 2



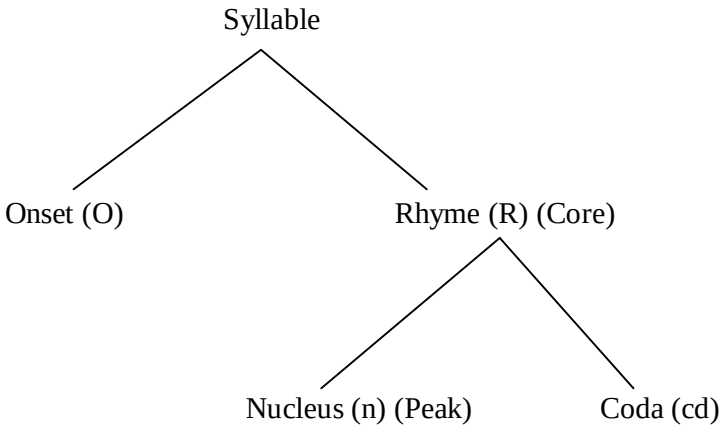
Nota bene: The syllabic nucleus can also be occupied by a semi-vowel or a syllabic consonant. Within the researches carried out on the syllable, many theories have been developed in order to define the syllable, to propose its representation and to give the structure of a syllable. Thus, many models of representation have been proposed among which there are the following:

- **The flat model**
- **The model of the rime**

Hocket (1965) proposes a representation with all the three major elements of the syllable. Here, the syllable is made up of two main parts:

- The onset (O) which is generally occupied by a consonant (C).
- The rhyme (R) which consists of a nucleus (n) and a coda (cd). The nucleus is generally occupied by a vowel whereas the coda is generally occupied by a consonant. This can be represented in the following diagram:

Diagram 3:



In the structure of the syllable, the nucleus is the most stable element. It can even make up a whole syllable alone. Languages usually function with two types of syllables:

- The open syllable that ends in a vowel
- The close syllable that ends in a consonant.

In some languages, there are syllables which are made up of groups of vowels and groups of consonants.

Speaking about the syllable, Mohanan (1986) states that,

> "*syllable formation consists of the following operations:* ***(a)****determining the number of syllables in a string and assigning segments to syllables,* ***(b)*** *determining whether a segment is a head or a nonhead, and* ***(c)*** *building the syllable tree on the segments, obeying the principles that define well formed onsets and rimes."*

Now let us examine the syllabic structure of**Fáŋ**.

III-1. The syllable structure of Fáŋ

In Fáŋlike in almost all the languages, there are two types of syllables as we said above: the open syllable and the close syllable, the nucleus being of course a vowel.

In Fáŋ, we can have monosyllabic, dissyllabic or polysyllabic structures. Therefore, the following structures do exist in Fáŋ: V-, CV-, CVC-, CGV-, CGVC, the CV structure being the core syllable.

III-1-1. The syllabic structure V-

In Fáŋ, there are two types of V- structure: the verbal prefix **ə́-** and the preposition **á-**.

a) -The verbal prefix ə́-

Example1

1-a- ə́- lí "to enter"

1-b- ə́- bélə "to read"

1-c- ə́- təm "to shout"

1-d- ə́- tấn "to jump"

As the examples above the infinitive marker (to) of this language is the morpheme **ə-** which always appears before the verb steem. This is of course treated as a separated syllable and not as a given phoneme.

b) - The preposition/ the conjunction á-

Example 2

2-a- ŋ̀ìm kpû bədó nə- ntélə á bəfàŋ

people my also Past settle in befang

"My people also settled in befang"

2-b- wə tá- gī á nsɔ́kələ

he Future come in evening

"He will come in the evening"

2-c- bá nè- nánə á wósəmē

We Past go tomarket

"We went to the market"

2-d- tə n- kə́ límkpə ŋyɛ̀ á təkô bəkàká

we Pres. do work farm and harvest cocoa

"We practice agriculture and we produce cocoa"

As the examples above show, a- is used as a preposition in **2-a-, 2-b-,** and **2-c**-, since it has in these ulterances, the meaning of **"in"**. But the same morpheme means **"and"** in **2-d-** where it is treated as a co-ordinating conjunction.

More over, when listening to the ulterances of Fáŋ native speakers, we realized that there is a pause after the **ə-** and before the **a**- above. So **ə-** and **a**- should be treated here as separated syllables. Therefore it should not be assimilated to the vocalic phonemes that we listed in chapter two.

III-1-2. The syllabic structure CV-

This structure is made up of two elements: a consonant and a vowel. This syllabic structure is quite usual in Fáŋ. This is illustrated in the following examples.

Example 3

3-a- fú	"hair"	**3-b-** ə́- já	"give"
3-c- mbɔ̀	"cloud"	**3-d-** ə́- bī	"walk"
3-e- dʒì	"path"	**3-f-** kə́sə́	"spoon"
3-g- fə̀- nsìŋə̀	"ring"	**3-h-** ŋə̀tɛ̂	"adult"
3-i- tsâ bá tsā	"five by five"		

The data above show that from **3-a-** to **3-e-,** words are just consisted of one syllable having the CV- structure. But from **3-f-** to **3-i-,** words are made up of two or three syllables of the same kind (CV-). For example, fə̀- nsìŋə̀ "ring" in **3-g-,** is made up of three syllables which are: **fə̀-**, **nsì-**, and **-ŋə̀**

III-1-3. The syllabic structure CVC-

The structure CVC- is made up of three elements: a consonant, a vowel, and a consonant. This is illustrated below.

Example 4

4-a-ɲàm "meat" **4-b-**ʧùm "fish"

4-c-lìm"tongue" **4-d-**wán"child"

4-e-ə́- gùŋ "sleep" **4-f-**ə́- tán" jump"

4-g-ə́- tə́m "shoot"

III-1-4. The syllabic structure CGV-

The structure CGV- is made up of three elements a consonant, a glide and a vowel. This is illustrated below.

Example 5

5-a-	lyə́	"smoke"
5-b-	dwàlə́	"star"
5-c-	twò	"toilet"

5-d-twə̂tú “tomorrow”

5-e- jwə́ “flesh”

5-f- bə̀dʒjə̂ŋ “tall”

III-1-5. The syllabic structure CGVC-

The structure CGVC- is made up of four elements: a consonant, a glide, a vowel, and a consonant. This is illustrated below.

Example 6

fù:m = bwə́n “type of dance”

bə̀d = ʒjə̂ŋ “tall”

It is important to recall here that, these two last syllabic structures (**CGV-** and **CGVC-**) are the results of the phenomenon of glide formation that we will tackle later on in this work.

III-1-6. Ambiguous sequences

Ambiguous sequences happen to be a major source of worry in the analysis of the syllabic pattern of Fáŋ.They are said to be doubly articulated consonants according to Tadadjeu & Sadembouo (7979). As a matter of fact, sounds such as labio-velar stopsand prenasalised turn to be puzzling sequences that require an appropriate interpretation. This interpretation is presented in the form of a series of hypotheses which will either be validated or not.

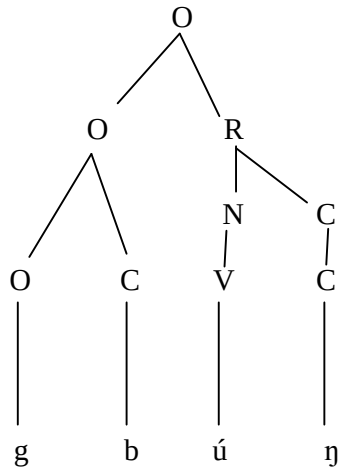
- **Labio-velar stops**

These refer to the sounds[kp]and [gb] which can be considered either as clusters of two distinct sounds or as single units.

Hypothesis :

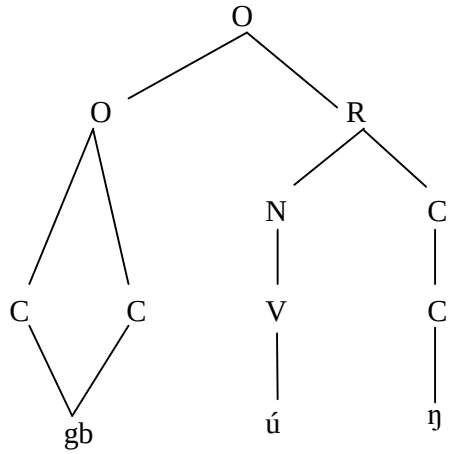
[kp]and [gb] are clusters of two distinct sounds, that is, [k] + [p] on the one hand and [g] + [b] on the other. Consequently this means that a word like gbúŋ“mountain”has a CCVC- structure as illustrated below:

Diagram 4:



Nevertheless, we have noticed that in Fáŋ, there is no underlying unambiguous consonant clusters (such as [gr], [dl], [kr] for example) which can also account for the same syllable structure. To add, Mutaka and Tamanji (2000) state that "*these sounds are unit phonemes and not consonant clusters*". Therefore, kp and gb cannot be considered as clusters of two distinct consonants. Here thus is the suitable syllable structure forgbúŋ"mountain"

Diagram 5:

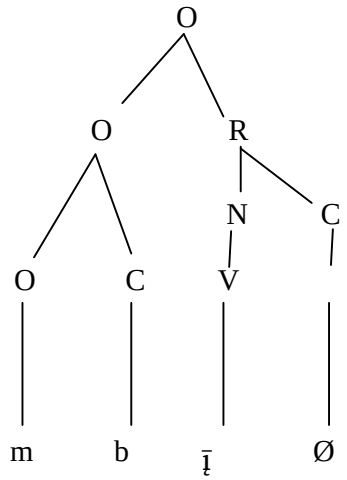


Prenasalised consonants

Hypothesis :

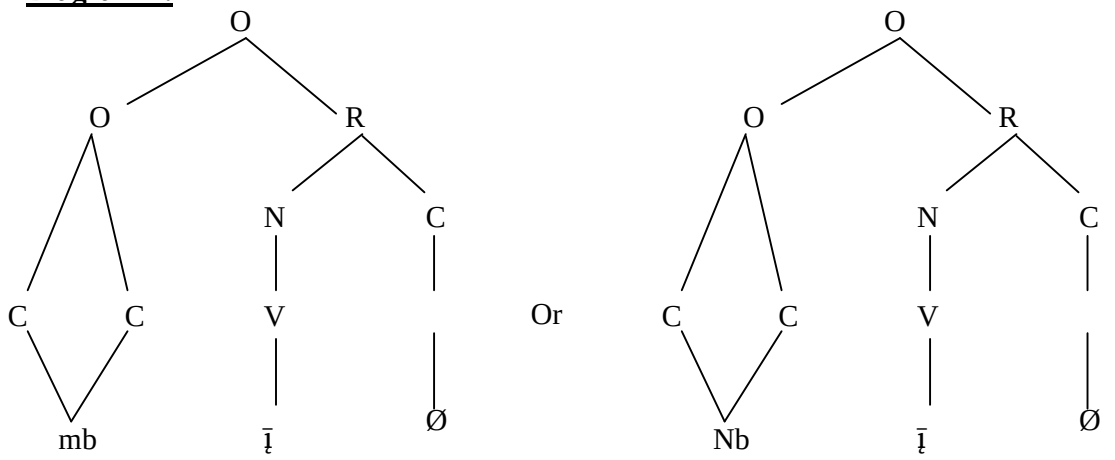
Prenasalised sounds such as [^{m}b], [^{n}t], [^{ŋ}g] and [^{ŋ}kp] are clusters of distinct sounds. As such they should be written as follows: [mb], [nt], [ŋg] and [ŋkp]. Consequently, a word like mbɨ̄ "earth" bears a CCV-syllable structure as represented below:

Diagram 6:



However, this hypothesis cannot hold because, as it was the case with labio-velar stop, there are no underlying unambiguous consonant clusters that can account for the same syllable structure. Thus, as said in **II -1-2-1**, prenasalysed sounds should therefore be interpreted as single units with a CV- structure which is similar to a NCV- structure. The result is the following structure for the wordmbɨ̄ “earth”:

Diagram 7:



We can conclude from the above analysis thatthe Fáŋlanguage does have both open and close syllables. Again, when we examine the structure CVC-, we come to realize that the part of the syllable known as the post-nucleus is generally occupied by a nasal sounds. Indeed, it was already mentioned in chapter II that, apart from nasals, consonants do not occur in word final position in this language.

III-2. The structure ofthe morpheme in Fáŋ

According to Jensen (1990), the morpheme is the basic or the fundamental unit of the word. He describes it as follows: *"morphemes are primarily structural units and they are typically but not necessarily meaningful."*

John Lyons (1984) defines the morpheme as a *"minimal form which can either be free (has meaning of its own) or bound (has no meaning of its own and must be linked to ether parts of the words to have meaning)."*

From the above definition, we retain that there are two categories of morphemes: free morphemes and bound ones. As it is shown in the definition, free morphemes can stand as words whereas, bound morphemes are bound to free ones (they cannot solely constitute a word). Prefixes, infixes and suffixes are usually bound morphemes.

In its form, the morpheme can be similar to the syllable, for it can be made up of one sound or of a group of sounds. However, as opposed to the syllable, the morpheme can have a full lexical meaning.

Now, let us examine the different structures morphemes can have in fáŋ. We can therefore get the following structure:

V

C

CV

CVC

CV. CV

CV. CVC

The structure V is made up of a vowel (á- as in *á- tán "to jump*").The structure C is constituted by a consonant (f-, m- as in *f- ànsìŋà "ring"* and *m- ànsìŋà "rings"*; n-). It is worth noticing here that **f-** and **m-** participate in the formation of the singular and the plural when **n-** indicates the present tense. The structure CV concerns prefixes which also participate in the formation of the singular and the plural in Fáŋ (fà-, mà-, kà-, bà- and tà-, as in *fà-ngúfà*

“umbrella”, mà-ngúfà “umbrellas”; kà-lɔ́fá “knife”, bà-lɔ́fá “knives”; –kásá “spoon”, tà-kásá“spoons”).

Most often, other structures lik CVC, CV.CV, and CV.CVC are found in verbs and nouns roots. This is illustrated in the data below.

Example 5

5-a--	tókó	“night”
	bà-tókó	“nights”
5-b-	kà-kàŋàm	“horse”
	bè-kàŋàm	“horses”
5-c-	kpɛ́ŋ	“wife”
	bà-kpɛ́ŋ	“wives”
5-d-	á-tām	“shoot”
5-e-	á-dűŋ	“sit”

III-3. The structure ofthe word in Fáŋ

According to Encarta (2009), the word is a

> “ *unité de langue consistant en un ou plusieurs sons à laquelle est associé un sens et dont la représentation graphique est comprise entre deux blancs* ”

The word can be viewed as made up of morphemes or syllables. Thus, since we have already analyzed the structure of the syllable and that of the morpheme, we think we have partly studied within this analysis, the structure of the word. Because of this reason, we will only study here tri/polysyllabic words.

III-3-1. Tri/polysyllabic words

We are dealing here with words which have more than two syllables. The following structures do exist in Fáŋ:

a) - CV.CV.CV, CV.CV.CVC (three syllables)

b) - CV.CV.CV.CV, CV.CV.CV.CVC (four syllables)

c) - CV.CV.CV.CV.CV, CV.CV.CV.CV.CVC (five syllables) and even more.

It is worth mentioning here that a good number of tri/polysyllabic word found inFáŋare compound nouns as it can be seen below.

Example 6

6-a-	fəmásá	"cat"
6-b-	kətsásə	"yesterday"
6-c-	kəᵑkʃjàŋ	"basket"
6-d-	jù-fəʒì	"church"
6-e-	jù-bəkásə	"prison"
6-f-	tókó-fəntīn	"midnight"
6-g-	ʧùnə-ʧùnəjū	"grand parent"
6-h-	kóləm-ə-gəsáŋ	"red oil"
6-i-	təkú-tətətúmə	"head of state"

As one can observe in the data above, words with more than three syllables are generally compound words in this language. That is, simple words which we consider as basic are usually trisyllabic in Fáŋ (note that, components of compound words are separated here by a hyphen). Moreover, it is worth noticing verbs with more than two syllables are generally serial verbs (a serial verb being the association of two different verbs) in this language. Examples of those serial verbs are:

V1	ə- wú	"to strip"
V2	ə- fəsə	"to remove"
SV (V1 + V2)	ə- wúfəsə	"to strip off"

V1	ə- sínə	"to turn"
V2	ə- jā	"to give"
SV (V1 + V2)	ə- sínəjā	"to give back"

V1	ə- sínə	"to turn"
V2	ə- gɛ̀nə	"to say"
SV (V1 + V2)	ə- sínəgɛ̀nə	"to reply"

Now, let us provide the syllabic representations of the following trisyllabic words: fəməsá"cat" and Kəŋkíàŋ"basket"

Diagram 8:

fəməsá « cat »

Kəŋkíàŋ " basket''

III-4. Phonological processes

Generally, sounds tend to be conditioned by the environments they are found in and these sounds' behavior can be predicted by rules. This rule-governed characteristic of sounds refers to the concept of phonological process. Several segmental processes take place, so as to maintain the preferred syllable structure of the language. Like other languages, Fáŋ is rule-governed. An analysis of this language reveals twelve phonological processes which will be taken up in turn below.

III-4-1. Gliding

Glide formation is one of the most regular and common segmental processes found in this language. This is equally due to the refusal of this language to accept vowel clusters as is the case for vowel deletion. The difference between the two is that, while vowel deletion deals with non-high vowels, glide formation deals with high vowels. That is to say, in a V_1V_2 sequence, V_2 can only be deleted if V_1 is a non-high vowel. On the other hand, in a V_1V_2 sequence, if V_1 is high, vowel deletion (of V_2) cannot take place. Rather, V_1 devocalizes into a glide in the presence of V_2 which must be a non-high vowel. Hence, glide formation or devocalization is a process whereby a high vowel devocalizes into a semi–vowel otherwise known as a glide, when it is followed by a non-high vowel. Mutaka (200:71) states it in the following terms: *"Gliding often occurs with high vowels that leave their slot and become part of a consonant onset."*The data below reveals some of the words in which glide formation is present.

líá	[lyá]	"smoke"
dùàlá	[dwàlá]	"star"
tụ̀ò	[twò]	"toilet"
túàtú	[twâtú]	"tomorrow"
júá	[jwá]	"flesh"
bədʒíəŋ	[bədʒjâŋ]	"tall"

From this data we can observe that high vowels are transformed into the corresponding glide when preceded by a vowel. That is, /i/ and /u/ glide into /y/ and /w/ respectively before a vowel. This process gives rise to the subsequent phonological rules:

Rule 1:

Prose statement:

The high front unrounded vowel /i/ becomes the palatal glide /j/ when occurring before a vowel.

Formal statement:

$$\begin{pmatrix} +high \\ -back \\ -round \end{pmatrix} \longrightarrow \begin{pmatrix} -syll \end{pmatrix} \; / \; \underline{\quad} \; \begin{pmatrix} +syll \\ -cons \end{pmatrix}$$

Rule 2:

Prose statement:

The high back rounded vowel /u/ becomes the labio-velar glide /w/ when appearing before a vowel.

Meanwhile, it is worth noticing that the above phonological process can be analyzed as a devocalization process. Indeed, when vowels change to glides, they are said to have devocalized. This phenomenon which is common in Cameroonian languages, demonstrates that the high vowels of a sequence of two vowels (usually V1 in Fáŋ), often devocalize. The back (**+** round) vowels usually labialize while the front (- back) vowels palatalize. Moreover, it seems that devocalization / gliding occurs in order to maintain and restore the canonical CV structure of this language that allows C(G)V(C) not C(V)V(C) as it is shown in the data analyzed above.

Formal statement:

$$\begin{pmatrix} +high \\ +back \\ +round \end{pmatrix} \longrightarrow \begin{pmatrix} -syll \end{pmatrix} \; / \; \underline{\quad} \; \begin{pmatrix} +syll \\ -cons \end{pmatrix}$$

It should be noted that these two rules refer to the same phonological process. Therefore, we will be missing linguistically significant generalization if we were stating them as two separate rules. As such, we can collapse R1 and R2 into a single phonological rule that will account for both as follows.

Prose statement:

A high vowel becomes the corresponding glide when found before a vowel.

Formal statement:

$$\begin{pmatrix} +syll \\ +high \\ \alpha back \end{pmatrix} \longrightarrow \begin{pmatrix} -syll \end{pmatrix} \; / \; \underline{\quad} \; \begin{pmatrix} +syll \\ -cons \end{pmatrix}$$

Let us exemplify this process by doing the derivation of the following words: líə́ “smoke”, dùàlə́ “star” and tʊ̨ò “toilet”.

UR	/	liə	dualə	tʊ̨o	/
Gliding		y	w	w	
PR	[	lyə	dwalə	two	]

III-4-2. Elision

This can be defined as a process whereby a segment (vowel or a consonant) is deleted within a given context. This phenomenon aims at restoring the syllabic pattern of a language in case there are ill-formed syllables.

III-4-2 -1. Vowel Deletion

Vowel Elision is defined by Essono (2006) as:

« Un processus phonologique par lequel un segment prononcé dans certains contextes, s’élide dans d’autres environnements prévisibles ».

Let us consider the behaviour of the central round vowel /ə/ and that of the mid-low back rounded vowel /ɔ/ in the data below:

a-	/mɔ́mə́sə́/	[mɔ́msə́]	“act”
	/sə̀mə́nə́/	[sə̀mnə́]	“play”
	/jə́gə́lə́/	[jə́glə́]	“teach”
	/tébə̀lə̀/	[téblə̀]	“table”
	/ndìbə̀lə̀/	[ndìblə̀]	“Mundabli, a neighbouring language”
	ə́-gɔ̄nə̀		“to be sick”
	gɔ̄ntə̀lə́		“sickness”
	dʒə́mə̄		“happy”

	dʒə́mnənə́		"happyness"
	/fəmágɔlɔ/	[fəmáglɔ]	"mango"
	/məmágɔlɔ/	[məmáglɔ]	"mangoes"
b-	fəkəlàgwá		"lice"
	mənətàlə		"I threw"

From the above examples, one can observe that the central round vowel/ə/ and the mid-low back rounded vowel /ɔ/ are deleted in **a-**, but not in **b-**. The environment which triggers this phenomenon is the following: the deleted vowel should be preceded by a voiced consonant and it should be a penultimate vowel. Notice that the presence of a glide afther such a vowel makes it not undergo the deletion and yet be [3]transparent or immune to vowel deletion. This is why the examples in **b-** are considered as exceptions to this process. Also, as said earlier, one should know that consonant clusters are not underlying in this language. We therefore have to account for it with the following rules:

Rule 1:

Prose statement:

The central round vowel/ə/ is deleted between a voiced consonant and another consonant in the penultimate position.

Formal statement:

$$\begin{pmatrix} +syll \\ -high \\ -front \\ -back \\ +ATR \end{pmatrix} \longrightarrow \text{ø} \;/\; \begin{pmatrix} +cons \\ +\text{voice} \end{pmatrix} \_\_ \begin{pmatrix} +cons \end{pmatrix} \text{V}$$

Rule 2:

Prose statement:

The mid-low back rounded vowel /ɔ/ is deleted between a voiced consonant and another consonant in the penultimate position.

[3] We owe the words *transparent* and *immune* to Mutaka and Tamanji (2000:57 &68).

Formal statement:

$$\begin{pmatrix} +syll \\ -high \\ +back \\ -ATR \end{pmatrix} \longrightarrow \text{ø} \;/\; \begin{pmatrix} +cons \\ +\text{voice} \end{pmatrix} \_\_ \begin{pmatrix} +cons \end{pmatrix} \text{V}$$

Again, we should mention here that these two rules refer to the same phonological process. Therefore, we will be missing linguistically significant generalization if we were stating them as two separate rules. As such, we can collapse R1 and R2 into a single phonological rule that will account for both as follows.

Rule :

Prose statement:

A vowel is deleted between a voiced consonant and another consonant in the penultimate position.

Formal statement:

$$\begin{pmatrix} +syll \end{pmatrix} \longrightarrow \text{ø} \;/\; \begin{pmatrix} +cons \\ +\text{voice} \end{pmatrix} \_\_ \begin{pmatrix} +cons \end{pmatrix} \text{V}$$

It is worth indicating here that the above phenomenon operates generally within the word, but not in word-boundary position.

Like devocalization (glide formation), the motivation for this rule is to do away with undesirable situations in relation to the internal structure of words, so as not to violate the preferred syllable structure of the language. The derivation of the following words exemplifies this process: fəkàlàgúá “lise”, mànátàlà “I threw”, jáglá “teach”, fəmáglɔ̀ “mango”.

UR	/ fəkàlàgúá	fəmágɔ̀lɔ̀	mànátàlà	jágálá /
Gliding	w			
Vowel deletion	———	Ø	———	Ø
PR	[fəkàlàgwá	fəmáglɔ̀	mànátàlà	jáglá]

III-4-2 -2. Consonant Deletion

- **Nasal Deletion**

In Fáŋ, two nasals cannot stand together, especially in word-boundary contexts.

This is illustrated in turn below:

a-	ɲàm	"meat"
	sɔ́m	"palm"
	ndʒə̄m	"water"
	gbúŋ	"mountain"
	mànân	"birds"
	mân	"this"
	má	"of"
	Wân	"tooth"
	Fàmásá	"cat"
	màmásá	"cats"
	kìm	"monkey"
	fànân	"bird"
	wán	"child"
	ŋmɛ́n	"children"
	ŋkúŋ	"king"
b-1-	ɲàm + mànân = ɲàmànân	"birds meat"
	ndʒə̄m + má + gbúŋ = ndʒəmágbúŋ	"the water of the mountain"
	ndʒə̄m + mân = ndʒəmân	"this water"
	wán + ŋkúŋ = wáŋkúŋ	"prince"

	ŋmɛ́n + ŋkúŋ = ŋmɛ́ŋkúŋ	"princes"
	wán + ɲū = wáɲū	"my son"
	ɲàm + ŋgbú = ɲàŋgbú	"my meat"
	sɔ́m + ŋgbú = sɔ́ŋgbú	"my palm"
b-2-	Wân + fəməsá = Wânfəməsá	"cat's tooth"
	ɲàm + kìm = ɲàmkìm	"monkey's meat"
	ɲàm + fənân = ɲàmfənân	"bird's meat"

The set of words in **a-** is made up of word in isolation. Those in **b-1-** and **b-2-** are made up of words in collocation. As one can see in **b-1-** , the nasal of the first item is deleted when it preceeds another nasal. It does not disappear in **b-2-**, for it is not followed by another nasal but by a defferent sound.

Like the others, the motivation of this process is that of preserving the syllable structure of the language. This rule is seen to apply only to nasals and precisely in a situation where a nasal precedes another nasal. It therefore states that a nasal is deleted when it is followed by another nasal. Precisely and according to the above, the deletion of the bilabial nasal occurs when it is preceded by another bilabial nasal. So the following phonological rule accounts for this phenomenon:

Rule :

Prose statement:

A nasal is deleted when preceding another nasal in word boundary position.

Formal statement:

$$\begin{pmatrix} +\text{cons} \\ +\textit{nas} \end{pmatrix} \longrightarrow \textbf{ø} \;/\; \_\_ \;\; \# \;\; \begin{pmatrix} +\text{cons} \\ +\textit{nas} \end{pmatrix}$$

The derivation of the following items shows the application of the preceeding rule: wânfəməsá "cat's tooth", wáŋkúŋ "prince", ɲàmkìm "monkey's meat", ɲàmənân "birds meat".

UR	/ wən-fəməsá	wáɲ-ŋkúŋ	ɲàm-kìm	ɲàm-mənən /	
Nasal deletion	————	Ø	————	Ø	
PR	[wənfəməsá	wáŋkúŋ	ɲàmkìm	ɲàmənən]	

- **Glide Deletion**

This phenomenon takes place at the level of the imperfective (progressive), in Fáŋ. This phenomenon leads in its turn to the deletion of the vowel which precedes the glide. Indeed, as said above, the deletion of the glide brings two vowels together, provoking the elision of the first one. For there are not diphtongs in Fáŋ (two vowels cannot stand together in this language). Let us consider the following data:

a- á + bənájə = /ábənájə/ [ábənâ] "be rolling!"

á + dəkàjə = /ádəkàjə/ [ádəkà] "be busting!"

á + kəlájə = /ákəlájə/ [ákəlâ] " be holding!"

á + ɲūájə = /áɲūájə/ [áɲūâ] "be pushing!"

á + jəglájə = /ájəglájə/ [ájəglâ] "be learning!"

á + dékɛ́jə = /ádékɛ́jə/ [ádékâ] "be stopping! "

á + t^hɨ́ājə = / át^hɨ́ājə/ [át^hyə] "be needing!"

b- əwə́ + nəwō = /əwənəwō/ [əwənō] " to him"

to + him

əbə́ + nəwō = /əbənəwō/ [əbənō] "to you"

to + you

əbə́ + səwō = /əbəsəwō/ [əbəsō] "to us"

to + us

əbú + núwō = /əbúnúwō/ [əbúnō] "to them"

to + them

c- mə́ + n + ŋmúwɔ̀ = /mə́ŋmúwɔ̀/ [mə́ŋmɔ̂] "I am drinking"

I + PO + driking

mə́ + n + tàntàwɔ̀ = /mə́ntàntàwɔ̀/ [mə́ntàntɔ̀] "I am jumping"

I + PO + jumping

tə̀ + n + ǰ èmə́wɔ̀ = /tə̀nǰ èmə́wɔ̀/ [tə̀nǰ èmɔ̂] "we are singing"

we + PO + singing

tə́ + n + ʒíwɔ̀ = /tə́nʒíwɔ̀/ [tə́nʒɔ̂] "we are eating"

we + PO + driking

d- kə̀:ŋkúwásə̀ "type of dance"

kəwɔ̀:ntə̀ "book"

The data above exhibits the deletion of the palatal glide /j/ and that of the labio-velar glide /w/ when occurring between two vowels in the word's last syllable. Notice that the last syllables **-jə̀** and **-wɔ̀** stand for the progressive marker in **a-** and **c-** respectively. So, the forms in **a-** are made up of the following components: **á (be) + verb + ING**. Hence the following phonological rules:

Rule 1:

Prose statement:

The palatal glide /j/ is deleted between two vowels in the word's last syllable.

Formal statement:

$$\begin{pmatrix} -cons \\ -syll \\ +high \\ -back \end{pmatrix} \longrightarrow \text{ø} \;/\; \begin{pmatrix} +syll \end{pmatrix} \_\_ \begin{pmatrix} +syll \end{pmatrix} \#$$

Rule 2:

Prose statement:

The labio-velar glide /w/ is deleted between two vowels in word final position.

Formal statement:

$$\begin{pmatrix} -cons \\ -syll \\ +\text{high} \\ +back \end{pmatrix} \longrightarrow \text{Ø} \;/\; \begin{pmatrix} +syll \end{pmatrix} \_\_ \begin{pmatrix} +syll \end{pmatrix} \#$$

Once again, we should mention here that these two rules refer to the same phonological process. Therefore, we will be missing linguistically significant generalization if we were stating them as two separate rules. As such, we can collapse R1 and R2 into a single phonological rule that will account for both as follows.

Prose statement:

A glide is deleted between two vowels in word final position.

Formal statement:

$$\begin{pmatrix} -cons \\ -syll \\ +\text{high} \end{pmatrix} \longrightarrow \text{Ø} \;/\; \begin{pmatrix} +syll \\ -cons \end{pmatrix} \_\_ \begin{pmatrix} +syll \\ -cons \end{pmatrix} \#$$

Notice that this rule applies only in the word's last syllable or in word final position. That is why words like **kə̀:ŋkúwásə̀ "type of dance"** in **d,** will not undergo this process.

The derivation of the following words illustrates the process of glide deletion: əwə̀nɔ́ "to him", ájə́glə̂ "be learning", mə́ŋmə̂ "I am drinking".

UR	/	əwə̀nə́wɔ̄	ájə́gl̰ə́jə̀	mə́ŋmúw̰ɔ̀	/
Vowel deletion			Ø		
Glide deletion		Ø	Ø	Ø	
Vowel truncation		əwə̀nə́ɔ̄	ájə́glə́ə̀	mə́ŋmúɔ̀	
		Ø	Ø	Ø	
PR	[	əwə̀nɔ̄	ájə́glə̂	mə́ŋmɔ̂	]

III-4-3.Vowel truncation

This is another kind of vowel elision in Fáŋ. It is a phonological phenomenon whereby a vowel deletes when followed by another vowel. In the meantime, this does not affect high vowels. This is shown in the following data:

a-	/ábànájà/	[ábànáà] →	[ábànâ]	"be rolling!"
	/ádàkàjà/	[ádàkàà] →	[ádàkà]	"be bursting!"
	/áɲūájà/	[áɲūáà] →	[áɲwâ]	"be pushing!"
	/ádékɛ́jà/	[ádékɛ́à] →	[ádékâ]	"be stopping! "
	/ tʰɟājà/	[tʰɟāà] →	[tʰyà]	"be needing!"
b-	/áwánáwō/	[áwánáō] →	[áwànō]	" to him"
	/ábánáwō/	[ábánáō] →	[ábánō]	"to you"
	/ábásáwō/	[ábásáō] →	[ábásō]	"to us"
	/ábúnúwō/	[ábúnúō] →	[ábúnō]	"to them"
c-	/máŋmúwɔ̀/	[máŋmúɔ̀] →	[máŋmɔ̂]	"I am drinking"
	/mántàntàwɔ̀/	[mántàntàɔ̀]→	[mántàntɔ̀]	"I am jumping"
	/tànɲ̀ èmáwɔ̀/	[tànɲ̀ èmáɔ̀] →	[tànɲ̀ èmɔ̂]	"we are singing"

In fact, we discussed in **III-4-2-2.** above, a phonological process which provokes the deletion of the glide in this data. Then, glide deletion will trigger the disappearance or the truncation of the vowel that stood before the deleted glide. Besides, the merging of high vowels with other vowels leads to glide formation which we have already discussed. On the contrary, the merging of non high vowels with other vowels leads to vowel truncation. We therefore have to state the phonological rule which captures the above phenomenon.

Prose statement:

A - High vowel is deleted when preceding another vowel.

Formal statement:

$$\begin{pmatrix} +\,syll \\ -\,high \end{pmatrix} \longrightarrow \text{ø} \;/\; \text{—} \begin{pmatrix} +\,syll \end{pmatrix}$$

Once more, it is worth noticing that, like the glide formation rule, the motivation for this rule is to do away with undesirable situations in relation to the internal structure of words, so as not to violate the preferred syllable structure of the language. Indeed, vowel clusters are not accepted in this language.

Let us illustrate this phenomenon through the derivation of the following words: tənj èmə̂ "we are singing", ádékâ "be stopping! ", əbúnə̃ "to them".

UR	/ tənj èməwɔ̀	ádékɛ́jə	əbúnúwɔ̄	/
Glide deletion	Ø	Ø	Ø	
Vowel truncation	tənj èməɔ̀	ádékɛ́ə	əbúnúɔ̄	
	Ø	Ø	Ø	
PR	[tənj èmə̂	ádékâ	əbúnə̃	]

III-4-4. Vowel Insertion

This deals with the insertion of a vowel within a word. In Fáŋ we have realized that, the central round vowel /ə/ is always inserted in word boundary position, especially between two consonants (the first word should end with a consonant and the next one should start with a consonant). Let us observe the following data:

a)-	jù	"house"
	ə́-kâ	"to be"
	kəmù	"one"
	ʃū	"full"
	tsâ	"five"

	kálə	"day"
	gáwɔ̀	"large"
	ngɔ̀tɔ̀	"cold"
b)-	kə̂ -n- ə́- kə̀mù	"it is one"
	kə̂- n- ə́ kúmàwɔ̀	"it is ten"
	kə̂- n- ə́ tsâwɔ̀	"it is five"
	jù jə̂- n- ə́ ʃū	"the house is full"
	house be Po full	
c) -	kálə kə̂- n- ngɔ̀tɔ̀	"the day is cold"
	day be Po cold	
	jù jə̂- n- gáwɔ̀	"the house is large"
	house be Po large	

The above data demonstrates that the central round vowel /ə/ is always inserted between two consonants, in word boundary position. Meanwhile, the examples in **c) –** do not undergo this process because the nasal **N** which preceed the insertion, syllabifies with the following velar. Hence the phonological rule stated in turn below:

Prose statement:

The central round vowel /ə/ is inserted in word-boundary position between any consonant and a voiceless consonant.

Formal statement:

$$\text{Ø} \longrightarrow \begin{pmatrix} +syll \\ -high \\ -front \\ -back \\ +ATR \end{pmatrix} \Big/ \begin{pmatrix} +cons \end{pmatrix} \#\, \underline{\quad} \begin{pmatrix} +cons \\ -voice \end{pmatrix}$$

The derivation of the following ulterances illustrates this phenomenon: kâ n- á- kàmù “it is one”, jù jâ- n- á ʃū “the house is full”, kâ n- á- kàmù “it is one”.

UR / kâ n- - kàmù jù jâ- n- -ʃū kâ n- - kàmù /

Vowel insertion á á á

PR [kâ n- á- kàmù jù jâ- n- á ʃū kâ n- á- kàmù]

III-4-5. Aspiration

Aspiration is a phonological process which makes a stop be pronounced with an audible and forceful release of breath. This always causes the friction of the released breath and therefore leads to the production of an aspirated consonant.

Aspirated sounds are represented in many languages in general and in Fáŋ in particular as “*clusters of a consonantal segment /C/ plus a segment /h/, the latter being [-consonantal, -vocalic], and not as single consonantal segments with the feature [+aspirate], which is the usual analysis*”Eva I. Ejerhed (1981).

In Fáŋ, aspiration is caused by /į/ and /ų/, the two highest vowels of the vowel chart, but not by their normal counterpart /i/ and /u/. In fact, theses vowels which we consider as fricative vowels, generally affect stops and glides. Mutaka and Tamanji (2000) refer to them as “high vowels of the first degree of aperture”. Let’s observe the following data:

a-	á-kū	“to fasten a goat”
	wû	“nose”
	tûm	“land”
	kú	“head”
	á-tín	“to cut”
	á-gí	“to come”
	á-gùŋ	“to sleep”
	kí	“know!”

	dúŋ	“sit!”
	jű	“houses”
	ə́-bǐ	“to walk”
	ə́-dí	“to cry”
	ə́-dū	“to poison”
	tǐ	“palm kernel”
	ə́-kpu̍	“to die”
b-	gʰú̱	“fire”
	mbʰī̱	“earth, world”
	ə́-gʰū̱	“to lend”
	túməwʰú̱	“my village”
	ə́-jʰű̱	“to smell”
	dʰī̱	“road”
	ə́-tʰì̱n	“to fish”
	ə́-tʰí̱ā	“to need”
	ə́-dʰú̱ə	“to hire”
	ə́-ʧū̱	“to beat”
	ə́-bʱī̱	“to move”
	ə́-kʰí̱ɛ̄	“to dance”
	kpʰú̱	“death”

The above data shows us that the normal high vowels /i/ and /u/ do not cause aspiration within the words in **a-** while the high vowels with the first degree of aperture /ị/ and

/ụ/ which are considerd + ATR in Fáŋ and which we call fricative vowels, do so in **b-**. Thus, the following two phonological rules account for the process of aspiration in Fáŋ:

Rule 1:

Prose statement:

A plosive is aspirated (+spread)[4] before a high vowel with the first degree of aperture a fricative vowel (a + ATR high vowel).

Formal statement:

$$\begin{pmatrix} -son \\ -cont \end{pmatrix} \longrightarrow \begin{pmatrix} +spread \end{pmatrix} \; / \; \_\_ \; \begin{pmatrix} +\text{syll} \\ +high \\ +ATR \\ +\text{spread} \end{pmatrix}$$

Note: In Fáŋ, the high vowels /į/ and /ụ/ have (+spread) as a latent feature. Naturally, this feature is not phonological, but it manifests itself on the preceeding plosive and the preceeding glide.

Rule 2:

Prose statement:

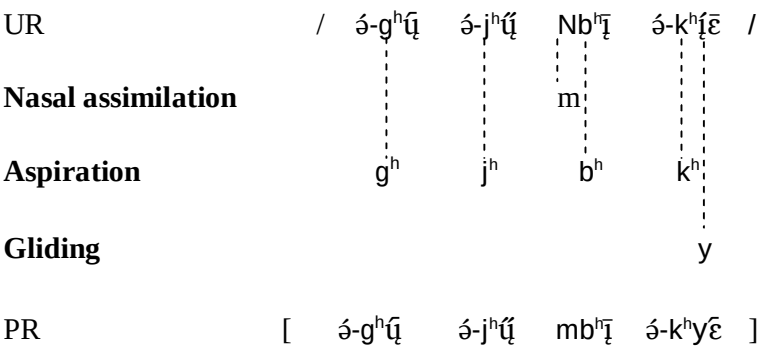
A glide is aspirated (+spread) before a high vowel with the first degree of aperture (a fricative vowel).

Formal statement:

$$\begin{pmatrix} -cons \\ -syll \end{pmatrix} \longrightarrow \begin{pmatrix} +spread \end{pmatrix} \; / \; \_\_ \; \begin{pmatrix} +\text{syll} \\ +high \\ +ATR \\ +\text{spread} \end{pmatrix}$$

The derivation of the following items shows the application of the preceeding rule: ə́-gʰū̱ “to lend”, ə́-jʰū́ “to smell”, mbʰī̱ “earth, world” ə́-kʰyɛ̄ “to dance”.

[4] [± Spread] is a feature which is relevant in the differentiation of the sound [h] from other fricatives.



III-4-6. Vowel lengthening

This refers to a process whereby a short vowel becomes long in a given environment. In Fáŋ, the specific phonological process which deals with long vowels is known as compensatory lengthening. Indeed, the presence of nasal assimilation in this language seems to lead to this phenomenon (Mutaka and Tamanji, 2000). This is exemplified in the data bellow.

a-	k-àwɔ̀:ntà	"book"
	k-à:ntʃù	"cloud"
	k-à:ŋkúwásà	"type of dance"
	t-à:ŋkpà	"bench"
	m-à:nsìŋà	"rings"
	Ø-ɲà:ŋgbú	"my meat"
	k-àbá:ntà	"white"
	Ø-wá:ŋkúŋ	"prince"
	m-àkpɛ́:ŋkàbíkē	"bad woman"
	Ø-ŋmɛ́:ŋkúŋ	"princes"
	f-à:ŋgó:ŋgó	"ant"
	Ø-sɔ́:ŋgbú	"my palm"
b-	K-ɔ́lwɔ́súŋ	"son"
	k-àkàɲàm	"horse"
	f-àsɛ̀ŋà	"ring"
	f-àʒà	"god"

j-ə̀kpún	“tree branch”
b-ə̀kê	“chairs”
k-ə̀dâ	“door”

As shown in these examples, long vowels appear before nasal consonant clusters. Such long vowels are not underlying but the result of compensatory lenghening. In fact, we first of all wanted to treat this lenghening as a compensatory lenghening, but this analysis came to be unsatisfactory when we considered the data in **b-** where words do not undergo vowel lenghening as compared to those in **a-**. Note that the morphemes that appear before the hiphens in the above data are considered as noun classes’ markers. It is worth noticing that in Fáŋ long vowels appear in open syllables. The phonological rule which captures this phenomenon can be stated as follows.

Rule :

Prose statement:

A vowel is lengthened when occurring before a prenasalized consonant.

Formal statement:

$$\begin{pmatrix} +syll \\ -cons \end{pmatrix} \longrightarrow \begin{pmatrix} +long \end{pmatrix} \; / \; \underline{\quad} \; \begin{pmatrix} +cons \\ +nasal \end{pmatrix} C$$

The derivation of the following items illustrates the phenomenon of vowel lenghening:

tə̀:ŋkpə̀ “bench” sɔ́:ŋgbú “my palm” mə̀:nsìŋə̀ “rings”

UR	/	tə̀Nkpə̀	sɔ́Ngbú	mə̀Nsìŋə̀	/
Nasal assimilation		ŋ	ŋ	n	
Vowel lenghening		ə̀:	ɔ́:	ə̀:	
PR	[	tə̀:ŋkpə̀	sɔ́:ŋgbú	mə̀:nsìŋə̀	]

III-4-7. Vowel shortening

This refers to a process whereby a long vowel becomes short in a given environment. In Fáŋ, this seems to happen when a long vowel is found in word final position or when it is followed by a nasal in wordfinal position. In fact, as said earlier, long vowels in this language appear solely in penultimate position. This is exemplified in the data bellow.

/ə́-mɛ́ɛ̄/ → [ə́-mɛ̋] "to build" /ə́-lúū/ → [ə́-lū̋] "to plait"

/ə́-sə̄ə́n/ → [ə́-sə̋n] "to cut open" /ə́-wūú/ → [ə́-wú] "to hear"

/ə́-kàám/ → [ə́-kă̋m] "to squeeze" /ə́-jɔ́ɔ̀/ → [ə́-jɔ̂] "to quarrel"

/ə́-gbúù/ → [ə́-gbû] "to fail"

As shown in the data above, long vowels lose their length in word final position or when followed by a nasal in word final position. This naturally leads to the process of contour tone formation which will be discussed in chapter five. Therefore, the phonological rules which capture this phenomenon can be stated as follows:

Rule 1:

Prose statement:

A long vowel is shortened when occurring in word final position.

Formal statement:

$$\begin{pmatrix} +\,syll \\ +\,\text{long} \end{pmatrix} \longrightarrow \begin{pmatrix} -\,long \end{pmatrix} \quad / \quad \underline{\quad} \quad \#$$

Rule 2:

Prose statement:

A long vowel is shortened when followed by a nasal in word final position.

Formal statement:

$$\begin{pmatrix} +\,syll \\ +\,\text{long} \end{pmatrix} \longrightarrow \begin{pmatrix} -\,long \end{pmatrix} \quad / \quad \underline{\quad} \quad \begin{pmatrix} +\,\text{cons} \\ +\,nasal \\ +\,ant \end{pmatrix} \#$$

we should mention here that these two rules refer to the same phonological process. Therefore, we will be missing a linguistically significant generalization if we were stating them as two separate rules. As such, we can collapse R1 and R2 into a single phonological rule that will account for both as follows.

Rule :

Prose statement:

A long vowel is shortened when occurring in word final position or when followed by a nasal in word final position.

Formal statement:

$$\begin{bmatrix} +\,syll \\ +\,long \end{bmatrix} \longrightarrow \begin{bmatrix} -\,long \end{bmatrix} \;/\; \_\_ \; \left\{ \begin{bmatrix} +\,cons \\ +\,nasal \end{bmatrix} \#, \; \# \right\}$$

The derivation of the following words illustrates the phenomenon of vowel shortening: á-lū “to plait”, á-kăm “to squeeze”, á-sən “to cut open”.

UR	/	á-lúū	á-kàám	á-sɔ̄ɔ́n	/
Vowel shortening		ū	ă	ɔ̆	
PR	[	á-lū	á-kăm	á-sən	]

III-4-8.Homorganic Nasal Assimilation

Assimilation is one of the processes that are very common to nasals in this language. Assimilation is a process whereby a segment or sound gets the qualities of the following or preceding sound. According to Katamba (1989), when discussing assimilation, it is important to look at it in terms of directionality. That is to say, we can tell whether a sound becomes more like either the sound that precedes it, or the sound that follows it. If a sound becomes more like the one that follows it, we talk of regressive assimilation. If on the other hand a sound becomes more like the one that it follows, we talk of progressive assimilation.

As far as words in Fáŋ are concerned, the type of assimilation process that exists can be referred to as regressive nasal assimilation. This is because the nasals always assimilate the qualities of the consonant that follows the nasal (the consonant they precede).

This is another rule that was seen to be present within the phonology of Fáŋ. The motivation for this rule like the others is to preserve the syllable structure of the language, and it helps or results in a smoother, effortless and more economical transition from one sound to another. This rule states that a nasal takes the place of articulation of the consonant it precedes. This can thus be exemplified in the data below.

tə:ŋkpə	"bench"
mə:nsìŋə	"rings"
ɲà:ŋgbú	"my meat"
kəbá:ntə	"white"
wá:ŋkúŋ	"prince"
məkpɛ́:ŋkəbíkē	"bad woman"
ŋmɛ́:ŋkúŋ	"princes"
fə:ŋgó:ŋgó	"ant
sɔ́:ŋgbú	"my palm"
mbī	"earth"
mbálə	"type of fish"
fù:mbwən	"type of dance"
dụ̀bə:ndɔ́ŋ	"goat"
kə:mfụ̀n	"hut"

The above data demonstrates that nasals become homorganic with the following consonants that is nasals assimilate to the place of articulation of the consonants they precede. The following rule inspired by Sam Rosenthall (1988), captures nasal assimilation in this language.

Rule :

Prose statement:

A nasal assimilates the place of articulation of the following consonant.

Formal statement:

$$N \longrightarrow [\alpha place] \; / \; \underline{\quad} \; [\alpha place]$$

This general formal statement covers the features that are involved in this process as presented in the following:

$$\begin{pmatrix} +nasal \end{pmatrix} \longrightarrow \begin{pmatrix} +ant \\ -cor \end{pmatrix} \; / \; \_\_ \; \begin{pmatrix} +cons \\ +ant \\ -cor \end{pmatrix}$$ = **N** becomes **m** before **b, f**, and **g.**

$$\begin{pmatrix} +nasal \end{pmatrix} \longrightarrow \begin{pmatrix} +ant \\ +cor \end{pmatrix} \; / \; \_\_ \; \begin{pmatrix} +cons \\ +ant \\ +cor \end{pmatrix}$$ = **N** becomes **n** before **d, t, s, ts,** ^{n}ʧ, ^{n}ʤ.

$$\begin{pmatrix} +nasal \end{pmatrix} \longrightarrow \begin{pmatrix} -ant \\ -cor \end{pmatrix} \; / \; \_\_ \; \begin{pmatrix} +cons \\ -ant \\ -cor \end{pmatrix}$$ = **N** becomes **ŋ** before **k**, **g,** and **kp.**

We therefore need to illustrate the process of nasal assimilation through the derivation of the following words: sɔ́:ŋgbú “my palm”, fù:mbwə́n “type of dance”, kəbá:ntə̀ “white”.

UR	/	sɔ́Ngbú	fùNbúə́n	kəbáNtə̀	/
Gliding			**w**		
Nasal assimilation		ŋ	m	n	
Vowel lenghening		ɔ́:	ù:	á:	
PR	[	sɔ́:ŋgbú	fù:mbwə́n	kəbá:ntə̀	]

III-4-9. Vowel Rounding

Vowel rounding is a process whereby a nonround vowel is assigned round and back values when occuring in a given environment. Most often, this usually happens in many languages where a nonround vowel is preceded by a labio-velar glide. As far as Fáŋ is concerned, this process affects the mid-high central unrounded vowel [ə]. In effect, whenever this vowel occurs after the labio-velar glide [w], it becomes the mid-high back rounded vowel [o].

However, roundedness is the vocalic equivalent of consonantal labialization. As such, rounded vowels and labialized sounds affect each other through phonetic assimilation: Rounded vowels labialize consonants and labialized consonants round vowels.In many languages such effects are minor phonetic detail, but in some cases they become significant. This is the case of the mid-high central unrounded vowel [ə] and the labio-velar glide [w] in the present language.

The process that gives rise to this situation is a type of vowel harmony (vowel-to-vowel feature transfer, or agreement). In this particular case, the harmonizing features are [back] and LAB (Labial place features). So, as seen in the data below, the mid-high central unrounded vowel [ə] is assigned a value for [back] and LAB (if present) through assimilation to the preceding labio-velar glide [w].

a-	kə́ntə̂ŋ	"small"
	kə̀nîn	"big"
	bə̀nîn	"fat"
b-	kwáŋ w-òntə̂ŋ	"small pan"
	kwáŋ w-ònîn	"big pan"
c-	kə́sə́ k-ə̀ntə̂ŋ	"small spoon"
	kə́sé k-ə̀nîn	"big chair"

from the above data, one can clearly see that the forms in **b-** undergo the process of vowel rounding because of the presence and the position of the labio-velar glide [w] when those in **c-** do not. We can therefore state the following rule to account for this phenomenon:

Rule :

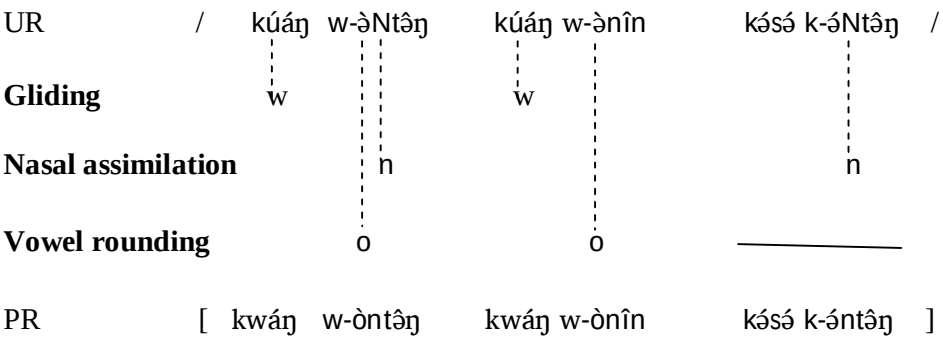
Prose statement:

The mid-high central unrounded vowel [ə] becomes the mid-high back rounded vowel [o] when preceded by the labio-velar glide [w].

Formal statement:

$$\begin{pmatrix} +syll \\ -round \\ -high \\ -low \end{pmatrix} \longrightarrow \begin{pmatrix} +round \\ +back \end{pmatrix} \; / \; \_\_ \; \begin{pmatrix} -cons \\ +son \\ -syll \\ +cont \end{pmatrix}$$

The derivation of the following phrases illustrates the process of vowel rounding: kwáŋ w-òntə̂ŋ "small pan", kwáŋ w-ònîn, "big pan", kə́sə́ k-ə́ntə̂ŋ "small spoon".



III-4-10. Reduplication

Reduplicated words are set of derived words that lead to segmental changes in this language. Reduplication is a phonological process in which a whole word or parts of a word (stem root, syllable(s) etc) is repeated (reduplicated) in order to form a new word. This therefore implies that there are two types of reduplication, namely, complete reduplication (whole word) and partial reduplication (part of the word) (Mutaka and Tamanji, 2000, 63-66). As far as reduplication is concerned in Fáŋ, this language makes use of partial reduplication, more precisely, stem or root reduplication. Note that there is no distinction between the stem and the root. Fáŋ has a regular verbal reduplication. Moreover, when the process of verbal reduplication occurs in Fáŋ, there is the intervention of a discontinuous morpheme with a CV…CV structure [kà...mɛ̄] within the reduplicated form. The data below illustrates instances of reduplication in this language.

- **Basic forms**

a-1-	ə́-tə́sə́nə́	“to repeat”
	ə́-nə́nə̄	“to go”
	ə́-kíə̄n	“to look”
	ə́-tɔ̀mə́	“to send”
	ə́-kíə̄	“to laugh”
	ə́-nɔ̋	“to fight”
	ə́-ʒí	“to eat”
	ə́-sə́mnə́	“to play”

- **Reduplicated forms**

a-2-	á-kíənkàkíəmɛ̄	"to look repeatedly"
	á-nánəkànánəmɛ̄	"to go repeatedly"
	á-tɔ̀mákàtɔ̀mámɛ̄	"to send repeatedly"
	á-kíəkàkíəmɛ̄	"to laugh repeatedly"
	á-nɔ̃kànɔ̃mɛ̄	"to fight repeatedly"
	á-ʒíkáʒímɛ̄	"to eat repeatedly"
	á-sámnákásámnámɛ̄	"to play repeatedly"

The above data lead us to some observations as follows.

- The alveolar nasal [n] deletes in the verb á-kíən "to look"when reduplicated and especially when preceding the bilabial nasal [m] in word boundary position as shown in á-kíənkàkíəmɛ̄ "to look repeatedly".The following phonological rule captures this process.

$$\begin{pmatrix} +\text{cons} \\ +\textit{nas} \\ +\text{ant} \\ +\text{cor} \end{pmatrix} \longrightarrow \textbf{ø} \;/\; \underline{\quad} \; \# \; \begin{pmatrix} +\text{cons} \\ +\textit{nas} \\ +\text{ant} \\ -\text{cor} \end{pmatrix}$$

This falls under a rule we stated earlier in **III-4-3 -2.**, especially when dealing with nasal deletion. This rule was formulated as follows.

$$\begin{pmatrix} +\text{cons} \\ +\textit{nas} \end{pmatrix} \longrightarrow \textbf{ø} \;/\; \underline{\quad} \; \# \; \begin{pmatrix} +\text{cons} \\ +\textit{nas} \end{pmatrix}$$

- Some verbs roots like -sámná "play" and -ʒí "eat", consist of only syllables with high tones. Others like -tɔ̀má "send" and -nánə "go", exhibit the intervention of a mid or a low tone. We therefore observe that there is a process of high tone substitution from the verb root where the high tone appears exclusively, to the first vowel of the morpheme[kà...mɛ̄]. but

where a mid or a low tone is present in the verb root, this process does not occur. Here the high tone substitutes for the low tone. Note that we will recall this tonal phenomenon in the analysis of chapter five.

III-5. Rule ordering and sample derivation

III-5-1. Rule ordering

It is worth noting that in Fáŋ like in many other languages, some rules have applicational prededence over others. Such rules permit to get a feeding order (a situation where a rule creates an environment in which the following rule should apply). In other words, some rules must be given priority during their application so as to avoid having a bleeding order (an order where the prior application of one rule takes away the environment in which the other rule(s) should apply) and consequently to avoid achieving ill-formed derivation in the language. As a matter of fact, a rule such as gliding for example must have applicational precedence over vowel deletion so as to achieve the appropriate derivation. Moreover, gliding should apply after the aspiration rule whereas assimilation is applied before vowel lengthening. Glide deletion also has applicational precedence over vowel truncation. As far as other rules are concerned, we have come to notice that their application does not follow a specific order, since they do not have any effect on each other.

Conclusion

We have just seen a good number of segmental processes attested within the words (nouns and verbs) of this language. The analysis of these processes reveals some segmental rules which the language uses to resolve some of the problems that the language has, as concerns the internal structure of words.

In this chapter, a number of segmental processes in Fáŋ word formation have been examined. It has been argued that to better examine the segmental processes present at the phonology of this language, there is need to look at the nature of the structure of the syllable, since segmental phonological rules are frequently sensitive to syllable structure. The analysis of the syllable structure revealed that the core syllable in Fáŋ is the CV syllable type.

Looking at the segmental processes in this language, it has been shown that these processes revealed a number of rules whose motivation was argued to be structure preservation. Our data therefore permited us to account for phonological processes such as gliding, segments deletion, segments insertion, aspiration, vowel lengthening, nasal assimilation, vowel rounding, and vowel raising. The rules and processes seen in this chapter

will help to better explain certain phenomena (especially tonal processes) that will be dealt with in the subsequent chapters.

CHAPTER IV: THE TONOLOGICAL SYSTEM OF FÁŋ

IV-0. Introduction

Fáŋ happens to be a tone language like most African languages. The tone is a prosodic unit which has the same value as the phonemic consonants and vowels. Welmers (1973:90) defines it as a pitch phoneme. In other words, the tone is a feature that can be used in bringing semantic contrast between two words that sound alike. Moreover, unlike the stress, the tone is carried by a tone bearing unit (TBU), which can be any segment that can function as the peak of the syllable. Now, one should notice that only vowels are tone bearing units in Fáŋ for there is no syllabic nasals or syllabic laterals in the language in hand. According to Pulleyblank (1986), Halle and Vergnaud (1982), languages differ as to the number of tones that can link to a single tone bearing unit. The treatment of tone in Fáŋ will therefore need a special attention.

Consequently, an overview of the tonological system of this language is provided in this chapter. The phonetic and the phonemic inventories of tones and the classification of tonemes are outlined here. The present chapter will equally be dedicated to the treatment of the various tonal patterns found in both nouns and verbs of this language.

Some tonal variations can be accounted for by the interaction of some phonological processes as well as by some tonal processes. Moreover, the presence of tonal variations in this language reveals interesting tonal phenomena that we will explore in the subsequent chapter.

IV-1. Tone inventory

In the Fáŋ language there are four attested level tones, namely: the low tone (L), the mid tone (M), the high tone (H) and the super-high tone (S). These are the only underlying tones attested in this language. Moreover, we have come across four contour tones, namely the rising tone (LH), the falling tone (HL), the mid-high tone (MH) and the high-mid tone (HM). But the latter should be treated as sequences of two different level tones, thus they just occur in surface forms. Now let us give more details about that matter in handling types and functions of tones in the Fáŋ language.

IV-1-1. Typology and function of tones

This section provides first of all a presentation of phonetic and phonemic tones than one can find in this language. It also presents the different functions that tonal units can have in Fáŋ. Finally,it exhibits the various tonal patterns existing within Fáŋ nouns and verbs.

IV-1-1-1. Types of tones

IV-1-1-1-1. Level tones

Tones are most often distinguished by their shape (contour) and pitch range (or register). Level tones are therefore tones which are obtained or marked when the pitch of the voice does not change during the production of a syllable. That is the pitch of the voice remains at the same level during the pronunciation of the syllable.

In Fáŋ, as said earlier, we have come across four types of level tones: the low tone (L), the mid tone (M), the high tone (H) and the super-high tone (S).

- **The Low tone (L):**

This is a register tone which transmits a low pitch to the TBU. It is represented by the symbol [̀] on a given TBU. Here are some illustrations:

Example 1

1-a-	lìm	"tongue"	**1-b-**	tàn	"jump"
1-c-	kəkàŋàŋ	"horse"	**1-d-**	fənsìŋə	"ring"
1-e-	kə^{n}ʧù	"cloud"	**1-f-**	lùm	"bite"

- **The Mid tone (M) :**

This is a tone which has a mid-level pitch, that is a tone that is higher than the low tone and lower than the high tone. It is indicated by the symbol [̄]. The data below provide some examples.

Example 2

2-a-	nōkō "for"		**2-b-**	nʃū	"full"
2-c-	gī "come"		**2-d-**	kā	"every"
2-e-	^{m}bī̱"earth"		**2-f-**	k^{h}ī̱ɛ̄	"dance"

2-g- ə-tɛ́mkəŋ "to surround" **2-h-** bíkə "bad"

2-i- wəsə "eye"

- **The High tone (H):**

This is a register tone which gives its tone bearing unit a high pitch. It is indicated by the symbol [´] on the tone bearing unit. Here are some examples:

Example 3

3-a- ⁿgíyəm "water" **3-b-** gbúŋ "mountain"

3-c- fəⁿtáŋ "seed" **3-d-** kófə "bone"

3-e- kú "head" **3-f-** sɔ́m "palm"

- **The Super-high tone (S):**

This is a register tone which gives its TBU an extra-high pitch. This tone is higher than the high tone. It is indicated by the symbol [˝]. Here are some examples:

Example 4

4-a- sí̋ "burn" **4-b-** gí̋ "come"

4-c- bɛ̋ "building" **4-d-** tí̋m "woodash" **4-e-** wɔ̋m "dry"

4-f- mbɨ̋-wən "this hearth" **4-g-** tə̀gbű-tən "this ash" **4-h-** sɛ̋-yən "this sand"

As it can be observed at the above data, the super-high tone occurs only in monosyllabic words or in words (stems) boundaries in the situation of collocation, which is not the case of the rest of level tones. As this is an environment (monosyllabicity) where sounds are generally produced with a very high pitch, we should consider the super high tone as being just a kind of phonetic implementation. Therefore, it will not be treated as an underlying tone in this work.

As for the mid tone, it generally appears at word final position except when a disyllabic word like **nōkō "for",** is only consisted of mid tone. It can thus be concluded that the mid tone is predicted by rules. Unlike the super-high tone, the other level tones are used by Fáŋ in all kind of words.

Apart from these four reference tones, as said above, we came across other types of tones that are referred to as contour tones.

IV-1-1-1-2. Contour tones

Contour tones are tones which are obtained when thepitch of the voice changes during the production of a syllable. That is the pitch of the voice moves from one level to another level during the pronunciation of the syllable.

Fáŋ makes use of four contour tones as mentioned earlier: the rising tone (LH), the falling tone (HL), the mid-high tone (MH) and the high-mid tone (HM).

- **The high-low tone (HL):**

The high-low tone results from the combination of a high tone and a low tone. It is also referred to as "falling tone" by many linguists. It is represented by the symbol [ˆ]. Words with high-low tone include the following:

Example 5

5a-	wû	"nose"	**5-b-**	wɛ̂bô	"aunt"
5-c-	wònîn	"big"	**5-d-**	ᵑgôn	"plantain"
5-e-	tûm	"land"	**5-f-**	fənân	"bird"

- **The low-high tone (LH):**

Unlike the high-low tone, the low-high tone also called "rising tone" rather begins with a low tone and ends with a high one. Its symbol is [ˇ]. This is illustrated in the following examples:

Example 6

6-a-	gǐ	"egg"	**6-b-**	lŭm	"bite"
6-c-	mənkpɛ̌kəbíkə	"bad wife"	**6-d-**	kě	"see"
6-e-	lǐ	"enter"	**6-f-**	kŭ	"tie"

- **The mid-high tone (MH):**

The mid-high tone results from the combination of a mid tone and a high tone. It is represented by the symbol [¯]. Words with mid-high tone include the following:

Example 7

7-a-	ə́-tűŋ	"to crow"	**7-b-**	ə́-kălə́	"to fold"
7-c-	ə́-ŋműg^hū	"to smoke"	**7-d-**	ə́-wú	"to hear"
7-e-	ə́-tɛ̄mkəŋ	"to surround"	**7-f-**	ə́-fə̄m	"to suffer"

- **The high-mid tone (HM):**

Unlike the mid-high tone, the high-mid tone rather begins with a high tone and ends with a mid tone. Its symbol is [᷇]. This is illustrated in the following examples:

<u>Example 8</u>

8-a- ə́-jā̃gʰú̄ "to lend" **8-b-**ə́-jábṓnə̄ "to bless"

8-c- ə́-dú̄ "to poison" **8-d-** ə́-lə̄́ŋ "to curse"

8-e- tɔ́̄ "to peck" **8-f-** ə́-tɛ́̄ "to sting"

As we can observe from the above data, the mid-high and the high-mid tones are most often used by verbs in Fáŋ. Indeed, we rarely came across these tones in the nominal context. Moreover, it is worth noting once again that in this study the high-low, the low-high, the mid-high and the high-mid tones are considered as sequences of two different tonological units and not as single ones.

IV-1-1-1-1. Phonetic tone chart in fáŋ

As shown earlier, there are other tones that are attested at the phonetic level of words (and phrases) in this language though there are only four underlying tones. Generally speaking, there are eight phonetic tones in the phonology of Fáŋ. These tones include the lexical low (L), the mid (M), high (H) and super-high tone (SH) and four contour tones, namely, the rising (LH), the falling (HL), the mid-high (MH), and the high-mid (HM).

Since we have already seen words in which these level and contour tones are present, we will proceed by providing the phonetic tone chart before presenting some minimal pairs in relation to the four underlying tones.

<u>Table 13</u>: Table of phonetic tones

Level tones				**Contour tones**			
L	**M**	**H**	**SH**	**HL**	**LH**	**MH**	**HM**
`	¯	´	˝	ˆ	ˇ	᷄	᷇

The following minimal pairs lead us to the phonemic tone chart:

<u>Example 9</u>

9-a- ká "hands" and kā "every"

9-b- lìm “tongue” and līm“work”

9-c- kəlɔ́fə́ “knife” and kə́lɔ̀fə̀ “slice”

9-d- lə́ “collect” and lə̀ “intestine”

IV-1-1-1-2. Phonemic tone chart in Fáŋ

As mentioned earlier and from the above date, Fáŋ has three tones that are present in the underlying representation of its words (and phrases), which are referred to as phonemic tones or better still as tonemes. However, this does not sound surprising, for the four-tone system (at the surface level) is a significant characteristic of many languages of Lower Fungom like Mungbam, Mundabli, and Naki (Jeff Good et al., 2011: 48). Having provided some examples of nouns and verbs bearing these four tones in the data above and distinguished the super high tone from the other level tones which are underlying; we can now set the phonemic tone chart as follows.

Table 14: Table of phonemic tones

Low tone	Mid tone	High tone
`	¯	´

As we said above, the contour tone is treated as sequences of two different level tones: we therefore have the rising tone (LH), the falling tone (HL), the mid-high tone (MH), and the high-mid tone (HM). However, due to tonological processes, these contour tones happen to be in complementary distribution with some level tones. This will be demonstrated in chapter four where we will examine the tonological rules through a large set of data.

II-2-1-2. Functions of tones

Generally, in the Bantu languages, tones have two functions: the lexical function and the grammatical function. We therefore have lexical tones and grammatical ones.

II-2-1-2-1. Lexical tones

Tones are said to have a lexical function when they are able to bring a semantic contrast between two words that look alike at the segmental level but which are distinct at the supra-segmental level. Such tones can also be called semantic tones. Here are some examples:

Example 10

10-a-	ʃű	"untie"
	ʃū	"full"
10-b-	sű	"soap"
	sū	"bath"
10-c-	**s**ɔ́ŋ	"kind of dance"
	sɔ̀ŋ	"he goat"
10-d-	wə́sə́	"market"
	wə́sə̄	"eye"
10-e-	kólə́	"strangers"
	kólə̀	"rat"

From the above examples, we can establish that within a minimal pair, only the difference of tone leads to the semantic difference, for each minimal pair is made up of the same segmental units.

IV-1-1-2-2. Grammatical tones

We have just talked about the lexical tone where we provided examples of words in isolation. But when expressing one's self, one takes these words from the lexical context and combines them with others. This new context wil then be called a grammatical context, for words that have been taken from their lexical isolation can influence each other and consequently lead to change of tones. These new tones that exhibit many realities like tenses, mood or other grammatical units, are called grammatical tones (Ngueffo and Sadembouo, 2010).

Tones that have a grammatical function do not necessarily lead to the semantic change of the word nor do they lead to the change of its grammatical category. The grammatical tones can be floating ones. They thus affect lexical tones or they have an impact on them in specific contexts. This surely brings out a tonological process (Mfonyan, 1982). Floating tones are underlying tones which are not associated to any syllable. They generally come from deleted

segments or deleted syllables. As a matter of fact, the behavior of the high tone in some verbs permits us to distinguish between the indicative and the imperative moods as illustrated in the examples below:

Example 11

Indicative mood			**Imperative mood** (2pl)		
11-a-	nə̀-n-yəglə́	"you are teaching"	**11-b-**	yə́glə́	"teach!"
11-c-	nə̀-n-nə́nə̄	"you are leaving"	**11-d-**	nə̀nə́	"leave!"
11-e-	nə̀-n-mɛ́	"you are moulding"	**11-f-**	mɛ́	"mould!"

From the above data, we observe that the imperative mood is exhibited via a high tone which is therefore known as a grammatical tone.

The grammatical tone can also be exemplified as follows.

Example 12

12-a- mjə́ nə́-jəglə́ "I have (just) learnt".

tə̀ nə́-fə̄m "we have (just) suffered".

12-b- mjə́ nə̀-jəglə́ "I learnt (yesterday, some days before, a long time a go)"

tə̀ nə̀-fə̄m "we suffered (yesterday, some days before, a long time ago) ".

These examples show that the past tense marker in this language is the morpheme nə̀-. Therefore, the variation of tones on this morpheme demonstrates that the low and the high tones represent the close past and the remote past respectively. Thus, these tones are said to be grammatical tones in this context.

Moreover, this language exhibits grammatical tones which function as associative markers (AM) within associative constructions[5]. Let us consider the function of the H tone on the second noun in the following data:

(a)	Límə̄	kə́	kìm	→	[límə̄	kə́	kìm]
	blood	AM	monkey		monkey's blood		

[5]We take this expression from Awambeng, E. (1991) who thinks that the association construction, also called genitive construction, occurs when a noun is modified by another noun in order to express possession.

(b)	tətílə tə məkpéŋ	→	[tətílé tə məkpéŋ]
	mats AM woman		woman's mats
(c)	fətáŋ fə ŋgòn	→	[Fətáŋ fə ŋgòn]
	seed AM plantain		plantain's seed
(d)	ɲàm ´(HT) kìm		ɲàm kím
	meat AM monkey		monkey's meat
(e)	jù ´(HT) kəfí		jù kəfí
	house AM pig		pig's house

From the preceding data, it is noticeable that the associative marker, which has the grammatical meaning of genitivity in Fáŋ, is a segmentless tone. Indeed, the morphemes kə, tə, and fə, represent class 7, class 13, and class 19 respectively (Jeff Good et al., 2011: 56). These noun classes generally occur with a low tone. But in the data above, they appear with a high tone. This is considered here as a result of tone docking and tone simplification. That is, we propose a rightward docking othe AM, then a tone simplification in order to account for the surface high tone. However, tonal changes on the second noun (N2) in the Fáŋ associative construction provide evidence for the postulation of floating tone associative markers.

From the above analysis, we can retain that tones are of major importance in the Fáŋ language. Now, it is worth noting that we give just a presentation of tones in this part of the work. We will analyse them in depth in the tonological processes, especially in chapter five. Now, before dealing with the tonological processes that intervene in Fáŋ, let us examine in the following lines, the tonal patterns of this language. This will help us to better tackle this question of tonological phenomena.

IV-1-2. Tone group

Fáŋ has various tone groups, and these tone groups vary from one noun root to another, as well as from one verb root to another. We will therefore examine the tonal patterns of this language in relation to the internal structure of nouns and that of verbs.

IV-1-2-1. Tone group within Nouns

Nouns in Fáŋ can surface with many different tonal patterns which fall into different tone groups. However, the tone groups in Fáŋ nouns just consist of a variety of tone sequences as seen in many Bantu languages (Mutaka and Tamanji, 2000, 85). We will take into consideration the internal structure of nouns in Fáŋ in order to better analyze their tonal patterns. Note that Fáŋ basic words are said to be monosyllabic, disyllabic, and trisyllabic as shown in chapter three (we will not deal with compound words here as they seem to be subject of tonal change, since some are even in reduplicated form).

IV-1-2-1-1. Monosyllabic Nouns

In Fáŋ, monosyllabic nouns exhibit several tonal patterns as the data below reveal.

(a)	ŋmə̀	“person”
	ɲàm	“meat”
	tsù	“sun”
	kpɛ̀	“burn”
	sìm	“heart”
(b)	wán	“child”
	búŋ	“mountain”
	tsé	“stone”
	kú	“head”
	fú	“hair”
(c)	mb^{h}ɨ̄	“earth, world”
	dʒɛ̄	“lion”
	tsə̄ŋ	“neck”

	kā	“every”
	ʃū	“full”
(d)	tí̋ m	“woodash”
	tí̋	“palm kernel”
	jű	“houses”
	dʒí̋	“roads”
(e)	tûm	“land”
	jə̂n	“teeth”
(f)	gĭ	“egg”
	sĕ	“sand”

Looking at the data above, monosyllabic nouns in Fáŋ exhibit the following tonal patterns.

1) Low (ò)

As already mentioned, the low tone is one of the four tones that are present in the underlying representation of words in this language. This tonal pattern is justified using the data above, especially in **a-.** The low tone in these nouns can be accounted for by simply positing a low in the underlying representation of these words, and then associating the high to the single tone bearing units above, following the association convention principle. The data above present the low tone as being very present in the underlying representation of words in this language.

2) High (ó)

This tonal pattern is shown in the examples in **(b)**. Like in **(a)**, the high tone in the above data is accounted for by simply positing a high in the underlying representation of these nouns, and then associating them to their tone bearing units.

3) Mid (ō)

This tonal pattern is present in **c-.** It is worth noticing that this tone is not as present as the low and high tones are in Fáŋ nouns. Like in **(a)** and **(b)**, the mid tone in the above data is accounted for by simply positing a mid in the underlying representation of these nouns, and then associating them to their tone bearing units.

4) Super high (ő)

This tonal pattern is present in **(d).** Again, it is worth noticing that like the mid tone, this tone is not as present as the low and high tones are in Fáŋ nouns. Like in **(a)**, **(b)**, and **(c)**, the super high tone in the above data is accounted for by simply positing a super high in the underlying representation of these nouns, and then associating them to their tone bearing units.

5) High Low (ô)

The above tonal pattern is one of the tonal patterns in Fáŋ that is not found underlyingly, but which surfaces at the phonetic level of words in this language. This tonal pattern can be justified as existing in this language, when one takes into consideration the above data in **(e).**As mentioned above, this tonal pattern does not associate to a single tone bearing unit in the underlying representation of words in Fáŋ. As such, it can only be accounted for by arguing that some phonological processes like gliding or vowel deletion have taken place within these nouns, which have led to their being realized as above. In fact, looking at these words, it is evident that the tone bearing units above feature with two tones. Since only one tone can be associated to a tone bearing unit at the underlying representation of words following the association convention principle, it implies that one of the tones is as a result of one or more phonological processes. A detailed analysis of how the above pattern is derived will be provided when we will be looking at the process of contour tone formation in chapter four.

6) Low high (ǒ)

Like the High Low tonal pattern, this tonal pattern is one of the tonal patterns that need to be accounted for in this language. The existence of this tonal pattern in Fáŋ can be justified by using the data above, in particular in **(f).**

The examples in **(f)** reveal another set of nouns in which a single tone bearing unit bears two tones, the **(e)** examples constituting the first set of nouns of this nature. Thus, the situation in **(f)** is similar to that in **(e)** in that, both cases originally had two tone bearing units each associated with one of the two tones. As already said, the process of devocalization

(glide formation or gliding) caused one of the tones to lose its tone bearing unit. This tone therefore had to look for another tone bearing unit which, in this case, already had a tone. Hence, the occurrence of two tones on a single tone bearing unit.

So far, we have been looking at tonal patterns within monosyllabic nouns. The data provided in this section reveal that the high, the low, the mid and the super high tones are abundantly present within monosyllabic nouns, especially, the high tone, the low tone and the mid tone. This can be justified by the fact that these are the three tones present in the underlying representation of words in this language. However, it has also been shown that in spite of this fact, monosyllabic nouns equally surface with contour tones (falling and rising tones), though their occurrence is triggered by phonological processes. The devocalization process which gives rise to the tonal patterns in **(e)** and **(f)** is a very important process in Fáŋ, since it is a process that affects the tonal system of this language in that, it enables tone bearing units to surface with more than one tone. In other words, it enables a tone bearing unit to surface with a tone to which it was not originally associated or linked to. Now, let us deal with nouns with more than one syllable.

IV-1-2-1-2Disyllabic Nouns

Several disyllabic nouns are present in the phonology of this language, and they exhibit different tonal patterns. This can be illustrated using the following data.

a-	kófə́	“bone”
	bínə́	“breast”
	tókó	“night”
b-	fəʒə̀	“god”
	kə̀ntsù	“belly”
	jə̀ŋmə̀	“word of man”
c-	mbālə̄	“soup”
	gɔ̄lə̄	“foot”

d-	dwàlə́	“star”
	ŋgàkpə́	“root”
	jàkpún	“tree branch”
e-	kálə̀	“day”
	kósɔ̀ŋ	“question”
	kwə́lə̀	“rat”
f-	límə̄	“blood”
	túmə̄	“village”
g-	fə̀nə̂n	“bird”
	bə̀kə̂	“chairs”
	kə̀də̂	“door”

The sample of disyllabic nouns above reveals the following tonal patterns.

1) Hight-High (ó ó)

The High –High tonal pattern can be seen surfacing on disyllabic nouns of the above data, in **(a).**

The tonal pattern seen in these disyllabic nouns can be accounted for by positing a high tone in the underlying representation of these words, which then associates to the first tone bearing unit following the association convention principle. This tone later spreads to the next tone bearing unit, thereby creating a high-high sequence. Details about the spreading rule will be discussed in the subsequent section.

2) Low – Low (ò ò)

This tonal pattern can be justified in this language when one considers the disyllabic nouns in **(b)** of the data above.

The low-low tonal pattern seen above can be accounted for by positing a single low tone in the underlying representation of these forms, which associates onto the first tone bearing unit. Therefore, this underlying low tone will spread to the other tone bearing gets its low tone after the application of the low spreading rule. More about the low tone spreading will be treated in chapter five.

3) Mid – Mid (ō ō)

This tonal pattern can be justified in this language when one considers the disyllabic nouns in **(c)** of the data above.

The mid-mid tonal pattern seen above can be accounted for by positing a single mid tone in the underlying representation of these forms, which associates onto the first tone bearing unit. Therefore, the other tone bearing is assigned a default mid after the application of the default mid rule. More about the default mid will be treated in chapter five.

3) Low–High (ò ó), High-Low (ó ò) and High-mid (ó ō)

The above tonal patterns are evident in this language, when one looks respectively at disyllabic nouns like the ones in **(d), (e) and (f).**

The tonal patterns seen to be present in theses nouns can be analyzed as follows. First, each of the nouns above is made up of a prefix and a stem or root. Secondly, the low tone appears as the first tone on the first tone bearing unit of the nouns in **(d)** while the high tone isthe first tone on the first tone bearing unit of the nouns in **(e) and (f).** The low tone and the high tone in the above roots are therefore the tones which are present in the underlying representation of these nouns in **(d), (e) and (f)** respectively, and so associate to the first tone bearing unit of the nouns'roots following the association convention principle. Thus, the TBU of the second position (the second tone bearing unit of the roots) get their tone through the default mid rule in **(f).** But, we treat the high tone in **(d)** and the low tone in **(e)** as pre-linked tones**.**

So far, this section has been looking at the various tonal patterns attested within disyllabic nouns in Fáŋ. Looking at the different data provided, we can once more say that the low tone, the high tone, and the mid tone are abundantly present in this language. Again, this justifies the fact that these three tones are the tones that are present in the underlying representation of words in this language. The data seen in this section equally reveals that in addition to the lexical low, high and mid tones present in the underlying representation of words in Fáŋ, there is another mid tone known as a default tone whereas some low and high

tones are treated as pre-linked tones in the second TBU of the concerned words. These default tones will be tackled once more in the following sections.

IV-1-2-1-3 Nouns with more than two syllables

Trisyllabic nouns unlike those with four syllables are abundantly present in Fáŋ, and they exhibit several tonal patterns. This can be illustrated using the data below. Note that some of the tonal patterns on these nouns are the result of tonal processes which have taken place within the nouns concerned as we will see in the following chapter.

(a)	késátá	"darkness"
	Wánkákpéŋ	"girl"
	Kálwásúŋ	"son"
(b)	kàkàŋàm	"horse"
	fàsèŋà	"ring"
	kàwɔ̀:ntà	"book"
(c)	kàfálá	"cap"
	kàlátá	"calabash"
	kàʧɔ́ŋná	"groundnut"
	gùŋsánà	"end"
	fàmásá	"cat"
	fàŋgóŋgóŋ	"ant"
	kàlɔ́fá	"knife"
(d)	dùbàndɔ́ŋ	"goat"
	bàlàŋgí	"blanket"

(e)	màlásùŋ	"man"
	tàpárùm	"parlour"
(f)	bàtwáfà	"wisedom"
	fàŋgúfà	"umbrella"
	fwɔ̀mtúmà	"president"
(g)	fàŋkàlàŋgwá	"louse"

1) High-High-High (ó ó ó)

This tonal pattern can be justified as being present in this language, when one looks at trisyllabic nouns like those in **(a)** in the data above:

késátá	"darkness"
Wánkákpɛ́ŋ	"girl"

These nouns surface with a sequence of three high tones. This can be explained by the fact that there is one high tone in the underlying representation of these nouns, which links or associates to the first tone bearing unit of the root of these nouns. The other tone bearing units get their high tone through the high tone spreading rule which we will discuss in the subsequent chapter.

2) Low – Low – Low (ò ò ò)

This tonal pattern can be said to be present in Fáŋ, when one looks at trisyllabic nouns like those in **(b)** in the data above**:**

kàkàɲàm	"horse"
fàsɛ̀ŋà	"ring"

These nouns surface with a sequence of three low tones. This can be explained by the fact that there is one low tone in the underlying representation of these nouns, which links or associates to the first tone bearing unit of the root of these nouns. The other tone bearing units

get their low tone through the low tone spreading rule which we will take care of in the following chapter.

3) Low-High-High (ò ó ó)

This is a tonal pattern that can be justified as being present in this language, when one looks at trisyllabic nouns like those **(c)**, in the data above:

gùŋsánə́ "end"

fəmə́sá "cat"

The tonal pattern in these nouns can be accounted for as follows. These nouns have two underlying tones, the low and the high tones. Therefore, the first tone bearing unit has an underlying low tone while the second has an underlying high tone. This high tone then spreads onto the next tone bearing unit of the stem, following the application of the high tone spreading rule.

4) Low – Low –High (ò òó)

The Low Low- High tonal pattern can be justified as being part of the tonal patterns within the nouns of this language if we take into account the trisyllabic nouns in the data in **(d)**:

dùbəndɔ́ŋ "goat"

bələ̀ŋgí "blanket"

The tonal pattern in these nouns can be accounted for as follows. These nouns have two underlying tones, the low and the high tones. Therefore, the first tone bearing unit has an underlying low tone. The second tone bearing units get their low tone through the process of low tone spreading. The third tone bearing unit in is turn, is assigned an underlying high tone.

5) Low-High– Low (ò ó ò)

The Low-high-low tonal pattern can be said to be present in the nouns of this language, when we take into consideration the data in **(e)**:

mə̀ləsùŋ "man"

tə̀párùm "parlour"

The tonal pattern in these nouns can be accounted for as follows. These nouns have two underlying tones, the low and the high tones. Therefore, the first tone bearing unit has an underlying low tone while the second is assigned an underlying high tone. The third tone bearing unit has a pre-linked low tone.

6) Low – Low – Low –High (ò ò ò ó)

Here, we are dealing with a noun of four syllables. This tonal pattern is evident in this language, when one takes into account the data in **(g)**:

fəŋkàlàŋgwá "louse"

The tonal pattern in this noun can be accounted for as follows. This kind of nouns has two underlying tones, the low and the high tones. Thus, the first tone bearing unit has an underlying low tone. This low tone then spreads onto the next two tone bearing units, following the application of the low tone spreading rule. The fourth tone bearing unit is assigned an underlying high tone.

So far, this section has been looking at the various tonal patterns attested within nouns with more than two syllables in Fáŋ. Looking at the different data provided, we can once more say that the low and the high tone are abundantly present in this language. Again, this justifies the fact that these tones are said to be among the tones found at the underlying representation of words in this language. Moreover, the data analysed in this section show that in Fáŋ nouns with four syllables are not as abundant as trisyllabic nouns.

IV-1-2-2. Tone group within Verbs

During our data elicitation on this language, we have come to realize that, except serial verbs (verbs made up of two different verbs), Fáŋ verbs are either monosyllabic or dissyllabic**.** Moreover, only monosyllabic verbs cope with the extra-high tone and contour tones in this language. Dissyllabic ones exhibit only three of the four level tones attested in this language: the high, the mid and the low tones.

IV-1-2-2-1. Monosyllabic Verbs

In Fáŋ, monosyllabic verbs can be divided into four groups as far as their underlying tone is concerned. Therefore, we have verbs with an underlying high, those with an underlying low, those with an underlying mid and those with an underlying extra-high. This is illustrated in the data below.

(a)-	á-dʒí	" to feed"	á-jó	"to go up"
	á-lí	"to enter"	á-tám	"to shoot"
(b)-	á-lùm	"to bite"	á-dì	"to cry"
	á-fà	"to shave"	á-kɔ̀ŋ	"to love"
(c)-	á-kū	"to fasten"	á-bā	"to load"
	á-gɔ̄m	"to pay"	á-bāŋ	"to cover"
(d)-	á-tấn	"to jump"	á-ʒí	"to eat"
	á-dűŋ	"to sit"	á-ké	"to see"

As said earlier, these data show that the Fáŋ monosyllabic verbs consist of four groups: the H tone verb in (a), the L tone verb in (b), the M tone verb in (c) and the SH tone verb in (d). In the (a) forms, the H tone is considered as being a default tone. That is, the H tone verb stem in this language are analysed as being toneless underlyingly and that they get their H tone by default. As for the L, the M and the SH tones, they can be analysed as being floating tones and link to the first root vowel, following the association conventions (Pulleyblank 1985, Goldsmith 1976) that we mentioned in chapter one when dealing with the theoretical framework. Indeed, we have come to realize that in the infinitive, these three tonal pattern (L, M and SH tones) are never found on a vowel other than the root vowel.

Nevertheless, we have observed that some monosyllabic verbs occur with contour tones in this language. But these contour tones are not considered as being part of the underlying tonal pattern inFáŋ because, as mentioned previously, contour tones are formed in this language under the influence of some phonological processes like gliding, vowel deletion, vowel truncation and vowel shortening. This is exemplified by the following data:

/á-mɛ́ɛ̄/ → á-mɛ̌ "to build" /á-lúū/ → á-lū̌ "to plait"

/á-sə̄ə́n/ → á-sə̌n "to cut open" /á-wūú/ → á-wū́ "to hear"

/á-kàám/ → á-kăm "to squeeze" /á-jɔ́ɔ̀/ → á-jɔ̂ "to quarrel"

/máŋmúwɔ̀/ [máŋmúɔ̀] → [máŋmwɔ̂] "I am drinking"

/mántàntəwɔ̀/ [mántàntəɔ̀]→ [mántàntɔ̀] "I am jumping"

/tànj èmɓwɔ/ [tànj èmɓɔ] → [tànj èmɓ̂] “we are singing”

/tánʒíwɔ/ [tánʒíɔ] → [tánʒyɔ̂] “we are eating”

As the data above shows the different contour tones that we have here are a result of the phonological processes we have already mentioned.

IV-1-2-2-2. Disyllabic Verb

As far as disyllabic verbs are concerned, Fáŋ verbal system shows a simple underlying contrast between stems with H, stems with L and stems with M tone. Disyllabic H-stems occur with H on both syllables, while disyllabic L-stems occur with a LH tonal pattern. On their part, disyllabic M-stems occur with HM tonal pattern. This is illustrated in the data below:

(a)- á-gúmá “to bury” á-sámná “to marry”

á-kálá “to fold” á-dékɛ́ “to stop” á-fɔ́fá “to fly”

(b)- á-jàlá “to kill” á-kùmá “to paint” á-sàlá “to boil”

á-jàglá “to teach” á-lìká “to run” á-kòlá “to come back”

(c)- á-dɛ́kɛ̄ “to allow” á-dákə̄ “to burst”

á-fífə̄ “to seize” á-gáwɔ̄ “to shear”

More generally, while disyllabic nouns may carry L and M tones throughout as shown in **IV-1-2-1-2** above, verbs can neither have all-L nor all-M suface realizations.

We analyze the stem final H in the L-tone class in **(b)** andthe stem initial H in the M-class in **(c)** as a tone that is inserted so as to meet a demand on the presence of at least one H tone in disyllabic verbs (Alexander Iwara et al., 1997:3). So this inserted H is illustrated in the example below.

Example:

a)- Disyllabic verbs have at least one H tone in isolation[6].

b)- ə-kumə → ə-kumə

H L H L H

c)- ə-fifə → ə-fifə

H M H H M

It is worth noticing here that the Fáŋ infinitive marker ə- always carries a H tone. We will come back on this tonal process in the subsequent chapter.

In this section, we deemed it not important to deal with trisyllabic verbs, for as mentioned earlier, verbs with more than two syllables are considered as serial verbs. That's they are made up of two different verbs.

Conclusion

To sum up, this chapter has taken up the analysis of the tonal system of Fáŋ. So we can retain that, in the Fáŋ language there are three attested level tones namely: the low tone (L), the mid tone (M), and the high tone. These are the only underlying tones attested in this language. Moreover, we have come across four contour tones, namely the rising tone (LH), the falling tone (HL), the mid-high tone (MH) and the high-mid tone (HM). But the latter should be treated as sequences of two different level tones, thus they just occur in surface forms. Moreover, we have seen in this language that tones have two functions: the lexical function and the grammatical function. We therefore have lexical tones and grammatical ones. Besides, this chapter has studied the different tonal patterns within nouns and verbs of this language. This helped us to notice that the high tone and the low tone are the most abundant tones in the tone system of Fáŋ as compared to the mid tone and the super high tone. Further, this part equally revealed that in addition to the lexical low, high and mid tones present in the underlying representation of words in Fáŋ, there is another mid tone known as the default tones. There are also another low tone and another high tone known as pre-linked tones. In addition, this chapter has shown that Fáŋ nouns typically have a variety of tone sequences

[6] We owe this idea which is supported by the Fáŋ data, to Alexander Iwara et al. (1997:3).

whereas verbs have a restricted number of underlying tones. In the following chapter, we will deal with the tonological processes that words undergo in this language.

CHAPTER V: THE TONOLOGICAL PROCESSES

V-0. Introduction

In this section, we will look at the different tonal processes and rules that exist within the nouns and verbs of Fáŋ. More precisely, we will be looking at high tone insertion, tone assimilation high tone and low tone spreading, tone docking, contour tone formation as seen in nouns and verbs, tone Simplification**,** the stray erasure principle, the process of default mid and finally the process of delinking. Tonal processes will be tackled here using the autosegmental model as mentioned in chapter one.

V-1. Tonal Processes

After having analyzed, in chapter three, the tonal patterns that exist within nouns and verbs in Fáŋ, we will now take a look at the tonal processes and rules that apply to these words in this language. Though some these processes and rules were evoqued in the analysis given for the different tonal patterns, it is necessary to discuss each of them in detail. Most often there are two kind of tone-related rules: universal rules and languages' specific rules.These two types of tonal rules are taken up in turn below.

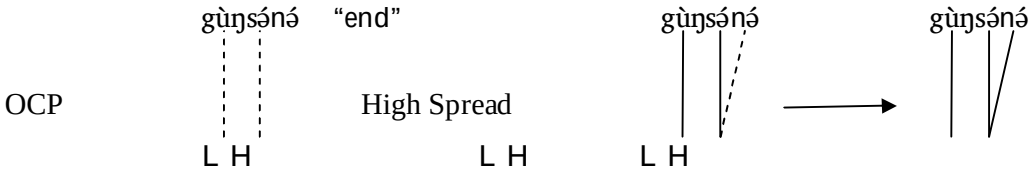
V-1-1. Universal tonological rules

- **Universal Association Convention (UAC)**

This refers to a rule stated in Pulleyblank (1986). It stipulates that tones should be associated to tone-bearing units (TBU) in a one-to-one relationship, from left to right.

- **Obligatory Contour Principle (OCP)**

This is a universal condition that prohibits two identical contiguous tones within the same morphological unit at the systematic phonemic level or Underlying Representation. In case an item has two contiguous tones of the same nature, the rule rather recommends to merge these tones into a branching tone as the illustration below shows.



V-1-2. Language specific tonological rules

It is important to note that the tone rules in this language take place from one syllable to the immediately following syllable as is the case for Kikuyu (Clements 1984), and Chaga (McHugh 1987). The tonal rules seen to apply within words in this language include the following.

V-1-2-1. High tone insertion

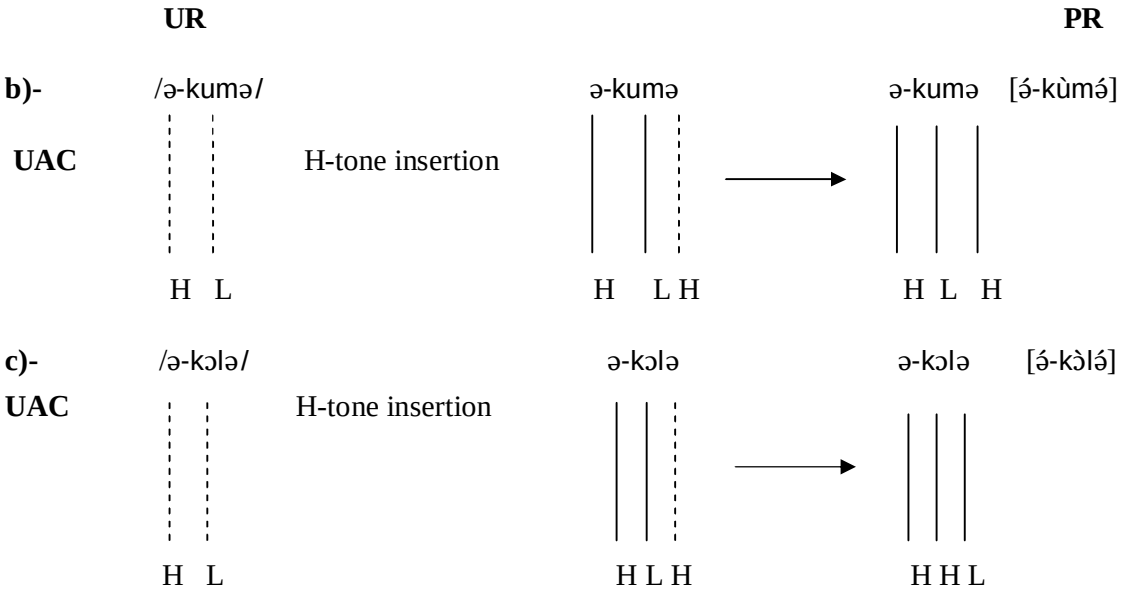
The High tone insertion process generally occurs in verbs, especially in verbs belonging to the L-tone and the M-tone classes. It is therefore a tonological process whereby a H tone is inserted within a L-tone class or a M-tone class. Let us consider the data below.

(a)- á-kùmá "to paint" á-sàlá "to boil"

á-lìká "to run" á-kòlá "to come back"

We analyze the stem final H in the L-tone class in **(a)** andthe stem initial H in the M-class in**(b)** as a tone that is inserted so as to meet a demand on the presence of at least one H tone in disyllabic verbs. So this inserted H is considered as a default tone (see the derivation below) **:**

a)- Disyllabic verbs have at least one H tone in isolation.



It is worth noticing here as said before, that the Fáŋ infinitive marker ə- always carry a H tone. We will come back on this tonal process in the subsequent chapter.

V-1-2-2. Tone Assimilation / High Tone substitution

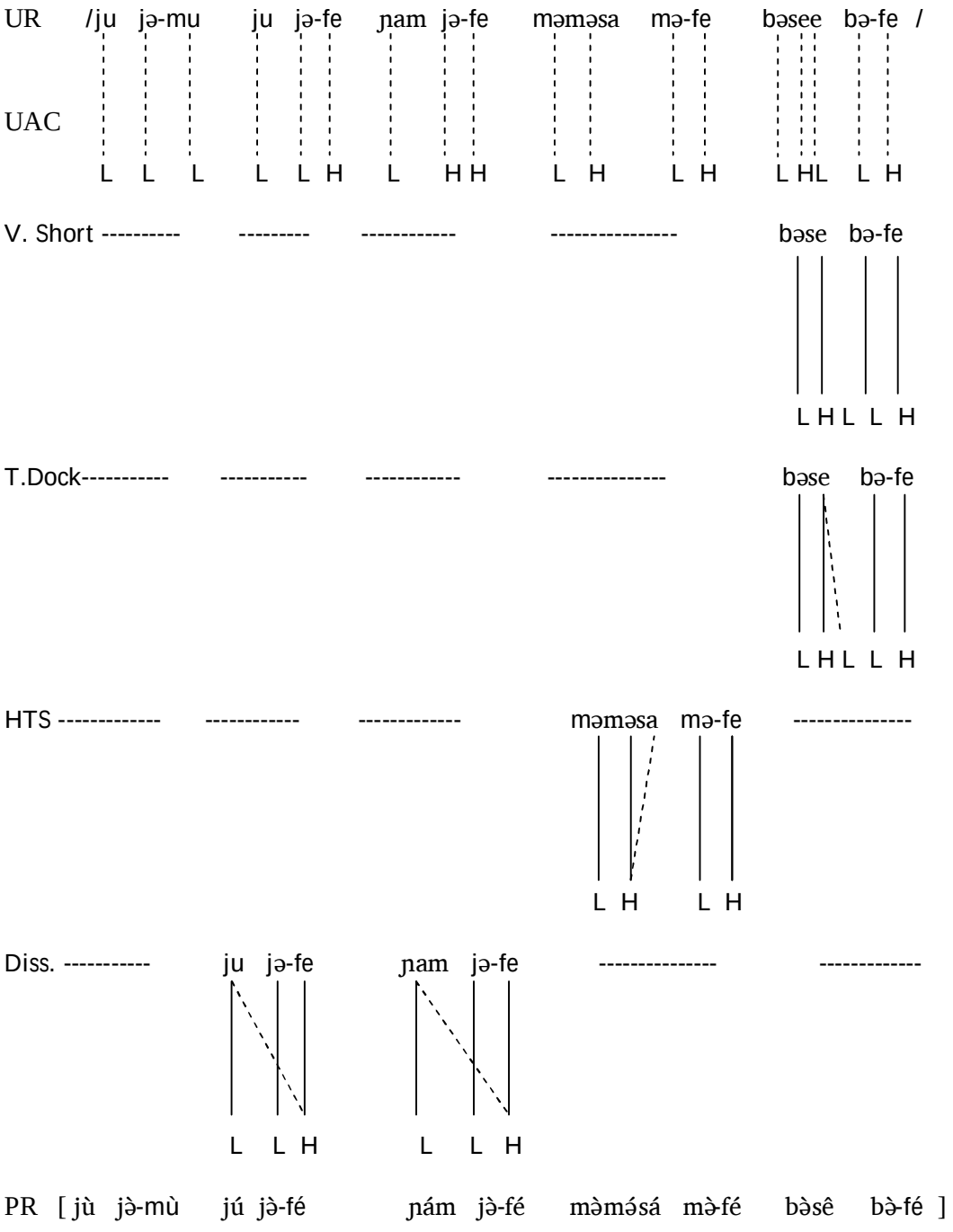
Lebikaza (1999) uses the term Dissimilation to mean that one tone becomes unlike its neighbour after the application of a tonal process. But we have come to see that Fáŋ tones function differently. That is, we rather face in this language, a situation where a given tone assimilates the nature of its neighbour. Most often, this concerns the High Tone which influences the others, especially the Low Tone in Fáŋ. Moreover, this tonological process deals systematically with monosyllabic nouns and high tone verbs. Dissimilation applies from right to left within nouns phrases whereas it is applied from left to right within verb phrases in this language. Moreover, this process has a cross-boundary application in Fáŋ. This is shown in the following data.

V-1-2-2.1. Nouns

As mentioned above, dissimilation applies systematically on monosyllabic nouns. So, the items in a)- do not constitute a fertile domain for the application of this process (there is not any trigger of dissimilation within these phrases). Meanwhile, within the items in b)-, monosyllabicity is what triggers this phonological event (tone substitution).

a)-	fəmásá fəmù	"one cat"	màmásá məfé	"two cats"
	fənân fəmù	"one bird"	mànân məfé	"two birds"
	kəfí kəmù	"one pig"	bəfí bəfé	"two pigs"
	kəsê kəmù	"one dress"	bəsê bəfé	"two dresses"
b)-	ɲàm jəmù	"one meat"	ɲám jəfé	"two meat"
	kìm jəmù	"one monkey"	kím jəfé	"two monkeys"
	jù jəmù	"one house"	jú jəfé	"two houses"

jù jəmù jú jəfé ɲám jəfé bəfí bəfé màmásá məfé bəsê bəfé



PR [jù jə-mù jú jə-fé ɲám jə-fé màmásá mə-fé bàsê bə-fé]

V-1-2-2.2. Verbs

As far as verbs are conserned, dissimilation applies systematically on high tone classes. So, the items in b)- do not have any trigger of dissimilation. However, within the items in a)-, the high tone class is what triggers this phonological event.

a)- ə́-ʒí “to eat” ə́-sə́mnə́ “to play”

ə́-ʒíkáʒímɛ̄ “to eat repeatedly”

ə́-səmnəkásəmnəmɛ̄ “to play repeatedly

b)- ə́-kíən “to look” ə́-nənə “to go”

ə́-tɔ̀mə́ “to send” ə́-kíə “to laugh”

ə́-nɔ̄ “to fight”

ə́-kyəkàkyəmɛ̄ “to look repeatedly”

ə́-nənəkànənəmɛ̄ “to go repeatedly”

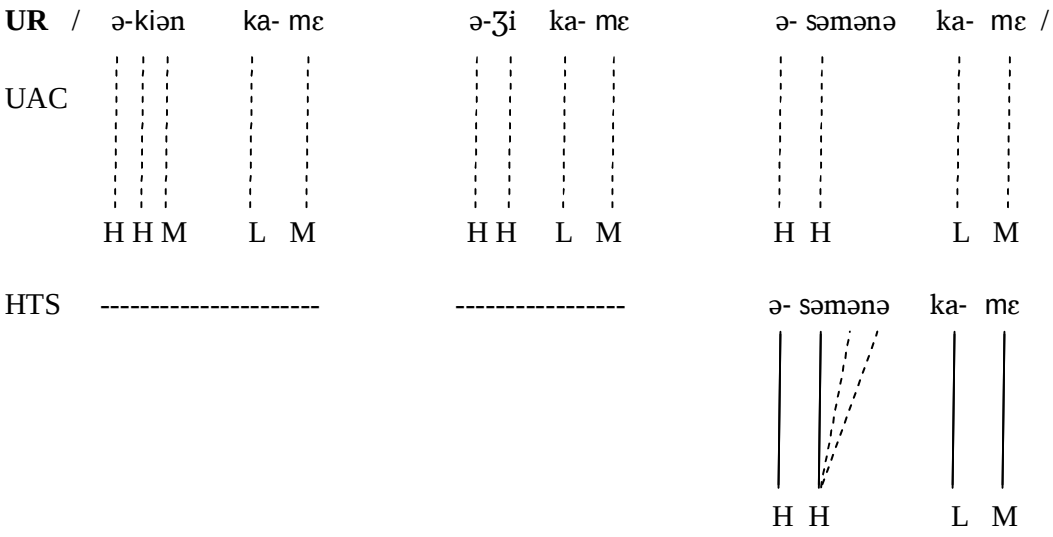
ə́-tɔ̀məkàtɔ̀məmɛ̄ “to send repeatedly”

ə́-kwəkàkíəmɛ̄ “to laugh repeatedly”

ə́-nɔ̄kànɔ̄mɛ̄ “to fight repeatedly”

Some verbs roots like -səmnə́ “play” and -ʒí “eat”, are consisted of only syllables with high tones. Others like -tɔ̀mə́ “send” and -nənə “go”, exhibit the intervention of a mid or a low tone. We thereforeobserve that there is a process of high tone substitution from the verbs root where the high tone appears exclusively, to the first vowel of the morpheme[kà...mɛ̄]. but where a mid or a low tone is present in verbs root, this process does not occur. Here the high tone substitute for the low tone**.** Therefore, let’s provide a defrivation for the following items:

ə́-kyəkàkyəmɛ̄, ə́-ʒíkáʒímɛ̄ and ə́səmnəkásəmnəmɛ̄.


UR / ə-kiən ka- mɛ ə-ʒi ka- mɛ ə- səmənə ka- mɛ /
UAC
H H M L M H H L M H H L M
HTS ---------- ---------- ə- səmənə ka- mɛ
H H L M
Glid. ə-kyən ka- mɛ ---------- ----------
H H M L M
T.Doc.ə-kyən ka- mɛ ---------- ----------
H H M L M
Red. ə-kyən ka-kyən- mɛ ə-ʒi ka -ʒi -mɛ ə- səmənə ka- səmənə - mɛ
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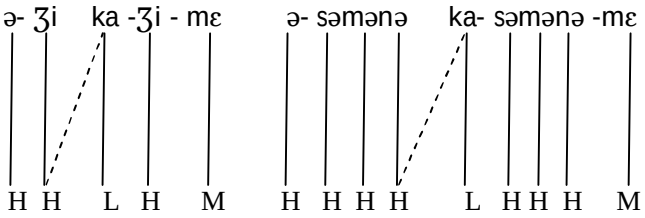
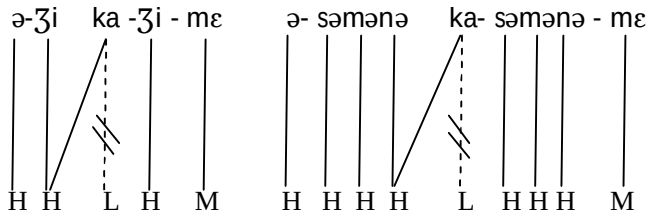
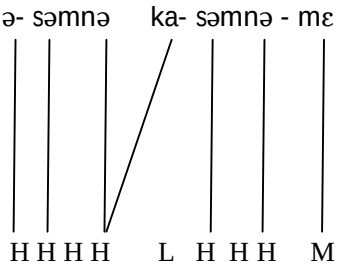


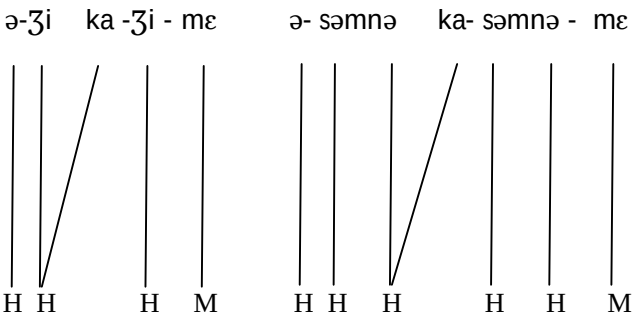
Delink ----------



V. Del. ---------- ----------



S.E. ----------



PR [ə́- kyə̀n –kà -kyə̄ -mɛ̄ ə́-ʒí –ká –ʒí- mɛ̄ ə́-sə́mnə́ –ká -sə́mnə́ -mɛ̄]

V-1-2-3. Tone Spreading

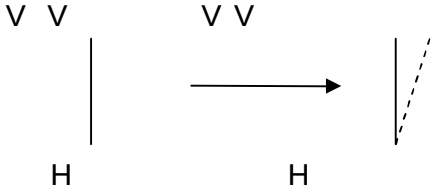
Generally, it has been argued that the multiple linking of tones to a single tone bearing unit is as a result of rule application rather than by association convention as originally stated by Goldsmith's well- formedness conditions. Similarly, the linking of a single tone to more than one tone bearing unit can only occur as the result of a particular rule in a language. This is actually the case in Fáŋ where we deal with two kinds of tone spreading: high tone spreading and low tone spreading.

V-1-2-3-1. High Tone Spreading

Broadly speaking, high tone spreading is a tonal process whereby a tone bearing unit gets the high features of the high tone it precedes or follows. This implies that high tone spreading can take place from left to right, as well as from right to left. This is however not the case in this language. In Fáŋ, spreading is only left to right, and it takes place only from one syllable to the immediately following syllable. Consider the following data.

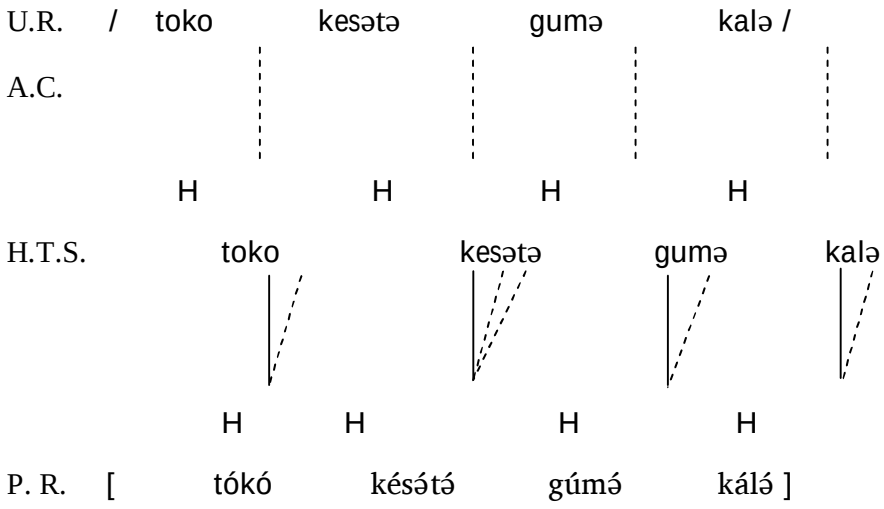
bínə́	"breast"
tókó	"night"
késə́tə́	"darkness"
gùŋsə́nə́	"end"
fə̀mə́sá	"cat"
ə́-gúmə́	"to bury"
ə́-sə́mnə́	"to marry"
ə́-kálə́	"to fold"

Looking at these words, we can say that high tone spreading has taken place from one syllable to the immediately following syllable given the fact that only one high tone can be posited in the underlying representation of these forms. The high tone spreading rule can thus be stated as follows:



The spreading rule reveals that a high tone can spread onto a following toneless bearing unit, that is, a tone bearing unit that had no tone underlying.

As concerns the words in above, the high spreading rule above is seen to apply to them as illustrated in the following derivation.

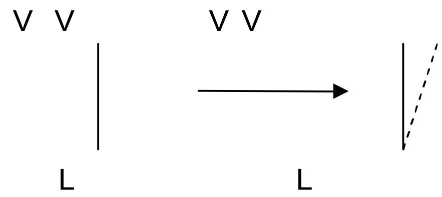


V-1-2-3-2. Low Tone Spreading

Like the process of high tone spreading, low tone spreading is a tonal process whereby a tone bearing unit gets the low features of the low tone it precedes or follows. As said earlier, in Fáŋ, spreading is only left to right, and it takes place only from one syllable to the immediately following syllable. Consider the following data.

fəʒə	"god"
kəntsù	"belly"
jəŋmə	"word of man"
kəkəŋəm	"horse"
fəsɛŋə	"ring"
kəwɔ:ntə	"book"

From the above data, we can say that low tone spreading, like high tone spreading, takes place from one syllable to the immediately following syllable given the fact that only one low tone can be posited in the underlying representation of these forms. The low tone spreading rule can thus be stated as follows:



As concerns the above items, the low spreading rule above is seen to apply to them as illustrated in the following derivation.

U.R. / fəʒə kəkaɲam fəsɛŋə /

A.C.

H H H

L.T.S. fəʒə kəkaɲam fəsɛŋə

H H H

P. R. [fə̀ʒə̀ kə̀kàɲàm fə̀sɛ̀ŋə̀]

The analysis in this section has revealed how the high tone spreading and the low tone spreading rules operate in Fáŋ. One claim about any type of tone spreading rule in this language is that it takes place only from one syllable to the immediately following syllable. Tone spreading in Fáŋ, is therefore left to right and not vice versa.

V-1-2-4. Contour Tone Formation

As already seen, Fáŋ has four phonemic tones: the high, the low, the mid and the superhigh tones. All other tones attested in this language are therefore accounted for through rules that apply within its phonology. This is the case for the contour tones that are attested in this language, which are four in number: the rising tone (ˇ) , the falling tone (ˆ) the mid-high tone(ˉ́) and the high-mid tone(́ˉ).

Broadly saying, contour tones are tones that are realized as a result of some segmental processes such as glide formation, vowel deletion and vowel coalescence, as well as some tonal processes such as high tone spreading and tone docking. When these processes take place (tonal and segmental), a tone bearing unit which was originally associated or linked to a single tone now surfaces with two different or heterogeneous tones. Depending on the type of

tone that docks onto an already linked tone, and considering the direction from which the tones come, a rising, a falling, a mid-high or a high-mid tone is created.

One basic claim in this work is that, in Fáŋ, a tone bearing unit does not link to more than one lexical tone. Like Kinande (Mutaka 1990), the result of this is that a rising and falling tone that consists of a low and high, and a high and low respectively, as well as the mid-high tone and the high-mid tone that consists of a mid and high and a high and mid respectively, cannot be found at the underlying representation of such words in which they occur.

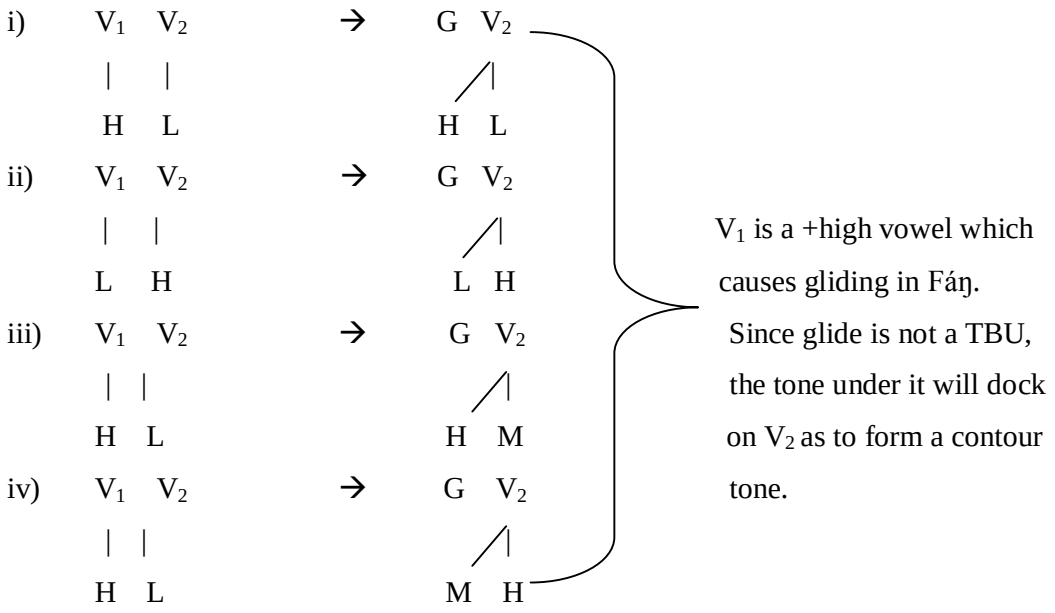
As previously seen, words in Fáŋ exhibit different tonal behaviours at the surface form. Fáŋ being a four tone language, one expects to find words surfacing with just those four tones (high, low,mid and super high tones). This is however not the case, as it is common to find words in this language surfacing with more than one tone on a single tone bearing unit. Let us consider the following data.

túàtú [twâtú]	“tomorrow”		
bàdʒíàŋ[bàdʒjâŋ]	“tall”		
/á-mɛ́ɛ̄/ → á-mɛ̃	“to build”	/á-lúū/ → á-lū̃	“to plait”
/á-sə̄ə́n/ → á-sə̃n	“to cut open”	/á-wūú/ → á-wú	“to hear”

/ábànájà/	[ábànáà] →	[ábànâ]	“be rolling!”
/ádàkàjà/	[ádàkàà] →	[ádàkà]	“be busting!”
/áɲūájà/	[áɲūáà] →	[áɲūâ]	“be pushing!”
/ábánáwō/	[ábánáō] →	[ábánō]	“to you”
/ábásáwō/	[ábásáō] →	[ábásō]	“to us”
/ábúnúwō/	[ábúnúō] →	[ábúnwō]	“to them”

The data above reveals words which surface with contour tone. The claim from the examples above is that these contour tones are as a result of segmental processessuch as glide formation, glide deletion, and vowel truncation. As previously mentioned, two heterosyllabic segments do not occur adjacently to each other in this language. In a situation where such instances occur, due to the concatenation of two or more morphemes, one of the vowel either deletes, or undergoes devocalization. As concerns the above words, they have undergone the

process of devocalization (glide formation) glide deletion and vowel truncation. As a result, the tone of the tone bearing unit that has been affected by these processes, becomes stranded or floating. This stranded or floating tone is then forced to dock onto the adjacent tone bearing unit which, in the above cases, is already linked to a high, a low or a mid tone, thereby creating a contour tone. The tone rule for contour tone formation on words in Fáŋ can be stated as follows.



Note that details about the devocalization rule have been provided in chapter three.

The above rules reveal that after devocalization, the high and low tones in (i), (ii) and (iii) dock onto the following tone bearing units creating a contour tone. This is also the case of glide deletion and vowel truncation. Besides, we do not treat the contour tone formation as a separately autosegmental rule. Instead, we closely link it to the process of tone docking.This can be demonstrated in the subsequent section (tone docking). Indeed, tone docking leads to contour tone formation: we get a contour tone after tone docking.

V-1-2-5. Tone Docking

Tone docking is a tonal process that is very common in Fáŋ. So far, the analysis of contour tone formation has revealed that tone docking is present in all the forms seen. This is so because once a tone loses its tone bearing unit (as is the case with glide formation), such a tone has to associate to a tone bearing unit. This can be seen in the following data:

/ə-mɛ́ɛ̄/ → ə-mɛ̋ "to build" /ə-lúūū/ → ə-lū̋ "to plait"

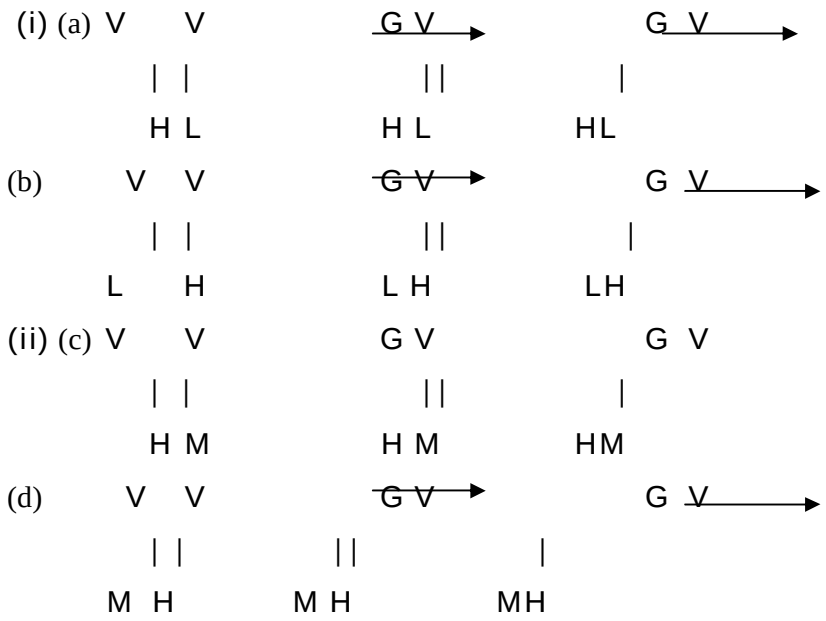
/ə-sə̄ə́n/ → ə-sə̄n “to cut open” /ə-wūú/ → ə-wú “to hear”

/ábə̀nə́jə̀/ [ábə̀nə́ə̀] → [ábə̀nə̂] “be rolling!”

/ə́bə́sə́wō/ [ə́bə́sə́ō] → [ə́bə́sō] “to us”

/ə́búnúwō/ [ə́búnúō] → [ə́búnwō] “to them”

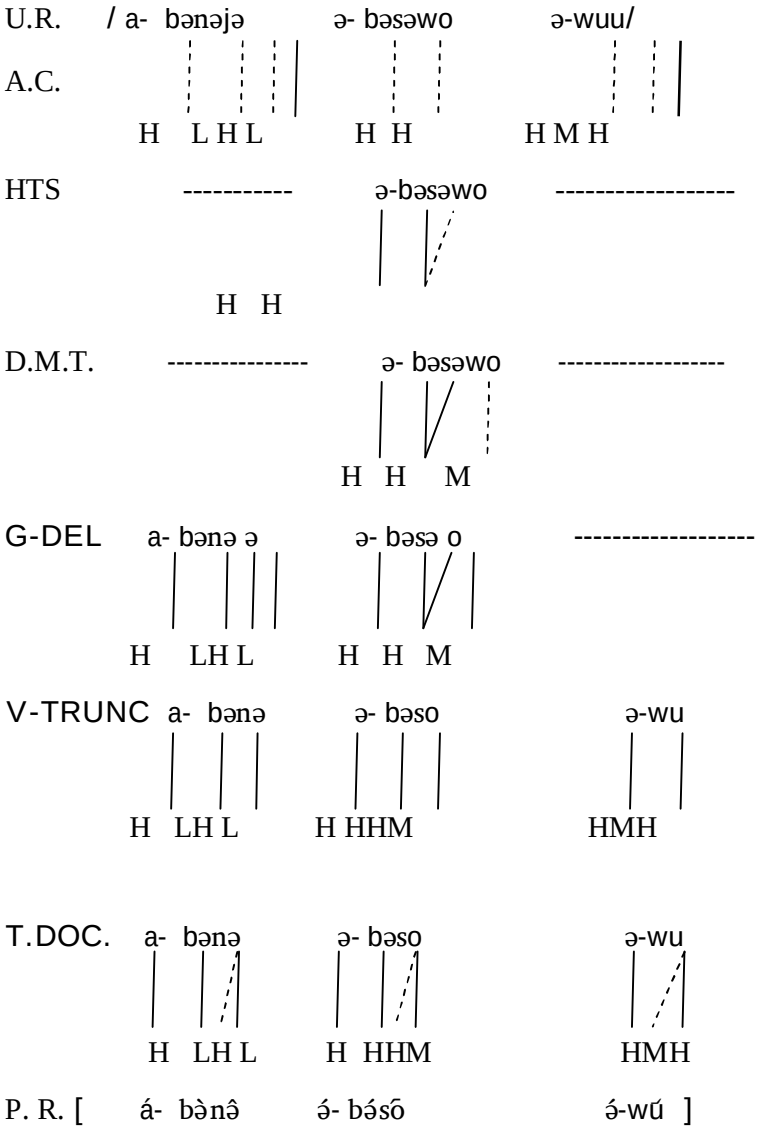
Broadly speaking, tone docking is a phonological (tonal) process in which a floating tone docks onto an adjacent tone bearing unit. The rule for tone docking in Fáŋ can be stated as follows.



As said before, the rules in above apply to forms that have lost a tone bearing unit through the processes of devocalization or gliding and vowel truncation. The rule in (a) has to do with a high tone that loses its tone bearing unit, while in (b) it is a low tone that loses its tone bearing unit. The two cases ((a) and (b)) give rise to a falling and rising tone respectively. Moreover, the rule in (c) has to do with a high tone that loses its tone bearing unit, while in (d) it is a mid tone that loses its tone bearing unit. The two cases ((c) and (d)) give rise to a high-mid and mid-high tone respectively.

It is important to note that tone docking is a very vital process in Fáŋ, as it enables tones which originally had no tone bearing unit as well as those which lost their tone bearing

unit, to be associated to tone bearing units. This can be exemplified using the followingderivation.



As this derivation shows, tone docking is a process which merely applies in this language after the application of glide formation and vowel truncation.

V-1-2-6. Tone Simplification

Tone Simplification is a tonological process whereby a contour tone looses one of its branches to become a level tone. Lets consider the following data.

(a) Límə́ ká kìm → límə́ ká kìm

blood AM monkey "monkey's blood"

(b) tàtílə́ tə́ məkpéŋ → tàtílé tə́ məkpéŋ

mats AM woman "woman's mats"

(c) fətáŋ fə́ ŋgòn → Fətáŋ fə́ ŋgòn

seed AM plantain "plantain's seed"

(d) ɲàm ´(HT) kìm ⟶ ɲàm kîm ⟶ ɲàm kím

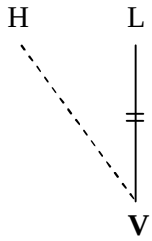
meat AM monkey "monkey's meat"

(e) jù ´(HT) kəfí ⟶ jù kə̂fí ⟶ jù kə́fí

house AM pig "pig's house"

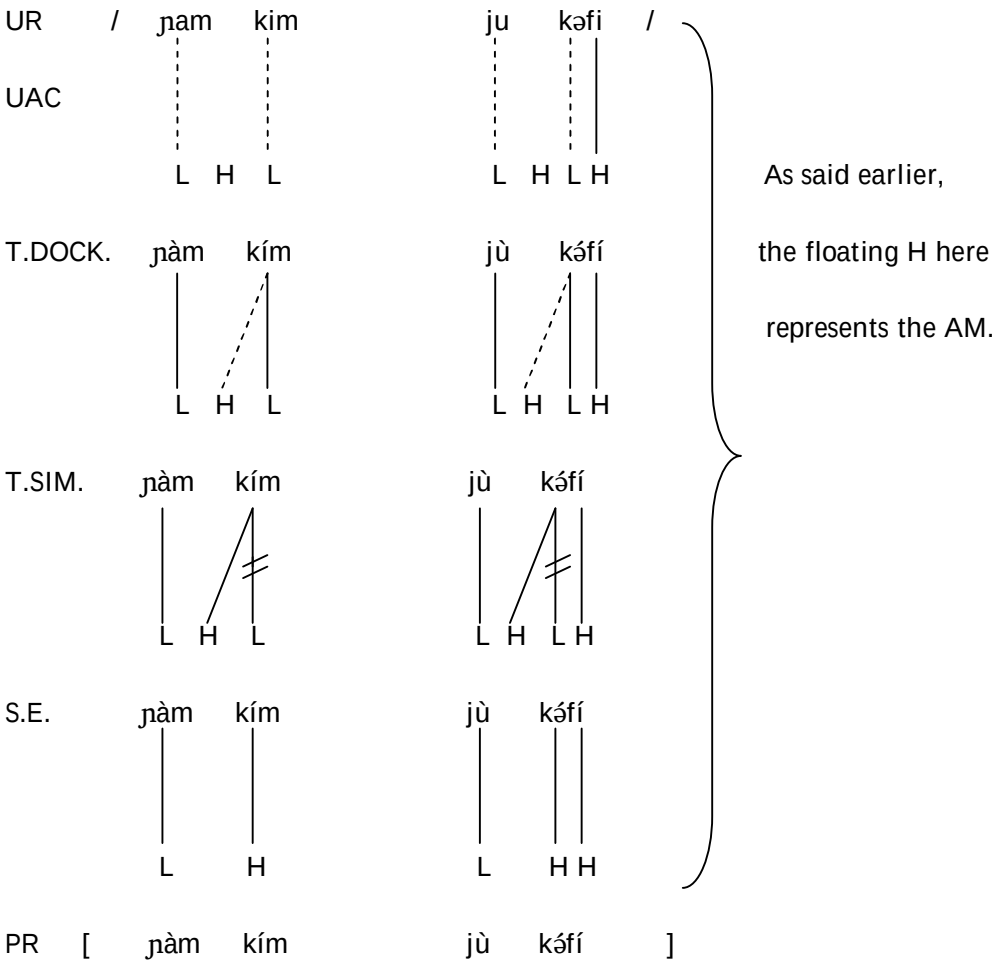
Several changes are observed on the items in the surface strings in the above data where we are dealing with the associative constructions in Fáŋ . There is the appearance of a high tone on the segmental AM in **(a)** to **(c)**, which should surface with a low tone. There is also the appearance of a high tone on the first syllable of the N2 nouns in **(d)** and **(e).**

To account for the appearance of the appearance of a high tone on the segmental AM and on the first syllable of the N2 nouns and the disappearance of the underlying original low of the same syllable, we propose a rightward docking othe AM, then a tone simplification in order to account for the surface high tone. This claim states that a high low contour will siplify to a high:



We have observed that the tone simplification accommodates itself to Chumbow's (1982) proposal. This proposal is a universal tone simplification rule which states that a HL or LH contour will always simplify to a high. This process is illustrated in the following derivation:

ɲàm kím "monkey's meat" jù kə́fí "pig's house"



V-1-2-7. Stray Erasure

We have realized in this work that when a tone is left unlinked after all the possible processes have applied, that tone is deleted through the stray erasure principle. Therefore, the stray erasure principle as seen operating in this language is simply a situation whereby a tone that fails to link to a tone bearing unit is deleted. This can be illustrated using the following data.

/ádàkàjà/ [ádàkàà]→[ádàkà] "be busting!"

/mə́ntàntàwò/ [mə́ntàntàɔ̀]→ [mə́ntàntɔ̀] "I am jumping"

/twò/ [tʊ̀ò] "toilet"

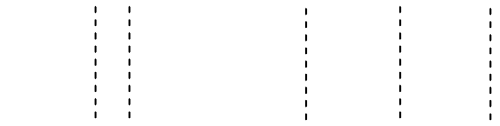
/jwə́/ [júə́] "flesh"

/lyə́/ [líə́] "smoke"

The above data exhibit how low tone items in a)- and high tone items in b)- do not dock, after the application of glide formation and vowel truncation. These low and high tones are therefore done away with, through the stray erasure principle as the derivation below demonstrates.

U.R. / a-dəkəjə tụo juə liə /

A.C.



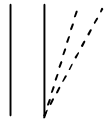
H L L H H

TSP a-dəkəjə tụo juə liə

H L L H H

GLID FOR ---------- two jwə lyə

G-DEL a-dəkəə ------ ------- ------



H L

V-TRUNC a-dək ə ------ -------- -------

H L

S.E. a-dəkə two jwə lyə

H L L H H

P. R. [á-dəkə twò jwá lyá]

The stray erasure principle is however a process that is not very frequent in this language. It actually applies only when all the other processes (rules) have applied, and there is no other option for the left over tone(s).

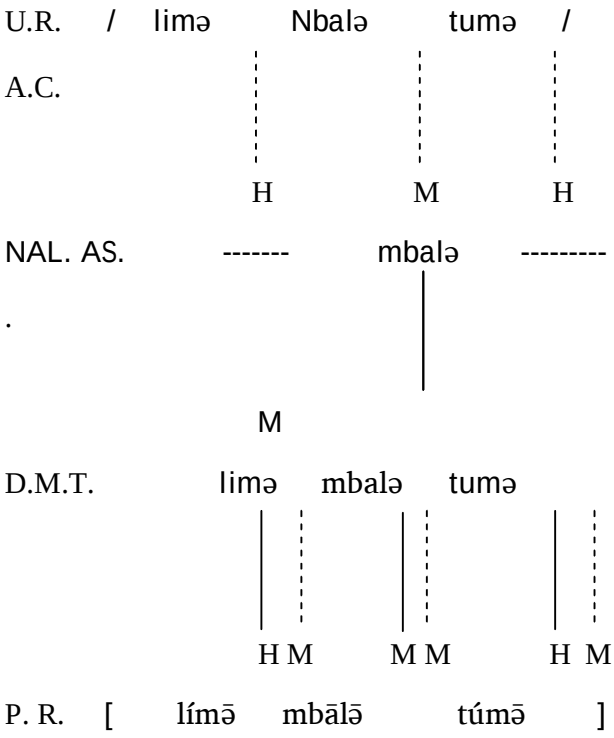
V-1-2-8. Default Mid or Mid Tone Assignment

Our claim in this study like Pulleyblank (1986) is that tone bearing units which are not assigned tones by the phonological rules seen so far, get their tones by a default tone rule. The idea that certain tonal specifications should be filled in by default tone rule is not a new idea in itself. In addition, it has been recognized by almost all linguists working on tones that certain syllables or morphemes have no inherent tone of their own, and so acquire tone as a function of the tonal properties of adjacent syllables or morphemes (as seen in the analysis of the previous sections in this study). In a situation where this fails to happen, that is, where a morpheme or syllable fails to acquire a tone from an adjacent morpheme or syllable, that morpheme or syllable is assigned a default tone. In Fáŋ, we deal with the default Mid. This process functions like the default low in other languages. The rule and the data below permit us to exemplify this process.

V -> V
|
M

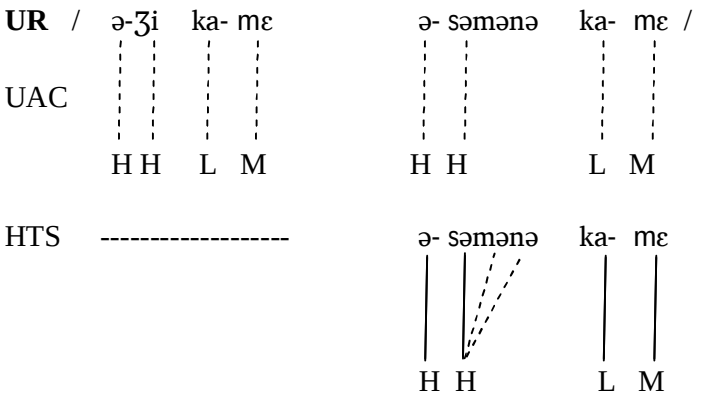
(a)	mbālə		“soup”	
	límə		“blood”	
	túmə		“village”	
(b)-	ə́-dɛ́kɛ̄	“to allow”	ə́-də́kə	“to burst”
	ə́-fífə	“to seize”	ə́-gáwɔ̄	“to shear”

As concerns the words above, the defauld mid rule is seen to apply to them as illustrated in the following derivation.

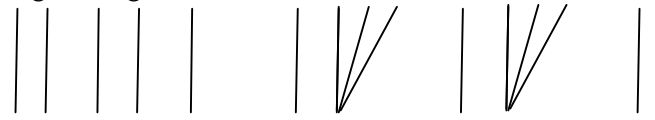


V-1-2-9. Delinking

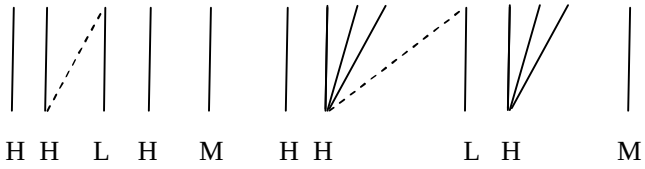
It is commonly held that phonological processes are nothing but linking and delinking operations. In autosegmental term, all phonological events imply the linking or delinking of melody (tone) to/from a skeletal slot or a syllabic constituent. In this section, we deal with the process of delinking. This is a process which is caused in this language by the operation of tone assimilation or dissimilation. Let us exemplify this by the following derivation (see section V-2-2-2.2.).



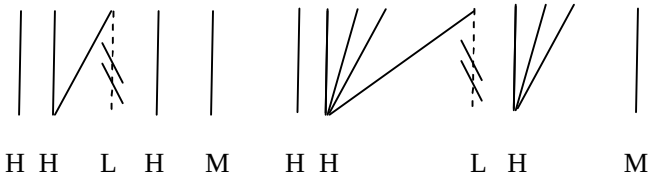
Red. ə-ʒi ka -ʒi -mɛ ə- səmənə ka- səmənə - mɛ



Dis. ə- ʒi ka -ʒi - mɛ ə- səmənə ka- səmənə -mɛ

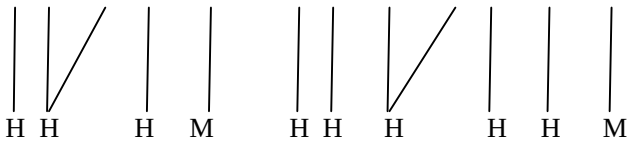


Delink ə-ʒi ka -ʒi - mɛ ə- səmənə ka- səmənə - mɛ



V. Del. ---------- ə- səmnə ka- səmnə - mɛ

S.E. ə-ʒi ka -ʒi - mɛ ə- səmnə ka- səmnə - mɛ



PR [ə́- ʒí –ká –ʒí- mɛ̄ ə́- sə́mnə́ ká -sə́mnə́ -mɛ̄]

Conclusion

In this chapter, a number of tonal phenomena that occur within the phonology of Fáŋ have been discussed. It has been shown that tone is contrastive in this language, as the same word can have different meanings when it features with two different tones. It has equally been shown that though words in Fáŋ have the tendency of surfacing with more than one tone on a single tone bearing unit, only one tone can be associated to a given tone bearing unit at the underlying representation. Precisely speaking, only the high tone, low tone, and mid tone were seen to be present in the underlying representation of words. The contour tones were

accounted for through some phonological processes whereas the super high tone was considered as a result of phonetical implementations.

Note that some processes such as glide formation (devocalization) and tone spreading rules are very important in this language, as they enable tone bearing units to surface with tones other than those to which they were originally associated, or to which they were not previously linked. Similarly, the tone docking rule is also very vital in Fáŋ, as it enables tones which originally had no tone bearing unit, or who have lost their tone bearing unit, to be linked to tone bearing units.

All in all, this chapter has revealed remarkable tonal phenomena, and has given a better insight into the tonal situation of the phonology of Fáŋ. Finally, the analysis in this chapter has confirmed the first assumption which is that Fáŋ is underlyingly a three tone language, namely, the high, low, and the mid tone.

CHAPTER VI: GENERAL CONCLUSION

VI-0. Introduction

This chapter intends to provide the reader with a summary of the whole thesis and its findings. Another purpose of this chapter is to indicate the difficulties we faced during this work and to make some recommendations for further research works on this language.

VI-1. Summary and findings

The topic of this work is: Aspects of the phonology of Fáŋ. A language spoken in the North-West Region, especially in a village called Fang. This village is situated in Wum subdivision, in an area known as Lower Fungom. As stated in the introductory chapter, the aim of this work was to provide an analysis of some aspects of the *phonology of Fáŋ*. We therefore discussed the sound and tone systems of this language as well as the segmental and tonological phenomena that exist in the phonology of this language. In order to achieve this goal, we organized our work in six chapters: chapter 1: general introduction, chapter 2:the sound pattern of Fáŋ, chapter 3: the phonological processes of Fáŋ, chapter 4: the tonological systemof Fáŋ, chapter 5: the tonological processes, chapter 6: general conclusion.

The introductory chapter begins by a presentation of the objectives and motivation of this study. In this chapter, we also provided the geographical, socio-cultural situations and the historical background of the language as well as the linguistic situation so as to enable the reader to locate the language and its speakers. Attention was paid to works that have so far been carried out in this language by both linguists and non-linguists.The theoretical framework used in the analysis of this work was equally described in this chapter. The data collection procedures, treatment and interpretation were further subject of discussion in this introductory chapter. Finally, the manner in which the dissertation is organized was given, as well as the scope it covers.

In chapter two we presented the sound system of Fáŋ. In this chapter, we provided the phonemic inventory of consonants and vowels. We therefore had to analyze minimal pairs in relation with the different phonetic sounds, in order to contrast them in identical and quasi-identical environments so as to come out with distinct phonemes as inspired by Essono (2006) and Mutaka and Tamanji (2000). Thus, from this study, we retain that Fáŋ has a phonic system that exhibit thirty-height (38) consonants among which there are thirty-two (32)

phonemes on the one hand, and, on the other hand, eleven (11) vowels among which there are eight (08) phonemes with their corresponding eight (08) long vowels. We ended up in this chapter by providing the distinctive feature matrix of the consonants and vowels attested in Fáŋ.

As far as chapter three is concerned, we were interested in the segmental processes that take place within the phonology of this language. It was argued in this chapter that in order to better understand the segmental processes of this language, it is necessary to analyze its syllable structure since words are composed of syllables. The syllable structure processes on the other hand were considered to be better identified by examining the different syllable types. The analysis of the syllable structure of nouns and verbs in this language revealed relevant information about the nature of words in the language. The following syllable types were found to be present within words in this language: V, CV, CVC, CGV and CGVC. The CV was considered as the core syllable and this was important in the interpretation of segmental processes. Those segmental processes present within the phonology of this language were argued for as a means of preserving the syllable structure of this language. It is worth noticing that this chapter also presented the morpheme and the word structure in Fáŋ. It was therefore mentioned that, in this language, words are generally monosyllabic and disyllabic. So, a good number of tri/polysyllabic words found in Fáŋ are either compound nouns or serial verbs.

Some segmental processes and rules identified in this chapter were very vital for the analysis of the tonal processes in the following chapter. A number of segmental processes were seen to be present in the phonology of Fáŋ. These processes revealed a number of rules whose motivation was argued to be structure preservation. More precisely, twelve segmental rules were seen to be present within the phonology of this language. These include: glides formation, vocalic elision, glide deletion, nasal deletion, vocalic insertion, nasal assimilation, vowel lengthening, vowel shortening, vowel rounding, vowel truncation, vowel raising and aspiration.

Chapter four, entitled the tonological systemof Fáŋ, exhibits an overview of the tonological system of this language. The phonetic and the phonemic inventories of tones and the classification of tonemes are outlined in this chapter. We noticed that in Fáŋ language, there are three attested level tones namely: the low tone (L), the mid tone (M), and the high tone (H). These are the only underlying tones attested in this language. The phonetic super-high tone (S) was considered as a result of phonetic implementations. Moreover, we have come across four contour tones, namely the rising tone (LH), the falling tone (HL), the mid-

high tone (MH) and the high-mid tone (HM). But the latter should be treated as sequences of two different level tones, thus they just occur in surface forms. We also analyzed minimal pairs in relation with the different phonetic tones, in order to contrast them in identical environments so as to come out with distinct tonemes as inspired by Essono (2006). This chapter also shows that tones have two functions in this language: the lexical function and the grammatical function. We therefore got lexical tones and grammatical tones.

The present chapter is equally dedicated to the treatment of the various tonal patterns found in both nouns and verbs of this language. So, nouns and verbs in Fáŋ can surface with many different tonal patterns which fall into different tone groups. However, it has been said that the tone groups in Fáŋ words just consisted of a variety of tone sequence as seen in many Bantu languages (Mutaka and Tamanji, 2000, 85). We took into consideration the internal structure of words in Fáŋ in order to better analyze their tonal patterns. In doing so, we paid attention on the fact that Fáŋ basic words are generally said to be monosyllabic, disyllabic, and sometimes tri/polysyllabic as shown in chapter three. For each syllable structure, examples were provided, revealing all the possible tonal patterns present within a given category. The occurrence of each tonal melody was analyzed and accounted for.Thus, we came out with a good number of tone classes within nouns and verbs. Thus, Fáŋ nouns present Low, High, Mid, Super high, High-Low, Low-High, and High-Mid classes, while Fáŋ verbs exhibit Low, High, Mid, and Super high patterns.

In conclusion, some tonal variations can be accounted for by the interaction of some phonological processes as well as by some tonal processes. Moreover, the presence of tonal variations in this language reveals interesting tonal phenomena that were explored in chapter five.

Chapter five focused on the tonal phenomena within the phonology of this language. In fact, in the course of accounting for the tonal patterns revealed from the data, several tonological processes and rules were obtained. These tonological processes were analyzed using the autosegmental theory. It was important to note that the tone rules in this language take place from one syllable to the immediately following syllable as is the case for Kikuyu (Clements 1984), and Chaga (McHugh 1987). This chapter mentioned that there are two kind, of tone-related rules: universal rules and language specific rules. Within the universal tonological rules, we dealt with the Universal Association Convention (UAC) and the Obligatory Contour Principle (OCP). As far as language specific tonological rules are concerned, we analyzed a good number of tonal processes and rules that exist within the nouns and verbs of Fáŋ. Therefore, the tonal processes and rules seen to apply within words in

this language include the following: high tone insertion, high tone substitution, tone spreading, contour tone formation, tone docking, tone simplification, the stray erasure principle, the delinking, and finally default mid.

In sum, a number of findings were obtained during the analysis of the phonology of Fáŋ. Therefore, the following are the salient findings of this research.

First, it has been pointed out that Fáŋ is a language of thirty-two consonants and ten vowels among which there are eight long vowels. Again, the analysis revealed twelve segmental rules, amongst which some led to tonal variations. These rules were: glide formatiom (devocalization), vowel deletion, nasal deletion, glide deletion, vowel truncation, vowel insertion, Aspiration, vowel shortening, homorganic nasal assimilation, and vowel rounding. It was pointed out that the motivation for these rules was to meet up with the structure that is accepted within the phonology of the language, thereby preserving and respecting the preferred syllable structure of the language.

Next, the analysis brought out the fact that Fáŋ is actually a three tone language, namely, the high tone, low tone, and the mid tone. This was actually important as it clarified the first assumption that guided this work: Fáŋ has three underlying tones: the high tone, the low tone, and the mid tone. All other tones were accounted for by positing some tonal rules. Moreover, this research exhibits seven tone pattern, at the level of nouns (the Low, High, Mid, Super high, High-Low, Low-High, and High-Mid classes) and four at the level of verbs (the Low, High, Mid, and Super high patterns).

Finally, it has been revealed in this thesis that ten tonal rules were seen to be present within the phonology of this language: high tone insertion, high tone substitution, high tone spreading, tone docking, contour tone formation, the stray erasure principle, the delinking, the default low, default high and finally the process of default mid..

The findings in this work have revealed the nature of the phonology of Fáŋ. Most importantly, the behaviour of tones in different contexts was analyzed in great details. This work will thus be of great use to tone designers who are interested in designing the tone orthography of Fáŋ. To better represent tone in orthography, Chumbow (2001) affirms that the best system of tonal representation in any orthography is one that is derived from an insightful study of the entire phonological system of the particular language with a special focus on its tonology or tonal system. This is actually what this dissertation was all about. The work brought out the function of tones in this language, the number of level tones that the language

has the tonal changes that these level (lexical) tones undergo during phonological processes and grammatical constructions, why they undergo these changes, and so on.

Tone is not easy to deal with. Many linguists working on tones have supported this view by saying that even those with training who can distinguish systematically between one tone and another are still worried about writing it. Many users cannot easily be taught to read tone correctly, not to mention writing it. It is thus in this respect that we consider this work as one which is not complete in itself, but which stands as a basis for further research on the nature and behaviour of tones in Fáŋ. Our hope is that this work has contributed a great deal to a better and insightful understanding of the tonal phenomena that exist in this language, and also to the literature on phonology, especially with respect to tone.

VI-2. Difficulties

The major difficulty we faced during this work is that Fáŋ village is not an accessible place. That is one cannot easily reach there, for the road that leads to this village stops on its way, especially at Yemge, a small center which is very far away from Fáŋ. So given the fact that even motorbike, cannot reach there, we had to trekk (to go on foot) in order to reach Fáŋ and to meet consultants. Sometimes, after walking many kilometers without reaching Fáŋ, we had to spend the night in a small village so as to walk towards Fáŋ the following day.

Moreover, as soon as we started doing this work, we were admitted to the higher teacher's training college of Yaounde, in the Department of Cameroonian Languages and Cultures. We must confess that this training was so uphill that it was very difficult progress normally with this research at the same time as we acted as guinea pigs for the experimentation of programs of this very new Department. That is why this work took us too much time.Our lack of normal progress in this work was also due to a lot of health problems that we faced during this research. This became very serious when the problem of sinusitis and eyes ploblem intervened: we were then sometimes unable to work with the computer for a considerable period of time.

VI-3. Recommendations

To end the foregoing discussions, we have deemed it opportune to give some recommendations. In this section we are therefore proposing some orientations for further research on the one hand and some orientations for the promotion of Fáŋ language on the other.

VI-3-1. Recommendations for further research

The phonological analysis of a given language happens to be the starting point of any descriptive study of that language. It is generally understood that, in studying a language, linguists find evidence to show that there are patterns to study, then figure out what the nature of the patterns are, and finally, determine a formal characterization of the patterns. In each of these efforts, linguists maintain a fairly broad approach. When finding a pattern, the concern is not simply 'does this pattern exist?' but also, 'how does this pattern interact with other patterns in the language?' and how does this pattern compare to similar patterns in other languages?' The analysis in this thesis has succeeded in dealing with many patterns that exist in Fáŋ, and how they interact with each other. However, we must admit that the present research work is not sufficient to account for the functioning of the entire language. In this perspective, we encourage other researchers who like us wish to bring their contribution in the process of standardization of this language to carry out other descriptive studies on Fáŋ which will better shed light on various aspects of this language. These researchers may study other levels of analysis of the phonology of this language like lexical phonology, phrasal phonology, prosodic phonology and metrical phonology.

We also recommend other researchers to explore other language domains such as morphology, semantics, syntax, lexicology and terminology. In doing so, Fáŋ will no doubt escape from the phenomenon of language death which happens to be a constant formidable threat to indigenous languages. Moreover, through such works, Fáŋ will get an important documentation which will permit it to be easily taught in schools as local languages are already taught in school officially.

VI-3-2. Recommendations for the promotion of Fáŋ

The effective introduction of Cameroonian languages and cultures is materialized through the appointment of regional inspectors of CLC (Cameroonian Languages and Cultures) in 2007 and the opening of the Department of CLC of the Higher Teacher Training School of Yaounde in 2008. But there is still a need to see Cameroonians practicing their Mother Tongues (MT) in day to day conversations. That is why we think that the action of introducing national languages and cultures in schools programs is great but not sufficient. The practice in question must start in households and need a help from the main actors in such a process, namely, parents, scholars, the government and even NGOs (Non-Governmental Organizations) and foreign universities. We therefore address our recommandations to these actors in turn below.

First of all, parents constitute the fisrt target for our recommendations. Since households are considered the first places of socialization, parents should speak the MT to their children from the childhood. Thas is they ought to speak as much as possible at least one national language like Fáŋ which must in fact constitute the main means of communication at home. Notice that the MT here refers to any local language that a Cameroonian as a native speaker can have. Therefore, if Fáŋ parents, for instance, endeavour to always converse with their children in Fáŋ, the latter will behave as Fáŋ native speakers, which is indispensable for the promotion of this language.

Again, we consider scholars as the second target of our recommendations. Scholars refer here to any teacher and students concerned by the teaching of national languages and cultures. Thisalso refers to national and international researchers interested in the domain of linguistics and culture. We therefore suggest that, in class situations, students should be given tasks on their various ethnical cultures, on their MT, that is the language of their ethnic group so that young Cameroonians in general and young Féŋə́ in particular could keep in touch with their culture and their MT even when they have not been using it since their childhood. Teachers of all level of education should equally sensitize both parents and students on the importance that lies in the promotion of local languages and cultures. Indeed, Cameroonian cultures constitute the living soul of this nation and Cameroonian languages are the means par excellence to express and to transmit these cultures.

Researchers in their turn are encouraged to continue carrying out studies on CLC in order to multiply good fruits or results in the tasks of documenting local languages and cultures. They should therefore multiply publications of works on CLC. Meanwhile, it is worth noticing here that these published works must be largely written in Cameroonian languages in general and in Fáŋ in particular, since a good number of works done so far on CLC have merely been published in official languages: English and French.

Further, our recommandations are also addressed to the government. The government has made good efforts by introducing CLC in school curricula which is interesting but not sufficient. The government should open more departments of CLC in all the regions. This will help to train more teachers of CLC. Thus, before long, a good number of CLC may be taught in schools. The government should also decide to implement a compulsory course of CLC like the course of bilingual training for all the series in all the universities and all the vocational school. Therefore while promoting by this way CLC, this will for instance help Cameroonians to know and to be accustomed to their own environment. The government

should equally develop strategies to introduce CLC in private enducational institutions, for this action should concern all the Cameroonians. This will surely lead to the promotion and the development of all the CLC which is important for the emergence of our country since any national emergence largely lies in the Cultural Revolution.

Finally, we have to address our recommandations to national and international NGOs as well as foreign universities. We encourage NGOs and foreign universities to continue providing human and financial resources for the development of local languages in general and Fáŋ in particular. Indeed, giving an aid for the development and the promotion of our local languages, which are sometimes endangered, is to participate in the battle of conservation of the worldwide cultural patrimony. In effect, every language constitutes a means of expression of the cultural patrimony of its people. So, when a language is not promoted and dies or disappears, it is an irreplaceable section of our knowledge and our understanding of the world which is for ever lost.

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APPENDICES

APPENDIX A: LIST OF WORDS

1- Nouns

kófə́	“bone”
bínə́	“breast”
tókó	“night”
fə̀ʒə̀	“god”
kə̀:ntsù	“belly”
jə̀:ŋmə̀	“word of man”
mbālə	“soup”
gɔ̀lə́	“foot”
dwàlə́	“star”
ŋgə̀kpə́	“root”
jə̀kpún	“tree branch”
kálə̀	“day”
kósɔ̀ŋ	“question”
kwə́lə̀	“rat”

límə̄	“blood”
túmə̄	“village”
fə̀:nə̂n	“bird”
bə̀kə̂	“chairs”
kə̀də̂	“door”
ŋmə̀	“person”
ɲə̀m	“meat”
tsù	“sun”
kpɛ̀	“burn”
sìm	“heart”
wán	“child”
búŋ	“mountain”
tsé	“stone”
kú	“head”
fú	“hair”
mbʰɻ̄	“earth, world”
dʒɛ̄	“lion”
tsə̄ŋ	“neck”
kā	“every”

ʃū	“full”
tǐm	“woodash”
tǐ	“palm kernel”
jű	“houses”
dʒǐ	“roads”
tûm	“land”
jân	“teeth”
gǐ	“egg”
sě	“sand”
késátá	“darkness”
Wánkákpɛ́ŋ	“girl”
Kálwásúŋ	“son”
kàkàɲàm	“horse”
fàsɛ̀ŋà	“ring”
kàwɔ̀:ntà	“book”
kàfálá	“cap”
kàlátá	“calabash”
kàtʃɔ́ŋná	“groundnut”
gùŋsánà	“end”

fəmásá	“cat”
fàŋgóŋgóŋ	“ant”
kàlɔ́fá	“knife”
dùbàndɔ́ŋ	“goat”
bàlàŋgí	“blanket”
màlásùŋ	“man”
tàpárùm	“palour”
bàtwəfə	“wisedom”
fàŋgúfə	“umbrella”
fwɔ̀mtúmà	“president”
fàŋkàlàŋgwá	“louse”

2- Verbs

a- Simple verbs

ə́-tűŋ	“to crow”
ə́-ŋműg^hū	“to smoke”
ə́-tɛ́mkāŋ	“to surround”
ə́-wű	“to hear”
ə́-fəm	“to suffer”
ə́-dʒí	“to feed”
ə́-jó	“to go up”
ə́-lí	“to enter”

ə́-tə́m	“to shoot”
ə́-lùm	“to bite”
ə́-fà	“to shave”
ə́-kɔ̀ŋ	“to love”
ə́-dì	“to cry”
ə́-kū	“to fasten”
ə́-bə̄	“to load”
ə́-gɔ̄m	“to pay”
ə́-bāŋ	“to cover”
ə́-tə́n	“to jump”
ə́-ʒí	“to eat”
ə́-dűŋ	“to sit”
ə́-kɛ́	“to see”
ə́-mɛ̄	“to build”
ə́-lú	“to plait”
ə́-sə̆n	“to cut open”
ə́-wú	“to hear”
ə́-kăm	“to squeeze”
ə́-jɔ̂	“to quarrel”
ə́-gúmə́	“to bury”
ə́-sə́mnə́	“to marry”
ə́-kálə́	“to fold”
ə́-dékɛ́	“to stop”

á-fɔ́fá	“to fly”
á-jə̀lá	“to kill”
á-kùmá	“to paint”
á-sə̀lá	“to boil”
á-jə̀glá	“to teach”
á-lìká	“to run”
á-kɔ̀lá	“to come back”
á-dɛ́kɛ̄	“to allow”
á-dáká	“to burst”
á-fífə̄	“to seize”
á-gáwɔ̄	“to shear”
á- wú	“to strip”
á- fə̀sá	“to remove”
á- sínə́	“to turn”
á- jā	“to give”
á-báŋ	“to close”
á-fɛ̄m	“to lock”
á- gɛ̀nə́	“to say”
á-tʃ̄in	“to cut (with a knife)”
á-tənə́	“to see off”
á-ɲyɛ̌	“to write”

ə́-gʰʊ́	“to leave”
ə́-dé	“to put”
ə́-ʃɨ́	“to bring down”
ə́-jó	“to climb”
ə́-jə̀n	“to go”
ə́-tə̄m	“to shoot”
ə́-sə̄n	“to shift”

b- Serial verbs

ə́- sínə́gɛ̀nə́	“to reply”
ə́- wúfə̀sə́	“to strip off”
ə́- sínə́jā	“to give back”
ə́-jójə̄n	“to climb up”
ə́- sínə́jə̄n	“to trake back”
ə́-déʃɨ́	“to unload”
ə́- sínə́gyə̂	“to return”
ə́-sə̄nʃɨ́	“to lower”
ə́-ɲyə̀tə́nə́	“to pintch”
ə́-jāgʰʊ́	“to lend”
ə́- tə̄msínə́	“to go round”
ə́-tíntə̄nə́	“to chop”
ə́-báŋfɛ́m	“to lock (seriously)”

Appendix B: Some words in collocation

Límə́ ká ŋkúŋ	“chief’s blood”
Wân fə̀mə́sá	“cat’s tooth”
Wân mə̀mə́sá	“cats’ tooth”
ɲàm kìm	“monkey’s meat”
ɲàm fə̀nân	“bird’s meat”
ndʒə̄m mə̄ gbúŋ	“mountain’s water”
ndʒə̄m mə̄ tə̀gbúŋ	“mountains’ water”
límə̄ mə̄ wú	“nose’ blood”
jú kə̀fí	“pig’s house”
wân puín	“tree’s leaf”
kə́sə́ wə̄ jō	“house’s spoon”
tə̀kə́sə́ wə̄ jō	“house’s spoons”
mbə̀nə̀ wə̄ jō	“house’s salt”
ndʒə̄m mə̄ mbɔ̀	“rainbow’s water”
kə̀sê ká ŋkúŋ	“chief’s dress”
tìlə̄ kpéŋ	“wife’s mat”
tìlə̄ tá ŋmə̀kpéŋ	“wife’s mats”
bə̀dʒélə̀ bá gbúŋ	“mountain’s bridge”
fə̀táŋ fə̀ gôn	“plantain’s seed”
ɲàm kólə̀	“rat’s meat”
ɲàm jə̀mù	“one meat”
kìm jəmù	“one monkey”
jù jə̀mù	“one house”
kə̀fí kə̀mù	“one pig”
ntsə̀ŋ jə̀mù	“one neck”
wú wə̀mù	“one nose”
bə̀dʒélə̀ bə̀mù	“one bridge”
fə̀mə́sá fə̀mù	“one cat”
fə̀nân fə̀mù	“one bird”

ɲám jəfé	“two meats”
kím jəfé	“two monkeys”
jú jəfé	“two houses”
bəfí bəfé	“two pigs”
ntsəŋ jəfé	“two necks”
wʉ́ wəfé	“two noses”
bədʒélə bəfé	“two bridges”
məməsá məfé	“two cats”
mənən məfé	“two birds”

ɲám jətsâ	“five meats”
kím jətsâ	“five monkeys”
jú jətsâ	“five houses”
bəfí bətsâ	“five pigs”
ntsəŋ jətsâ	“five necks”
wʉ́ wətsâ	“five noses”
bədʒélə bətsâ	“five bridges”
məməsá mətsâ	“five cats”
mənən mətsâ	“five birds”

Appendix C: Sample derivation

In order to better understand the notion of rule ordering in Fáŋ, we deemed it interesting to illustrate it through sample derivations. Note that a sample derivation is a practical exercise through which examples of segments are analysed in the light of the different phonological rules attested in the language. This aims at showing the validity of different phonological rules that we postulated in chapter three.

Therefore, let us derive the following items.

líə́	“smoke”
dùàlə́	“star”
tʉ̀ò	“toilet”

bədʒíəŋ	“tall”
mɔ́mə́sə́	“act”
fəmágɔ̀lɔ̀	“mango”
wánNkúŋ	“prince”
ɲàmNgbú	“my meat”
kpɥ́	“death”
tɨ́ā	“need”
ádékɛ́jə̀	“be stoping”
ə́bə́sə́wō	“to us”
kəwɔ̀Ntə̀	“book”
kúáŋ wənín	“big pan”
ŋmə̀mə̀bətɛ́ɛ̀	“adults”
ábənə́jə̀	“be rolling”
ájəgə́ləjə̀	“be learning”
ə́bə́nə́wō	“to you”
mə́ŋmúwɔ̀	“I am drinking”
kânkəmù	“it is one”
kântsáwɔ̀	“it is five”

UR / líá dùàlá mɔ́másá fàmágɔ̀lɔ̀ ɲàmNgbú kpú̱ tɻ̏ā ádékɛ́jà ábásáwō kàwɔ̀Ntà kúáŋ wànín ŋmàmàbàtɛ́ɛ̀ /

Asp. --- ------ --------- ---------- ---------- **kpʰú̱ tʰɻ̏ā** -------- --------- ---------- ---------- ----------

Glid. **lyá dwàlá** --------- ---------- ---------- ------ **tʰyā́**-------- ---------- ---------- **kwáŋ wànín** ----------

V. Del. --- ------ **mɔ́msá fàmáglɔ̀** ---------- ------ ----- -------- ---------- ---------- ---------- **ŋmàmbàtɛ́ɛ̀**

N.Del. --- ------ -------- --------- **ɲàNgbú** ------ ----- -------- ---------- ---------- ---------- ----------

G.Del. --- ------ -------- --------- --------- ------ ---- **ádékɛ́à ábásáō ----------** ---------- ----------

V.Trunc. --- ------ -------- -------- --------- ------ ----- **ádékâ ábásɔ̄ ----------** ---------- ----------

V.Inser. --- ------ -------- --------- ---------- **------ ----- ---------** ---------- ---------- ---------- ----------

N.Assim. --- ------ -------- --------- **ɲàŋgbú** ------- ---- --------- ---------- **kàwɔ̀ntà** ---------- ----------

V.Leng. --- ------ -------- --------- **ɲà:ŋgbú** ------- ----- -------- ---------- **kàwɔ̀:ntà** ------- -----

V.Round. --- ------ -------- --------- ---------- -------- ---- **-------- ---------- ----------** **kwáŋ wònín** ----------

V.Short. --- ------ -------- --------- --------- ------ ---- **-------- ---------- ----------** ---------- **ŋmìmbàtɛ̂**

PR [lyá dwàlá mɔ́msá fàmáglɔ̀ ɲà:ŋgbú kpʰú̱ tʰya ádékâ ábásɔ̄ kàwɔ̀:ntà kwáŋ wònín ŋmìmbàtɛ̂]

UR /	**ábànájà**	**tụ̀ò**	**ájàgálájà**	**bàdʒíàŋ**	**wánNkúŋ**	**əbánáwō**	**máŋmúwɔ̀**	**kânkàmù**	**kântsáwɔ̀ /**
Asp.	----------	**tʰụ̀ò**	----------	----------	----------	----------	----------	----------	----------
Glid.	----------	**tʰwò**	**----------**	**bàdʒyâŋ**	----------	----------	----------	----------	----------
V. Del.	----------	-----	**ájàgáljà**	----------	----------	----------	----------	---------	- ----------
N.Del.	---------	-----	----------	----------	**wáNkúŋ**	----------	----------	----------	----------
G.Del.	**ábànáà**	----	**ájàgláà**	----------	----------	**əbánáō**	**máŋmúɔ̀**	**----------**	**kântsáɔ̀**
V.Trunc.	**ábànâ**	----	**ájàglâ**	----------	----------	**əbánō**	**máŋmɔ̂**	----------	**kântsɔ̂**
V.Inser.	--------	**-----**	**-------**	**----------**	**----------**	**----------**	**----------**	**kânákàmù**	**kânátsɔ̂**
N.Assim.	-------	-----	-------	----------	**wáŋkúŋ**	----------	----------	----------	----------
V.Leng.	--------	-----	--------	----------	**wá:ŋkúŋ**	----------	---------	----------	----------
PR [	**ábànâ**	**tʰwò**	**ájàglâ**	**bàdʒyâŋ**	**wá:ŋkúŋ**	**əbánō**	**máŋmɔ̂**	**kânákàmù**	**kânátsɔ̂]**

Appendix D: Text (tale)

Text :

À nə ndù bátókó bədù

Wán wədzú wálá vį́ ná Mbàŋkəbɔ́ŋ wə nə gɛ̄ ná wɔ̄ŋə ntùə̄ tsákə ŋkúŋ

Ŋkúŋ á báŋə̄ wən ā tɔ̄ kìmē wə ā gɛ̄ nā gì ŋmù kú vū̱

Wə á já wən bā kálə

Kálə ké á gi, Mbàŋkəbɔ́ŋ á ɲúə̄ bəkpàn á dé ā bɛ̄ mé

Ká à dúŋ á tɔ́

Wə jə á ŋmū kú ŋkúŋ, tá ké má à sé, wə jə á ʒi̱ kəkpàn kə ɲúə̄ ná kíə

Ŋkúŋ á bi̱ nà á ʒí ɲìà

Wə ā sīná gɛ́ ná kəkpàn ŋkúŋ á gɛ́ nā já mī bá kədú

Mbàŋkəbɔ́ŋ á fəsə́ kəkpàn á já ŋkúŋ wō, wă jí

Ká wə ŋmú fələ́ wă gɛ́ á dzɔ́ŋ wɛ́ ɲū ká túə̄ fə̄

Ŋkúŋ á bī ə́ Mbàŋkəbɔ́ŋ wó, à gɛ́ ná jɔ̄ ŋə́ ntùə́ tsákə́ ŋkúŋ

King SM ask to Mbankebong that you say that you be wise than king

“The king asked Mbankebong you said you were wiser than the king”

Sínə́ dè fú $k^hú$ “moon”

Turn back hair my

“Put back my hair”

Mbàŋkəbɔ́ŋ á sísə́ gɛ́ ná, ə̀ ŋkúŋ, mə́ kî nà à tɛ̄m mí

Mbankebong SM turn say that yes king I know that you catch me

“Mbankebong replied, “yes you have traped me””

Wé wə́nɔ̂ à sínə́ dé kəkpàn $k^hú$ kíə̀

You also SM turn back corn my that

“You too should put back my corn”

Ŋkúŋ á gɛ́ ná á tà kɔ̂

King SM say that it be impossible

“The king said that it was impossible”

Wə̀ á jələ́ Mbàŋkəbɔ́ŋ

He SM kill Mbankebong

“And then, he killed Mbankebong” “moon”