

## Preface

It has been almost 30 years since I wrote my thesis on Sicitone. After completing the thesis, I returned to the village of Kotoura in Burkina Faso, where I continued to live for several more years, living and working among the Sicitone people. This allowed me to refine some of my understanding of the Sicitone language through further research. Two articles have since been published in the Journal of West African Languages, one on the challenging [analysis of a variety of mid tones in the language](#), and the other on [the phonological structure of the Senufo word](#). The latter corrects some of my misconceptions of the vowel system that I had at the time I wrote my thesis. This work led to the development of the Sicitone orthography which resulted in literacy programs and publication of literature in Sicitone. I am so thankful to God to be able to contribute in a small way to the development of the Sicitone language and proud of those who continue to teach and write and read in Sicitone. In this way, the results of my research are not relegated to a little-read thesis for a few linguists, but serve the people as a whole.

Two people in particular have contributed to my further understanding of the Sicitone language: Moussa Traoré, who served as my language assistant, and transcribed hundreds of pages in his language, and Zanga Lassina Traoré, who enriched his linguistics studies by researching in his own language and by directing the first literacy program in Sicitone; my wholehearted thank-you to these two friends and colleagues.

One person and one institution have greatly contributed to ensuring continued access to the original thesis despite the fact that it was not officially published: My father, Leonard W. Garber, a computer programmer, created special characters so that I could write my thesis on the computer way back in the 1980's. Since then, he updated the fonts and the software, and put it [online on my personal website](#). And now Max Planck Institute has gone one step further by ensuring a longer on-line life and incorporating it into their Language Description Heritage library. I want to thank both of these people for making it available to the linguists who want to investigate the Sicitone language both now and in the future.

Finally, I want to give special thanks to both of my parents, Leonard and Doris Garber, and my husband, Daniel Kompaore, my most faithful supporters and encouragers in my quest to share with others what I have learned.

Anne Garber Kompaoré  
Ouagadougou, Burkina Faso,  
October 28, 2014

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**A tonal analysis of Senúfo: Súcite dialect**

**Garber, Anne Elizabeth, Ph.D.**

**University of Illinois at Urbana-Champaign, 1987**

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A TONAL ANALYSIS OF SENUFO:  
SUCITE DIALECT

BY

ANNE ELIZABETH GARBER

B.A., University of Ottawa, 1978  
A.M., University of Illinois, 1980

THESIS

Submitted in partial fulfillment of the requirements  
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*Charles W. Kisseberth*

Director of Thesis Research

*Charles W. Kisseberth*

Head of Department

Committee on Final Examination†

*Charles W. Kisseberth*

Chairperson

*Charles W. Kisseberth*

*EB*

*Michael K...*

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1987

TONAL ANALYSIS OF SENUFO:  
SUCITE DIALECT

Anne Elizabeth Garber, PhD.  
Department of Linguistics  
University of Illinois at Urbana-Champaign, 1987  
Charles Kisseberth, Advisor

Sucite, a Senufo language of the Gur language group, is spoken in southwestern Burkina Faso. Its tonal system of three level tones and several contour tones exhibits a considerable number of complex alternations.

This dissertation provides a descriptive analysis of the tonal alternations in Sucite. With the help of the autosegmental approach and Clements (1981) system of tone features, we propose a double tiered approach to tonal analysis in the attempt to analyse the behaviour of the various types of Mid tone found in the language.

The dissertation consists of an introduction and six chapters. In Chapter 1, we provide a brief description of the sound system, the morphology, and syntax of Sucite. Chapter 2 describes the tone and morphology of the verb and introduces the concept of two tiers for tonal analysis. The discussion of noun tone and morphology in Chapter 3 brings to light the need to re-examine the accepted universal of associating tones to segments from left to right. Chapter 4 is a description and analysis of the tonal behaviour of verbs and verbal particles when preceded by nominal and verbal elements of various tones. In Chapter 5, we examine how the nominal elements affect each other tonally within a noun phrase. Both tonal behaviour across word boundaries and tonal alternations within complex nouns are examined and analysed with the use of the double-tiered approach. In particular, this chapter highlights the need for several different types of underlying representations for Mid tone. Chapter 6



discusses the tonal behaviour of the adverb phrase, question formation, and the noun class clitic, the latter of which poses special analytical problems. Finally, the ordering of the tonal rules presented in the thesis is discussed.

Dedicated to  
my friends in Kotoura  
and to  
the One who is always with us

## ACKNOWLEDGEMENTS

This study would not have been possible without the cooperative support of numerous people.

My first expression of gratitude must be directed to my language consultants who gladly provided the data used in this thesis. Primary consultants have been Ouattara Nama (farmer), Traoré Mamadou de Katien (student), Traoré Mamadou de Katile (student), Traoré Issiaka de Katile (young farmer), and Traoré Gnodjoutien (school teacher).

I wish also to thank my friend and co-worker, Gail Wiebe Toevs, for her companionship and for sharing with me her insights on Sucite during our years together in Burkina Faso.

The Commission on Overseas Missions of the General Conference Mennonite Church and the Africa Inter-Mennonite Mission are also to be acknowledged for kindly permitting me to pursue the research required for this dissertation, as their employee, and for providing a measure of financial assistance.

Thanks also go to the members of my committee for their comments and suggestions, in particular, to my advisor, Charles Kisseberth for patiently guiding me through the numerous revisions required for the thesis.

Finally, I wish to thank all of my friends for the support they provided during this long ordeal, as well as my sister, Carolyn, who typed much of the appendix and helped to prepare the maps in this thesis. Thank-you!

## TABLE OF CONTENTS

INTRODUCTION . . . . .	1
Classification of Senufo within the GUR language group . . . . .	1
Sucite as a SENUFO language (dialect?) . . . . .	4
Senufo language Research . . . . .	8
Purpose, Approach and Presentation . . . . .	9
NOTES . . . . .	11
CHAPTER 1 - BASIC FACTS ABOUT SUCITE . . . . .	12
I. INTRODUCTION . . . . .	12
II. THE SOUND SYSTEM . . . . .	12
A. Consonants . . . . .	12
1. Pre-nasalized Consonants and Consonant Clusters . . . . .	14
2. Stress and Consonants . . . . .	15
B. Vowels . . . . .	18
C. Tone . . . . .	23
III. MORPHOLOGY AND SYNTAX . . . . .	25
A. Nouns . . . . .	25
B. Pronouns . . . . .	26
Personal Pronouns . . . . .	28
C. The Noun Phrase . . . . .	28
D. Verbs . . . . .	31
E. The Verb Phrase . . . . .	32
F. The Adverbial Phrase . . . . .	33
G. The Sentence . . . . .	34
H. Negative Formation . . . . .	36
I. Question Formation . . . . .	36
IV. SUMMARY . . . . .	37
NOTES . . . . .	38
CHAPTER 2 - THE SUCITE VERB . . . . .	40
I. INTRODUCTION . . . . .	40
II. THE COMPLETIVE VERB . . . . .	40
A. Structural Description . . . . .	40
B. Tonal Description . . . . .	42
III. THE INCOMPLETIVE VERB . . . . .	42
A. Structural Description . . . . .	42
B. Tonal Behaviour of the Incompletive Verb . . . . .	51
1. The Underlying Tone of the incompletive suffix . . . . .	51

2. Root Tone Mutations in the Incomplete Verb . . . . .	55
IV. HISTORICAL SPECULATIONS AND TONAL FEATURES . . . . .	61
V. CONCLUSION . . . . .	68
NOTES . . . . .	70
 CHAPTER 3 - THE NOUN . . . . .	 71
I. INTRODUCTION . . . . .	71
A. Noun Structure . . . . .	72
B. Noun Classes and Suffixing . . . . .	72
C. Noun Tone . . . . .	73
II. THE INDEFINITE SUFFIX - TYPE I . . . . .	75
A. Structure . . . . .	75
B. The Tonal Nature of Indefinite Nouns - TYPE I . . . . .	80
1. The tone of the Indefinite Suffix - TYPE I . . . . .	82
2. Association conventions and the Indefinite Noun . . . . .	84
3. Tone and Pre-nasalized Consonants . . . . .	87
4. High final nouns . . . . .	89
III. THE INDEFINITE SUFFIX - TYPE II (Classes 2 and 6) . . . . .	91
A. Structure . . . . .	91
1. Class 6 Indefinite Suffix . . . . .	91
2. Class 2 Indefinite Suffix . . . . .	94
3. Summary . . . . .	96
B. Tone of TYPE II Indefinite Suffixes . . . . .	97
1. Tonal Behaviour of the Suffix . . . . .	97
2. Segmental Deletion and Tonal Behaviour . . . . .	99
3. Root tone lowering (High Deletion) . . . . .	116
a. High Deletion with Suffix Reduction (122); b. High Deletion with Full Suffix (124); c. Partial Suffix Deletion and Resistance to High Deletion (125)	
IV. THE DEFINITE SUFFIX . . . . .	128
A. Structure - TYPE I . . . . .	129
B. Structure - TYPE II nouns . . . . .	132
C. Definite Suffix Tone . . . . .	134
V. CONCLUSION . . . . .	141
NOTES . . . . .	142
 CHAPTER 4 - TONE IN THE SUCITE VERB PHRASE . . . . .	 145
I. INTRODUCTION . . . . .	145
Domain of Verb Tone Behaviour . . . . .	145

II.	NOUN OBJECT TONE AND THE VERB: DESCRIPTION AND ANALYSIS . . . . .	146
	A. Description . . . . .	146
	B. Analysis . . . . .	149
	1. Low Spreading Rule . . . . .	149
	2. High Tone Spreading . . . . .	157
	3. Mid Tone Lowering . . . . .	169
III.	THE VERBAL PARTICLES . . . . .	173
	A. Order Within the Verb Phrase . . . . .	173
	B. Aspect in the Verb Phrase . . . . .	175
	1. The Incomplete Aspect . . . . .	176
	2. The Complete Aspect Marker . . . . .	178
	C. Tense, Modal, and Other Particles . . . . .	183
	1. The NA Particle . . . . .	183
	2. The NII Particle . . . . .	185
	3. The Future Tense . . . . .	186
	4. The Incomplete náʔá . . . . .	188
	5. The CA Particle . . . . .	188
	6. The Habitual màʔa . . . . .	189
	7. The Modal SA . . . . .	191
	8. The BA Modal . . . . .	193
	9. The Pre-Tense Particles . . . . .	194
	10. The Negative Particle . . . . .	196
IV.	CONCLUSION . . . . .	198
	NOTES . . . . .	200
	CHAPTER 5 - TONE IN THE SUCITE NOUN PHRASE . . . . .	201
I.	INTRODUCTION . . . . .	201
	A. The Effect of Noun Phrase Structure on Tonal Behaviour . . . . .	202
	B. Nominal Tone . . . . .	204
II.	TONAL BEHAVIOUR WITHIN THE NOUN PHRASE . . . . .	205
	A. High Tone Nouns . . . . .	205
	B. Low Tone Nouns . . . . .	206
	C. Mid Tone Nouns . . . . .	207
	D. Mid and Mid-Low Tone Nouns . . . . .	210
	E. Weak Mid and Mid-Low tone Nouns . . . . .	212
	1. Description . . . . .	213
	(i) Raising (213); (ii) Low tone spreading (216)	
	2. Analysis . . . . .	218
	a. Mw and ML as Underlyingly High Tone . . . . .	218
	b. Mw and ML as Underlyingly Hl . . . . .	227
	(i) Low tone Spreading (229); (ii) High Tone Spreading (231);	
	(iii) Distinguishing Weak Mid and Mid-Low Nouns (235); (iv)	
	Mid-Low Tone and Independent Low Tone Linking (235); (v) Weak	
	Mid Tone and Feature Switch (239); (vi) Rule Ordering (241)	
	F. Low-High Nouns and RS Delinking . . . . .	243
	G. Conclusion of Mid tone behaviour on Nouns . . . . .	247

III. THE DEFINITE SUFFIX REVISITED . . . . .	248
IV. TONAL BEHAVIOUR OF THE COMPLEX NOUN . . . . .	252
A. Complex Nouns (H1 + H1) and the Obligatory Contour Principle . . . . .	252
1. The OCP Solution . . . . .	255
2. Rule Ordering for the OCP . . . . .	256
3. High Spreading and OCP . . . . .	257
4. Low Spreading and the OCP . . . . .	258
5. OCP and the Association Conventions . . . . .	259
B. High Delinking . . . . .	263
C. Lexical Changes . . . . .	269
1. High Deletion . . . . .	269
a. High Deletion I (269); b. High Deletion II (275)	
2. Low Deletion . . . . .	278
3. Other Lexical Changes . . . . .	282
4. Tone on Nominalized Verbs . . . . .	283
D. Conclusion of Study of Complex Nouns . . . . .	288
V. CONCLUSION . . . . .	289
A. The Double tiered Approach to Tonal Analysis . . . . .	289
B. Summary . . . . .	293
NOTES . . . . .	295
CHAPTER 6 - THE SUCITE SENTENCE . . . . .	297
A. Introduction . . . . .	297
B. The Adverbial Phrase . . . . .	297
C. The Noun Class Clitic . . . . .	301
D. Yes-No Questions . . . . .	313
E. Wh Question Formation and Frontshifting . . . . .	314
F. Rule Ordering . . . . .	316
G. Concluding Notes . . . . .	326
BIBLIOGRAPHY . . . . .	328
BIBLIOGRAPHY OF SENUFO LANGUAGES . . . . .	330
APPENDIX . . . . .	332
NOUN LEXICON OF SUCITE . . . . .	332
VERB LEXICON OF SUCITE . . . . .	352
WELMER'S QUESTIONNAIRE . . . . .	368
VITA . . . . .	399

## INTRODUCTION

The subject of this dissertation is the study of the tone of Sucite [Sùcité], a Senufo language of southwestern Burkina Faso, investigated on location by myself between the years 1982 and 1985. This introduction first situates the Senufo languages as a whole both geographically and genetically before discussing the relation of Sucite with the other Senufo languages. It continues with a review of the linguistic research in various Senufo languages and ends with a discussion of why and how the subject of Sucite tone is to be presented in the thesis.

### Classification of Senufo within the GUR language group

It has been widely acknowledged by authors such as Lavergne de Tressan (1953), Greenberg (1966) and Westermann (1970) that the Senufo languages belong to the Gur group of the Niger-Congo language family. The Gur or Voltaic languages are located primarily within the basin of the Volta River between the Sahara Desert to the north and the tropical forest to the south. In terms of political boundaries, this area stretches "from the southeast corner of Mali, across northern Ivory Coast, through a large part of Upper Volta [Burkina Faso], northern Ghana, northern Togo, northern Dahomey [Benin] into Nigeria." (Bendor-Samuel, p.141, 1971)

Senufo languages are located in the southwestern corner of this area, bounded to the west by Mande languages, to the south by Kwa languages, and to the north and east by other Gur languages. Their area is split among primarily three countries: Ivory Coast boasts the largest number of speakers (over 700,000) (Mensah, 1983), Mali comes close behind (680,272) (Atlas, 1981) and Burkina Faso has an estimated 100,000 speakers. Northern Ghana also has a few



isolated groups.

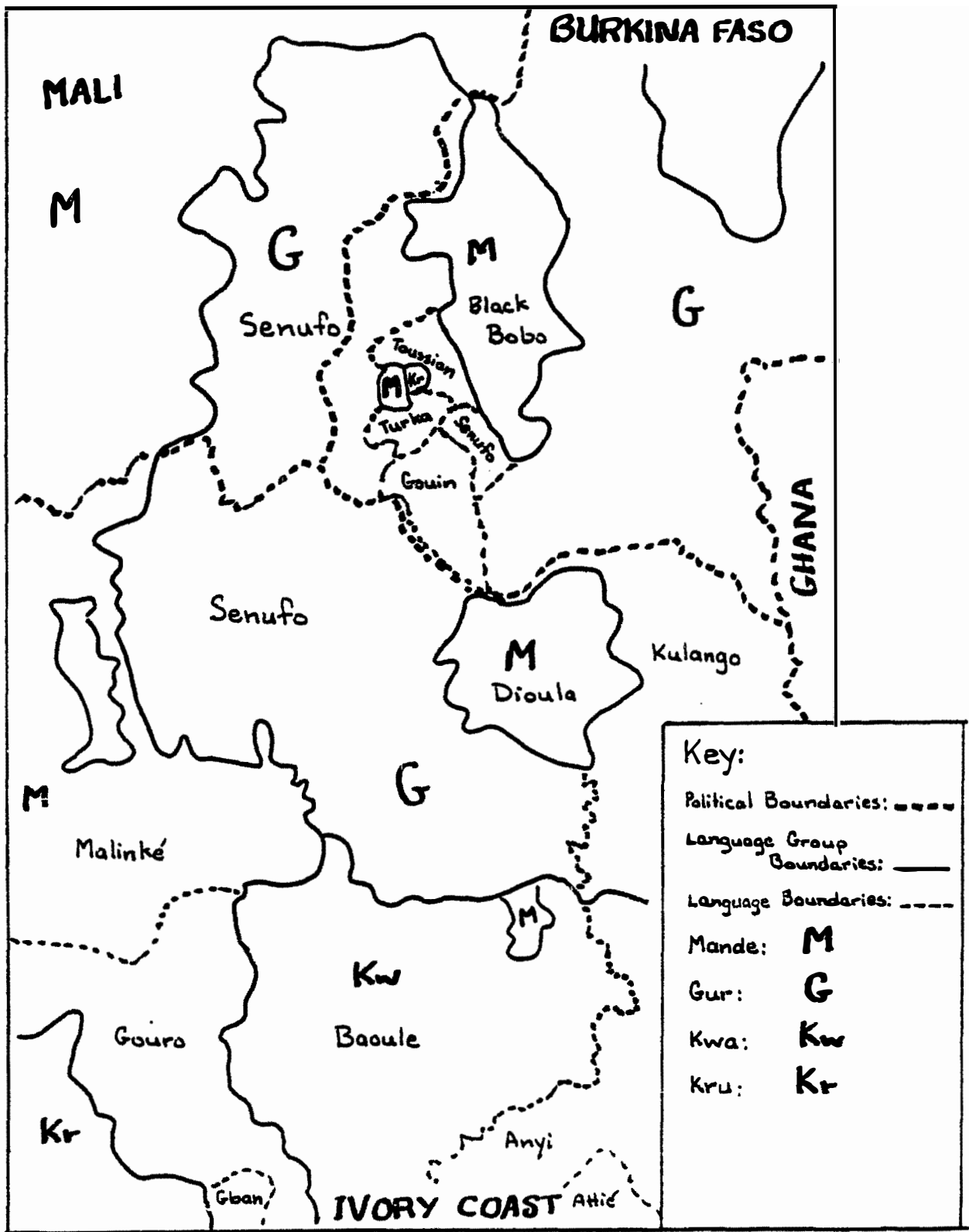
Senufo languages are typical of Gur languages in that they have a noun class suffix system and verbs are marked for aspect (completive and incompletive). In general, the consonant and vowel systems of Senufo languages do not have any particularly striking features<sup>1</sup>.

There is a distinct divergence in word order, however. Where most Gur languages are SVO, Senufo languages are SOVAdv<sup>2</sup>. A few other neighbouring Gur languages in Burkina Faso, such as Toussian<sup>3</sup>, also have this word order.

Tonally, there is no one common pattern throughout Gur languages. Samuel-Bendor (1971) notes, however, that a two tone downstep system appears to be an areal feature cutting across Gur language divisions spreading into the Kwa group. This two-tone areal feature stops short of the Senufo languages. To both the east (southeast) and west of the two-tone set of languages, we find entire blocks of languages with systems of three level tones. The Senufo languages, which are located to the west of the two tone systems, as well as a few other miscellaneous Gur languages bordering on the Senufo area, possess three level tones. On the western side of Senufo land, there are a number of Mande languages which have primarily two discrete tones. If Minyianka, a Senufo language, does actually have only two level tones, as has been reported<sup>4</sup>, it may be due to a more prolonged contact with Mande languages in the far north-western corner of the Senufo area.

In the far southeastern corner, on the other hand, we find two reported four-tone Senufo languages, Jimini<sup>5</sup> and Takper<sup>6</sup>, which just happen to be in the vicinity of several four-tone languages of other language groups - Bete (Kru), Attié (Kwa), and Gban (Mande) (See adjoining map for location). Again, it appears that language contact may play an important role in the development of

# LANGUAGE GROUPS

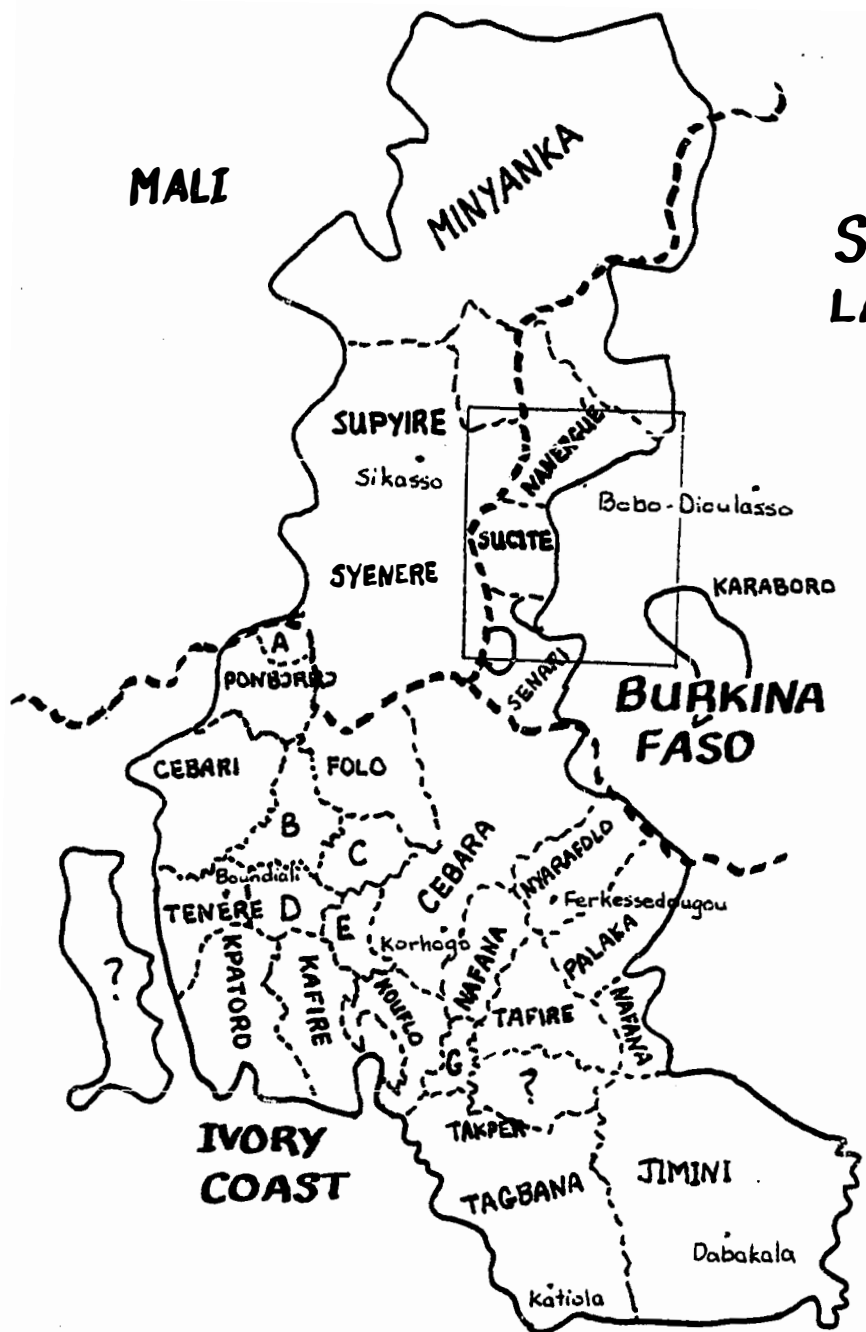


a language's tonal system. Further comparative studies in the tonal systems of West Africa could potentially yield very interesting insights as to why and how tonal systems change and shift through the centuries.

Sucite as a SENUFO language (dialect?)

Until the last couple of decades, Senufo language classification was primarily a matter of speculation. In a personal communication to Bendor-Samuel (1968), R. Mills divided up Senufo languages into three dialect groups and labelled them Northern, Central, and Southern Senufo. Bendor-Samuel (1971) apparently agreed with these divisions. Two recent publications, Mensah (1983) and Mills (1984) avoid these geographic labels, but they group the Senufo languages into roughly the same categories as R. Mills (1968), apparently allowing for more fuzziness between group boundaries. In certain cases, individual dialects have not been adequately investigated for accurate classification. Added to that, the complication of multiple names for a number of dialects creates a complex and, as yet, ill-defined linguistic group of languages?

Before my arrival in Burkina Faso in 1982, I only knew of Sucite as "Tagba". Lavergne de Tressan (1953) (and perhaps before him, Tauxier), includes Tagba in his list of 30 Senufo dialects. He had apparently identified two locations for Tagba, one in northwest Ivory Coast and the other in Burkina Faso. He gave no indication of what relation it had to other Senufo languages. I speculated that Tagba might be related to SUPYIRE, the Senufo language directly to the west across the border in Mali. My hunch proved to be correct, as I later discovered. For not only were Tagba and SUPYIRE closely related, but the real name for Tagba, Sucite, was a reflection of the close phonological



# SENUFO LANGUAGES

### KEY:

- |   |            |   |                    |
|---|------------|---|--------------------|
| A | Cepiri     | F | Fodonon            |
| B | Pogara     | G | Gbonzero           |
| C | Kasere     | H | Fantara            |
| D | Gbenzororo | I | Pantara            |
| E | Tangara    | J | Nafana (Bondoukou) |



correspondence between the two.

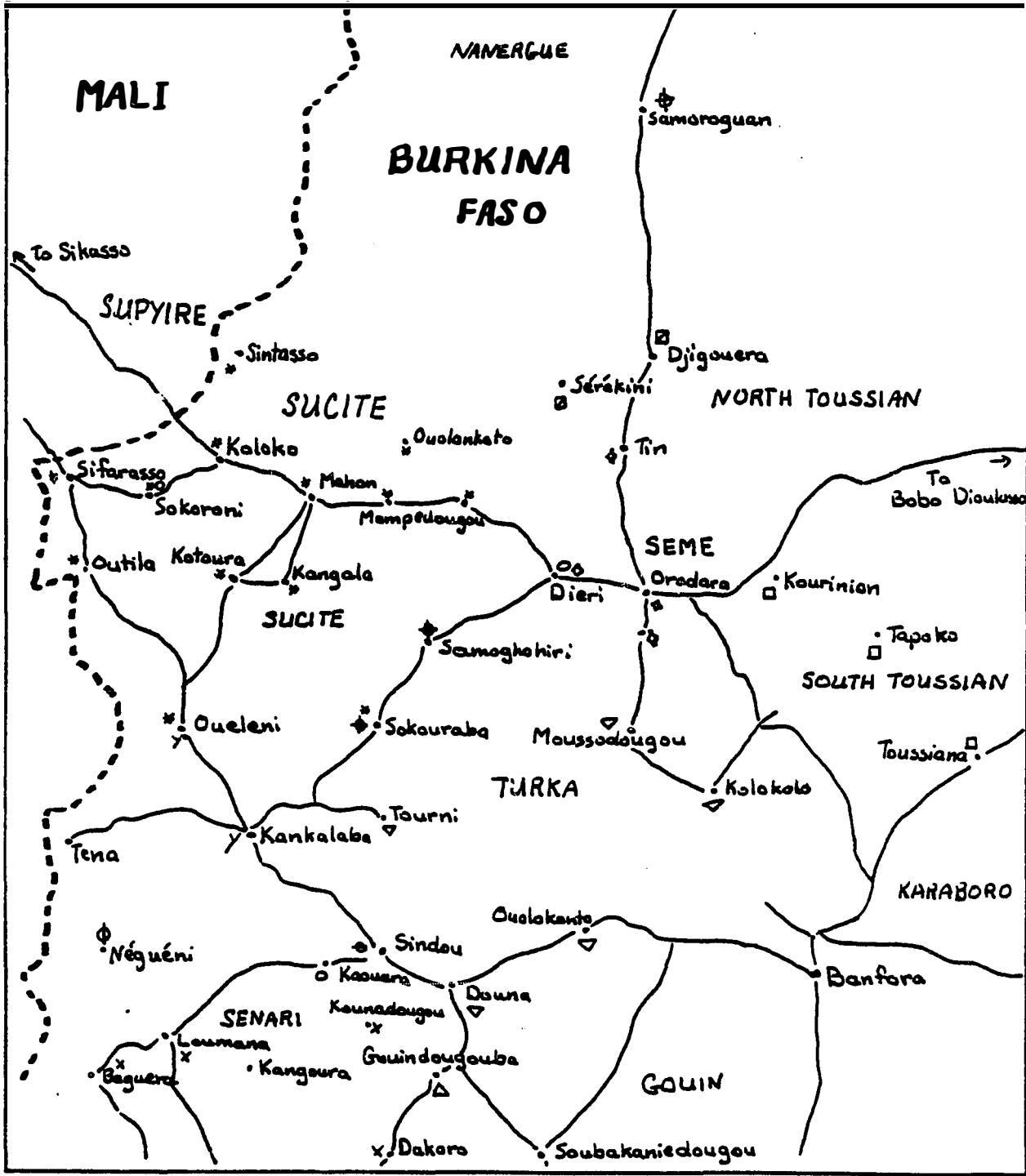
Both SuPyire and Sucite belong to the northern grouping of Senufo languages. According to Mill's (1984) map, no distinction is made between the two dialects; both are under the same label, SuPyire. SuPyire is located in the Sikasso area of southeastern Mali. Sucite is an eastward continuation of SuPyire into Burkina Faso. According to legend, the Sucite-speaking people originate in Mali and the Sucite say they speak the same language as the SuPyire. In fact, some people in Burkina Faso call their language 'SuPyire' rather than 'Sucite'. Chance encounters between individuals of the two groups has shown that the two dialects are quite mutually intelligible.

When speaking to an outsider, a Sucite speaking person will say he speaks Senufo or perhaps Bamana, as non-Senufo outsiders would call him. Another Senufo group to the south will call these people Tagba. The word Tagba is geographical in nature. The Sucite people live on the Tagouara Plateau. Sucite is what the people call their own language. Derived from the same root are the words 'sîcâ' (person) and 'sùpîle' (people).

The Sucite-speaking people in Burkina Faso number approximately 25,000 (actual figure unknown). They are located in the Koloko Préfecture in the Province of Kénédougon about 110 kilometres west of Bobo-Dioulasso in southwestern Burkina Faso. According to authorities in Koloko, there are 32 villages, but this figure is not exact since a few villages are not Tagba, and at least one Tagba village is located outside the Préfecture.

The linguistic neighbours of Sucite are Nanergué, a northern Senufo language to the north, SuPyire, to the west, and a Central Senufo language to the south known as Senar of Kankalaba (Prost, 1964). To the east and southeast are a number of small and diverse groups: Turka (Gur), Samogho (Mande), Dioula

# LANGUAGES OF SOUTHWEST BURKINA FASO



Key: 1 in. equals approximately 10 miles

Sucite: \*  
Senari (Kankalaba): y  
Senari: x

Wara: φ  
Natiore: ⊕  
Dioula: o

Turka: ▽  
Gouin: △  
Seme: ◆

Samogho: ⊕  
North Toussian: □  
South Toussian: □  
Road: —

(Mande), and Siamou or Seme (Kru). The latter has eluded classification, though it has been suggested by Person (1966) that Siamou is an isolated Kru language.

After visiting 6 major villages in the area, my Partner, Gail Wiebe and I chose to live in Kotoura, a geographically centralized village of approximately 2,000 people. A few civil servants and a couple of Dioula speaking families lived on the periphery of the village but otherwise the village was purely Senufo. The period of language investigation began on arrival on November 25, 1982, and continued until my departure on June 9, 1985.

#### Senufo language Research

Before the 1950's, tone was not given any importance in Senufo studies. Cheron's (1925) description of Minyanka does not even mention tone. Prost (1964) acknowledges the existence of tones but makes no attempt at transcription.

Serious research of Senufo languages began in the mid 1950's when Conservative Baptist missionaries settled in the Korhogo area of northern Ivory Coast. Their earliest descriptions of Cɔbara (Mills, 1967?) reflect their realization that tone was an essential part of this major Senufo language. To date, numerous articles may be found on a variety of Senufo dialects<sup>o</sup> and three theses or dissertations have been written, one on Tyebari (Laughren, 1973), another on Nyarafolo (Boese, 1983), and a third on Fodonon (Boutin, 1981). In addition, at least ten languages/dialects are currently being researched. A single book has been published in recent years; Senufo Phonology (1984) by Elizabeth Mills. All of these resources, published and unpublished, have proved helpful in the analysis of the basic features of Suciite.

The analysis of tone, however, has never been given much space in all of

these works. Mills as well as a few others do describe the basic tonal patterns of the languages that they have investigated, but little attempt has been made at a rigorous analysis. Bob Carlson is the first, to my knowledge, to attempt a tonal analysis on a Senufo language. He has written an unpublished descriptive draft of Supyire tone, as well as the article "Downstep in Supyire" (1983). His most recent unpublished paper, Supyire tone (1985), is his first attempt at a more comprehensive analysis, although the scope of his paper does not allow him to present a thorough examination of all tonal behaviour.

#### Purpose, Approach and Presentation

The purpose of this research is to explore the tonal patterns of Sucite, a dialect which has not previously been investigated. It is hoped that the presentation of these data will further the knowledge of the tonal behaviour of Senufo languages in general.

The scope of this study will be limited to the analysis of the simple non-complex sentence in Sucite. Tone in complex sentence structure and discourse will not be dealt with in detail for reasons of time, space, and lack of sufficient data. However, preliminary observations indicate that tonal rules outlined in the dissertation are not contradicted in complex sentence structures.

Several theoretical tools will be used in the attempt to provide a satisfactory analysis. Firstly, the underlying tones that provide the basis for rules will have to be determined. Research into the possible historical process of tonal development with the help of Clements' proposed feature system, as outlined in Chapter 2, contributes towards this end.

Secondly, an autosegmental approach to tonal analysis will be undertaken.



However, it will be quickly seen that the autosegmental approach, as it has been generally applied with reference to tone, may require some modifications here. In Chapter 3, it will be noted that the assumed Association Convention of Left to Right Linking Poses some Problems. An alternative solution of Right to Left linking is Proposed, discussed, and finally adopted.

In addition, with the help of Clements' Proposed feature system, which involves defining tone through the use of both a Primary register as well as a subregister level, we borrow some basic concepts from the recent developments in non-linear Phonology and Propose a double tiered approach to tonal analysis. This concept is first introduced in Chapter 2, and is briefly discussed in Chapters 3 and 4, while a more thorough Presentation of a double tiered approach for tonal analysis can be found in Chapter 5.

Finally it will be noted in Chapters 5 and 6 that rule ordering is crucial for the Proper application of tonal rules. Certain lexical rules will have to take Place before other rules such as rules spreading tones from one morpheme to another.

The Presentation of data will be organized according to chapter. The first chapter will Present the basic facts about the Sucite language, including Preliminary information about tonal behaviour. The second chapter will examine verb tone and morphology, while Chapter 3 will focus on non-complex noun tone and morphology. Chapter 4 will examine how the tonal environment in which the verb or verbal Particle is Placed, affects their tone, while Chapter 5 will concentrate on tone in complex nouns and noun Phrases. Chapter 6 will complete this description by describing the tonal behaviour of adverb Phrases and of the sentence as a whole. The noun class clitic, whose tonal behaviour can alter tone in the sentence in unexpected ways, will be the focus of attention here.

## NOTES

1. For a general survey of Gur languages, see Bendor-Samuel (1971).
2. A discussion concerning the historical implications of word order in Senufo can be found in "Word Order Change and the Senufo Language", Garber (1980).
3. For descriptions of Toussian, see Prost (1964) and Burdon (1984).
4. Eunice Pike, upon preliminary investigation, suggested that Minyianka has two level tones and one falling tone.
5. Information from Mensah (1983) indicates that Jimini is a four tone language. However, Mensah, himself, questions the reliability of his source, which, unfortunately, he does not name. Wolfgang Stradner, a linguist working on Jimini wondered if Jimini might be underlyingly a two tone language. To my knowledge, little serious analysis of tone has been undertaken in Jimini.
6. For a Phonological description of TakPer, a Tagbana dialect of Senufo, see Herault (1973).
7. References for linguistic maps and classifications of Senufo dialects include the following: Laverne de Tressan (1953), Westermann (1970), Bendor-Samuel (1971), Boutin (1982), Mensah (1983), and Mills (1984).
8. The reader is asked to refer to the 'Bibliography of Senufo Languages' located at the end of this dissertation for a full list of Published and unpublished material on Senufo languages.

## I. INTRODUCTION

Chapter 1 outlines the sound, morphological, and syntactic structures of the language so that the reader may examine data in succeeding chapters with some degree of familiarity. Information on tone is limited to outlining the phonetic tones found in Sucite and listing various tonal combinations on three-syllable words.

After describing basic morphological structures of nouns, pronouns, and verbs, the word order of the sentence is discussed in relation to where tonal alternations take place among its constituents. Although examples of tonal changes are given, the rules involved are left for thorough examination in subsequent chapters.

## II. THE SOUND SYSTEM

### A. Consonants

In terms of frequency, voiceless consonants are generally more frequent in Sucite than their voiced counterparts. The voiced double stop, /gb/ is also quite common. On the other hand, the voiced consonants, /b/, /d/, /v/, and /z/ are relatively rare. The reader will note in chart (1), the complete absence of the voiced velar stop, /g/. Carlson analyses the Supyire velar fricative as being underlyingly /g/. It is possible that the velar fricative in Sucite, /x/, is also underlyingly /g/. However, at this point in time, I have opted to continue using the symbol /x/ in the transcriptions. This velar fricative appears to be either voiced or voiceless depending on its phonological environment. It is never found in word initial position.

Below is a chart of the consonants found in Sùcìté.

(1)

<b>Plosive</b>	p	t		k	
	mp[bb]	nt[dd]		nk[gg]	
				ʔ	
	b	d			gb
	mb	nd		ŋʒ	ŋʒb
<b>Nasal</b>	m	n	ny	ŋ	ŋm
<b>Lateral</b>		l	r		
<b>Fricative</b>	f	fy	s	x	
	v		z		
<b>Affricate</b>				c	
				nc[jj]	
				j	
				nj	
<b>Glides</b>	w, wy		y		

Supyire, a Senufo dialect closely related to Sùcìté, has a number of attested Palatalized consonants. The chart above shows three such consonants, /fy/, /ny/, and /wy/.<sup>2</sup> However, in Sùcìté, it appears that this feature is in the process of being lost. In the examples below, the Palatalized consonant version of the word freely alternates with a non-Palatalized version.

(2) a. lèxo ~ lyàxo 'to get old, incomplete aspect'

b. mexè ~ myaxà 'name'

A more thorough analysis will have to be made before the status of Palatal consonants can be determined.

The symbol /c/ represents the alveopalatal affricate [tʃ].

### 1. Pre-nasalized Consonants and Consonant Clusters

There are numerous environments where a nasal consonant can be immediately followed by a stop or by an affricate. In all cases, however, these consonant clusters are found in morpheme initial position. In some instances, these nasal consonants are derived. For example, the future tense verbal particle consists of sí + n. When a verb follows immediately after this verbal particle, the nasal causes prenasalization of stops and affricates, and voicing of fricatives as shown below in (3)<sup>2</sup>.

(3) a.	Pan	come	ndà sî mPan [bban]	'I will come'
b.	kárí	go	ndà sí nkàrí [ggàrí]	'I will go'
c.	lì	eat	ndà sí ndì	'I will eat'
d.	jà	to be able	ndà sí njà	'I can'
e.	gba	drink	ndà sî mɔba	'I will drink'
f.	yìrì	get up	ndà sí njìrì	'I will get up'
g.	so	buy	ndà sî zo	'I will buy'

Some nouns with a nasal initial consonant cluster appear to be derived from verbs which do not have an initial nasal. The speculation then, is that prefixing a nasal to a verb in effect, nominalizes it, as is shown in the example below.

(4)a.	lì	----->	ndì
	eat	----->	food

There are however, pre-nasalized nouns and verbs for which there is no

evidence that the initial nasal is derived. Some of these are listed below.

- (5) a. mbúxí 'open, reveal'  
 b. mpá 'protect, defend'  
 c. mpùlò 'hill'  
 d. njidè 'tongue'  
 e. nkànlâ 'tooth'

What I call Pre-nasalized voiceless consonants are not phonetically realized as such. In the consonant chart (1), in (3a and b), and in (5b,c, and e) above, their phonetic transcription is given as a double voiced consonants. SuPyire cognates of these words actually possess a phonetic Pre-nasalized consonant. However, in Sucite, these Pre-nasalized voiceless consonants sound like a delayed release voiced stop. The nasal not being pronounced, one has the impression that it is swallowed or that the airstream through the nasal passages is somehow blocked, the pressure builds up in the mouth and is released only after the articulation of the stop, giving the effect of a fortis voiced stop or a lengthened or geminate voiced consonant. They contrast with voiced stops as well as with voiceless and Pre-nasalized voiced stops. Below are two sets of minimal pairs to illustrate this fact.

- (6) bi 'they'      mbi 'flour'  
 pùlò 'body'      mpùlò [bbùlò] 'hill'

## 2. Stress and Consonants

Consonants alternate in such a way that while the majority of consonants are allowed in morpheme initial position, these same consonants are not allowed to begin subsequent syllables of the same morpheme. All Pre-nasal consonants, most

stops such as p, t, k, d, gb, the affricates c and j, and most fricatives, f, fy, s, v, and z, are restricted to morpheme initial position. In (7) are some examples of these consonants in word initial position. The nouns in (8) are composed of two noun roots; thus the above consonants can be found at the beginning of each noun root.

- (7) a. ndà-rà-xó 'yam, indefinite'  
 b. tdnlà-xo 'to lengthen, incomplete aspect'  
 c. súxáí 'to shake, complete aspect'
- (8) a. sà-cá 'person'  
 b. sá-ká 'goat'  
 c. ká-fyaxé 'wind'

On the other hand, there is a very small set of consonants that are allowed only in non-morpheme initial position. These are c, x, and the glottal stop, ʔ. Below are a few examples.

- (9) a. ngcà-xo 'smoke'  
 b. txu-rò 'load' (from tuxo 'to carry')  
 c. kànʔà 'village'

Certain consonants such as nasals, the voiced bilabial, b, and the lateral, l, can be found in both positions:

- (10) a. lg?o 'water, indefinite'      folà 'owner'  
 b. qz?ala 'twist, wind, writhe'      fqz 'tell a lie'  
 c. láa 'twin'      kàlà 'lather, foam'

The nasal velar, ŋ, is most frequently found in non-morpheme initial

Position.

It would be conceivable to suggest that those consonants allowed only in non-morpheme initial Position are in complementary distribution with certain morpheme initial consonants. For example, t, which occurs in morpheme initial Position, alternates with ɕ, which is never found in morpheme initial Position. Likewise, k may alternate with ɣ or ʔ.

One may also suggest that stress plays a role in the distribution of consonants. Stress placed on the first syllable of the morpheme would then allow for the multiplicity of consonants, while consonants found in weakly stressed Positions are more limited and tend to be the weaker versions of their stressed counterparts.

Evidence that stress is located in word initial Position can be found in the behaviour of the noun class clitic, which, as will be seen later in Chapter 6, cliticizes to its surrounding environment. When the noun class clitic, ka, is found in sentence initial Position, as can be seen below in (11a), it possesses a consonant allowed only in morpheme initial Position. However, when the clitic is preceded by a verbal particle in the sentence as seen in (11b), its stop consonant is fricativized, which would be expected if its Position is now considered to be unstressed.

- (11) a. Stressed: ka tuxò 'carry it!'  
           it carry
- b. Unstressed: waà ɣa tuxò 'he carried it'  
           he-TA it carry

It must be noted that the clitic is the only morpheme that alternates between



stressed and unstressed consonants.

One might be tempted to suggest that instead of stress being a factor, the intervocalic environment of stop consonants leads to their fricativization. However, if one takes a second look at compound nouns (9), it is seen that the consonant of the second root of the compound does not undergo fricativization even though it, too, is in intervocalic position. Thus, the hypothesis that stress is a major factor of these particular consonant alternations is put forward. The matter of stress will be considered again briefly in the discussion of vowels.

#### B. Vowels

Sùcìté has 7 vowels, all of which are very common to West African languages.

(12)

i		u
	[ə]	o
ε		ɔ
	a	

All vowels can be lengthened and nasalized. A lengthened vowel is transcribed with two vowels: VV. Nasalized vowels are written as Vn. The 'n' of the nasalized vowel, however, can be sometimes confused with the 'n' in /ny/ or in any pre-nasalized consonant. For example the noun zànyâ 'rains' is written in our transcription as zànyâ. Written as such, it is impossible to know whether

the 'n' nasalizes the Previous vowel, [zã-yâ] or whether the 'n' along with the adjacent 'y' form a Palatal nasal, [zà-nyâ]. Therefore, to avoid an ambiguous reading of zãvyâ, an apostrophe is inserted to indicate syllable division: zàn'yâ. In addition, when a 'n' is Preceded by a vowel and followed by certain stop consonants, ambiguity arises in trying to discern whether the 'n' belongs to the Preceding vowel or the following consonant. The word kàkonké could be Phonetically either [kàkoké] or [kàkonné]. The former is correct. To distinguish Pre-nasalized consonants from nasalized vowels a superscript 'n' will be used for the former only in the situations where ambiguity arises. Therefore, in (13a) no superscript 'n' is written for the nasalized vowel, whereas in (b), there is no nasalized vowel but rather a Pre-nasalized consonant. In cases where there is no ambiguity, the 'n' will not be in superscript, as is shown in (13c).

- (13) a. kàkonné [kàkoké] 'cold, cough'  
 b. ka<sup>n</sup>kurò [kagurò] 'five'  
 c. nkànlé [gàlè] 'tooth'

The reader will also note the Presence of the schwa in square brackets in the vowel chart. The schwa is found in two specific environments. In both instances, it appears that the schwa is in complementary distribution with some other vowel.

The first vowel of any morpheme can be any of the eight vowels given in the chart above. However, the vowel /i/ is quite rare in this Position, while the schwa is quite frequent, leading one to the suspicion that the schwa may be an underlying /i/ which is centralized in certain environments. While data is not sufficient to complete an investigation on this issue, the items given below

seem to indicate that a high front vowel (as the first vowel of the morpheme) tends to remain fronted when located between two Palatal or dental type consonants (14), while it tends to be centralized elsewhere (15):

- (14) a. jide 'breast'  
 b. ncile 'balaPhone'  
 c. tide 'creePing vine'

- (15) a. sakà 'goat'                      farà 'excrement'  
 b. sàcà 'Person'                      tãbe 'medicine'  
 c. bàlè 'seed'                      také 'tree-DEF'

However, even if we could explain these apparent exceptions by phonological conditioning by adjacent consonants, we are still faced with the following near minimal pair contrasting *i* and *a*.

- (16) a. fale 'approach'  
 b. flé 'beat (a floor)'

Phonetically, the latter is not a long vowel. Whether underlying vowel length has something to do with this contrastive pair will be left for analysis at a later date. For the time being, schwas have been retained in transcription.

The second environment in which schwas are found is in the second or third syllable of a morpheme where the syllable concerned is not in word final position. Consider the examples below:

- (17) a. tònɔ̀xɔ                      'to lengthen, incomPletive aspect'  
 b. kaPè?àkí                      'fingers'  
 c. feramɛ                      'urine'  
 d. fáláxá                      'rock'

The example in (a) consists of a simple verb with an incomplete suffix. The first syllable contains the vowel /o/. The second vowel is a schwa. It is in the second syllable of the morpheme and it is not in word final position. The third vowel is not a schwa and it is in word final position. The example in (b) has two nominal morphemes along with a nominal suffix. Neither the first nor the second vowel is a schwa - both are the first vowels of their respective morphemes. The third vowel is a schwa and it is the second vowel of the second morpheme and is not in final position of the word. In all the other examples, the same pattern is repeated; there is always a schwa when the vowel is in non-word final and non-morpheme initial position. The choice of vowels preceding and following the schwa does not seem to be a factor for schwa formation<sup>3</sup>.

There are at least two possible analyses for the schwa in this position. The first is to suggest that it is underlyingly /i/, as was suggested for schwas in morpheme initial position. However, since the structural environment seems to be such a crucial factor for schwa formation, it may also be suggested that the schwa could be underlyingly any vowel found in this position.

In order to pursue this argument, it is necessary to take a look at the general distribution of vowels in a simple, non-complex word. It appears that each morpheme is specified for a single vowel regardless of the number of syllables it possesses. If a morpheme has two syllables, the following vowel patterns emerge:

(18)	i	fílé	'beat (a floor)	u	fulo	'push'
	a	fəle	'approach'			
	e	gbere	'be short'	o	gbòxò	'meet together, group'
	ɛ	péré	'sell'	ɔ	tónʔón	'dilute, draw out'
	a	bàʔà	'accuse'			

Although the above are all verbs<sup>4</sup>, the same Patterns can also be found for nouns. If a morpheme has three syllables, a similar, but slightly altered Pattern emerges, this time involving a schwa.

(19) i	no verbs		u	kúrǎǎ	'stumble, bump into'	
	a	yǎrǎxè			'raise, straighten'	
	e	yérǎǎ		o	tórǎxó	'send, accompany'
	ε	wérǎǎ		ɔ	ŋmǎrǎǎǎ	'Push roughly, jostle'
	a	kǎrǎǎ			'govern, translate'	

In each case of the examples in (19), the medial consonant is a schwa. Phonetically this particular vowel is both reduced in length and centralized. Because both the vowel preceding and the vowel following the schwa share some of the same features, one may be led to the conclusion that underlyingly, the schwa also shares these same features. This underlying vowel then, is reduced to a schwa when the structural conditions for schwa formation are met.

In the discussion on consonants, it was suggested that stress occurred on the first syllable of each morpheme. It may also be conceivable to suggest that the information concerning vowel features is specified for the first vowel of the morpheme while subsequent vowels adopt these features, which then are modified through rules such as vowel reduction and centralization. Rules for this behaviour will not be formulated, however, because the issue of vowel behaviour is a little more complicated than is presented here, and a more thorough analysis needs to be presented. Suffice it to say, however, that schwas will be retained in the orthography for the presentation of data in this thesis.

### C. Tone

On the surface, there are three levels of tone in Sucite, High (´), Mid (unmarked), and Low (`). Glides forming any combination of these three levels can be found in the language. However, the most common are High-Low (HL) and Mid-Low (ML). The issue of underlying tones is rather complicated and will be the focus of attention in the following chapters.

Tonal rules operate within words, and between components of a verb phrase or a noun phrase. Noun class clitics, postpositions, verbs, and verbal particles are especially susceptible to the tonal environment immediately preceding them.

The possible combinations of tone within a three syllable noun (disregarding the number of morphemes therein) are quite numerous, as shown below in (20). As will be seen later, the distribution of tones within individual morphemes is limited. In addition, tonal rules do block possibilities for certain combinations while engendering others.

(20) (Number in angle brackets indicates the number of tonally identical three syllable indefinite singular nouns found in a list of approximately 362 three-syllable nouns):

1.L-L-L	kàsàxè <sup>m</sup>	war	<12>
2.L-L-M	kàsàke	war-DEF	
3.L-L-HL	kàyìlê	compound	<13>
4.L-L-H	kàyììné	compound-DEF	
5.L-M-L	gànaà	packrat	<1>
6.L-M-M	kàcoxɔ	enclosure	<31>

---

\*Unless otherwise marked, all nouns given here are in the indefinite form. Those marked DEF are definite nouns.

7.L-M-H	kàcoké	enclosure-DEF	
8.L-H-L	mpàdèxè	rib	<2>
9.L-H-M	kàmólu	ant	<4>
10.L-H-HL	nyàpóló	bundle of grass	<4>
L-H-H	0		
11.M-L-L	nanàlù	fish (species)	<2>
12.M-L-M	folàṅe	chief, owner-DEF	
13.M-L-H	zanlùùné	kidney-DEF	
14.M-L-HL	zanlùlò	kidney	<4>
15.ML-L-HL	cāntòṅò	umbrella	
16.M-M-L	gbunnəṅò	wall	<3>
17.M-M-M	funkyaxe	diarrhea	<8>
18.M-M-H	funkyaké	diarrhea-DEF	
19.M-M-HL	kurugbá	matted overhang	
M-H-L	0		
20.M-H-M	gbabáne	room of a house-DEF	
21.MH-M-M	laálaṅe	butterfly	<1>
M-H-H	0		
22.M-H-HL	gbabálè	room of a house	<2>
23.H-L-L	Púnýèxè	clay	<2>
24.H-L-M	Púnýèke	clay-DEF	
25.H-L-H	tánýùṅé	stump of a tree-DEF	
26.H-L-HL	tánýùṅò	stump of a tree	<1>
27.H-M-L	tápadà	beam	<4>
28.H-ML-M	sáṅtùṅe	quail-DEF	
29.H-M-M	kámeṅe.	dew	<3>

30.H-M-H	kámeŋgé	dew-DEF	
31.H-H-L	náfíílé	buttocks	<1>
32.H-H-M	fáláke	rock-DEF	
33.H-H-ML	máʔánjð	beard	<1>
H-H-H	∅		
34.H-H-HL	céfólíʂ	diviner	<7>

### III. MORPHOLOGY AND SYNTAX

#### A. Nouns

As is the case with many Niger Congo languages, Senufo nouns and Pronouns are marked for class. This class marker is suffixed to the noun. The class marker not only conveys class affiliation but also definiteness and Plurality.

The eight noun classes have been grouped into five genders<sup>9</sup>, which include three singular/Plural Pairs and two mass/collective noun classes. Each class has two types of suffixing: Indefinite and Definite. Below is an example of each type for Gender 2 (Classes 3/4):

- (21) a. gba-xa 'house' Indefinite (Singular) Class 3  
 b. gba-ké 'the house' Definite (Singular) Class 3  
 c. gba-ya 'houses' Indefinite (Plural) Class 4  
 d. gba-nyé 'the houses' Definite (Plural) Class 4

Below is a noun chart showing the representative indefinite and definite forms for each class. Suffixes are underlined.



(22) Gender	Class	Indefinite	Definite	English
1. 'wi'	Cl.1	gba	gba-ŋé	'river'
	Cl.2	gba-ála	gba-á-bí	'rivers'
2. 'ki'	Cl.3	gba-xa	gba-ké	'house'
	Cl.4	gba-ya	gba-nyé	'houses'
3. 'li'	Cl.5	gba-là	gba-à-ne	'forehead'
	Cl.6	gbà-ʔala	gbà-ʔà-kí	'foreheads'
4. 'ti'	Cl.7	su-rà	sù-te	'main dish'
5. 'pi'	Cl.8	sə-mè	sə-m-be	'oil'

Although these nouns are representative of their respective classes, there are a substantial number of phonological alternations for each suffix, which will be described in Chapter 3. The complex tonal nature of nouns will be the topic of discussion in Chapters 3 and 5.

### B. Pronouns

Each noun class has a general, emphatic, Partitive, interrogative, demonstrative, and relative Pronoun. The chart below provides a quick view of the shapes of some of these Pronouns:

(23) Class	1	2	3	4	5	6	7	8
Clitic	wu	bi	kə	yi	lə	ki	tə	bə
Emphatic	wurà	Perà	kərà	yirà	lərà	kerà	tərà	Parà
Partitive	wà	Pì	kà	yà	là	kì	tà	pà
Demonstrative	ngá	mPí	nká	njí	ndá	nkí	ntá	mPá
Interrogative	ngə	mPi	nkə	nji	ndə	nki	ntə	mPə

Below are examples of each Pronoun type. It must be noted that Pronouns (in Particular, the emphatic and the demonstrative) can be understood best only in context of the discourse in which they are used.

(24) Clitic (functions as a Possessive, Reflexive or General Pronoun)

- a. wu nye nánʔán 'he is here'
- b. waa wù wéé he him saw 'he saw him'
- c. waa wù yé gbàlì he himself injured 'he injured himself'
- d. wu kaàte 'his meat'

(25) Emphatic Clitic (also Referential)

- a. wurà wi 'it's him'
- b. wurà kaàte 'his (ref) meat'
- c. Ngà èrì ya èrì jubá kóróŋe cèn mén  
but they-E Neg-T these-E words' meaning know not  
'But they did not understand the meaning of these words'

(26) Partitive

- a. mólòŋe wà 'some rice'
- b. waa wà wéé 'he saw some'
- c. càŋe wà ci nánʔán 'Some child was here'

(27) Demonstrative

- a. ndaà ngá so I this bought 'I bought this'
- b. ntá kaàte 'this meat'
- d. ndi yà cen nká mo ya mbírí men  
I Neg-T know what you T think Neg are thinking'  
'I do not know what you are thinking'

(28) Interrogative

- a. ngá tun wu yé 'who is it?'

There is also a class identifier, which surfaces in Phrases, such as the following:

- (29) a. nàà wi 'he's a man'  
 b. nààŋe wi 'he's the man'  
 c. nàmaa bi 'they are men'  
 d. nàmaabí bi 'they're the men'

The tone of Noun class clitics is quite variable. In isolation or in sentence initial position, they are mid tone. Otherwise, they may be High, Mid, or Low depending on the tonal environment. (See P.35 for examples of tone variability and Chapter 6 for a tonal analysis of the noun class clitic.) The other Pronouns are more stable tonally.

### Personal Pronouns

Below is a chart of the Personal Pronouns.

- |              |               |          |           |
|--------------|---------------|----------|-----------|
| (30) ñde, nǎ | 'I'           | wùri, wù | 'we'      |
| mo, ma       | 'you,sg.'     | yìri, yì | 'you,Pl.' |
| wu           | 'he, she, it' | bi       | 'they'    |

The third Person Pronouns are the Classes 1 and 2 Pronouns.

### C. The Noun Phrase<sup>6</sup>

Sùcité, as well as other Senufo languages, creates a large number of words by compounding two simple nouns or by nominalizing a Noun + Verb expression.

In fact, the latter is quite productive. Below are examples of each.

- (31) a. kà-lò-xò thing + water + cl. 'shower room'  
 b. ta-wa-xa Place + be dry + cl. 'desert, dry Place'  
 c. tǎ-pa-dà tree + spread across + cl. 'beam'

In these examples, the noun class marker is typically at the end of the word.

Noun + Adjective constructions are essentially the nominalization of the Noun + Verb and operate in the same way as the examples above. There seem to be very few real adjectives in Sùcité. The concepts normally handled by adjectives are found in stative verbs, as seen below.

- (32) a. gba-káà lɛ 'the house is old'  
 b. gba-lé-ke 'the old house'

The adjective 'good' may be one of the rare true adjectives. It cannot be accepted as either a noun or a verb in isolation. It is found only in adjectival or adverbial position.

- (33) a. \*kaa ceŋe 'it is good'  
 b. \*ceŋe wi 'it is goodness'  
 c. Pɔ̀n-cèŋè 'a good dog'  
 d. waa Pèré cèn-mi 'he sold well'

In Noun + Number constructions, each constituent retains its own noun class. Numbers belong to the 'wi' gender, i.e., Classes 1/2. As an indefinite (Class 1), it possesses no suffix (35a) while the noun which it modifies possesses the indefinite Class 4 suffix. In (b), both the noun and the number acquire the definite suffix of their respective noun classes.

- (34) a. gba-yi suunní two houses, INDEF  
 b. gba-nyé sù̀nnà-ŋé two houses, DEF

However, in Noun + Ordinal Constructions, there is only one noun class marker, which is located in word final position. Class is determined by the class of the noun.

- (35) a. gba-suun-ŋgù-ké 'the second house'  
           house-two-ord-cl-DEF
- b. ye-suun-ŋgù-né 'the second year'  
           year-two-ord-cl-DEF

In genitive constructions, constituents retain their own noun class markers. In the example below, the Possessive noun is in Class 1, while the second noun is in Class 3.

- (36) nàà-ŋe gba-ké 'the man's house'

Tonally, a string of nominal elements along with their suffixes operates as a unit. Each constituent is sensitive to tonal rules, which will be discussed later in greater detail. Below are a few examples of tonal perturbations within the Noun Phrase. The words on the left side of the arrow show the tone of the individual words as given in citation form, while the words on the right side of the arrow show what happens to the tone when the words are grouped together in noun phrases.

- (37) a. nda kaàte    ---> ndà káàte    'my meat'  
       b. gbayi sùùnnì ---> gbayi suunní 'two houses'  
       c. lùyò sùùnnì ---> lùyò sùùnnì 'two creeks'  
       d. ntàrà + folò ---> ntàràfòlò 'land chief'  
       e. mo folò     ---> mo fólò 'your chief'

The Noun Phrase itself is not sensitive to the tonal environment surrounding it unless the Noun Phrase begins with a Noun Class clitic. This situation is discussed briefly on P.34 and in detail in Chapter 6.

### D. Verbs

The basic verb is obligatorily marked for aspect, either completive (Perfective, singular) or incompletive (continuous, imperfective, plural). Bendor-Samuel (1971) suggested a singular - plural distinction for the two forms since the completive describes one complete, finished action whereas the incompletive describes a plurality or repetition of actions. In addition, he also pointed out (and this is true for Sùcìté) that the 'plural' forms of the noun and verb are phonologically similar.

There also appears to be some transitivizing and activizing suffixes, but the semantic load of verb suffixes has not yet been studied.

The completive form of the verb appears to have a zero morpheme. From the basis of this form, the incompletive aspect is derived. Tonally, an incompletive suffix varies according to the tone of the root. Segmentally, it can have a variety of shapes. The most common are '-i', '-ri', '-xo', '-ni', and '-li'. Some of these suffixes can have phonetic variants, to be seen in Chapter 2. There are also a few verbs which do not fit into any of these categories. Below are some examples showing these various suffixes:

#### (38) Completive

gbòxò	gbòxì-i	gather together
cyé	cyè-xo	refuse
kán	ká-ní	boil
yù	yú-lí	steal
cù	có-rí	catch, grab

The tonal nature of verbs is a topic reserved for discussion in Chapter 2.

### F. The Verb Phrase?

The basic verb phrase consists of a verbal particle and a verb. The verbal particle contains information concerning tense, mode, and also aspect. As with other Niger-Congo languages, modal particles tend to have been verbs historically. Below are a few examples of tense and modal markers.

- (39) a. wu à Pan --> waà Pan            'he came'  
       b. wu ná Pan --> wu ná Pàn        'he has come'  
       c. wu sî ba Pan -> wu sî ba Pàn    'he will come'  
           he TA M come  
       d. wu sî Pan                        'he will come'  
       e. wu sî kò Pan                    'he will end up coming'  
           he TA finish come  
       f. wu ya má                        'he is coming'  
       g. wu sí da má                    'he will be coming'  
           he T A come-incompl.  
       h. wu caa m                        'he was coming'  
           he TÀM come-incompl.

Serial verbs or verbal chains are quite common in Sùcìté, just as they are in many West African languages. In the examples below, the two verbs are separated by a type of connective which coalesces to the final vowel of the first verb.

- (40) a. waa wù lís-ò Pan                'he brought it'  
           he-T it take- come  
       b. waa Pèrà-ò kò                    'he finished selling'  
           he-T sell- finish

Like the noun Phrase, the verb Phrase also operates as a unit tonally. If the verbal Particle and the verb are adjacent to each other, the tone of the Particle affects the tone of the verb. This is illustrated in the examples below.

- (41) a. wu à Pan --> waà Pan            'he came'  
       b. wu ná Pan --> wu ná Pàn        'he has come'  
       c. wu à kárí --> waa kàrí        'he went'  
       d. wu ná kárí                        'he has gone'

Unlike the noun Phrase, which, as a unit, is not affected by the tonal environment of the constituents preceding or following it, the verb Phrase is sensitive tonally to the noun Phrase which precedes. See (45) for examples of tonal variations on the verb Phrase, as well as Chapter 4 for a detailed analysis of these variations.

#### E. The Adverbial Phrase

The adverbial Phrase is located post verbally, and consists of a Noun Phrase + PostPosition or Pronoun + PostPosition. The tonal rules that operate between these two constituents are very similar to the rules that operate on the verb Phrase. Below are a few examples:

- (42) a. wu nye wu kàtoxo    'he is behind him'  
       b. wu nye no katoxo    'he is behind you'  
       c. ka nye wu táán        'it is beside him'  
       d. ka nye no táán        'it is beside you'



### 9. The Sentence

We have already talked about the noun Phrase and the verb Phrase as separate entities. In this section we will examine their location in the simple sentence and briefly discuss tonal phenomena that operate across phrasal boundaries. The basic word order is outlined below:

(43) Subject + Verbal Particle + Object + Verb Phrase + Adverb Phrase

S(NP)            V.P.            O(NP)            VP            AdvP(NP+PP)

Tonally, nominal + verbal elements are grouped together as tonal units. A verbal element cannot be affected by the tone of a preceding nominal element, however. The linking in the illustration below demonstrates tonal sensitivity while the square brackets represent blocks to the application of tonal rules.

(44) [Noun P V.P.] [Noun P Verb P] [Noun P PostPosition]

The tone of verbal particles is affected by the tone of the noun subject. In addition, the tone of the verb is sensitive to the tonal nature of any word that precedes it whether that word is verbal or nominal. The examples below show various tonal variations of the underlined words.

- (45) a. [Ndà sí] [mo wéé]            'I will look at you'  
           I    fut    you    look at
- b. [Nàà sí] [mo wéé]            'A man will look at you'  
           man fut    you    look at
- c. [Nàà sí] [wà wéé]            'A man will look at some'  
           man fut    some look at
- d. [Nàà à] [kárí]            'A man has gone'  
           man Past leave

- e. [Ndà ná kárí] 'I have gone' (I'm leaving)  
 I Past leave

As mentioned earlier, a Noun Phrase is generally not sensitive to the surrounding tonal environment. However, if an NP begins with a noun class clitic, the clitic is sensitive to the tone of anything which precedes and as with any other noun, can also affect the tone of anything which follows, as shown below.

(46) clitic V.P. clitic Verb P clitic PostPosition

Below are examples which illustrate how the presence of a noun class clitic or the lack thereof influences tonal changes on the sentence.

- (47) a. wu à wu wée → waa wu wée 'he looked at him'  
 b. wu ná wu wée → wu ná wu wée 'he has looked at him'  
 c. wu à karà wée → waa karà wée 'he looked at meat'  
 d. wu karà wée → wu karà wée 'Look at his meat!'  
 e. wu à wu karà wée → waa wu kára wée 'He looked at his meat'  
 f. wu ná karà wée → wu ná karà wée 'he has looked at meat'  
 g. wu ná wu karà wée → wu ná wu kára wée 'he has looked at his meat'  
 h. wu à wu kan gu-ún → waa wu kan guún 'he gave it to him'  
 i. wu à wu ló gu-ún → waa wu ló guún 'he took it from him'  
 j. wu à wu ló tũgu-ú → waa wu ló tũguú 'he took it from the father'  
 k. wu à wu ló wu tũgu-ú → waa wu ló wu tũguú 'he took it from his father'

If karà, 'meat' is immediately preceded by the verbal particle, it does not undergo tonal change. All other nouns behave in this way. However, if a noun class clitic is inserted, the tone of karà is also affected. Any tonal changes

on the clitic can trigger tonal perturbations on the noun phrase and verb phrase elements which follow, as can be seen in the examples above. These phenomena will be discussed in greater detail in Chapter 6.

#### H. Negative Formation

The negative sentence is formed by inserting a negative morpheme immediately before the verbal particle and at the end of the sentence.

- (48) a. wu à Pan —→ wà Pan he came  
 b. wu yi à Pan mén ----→ wu yǎ Pan mén 'He did not come'  
     he N T come N  
 c. wu nǎ Pan he has come  
 d. wu yì na Pan mén ---→ wì na Pan mén 'he has not come'

As will be seen in Chapter 4, both parts of the negative morpheme can be affected by the tone of the preceding word. The negative particle, yì, can also affect the tone of the following verbal particle, while mén affects the tone of the Yes-No Question Marker.

#### I. Question Formation

Yes-no questions are formed by adding 'la' to any sentence.

- (49) a. wà Pan 'he came'  
 b. wà Pan la 'Did he come?'  
 c. waa kàrí 'he left'  
 d. waa kàrí la 'Did he leave?'  
 e. ndà lâ 'Me?'  
 f. mo lâ 'You?'

- g. kaàte là 'the meat?'  
 h. m̀l̀l̀ là 'rice?'

As the examples above show, the tone of the Yes-no question marker, la, varies in relation to the tone of the preceding word.

Frontshifting takes place for WH questions. A Q marker 'yè' is also placed at the end of the sentence.

- (50) a. Sán waa kàrí yè 'Where did he go?'  
 Where he-T go Q  
 b. Sán waà wú gbàrà yè [gbàréè] 'Where did he meet him?'  
 Where he-T him meet Q  
 c. Nyà?a waà nya yè [nyéè] 'What did he see?'  
 What he-T see Q

A front shifted constituent is treated as an isolated tonal unit and therefore has no effect on the tone of the constituent which follows.

Frontshifting also takes place quite frequently in answers to WH questions

- (51) a. Sán mu ya séè? 'Where are you going?'  
 b. caanké la, ndi ya sé 'I'm going to the market'  
 market to, I am going

#### IV. SUMMARY

This chapter has been a sketch of the basic structure of Sucié. Those acquainted with Senufo languages will have recognized numerous patterns and structures typical of Senufo languages.

The inventory of Sucié consonants includes stops, fricatives, and laterals,

as well as Pre-nasalized stops and Palatalized consonants, which await further investigation. Seven vowels were isolated, while an eighth, the schwa, is tentatively considered not to have phonological status. However, not enough research has yet been done to clarify this point.

Both consonants and vowels appear to play a role in signaling stress on words. It was proposed that the first syllable of each word is stressed. This first syllable allows for the greatest variety of consonants, and it is also the position where a fully specified vowel appears to dictate the underlying vowel quality of the vowels in the remaining unstressed syllables of the word. Again, more research will have to be done on the relation between segmental behaviour and stress before any definite statements can be made.

It was also seen that there are three levels of tone, as well as two falling tones in Sucite. In sketching out sentence structure and word order, it was noted that nominal elements can affect the tone of following verbals but that verbals cannot affect the tone of nominals. The discussion concerning the topics of underlying tone, the distribution of tones in nouns and verbs, and the rules governing tonal changes in the sentence will be dealt with in succeeding chapters of this thesis.

#### NOTES

1. Whether these consonants are underlyingly palatalized or whether they consist of a combination of consonants is a matter that must wait until further research is done.
2. See Chapter 3 for nasal conditioning of consonants on noun class suffixes.
3. Transcriptions in this thesis do not always show a schwa in this position. Regardless of the transcription given, however, a vowel in morpheme medial position is always reduced in length and tends to be at least slightly centralized. Further investigation with a language consultant should clear up these discrepancies in the transcriptions.

4. A significant number of disyllabic verbs possess a final /i/ instead of harmonizing with the initial vowel:

cèlì	'spread out'
faanri	'construct, build'
fori	'go out, appear'

5. There has been a question among those studying Senúfo languages as to how to number and organize the noun class system. Those working on Cebara (Mills et al) have grouped singular and plural forms together, calling each grouping a class. Thus, the first three 'classes' contain both singular and plural forms and the last two contain mass and collective nouns. Because Mills set the precedent, a number of other people have followed their lead. Carlson adopted this system of organization but renamed the 'classes', 'Genders'. Recently, in a discussion with Mary Laughren, she suggested placing each singular and plural form in its own class and added that Jean Cauvin, who has written on Minyianka, a Senúfo language, uses the same system. Carlson argues for his system in saying that there is not the mixing and matching of noun classes as is found in Bantu languages. In addition, he says that the singular and plural forms of each gender are closely linked and feels that the system used should reflect this intimate pairing of singulars and plurals.

One advantage of assigning a class number for each singular and each plural would be in capturing a certain generalization, to be seen in Chapter 3, that goes across the singular/plural distinction. Instead of discussing the singular indefinites and definites separately from the plurals, it might be more convenient to examine the singulars and plurals on the same level when discussing tonal and segmental behaviour. The analysis would then not be referring to singular and plural forms but only to indefinite and definite suffixation of certain noun classes.

For the above reason, I have utilized the Laughren/Cauvin approach for analysis in preference to Mills' and Carlson's. Chapter 1, however, does refer to Carlson's gender system when introducing Noun Classes.

6. Within the context of this dissertation, the term 'noun phrase, narrowly refers to the string of nominal elements along with their suffixes.

7. The term 'verb phrase' within the context of this thesis is meant to refer to a string of verbal elements only and not to the broader definition which also includes objects and adverbial phrases.

## CHAPTER 2 - THE SUCITE VERB

### I. INTRODUCTION

In Chapter 1, we saw that verbs are marked for aspect. Segmentally, the completive form of the verb is the basic stem, and the incompletive suffix is added to that stem. The first part of this chapter will provide a descriptive account of the morphophonology of the incompletive suffix, based on a study of about 300 common Sucite verbs. The root tone of verbs sometimes changes when an incompletive suffix is added. This study will also look at these tonal changes in an attempt to discover any general tendencies worthy of rule formulation. The possible underlying tone for the incompletive suffix will also be discussed and tentative rules will be posited, though the analysis of a broader range of data is needed before definitive proposals can be made.

### II. THE COMPLETIVE VERB

#### A. Structural Description

The basic verb is composed of one, two, or three syllables with a limit of three tone-bearing units. The following syllabic structures can be found on verbs:

(1) CV	lì	'eat'
CVV	wéé	'look'
CVCV	célé	'divine'
CVVCV	jòòlì	'saw'
CVCVCV	cúláńś	'heal, be healthy'

Any of these forms can be prenasalized in stem-initial position:

NCVCVCV	ndúxáló	'smell'
---------	---------	---------

There is also a small set of monosyllabic verbs that possess a diphthong in phrase final position:

(2)	fìù	'sprout'	bíé	'feed'
	paon	'come'	cie	'do'
	feo	'run'	jíé	'wash'
			jíé	'enter'

A diphthong is not as long as a long vowel, and should be considered as a single tone-bearing unit. Diphthongs imitate the tonal behaviour of verbs with short vowels rather than that of long vowels. As a result, it seems more feasible to consider them as having one tone-bearing unit rather than two. In the examples below, all of the verbs are high tone in citation form. However, when preceded by waa 'he-recent past', the disyllabic verb and the verb with the long vowel acquire a low-high tone, while both the diphthongized verb and the verb with a short vowel acquire a simple low tone.

(3) Verb Structure

CVCV	PéRé	'sell'	waa PéRé	'he sold'
CV:	wéé	'look'	waa wèé	'he looked'
CV	lɔ	'take'	waa lɔ	'he took'
CVV	jíé	'enter'	waa jìè	'he entered'

When a diphthongized verb is in phrase medial position, the second vowel of the diphthong is lost.

(4)	paon	waa paon la	'did he come?'
	fìù	waa fì la	'did it sprout?'
	jíé	waa jí la	'did he come in?'



### B. Tonal Description

Regardless of the number of syllables or tone-bearing units (TBU's) it may have, a verb in isolation has a choice of only three different tone Patterns: High, Mid and Low. Underlyingly, there are no contour tones of any type. The examples below show the verbs in the imperative form.

(5)	1 TBU		2 TBU's		3 TBU's		
a.	H	lɔ́	'take'	pɛ́rɛ́	'sell'	cúlúnɔ́	'be healthy'
b.	M	sɔ	'buy'	tuxo	'carry'	fuxəri	'rummage'
c.	L	tè	'show'	tùxì	'vomit'	kàràṅà	'govern, turn'

It appears then, that only one tone need be specified for each verb. This tone would be placed on a tier separate from the segment, and be linked to all of the TBU's of the verb. Thus, as shown in the example below, there is a single High tone at the autosegmental level which can be linked either to a single TBU or to a multi TBU verb.

(6)	lɔ́	'take'	pɛ́rɛ́	'sell'	cúlúnɔ́	'be healthy'
			∨	∨	∨	
	H		H	H		

Mid tone and Low tone verbs can be described in the same way. The underlying nature of the Mid tone itself will be discussed later in this chapter.

## III. THE INCOMPLETEIVE VERB

### A. Structural Description

The Incompleteive form of the verb is derived by suffixing to the basic Completeive form of the verb. There are five basic types of incompleteive suffixing from which, I propose, other types of suffixing are derived.

The first and most popular type is simple VOWEL SUFFIXATION. On verb stems with a single TBU, the high vowel suffix (let us suppose that it is underlyingly i) assimilates to the root vowel in terms of backness, then the final root vowel is raised to the level of the suffix vowel. However, if the root vowel is a, then the suffix is lowered to a. There are three exceptions to these descriptive rules. Below are three illustrations of the implementation of these rules, each followed by a short list of verbs which behave in the same way. The verbs in the first column are completive forms of the incompletive verbs, which are in the second column.

(7) fó + í ----> fó + ú 'flow' BACKING

fó + ú -----> fúú RAISING

a. ɲmo ɲmùun 'draw a bow'

b. kś kúú 'finish'

c. kśn kúún 'cut off'

(8) wé + í ----> N/A BACKING

wé + í -----> wíí 'look' RAISING

a. byé bíí 'feed,raise'

b. fyén fíín 'flower'

c. kén kíín 'moan'

exception: suffix lowering and Partial raising

d. tè tè 'show'

(9) ká + í ----> káá 'chew' LOWERING

a. ca cà 'look for,search'

b. cǎn cǎn 'drop, destroy'

c. nya nyàa 'see'

exceptions: raising rather than lowering

d. gba gbùu 'drink'

e. ja jìi 'shoot (Pull trigger)'

There is one small category of single syllable verbs where vowel raising or lowering takes place, but there appears to be no suffixing as such, or if there was, the suffix was deleted after the raising or lowering rule.

(10) Vowel Raising

a. se si 'give birth, be born'

b. fo fu 'emigrate'

c. jo yu 'speak, say'

d. to tu 'fall'

e. lì lí 'eat'

f. tì tí 'weave, braid'

(11) Vowel lowering

a. Pan mǎ 'come'

b. yá yá 'be sick, ache'

Disyllabic verb stems with two TBU's can also be suffixed by the High front vowel, i. The final vowel of the root is then totally assimilated to the suffix vowel.

(12)a. saxe sàxì-i 'wait'

b. tare tàrì-i 'grind'

c. célé célí-í 'divine'

d. yéxé	yéxí-í	'question'
e. fyèʔè	fyèʔì-i	'be quiet'
f. ɠbòxò	ɠbòxì-i	'gather together'
g. ɣmóló	ɣmólí-í	'sleep'
h. cǎrí	cǎrí-í	'plant'
i. fulo	fùlì-i	'push'
j. ɠbàrà	ɠbàrì-i	'agree, meet'

In Chapter 1, it was suggested that only the first vowel of a non-complex word is stressed and specified for features, while any subsequent vowels derived their shape from the first vowel. In the examples of (12), it appears that when the incompletedive suffix is added to the verb stem, the unstressed second vowel adopts the features of the suffix vowel instead of from the stressed root vowel.

We have seen the behaviour of vowel suffixing on single TBU and double TBU verbs. Triple TBU verbs also have their distinct mode of behaviour. Instead of a high front suffix vowel, however, the final vowel of the verb root is replaced by the high back vowel, -u. This category includes not only verbs with three syllables (see 14) but also any verb with three TBU's, such as disyllabic verbs with long vowels (13). Double TBU verbs whose second syllable begins with a nasal also belong to this group (15)<sup>1</sup>.

(13) Long-short verbs

a. cǎnrí	cǎnr-u	'resolve, choose'
b. fáálá	fáál-ú	'balance'
c. fììnnì	fììnn-u	'be clean'
d. cùùlò	cùùl-u	'belch'

## (14) Short-short-short verbs

- |    |        |         |                    |
|----|--------|---------|--------------------|
| a. | ceʔeɛ  | cèʔèl-u | 'insult, laugh at' |
| b. | cúláŋs | cúláŋ-ú | 'heal, be healthy' |
| c. | fúxári | fúxár-ú | 'frighten'         |

## (15) Final nasal syllable

- |    |      |       |          |
|----|------|-------|----------|
| a. | pànì | pàn-u | 'spin'   |
| b. | kàŋà | kàŋ-u | 'lather' |

The suffix -u never occurs after the consonant, ɣ. Rather it appears to be lowered to ɔ.

- |        |           |         |                     |
|--------|-----------|---------|---------------------|
| (16)a. | jɔɔxi     | jòòx-o  | 'sharpen'           |
|        | b. wúráxí | wúráx-ó | 'mix up, mistake'   |
|        | c. káláxí | káláx-ó | 'spoil, be spoiled' |

This subcategory of verbs provides evidence for the fact that Sucite verbs allow, at the most, only three vowels or three tone-bearing units on the verb<sup>2</sup>. If the incomplete suffix is added, this restriction remains in force, and consequently the suffix replaces the final vowel of the verb with the -u suffix instead of adding a final vowel. In fact, this is the only type of suffix allowed on triple TBU verbs. At this point, I will not discuss whether the underlying form of the incomplete vowel suffix is -i or -u.

The second type of suffix is -xo.

- |        |         |         |                         |
|--------|---------|---------|-------------------------|
| (17)a. | lɛ      | lè-xo   | 'be old, get old'       |
|        | b. pɛn  | pèn-xo  | 'be unhappy, disgusted' |
|        | c. cyé  | cyè-xo  | 'refuse'                |
|        | d. lílí | lílí-xó | 'be far, go far away'   |

- e. Pèlì      Pèlè-xo      'be big, get big'  
 f. yeri      yèrè-xo      'counsel'

(6 of 18)

Note that this suffix can be added to verbs with one or two tone-bearing units.

The third suffix, -l, has been identified on single TBU roots.

- (18) a. yù      yù-lí      'steal'  
 b. kù      kù-lí      'die'

There is a certain set of verbs which exhibit a -di suffix. From the examples given below, the reader will note that all of them have disyllabic verb roots and that these roots all end in /i/.

- (19) cèrì -----> cèdi      'sneeze'  
 Pànì -----> Pàdi      'lose'  
 sílì -----> sídì      'begin'  
 tɛxì -----> tédì      'Place, Put'

Rather than suggest that -di is a completely different suffix, one may speculate that it is underlyingly a -li suffix. Two bits of evidence rally in support of this proposal. First of all, there are no examples of a disyllabic verb root acquiring a -li suffix on the surface, while monosyllabic roots acquiring a -di suffix do not exist. Thus, it is possible that these two suffixes are in complementary distribution. Secondly, there is evidence that -di was derived from the deletion of the final /i/ and the coalescence of the final root consonant with the suffix consonant. In Chapter 3, it is seen that the coalescence of ɔ of a noun root and l of a certain noun class suffix,

results in  $g$ : cere + le  $\rightarrow$  cede 'calabash'. Although the mechanics of coalescence on verbal suffixes may be a little different than that on nouns, since a larger variety of final verb root consonants are involved, this example of coalescence on a noun does provide evidence that  $l \rightarrow d$  in certain phonological environments.

The fourth type, -ni, is added only to single TBU roots. There are 25 verbs which use the -ni suffix. Of these, 17 possess nasal stems possibly indicating that the nasality of the suffix is conditioned by the nasal in the stem (20). The other eight show no evidence of nasality in the root (21).

- (20) a. son      sò-ni 'worship'  
 b. tun      tù-ni 'send (someone)'  
 c. kán      kǎ-ní 'boil'  
 d. no      nò-ni 'bite'

(4 of 17)

- (21) a. pu      pù-ni 'swell'  
 b. wu      wù-ni 'pour, spill'  
 c. su      sù-ni 'defecate'  
 d. tó      tó-ní 'close, bury'

(4 of 8)

If the -ni suffix were a result of nasal conditioning, then one would have to seek out the underlying suffix. One likely candidate is -li. A complicating factor is the presence of -ni suffixed verbs like those in (21) that have no trace of nasality in the root. Although it is possible that they were historically nasal, there is no evidence as yet that this was the case or that synchronically, a  $l \rightarrow n$  rule can be motivated<sup>9</sup>. In addition, there are numerous

cases of co-occurrence of a nasalized vowel with  $\underset{\sim}{l}$  in Sucite, where the  $\underset{\sim}{l}$  is not nasalized. Below are a few such examples of completive verbs:

- (22) kanla 'uproot'  
 fɛnlɛ 'incline'  
 faanla 'flatter'

The fifth type of suffixation for the incompletive aspect is -RI.

- (23) a. kó kó-rí 'draw (water)'  
 b. kún kún-rí 'crunch (in eating)'  
 c. cù cù-rí 'catch, grab'  
 d. jó jó-rí 'swallow'

(4 of 5)

Most of the disyllabic verbs which take the -rɪ suffix have the final syllable of -xi or -ʔV in the completive form. In each case, the final syllable of the completive verb is replaced by the suffix, -ri, as shown below.

- (24) a. sɔ́-xí sɔ́-rí 'burn'  
 b. mbú-xí mbú-rí 'open'  
 c. mbù-xì mbú-rí 'suck'
- (25) a. so-ʔo so-ri 'cook'  
 b. lá-ʔá lá-rí 'return, go back'  
 c. wa-ʔa wa-ri 'dry'  
 d. yə-ri yə-ri 'call'

There is also a set of verbs whose completive and incompletive forms are identical segmentally. The common characteristic is that they each end in a



high vowel, ɨ or i.

- (26) a. siili      sɨ̀li      'be strong'  
 b. cèlì      cèli      'shiver'  
 c. nyéʔín      nyéʔín      'stir'  
 d. kùlù      kùlu      'roll'

There are only a couple of suppletive examples.

- (27) a. kárí      sé      'go'  
 b. gbó      kúlí      'kill'

Finally, there are a few verb forms where the complete and incomplete forms are obviously phonologically related to each other, but each pair stands in a class of its own. These have been grouped together below.

- (28) a. lóxó      ndúró      'hear,listen'  
 b. wùlò      wúú      'pick up, take off,from'  
 c. tánlǎ      tàan      'please'  
 d. nyeli      nyìni      'cry'  
 e. Pan      mǎ      'come'

In summary, it appears that all types of incomplete suffixing is characterized by the presence of a high vowel. In most cases, this vowel is i, but it was seen that triple TBU verbs require the vowel, ɨ. There are only a few exceptions to this general statement.

Although the structure of a particular verb may limit it to a restricted set of suffixes, there seems to be no clear phonological rules conditioning the choice of incomplete suffix. The choice seems to be primarily arbitrary, and

with a few Phonological constraints. It must be noted that other Senufo languages display an equally confusing variety of incomplete suffixes. Comparative study may possibly shed some light on this problem.

It remains clear, however, that the number of tone-bearing units in the stem has a bearing on what type of incomplete suffixing is available to that verb. Where monosyllabic stems have access to all the types of suffixing described above, disyllabic stems cannot use the -ni suffix, and all stems with three tone-bearing units (trisyllabic and long-short bisyllabic verbs) are entirely limited to Vowel Suffixation.

#### B. Tonal Behaviour of the Incomplete Verb

##### 1. The Underlying Tone of the incomplete suffix

Although there are a variety of segmental shapes for incomplete suffixes, the one feature that links them all together is tone. Regardless of the type of segmental suffixation, the incomplete suffix is always High tone after a high tone verb, and Mid tone after Mid tone verbs.

(29) COMPLETEIVE	INCOMPLETEIVE
a. PÉÉ	PÉÍ-í 'sell'
b. ta-ʔa	ta-ɕi 'put (on fire)'

When the incomplete suffix is attached to a Low tone verb, it is generally Mid tone, as the underlined suffixes in (30) indicate.

(30) wu ya tuxì-ì la	(he is vomiting Q)	'Is he vomiting?'
wu ya xá kà- <u>an</u> móú	(he is it giving you-to)	'He is giving it to you.'
wu ya xá kà- <u>an</u> nàŋuù	(he is it giving man-to)	'He is giving it to the man'

However, if the Low tone incomplete verb is followed by a noun class clitic (as in (31b,c)) or is in phrase final position (31a), the tone of the suffix is lowered to Low tone.

- (31) a. wu ya tuxì-ì → wu ya tuxìì 'he is vomiting'  
 b. wu ya xé kà-àn ɲúú → wu ya xé kàà̀n ɲúú 'he is giving it to him'  
 c. wu ya tuxì-ì wu la → wu ya tuxìì wá la 'he is vomiting on it'

Depending on the tonal environment, then, the incomplete suffix can be High tone, Mid tone, or Low tone.

Before trying to determine the underlying tone of the incomplete suffix let us observe the behaviour of incomplete suffix tone in Cebara, a major Senufo language in the Ivory Coast.<sup>4</sup>

In Cebara, the underlying tone for the incomplete suffix is High after Low and High tone verbs, but Mid after Mid tone verbs.

(32)	Completeive	Incompleteive	Sucite	English
Low tone	kpàlì	kpàlí	gbèlì, gbèlìi	wound, injure
Mid tone	nyàari	nyàari	nyɛɛri, nyèèru	walk, stroll
High tone	párá	párá	péré, péréí	sell

(Mills, 1967?)

If we look at Cebara, we see that High tone follows Low and High tone verbs. This leads us to suspect that the underlying tone of the suffix is High tone. If historically, the indefinite suffix was High tone in Senufo languages in general, then it may be possible that this suffix is also underlyingly High tone in Sucite. However, positing an incomplete High tone for the Sucite incomplete suffix, would require an explanation of how this High tone was lowered to Mid and, in certain cases, to Low tone.

One Possible way to account for High tone lowering after Low tone is to trigger a Low tone SPreading Rule, stated as follows:

(33) LOW SPREADING - When a Low tone is followed by a High tone across a morpheme boundary, the Low tone spreads to the right.



The following example illustrates this spread:

(34) tùxì-i 'vomit'  

$$\begin{array}{c} \downarrow \nearrow \\ L \quad H \end{array}$$

If the verb is in non-Phrase final Position, both High and Low tone will remain linked to the suffix vowel. Since, generally a Low-High contour is not pronounced on a single tone-bearing unit, this contour is simplified on the surface and becomes Mid tone (see (30) for examples). High does delink after Low tone spread only when the verb is in Phrase final Position or before noun class clitics<sup>9</sup>. This Low Spread and High Delinking is illustrated in the examples below.

(35) wu ya tùxì-i\* → wu ya tùxì-i ## 'He is vomiting'  

$$\begin{array}{c} \downarrow \nearrow \\ L \quad H \end{array} \quad \begin{array}{c} \downarrow \nearrow \\ L \quad H \end{array}$$
  
 L SPREADING                  HIGH DELINKING

(36) wu ya tùxì-i wú là → wu ya tùxì-i wú là 'He is vomiting on it'  

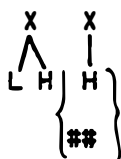
$$\begin{array}{c} \downarrow \nearrow \\ L \quad H \quad H \end{array} \quad \begin{array}{c} \downarrow \nearrow \\ L \quad H \quad H \end{array}$$
  
 LOW SPREAD                  HIGH DELINKING

---

\*Only those words whose tones are relevant to the discussion at hand will be marked for tone at the autosegmental level. Their final surface tone will be indicated by the tone diacritics above the words.

Although we cannot proceed with a thorough analysis at this stage, we can already see that the High delinking of (36) is a result of a combination of Low tone spreading from the left and the High tone noun class clitic on the right. High delinking appears to be a way of decontouring a Low-High glide linked to the same TBU when a High tone follows or when it is in phrase final position. The proposed rule would be stated as follows.

(37) HIGH DELINKING - Delink a High tone which is preceded by a Low tone linked to the same TBU, and followed by a High tone linked to the following TBU or is in sentence final position.



By positing an underlying high tone for the incomplete suffix, the above analysis can easily account for the tonal behaviour of the suffix after High and Low tone verb stems. We are forced, however, to look for another explanation for why this putative High tone suffix is Mid tone after a Mid tone verb stem, rather than the expected High tone:

(38) \*ta -ri 'be putting' Rather: ta-ri

What is the nature of Mid tone verbs that allows for this apparent anomaly? Do Mid tone verbs have a final floating Low tone that triggers Low tone spread onto the suffix? Or is the underlying tonal nature of the suffix something other than a pure High tone? These questions cannot be fully answered until more data are presented. Later in Chapter 6, we shall see that the tonal behaviour of the noun class clitic and the incomplete suffix is very similar. An analysis of the underlying tone of the clitic in Chapter 6 will show that this apparent peculiarity is not just restricted to the incomplete suffix.

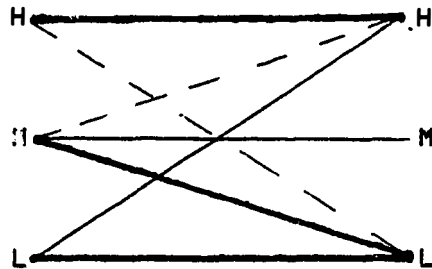
Before terminating this discussion, however, we must take a look at the root tone changes that take place when the incomplete suffix is added.

## 2. Root Tone Mutations in the Incomplete Verb

What has not been stated so far is that verb root tone often changes when an incomplete suffix has been added. The diagram below illustrates the root tone changes from complete to incomplete. The thickened lines indicate the most common tonal changes. The changes represented by the thin line account for 12 or 13 verbs each of the 300 in the corpus. For example, only 12 or 13 mid tone verbs retain their mid tone root when an incomplete suffix is added. The broken lines represent only 3 verbs each.

(39) Complete tone

Incomplete root tone



The tone of High tone and Low tone roots normally do not change when the incomplete suffix is added:

(40) High tone

péré	péí-í	'sell'
célé	céíí	'divine'

yéxé	yéxíí	'question'
cúláńń	cúláńńú	'heal, be healthy'
fúxáńń	fúxáńńú	'frighten'

## (41) Low tone

fyèʔè	fyèʔíi	'be quiet'
gbòxò	gbòxíi	'gather together'
gbàrà	gbàńńi	'agree, meet'
fíńń'nì	fíńń'nu	'be clean'
cùùlò	cùùlu	'belch'
cèlì	cèli	'shiver'

The first striking observation is that most Mid tone verbs are lowered to Low tone when an incomplete suffix is added.

(42) a. waà sá la?	'he <u>bought</u> ?'	COMPLETIVE
b. wu ya sùu la?	'he is <u>buying</u> ?'	INCOMPLETIVE
c. waà fuxari la?	'he <u>rummaged</u> ?'	COMPLETIVE
d. wu ya fùxàru la?	'he is <u>rummaging</u> ?'	INCOMPLETIVE
saxe	sàxíi	'wait'
tare	tàńńi	'grind'
cààńńri	cààńńru	'resolve, choose'
ceʔelɛ	cèʔèlu	'insult, laugh at'
jààxi	jààxo	'sharpen'
son	sòni	'worship'
tun	tùni	'send (someone)'

In fact, those Mid tone verbs that do not undergo root tone lowering are in a definite minority and fall into distinct Phonological categories, as will be seen shortly.

Although Carlson (n.d.) did not identify root tone lowering as a common result of incompletive suffixing in SUPYIRE, he did note that a number of Mid tone verbs acquired the behaviour of Low tone verbs in the incompletive. In CEBARA, no mention has been made of Mid tone lowering. In SUCITE, however, Mid tone lowering is so regular that some attempt must be made to account for the change.

It is not known whether the tonal nature of the suffix has something to do with the Mid tone Lowering, or whether the tonal structure of a Mid tone verb itself lends itself to tone lowering whenever any suffix is added, regardless of its tonal structure. Most likely, the tonal nature of both the root and the suffix play a role in root tone lowering. If we look ahead to the tonal behaviour of suffixed nouns, we will see that root tone lowering takes place only in the presence of a particular type of suffix as shown in (43b).

- (43) a. ji-le 'balaphon -IND' Class 5 Suffix  
 b. ji-xale 'balaphon<sub>s</sub>-IND' Class 6 Suffix

If we suggest that the tonal nature of the suffix calls for root tone lowering, we are forced to ask why and how. At this point, it is quite unclear that a synchronic solution can be found to account for this root tone lowering. For now, we shall call root tone lowering a tonal mutation. A mutation is a phenomenon which occurs at the point that words are formed but before the application of other tonal rules. Mid tone verbs which undergo the mutation of tone lowering behave exactly like Low tone verbs, once the lowering has taken place. This means that the incompletive formation of a Mid tone verb usually



first consists of Mid tone lowering, and then the adjusting of the tone of the incomplete suffix in accordance with the fact that the verb root is now Low tone.

(44) sɔ̃ - ú → sù - ú → sùu 'be buying'

$\begin{array}{ccc} \text{M} & \text{H} & \\ | & | & \\ \text{L} & \text{H} & \\ | & | & \\ \text{LH} & & \end{array}$

Tone Mutation    Low Spread

M→L

While most verb roots maintain High and Low tone on verb roots when the incomplete suffix is added, and lower Mid tone in this same environment, there is a small set of verbs where a Low tone root is raised to High tone in the incomplete, while the Mid tone verb root remains Mid except in one or two cases, where it is also raised to High tone. Below is a list of the verbs which follow these patterns:

(10)a. se            si            give birth, be born

      b. fo            fu            emigrate

      c. jo            yu            speak, say

      d. to            tu            fall

      e. lɪ̃            lí            eat

      f. tì            tí            weave, braid

(11)a. Pan            mǎ            come

      b. yǎ            yǎ            be sick, ache

(23)a. kó            kórí          draw (water)

      b. kún            kúrí          crunch (in eating)

      c. cù            córi          catch, grab

      d. jó            jóóri        swallow

(24)a. só-xí          só-rí          burn

- b. mbú-xí      mbú-rí open  
 c. mbù-xì      mbú-rí suck  
 (25)a. so-ʔo      so-ri cook  
 b. lá-ʔá      lá-rí return, go back  
 c. wa-ʔa      wa-ri dry  
 d. yə-ri      yə-ri call  
 (18)a. yù      yúlí steal  
 b. kù      kúlí die

The common characteristic of all these verbs is that they have monosyllabic, single tone-bearing roots. Even those verbs with disyllabic complete forms appear to be actually monosyllabic roots with a type of complete suffix that is replaced by an incomplete suffix (see (24) and (25)).

This set of exceptions is apparently quite old in Senufo because Cebara produces the exact same type of behaviour. In fact, the tonal correlation between the two languages for this set of exceptions is much higher than for the 'normal' tonal behaviour of incomplete suffixation. See examples of normal incomplete suffixation for Cebara in (32) above. Below are examples of the exceptional set of verbs in Cebara, along with the Sucié equivalents:

(45) Cebara	Sucié	English
lìì, líí	lì, lí	eat
lùgù, lúró	ndùxì, ndúrí	plant
mùgù, múró	mbùxì, mbúrí	suck
tìgì, tírí (Mills, 1967?)	tàxì, tárí	descend

It is instructive to note that non-lowered Mid tone verbs are found only

in this irregular group of verbs. Therefore, the Problems discussed above for the behaviour of the incomplete suffix tone after Mid tone verbs should not complicate the analysis of the underlying tone of the incomplete suffix if we consider the incomplete suffixation of non-lowered Mid tone verbs as irregular along with the raising of Low tone verbs to High tone.

Unfortunately, time and space do not allow for a more rigorous study of this type of tonal behaviour which raises Low tone verb roots to High tone and prevents the normal lowering of Mid tone verb roots to Low tone. With the present data, there appear to be some definite tendencies for tonal change based on syllable type and a particular type of incomplete suffixing. The precise reasons for this deviation remains obscure, however, forcing us to remain at the descriptive level of the analysis. With this in mind, the Low Raising rule is posited below.

#### (46) LOW RAISING

When a single TBU verb root acquires an incomplete suffix of the shapes, Ø, -ri, or -li, High and Mid tone verbs generally retain their root tone, while Low tone roots are raised to High:

$$\begin{array}{l}
 L \rightarrow H / \text{---} \left\{ \begin{array}{l} \text{Ø suffix} \\ -ri \\ -li \end{array} \right\} \\
 [X] \\
 \text{root}
 \end{array}$$

In contrast, when a single TBU verb possesses a vowel suffix or the -ni suffix, the verb root tone follows the normal pattern of lowering of the Mid tone root instead of raising a Low tone root to High tone.

## IV. HISTORICAL SPECULATIONS AND TONAL FEATURES

Examination of these root tone mutations reveals one common tendency. In both the group where Mid tone lowering takes place, and the group where Low Raising occurs, the three way tonal distinction found in the complete is reduced to two tones in the incomplete. The largest group, which involves Mid tone lowering, distinguishes between High and Low tone, while the second, 'irregular' group contrasts High and Mid tone. There are no examples of a High or Low tone verbs mutating to Mid tone in the incomplete. As a result, the vast majority of incomplete verbs are either Low tone or High tone.

These observations lead us to speculate that historically, the Suciite tonal system may have evolved from a two tone system. Other evidence supporting this possibility can be found by examining minimal pairs. There are numerous minimal pairs that contrast High and Low tones as well as High and Mid tone verbs, but tonal pairs contrasting Mid and Low tone are relatively rare.

(47) a. High vs. Mid (15 of 28 minimal pairs in 300 verb corpus)

fí	'grill'	fɔ	'blow, winnow, swell'
fó	'flow, drip'	fo	'emigrate'

b. High vs. Low (10 of 28 minimal pairs)

mbúxí	'open'	mbùxì	'suck (an orange)'
mání	'assemble, add'	mànì	'light, plaster'

c. Mid vs. Low (3 of 28 minimal pairs)

yiri	'call'	yìrì	'get up'
kuli	'gather'	kùlì	'shave'

No minimal tonal triplets have been found for verbs. Below is near minimal triplet:

(48) tùxí 'dig'      tuxo 'carry'      tùxì 'vomit'

The same can be found for nouns; no Mid versus Low minimal Pairs have been attested. In addition there are many more High tone verbs than Mid or Low tone verbs (135 vs. 95 vs. 71 in a data sample of about 300 verbs).

This could mean that in the distant Past, there was no tonal contrast between the Mid tone and Low tone, and as a result, the lexicon did not develop minimal Pairs.

It has been Proposed by numerous authors throughout the years that Proto-Niger-Congo was a two tone language. Proto-Bantu, it has been suggested, was also two tone. Clements (1978) suggests that the agglutinative character of many Bantu languages may have been a factor in their trend toward an accent type system while isolating languages tended to retain the tonal distinctions and even to allow for Proliferation of tonal contrasts. In West Africa, there are two, three, and four tone languages. It was noted in the Introduction that Senufo dialects have Primarily three tones, while a few appear to have two or four tones. The Possibility that Senufo may have evolved from a two tone system seems Plausible in the light of Proposals given by other linguists familiar with African languages.

The way that a three or four tone system may have evolved from a two tone system has been the object of study by various authors. Maddieson (1974) discusses the Possible motivations for tonal change or 'tone-splitting', as the historical Prolife-ation of tones is often termed. These include "the downdrift model" in which he suggests that "new constrastive tone levels" evolve "as a result of the superimPosition of intonational Patterns, such as downdrift" (p.29), the "sandhi model" where tone sandhi rules can trigger Permanent lowering or raising of tones, and the "'Phonation type' model" where tonal

change was triggered by segmental factors, such as certain types of consonants.

In discussing the 'tone sandhi' model, Maddieson invites us to "imagine how a language with two basic tone levels but with a tendency for high tones to be somewhat lowered when a low tone follows and for low tones to be somewhat raised when a high tone follows could develop into a language with four tone levels if the conditioning environment was lost or absorbed. This is essentially the kind of Process that is sketched for Fe?Fe? by Hyman (1972) and for Dschang by Tadadjeu (1974). A merger of the raised low and lowered high tones into a mid tone could result in a three-level system evolving from an earlier two level one."

(49) Maddieson: h l → lowered h l → ml  
 l h → raised l h → mh

Another type of tone splitting was suggested by Dwyer (via Maddieson): "Dwyer (1973:248-250) has suggested that Southwestern Mande did develop a third contrastive tone when the complementary distribution of mid and low phonetic levels in disyllabic nouns was 'spoiled' by the borrowing of low-low nouns from Northern Mande, and the distribution of the three tones does still largely reflect the earlier complementarity." (p.30)

(50) Dwyer: Southwestern Mande

H  
 L / M  
 \ L + Low tone loanwords

From Anderson (1978) we find that Stalhke notes that the four level Igede tone system "seems to have developed from an original two level system, by the splitting of each level into two distinct registers" (p.171).

(51) Stalhke: Iɔede

H	/
	\
L	/
	\

Clements' (1981) formalization of tonal features (as a revision of YiP's (1980) theory) reflects the theory of historical tone-splitting. First, he notes that in certain dialects of Ewe, the High, Mid, and Low tones do not stand in symmetrical relationship to each other. Rather the Mid and Low tones "alternate in highly productive patterns while neither tone alternates productively with the High tone." (p.57). This, Clements demonstrates, can be reflected in a system of tonal features which consists of two primary registers which can be split to create systems of three or four registers. "Thus, we could say, (in synchronic terms) that the Ewe system involves a split of the lower register into a higher and a lower subregister, normally designated as "Mid tone" and "Low" tone, respectively." (p.57) Clements represents the Ewe low tone split as given below:

(52) Clements: Ewe - three way split

h	
1	/ h
	\ 1

(p.58)

A four tone system would naturally involve the splitting of both the high and low tone registers.

(53) Clements: four way split

h	/ h
	\ 1
1	/ h
	\ 1

Studies in other languages such as Lendu (Trifkovic, 1977) have led to hypotheses that three tone and four tone languages evolved from two tones through the process of tone splitting. This tone splitting may have come about through the process of productive tone alternating rules developing into phonological tonal contrasts and through the introduction of loan words that helped to establish new tonal levels. The implications of these historical developments for synchronic analysis can be seen in Clements' proposed tonal feature system.

Clements integrates this tonal features proposal into the framework of autosegmental phonology by placing the features in rows. The top row includes the tones of the primary register, while the bottom row consists of tones assigned to the "subregister within the primary register defined by the entry in the first row." His representation of a M-H-L tonal sequence in Ewe is given as follows:

(54) l    h    l  
       h    |    l  
       |    |    |  
       CV CV CV

The features above indicate that mid tone is a result of a split of the low tone register. The high tone register, on the other hand, did not undergo a split, and thus is represented only by a single feature given in the top row.

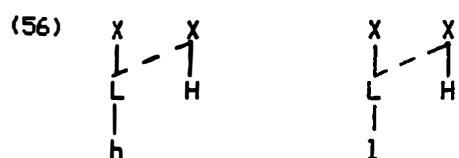
In Sucite, we have suggested that mid and low tones may have had a common origin, thus leading us to opt for the notion of a historical tone splitting of the lower tone register. The feature system proposed by Clements then predicts that mid tone as found on the verb will be represented by the features Lh and low tone with LL. For purposes of reading ease, the primary register tone is



represented by a capital while the subregister tone is indicated by a small letter. In addition, instead of placing the two rows of features above the segment, the features will be placed below the segments with the primary register tone closer to the segment than the subregister tone, as shown below.

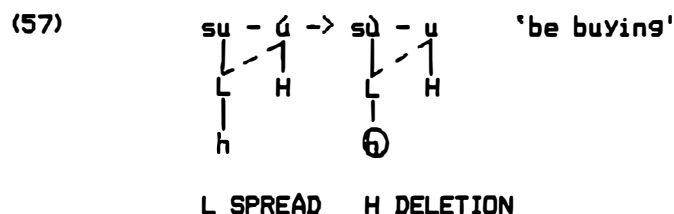


Previously we proposed that the underlying tone of the incomplete suffix was High tone. Since, at this point, there is no apparent tone splitting of High tone, the single feature, H, is sufficient. If the Mid tone verb, being analysed as underlyingly Lh, is followed by a H suffix, it could potentially trigger the Low tone spreading rule, since the Low tone spreading rule has no tone specified on the subregister tier of the Low tone (see (33)). Theoretically, then, either Lh or Ll tones could spread onto High tone as shown below.



The possible consequence of Lh tone spreading onto a High tone is the formation of a Mid-High contour tone on the suffix. This, unfortunately, is not an acceptable tonal shape for the incomplete suffix. If, however, we allowed a Lh verb to spread onto a High tone suffix, but then motivated a rule deleting the subregister high tone, the correct surface form would be produced. In addition, this process would help to explain why a Mid tone verb is lowered to High tone before a High tone suffix. Below we see an example of this suggested

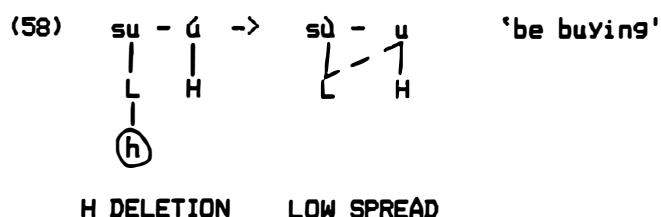
## Procedure-



If historically, L1 and Lh were one single tone, capable of spreading onto high tones, then even after the splitting of the Low tone register, it is conceivable that this spreading continued to occur, but that it required subregister High tone deletion.

It will be seen, in Chapter 4, however, that Lh spreading onto High tone is not allowed across word boundaries, and it can be permitted across morpheme boundaries of a noun and verb only if subregister High deletion takes place. These limitations will suggest that only those Low tones not specified on the subregister tier for High tone can trigger Low tone spreading. Once evidence of this problem is presented, adjustments to the Low tone spreading rule will be made.

An alternative analysis is to motivate a rule deleting the subregister High tone of a Lh verb. Once this subregister High tone is deleted, the Low tone then spreads onto the following High tone as shown below.

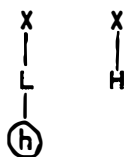


Thus, if for some lexical reason, the subregister high tone is blocked from

deletion, Low tone spreading is also blocked from application. The importance of ordering the High Deletion rule before Low tone Spreading will be made more clear in the following chapters since at this point, sufficient evidence is lacking.

The subregister High tone deletion rule can be tentatively stated as follows:

(59) SUBREGISTER HIGH DELETION: Delete the subregister High tone of a Lh tone when it is followed by a High tone.



As has already been noted, this rule applies to the majority of Mid tone verbs. However, the small group of Mid tone nouns which do not lower to Low when followed by an incompletive suffix do not allow for the application of the High deletion rule.

#### V. CONCLUSION

In summary, then, the posited four rules are listed below.

- (46) Low Raising
- (59) Subregister High tone Deletion
- (33) Low tone Spreading
- (37) High Delinking

We have already suggested that High Deletion must take place before Low

tone SPreading, so that those Lh verbs which have undergone High deletion can also trigger Low tone SPreading. Low Raising, likewise, must take Place before Low tone SPreading but for the opposite reason: it must block Low tone sPreading from taking Place. In other words, both the High Deletion and the Low Raising rules are tone feature changing rules which affect the application of the Low SPread rule. The final rule, High Delinking, was seen to take Place as a result of the Low SPread rule and therefore is obligatorily ordered after the Low SPread rule.

The major question addressed in this chapter was how to analyse a Phonetic Mid tone in Sucite. Clements' tone feature system was Proposed along with the suggestion that Mid tone was an historical split from Low tone, citing as evidence the small number of Mid versus Low tone minimal Pairs, as well as the rather productive alternation of tone between Mid and Low tone. According to Clements' system then, the Sucite Mid tone verb is underlyingly Lh tone.

There are other Possible analyses for the Mid tone, however, that need to be considered here. One Possibility is that the Mid tone is underlyingly toneless. If this is the case, then Mid tone would be assigned to the toneless segments at some Point in the derivation. In addition, a rule assigning a Low tone to toneless segments which are followed by a High tone incomplete suffix would have to take the Place of the Present High Deletion rule. This is a Potentially Plausible hypothesis for the Sucite verb. However, it will be seen, as data is Presented in later chapters, that this hypothesis runs into serious Problems.

A second alternative hypothesis is that Mid tone verbs are underlyingly a contour tone consisting of a Low and High tone. These Low-High tones would then be simplified to Mid tone on the surface. The trouble with this analysis is

that theoretically, a disyllabic Low-High verb should have a Low tone linked to the first TBU and the High tone linked to the second TBU. In actuality, there are no such Low-High verbs. Mid tone verbs are Mid tone in complete form regardless of the number of tone-bearing units. Therefore the hypothesis that the Mid tone verbs are underlyingly Low-High tone cannot be accepted as a viable analysis.

We are left, then with our original analysis that Mid tone is a split from the Low tone, with its features given as Lh. Later chapters will reveal other types of Mid tones found on nouns and verbal particles which require differing analyses.

#### NOTES

1. It is possible that these medial nasals were historically tone-bearing or syllabic, and as a result still retain the type of suffixing required for triple TBU verb forms.
2. In skimming the verb list in the appendix, the reader will note that nasals on pre-nasalized consonants occur on both disyllabic and trisyllabic verbs. At this point, it does not appear that pre-nasals on verbs are tone bearing or syllabic, thus a verb with three TBU's can also allow a pre-nasalized consonant.
3. A l->n rule can possibly be motivated elsewhere in the language. In Chapter 3, where a distinction is made between noun roots with nasalized vowels and those with a proposed underlying final nasal consonant, the latter is seen to cause nasalization of the l, where the former does not. It is possible that the verbal suffix, -ni is derived from -li in the same way. However, at this point, not enough research has been done to permit such a definitive proposal.
4. In his writings on Supyire, Carlson gives very little attention to the tone of the incomplete verbs. From his descriptions and data, it appears that, according to him, there is no generally no change in tone between the complete and the incomplete forms.
5. It should be noted here that noun class clitics vary tonally themselves. They can be High, Mid, or Low tone depending on the tonal environment. After High tone verbs, clitics are always High tone, and they are also High tone after incomplete Low tone verbs. For more information concerning the tonal nature of the noun class clitic, the reader is asked to refer to Chapter 6.

## CHAPTER 3 - THE NOUN

### I. INTRODUCTION

The Preceding chapter dealt with the morphology and tone of the verb. The examination of the tonal behaviour of the verb and the incompletive suffix yielded several tentative rules. It will be seen in this chapter on the noun that some of the tonal behaviour identified on the verb is also found on the noun. For example, it was Proposed in Chapter 2 that the Low tone of the verbal root spread onto the High tone of the completive suffix. Likewise, it is Proposed in this chapter that certain nominal suffixes which are High initial are lowered to Mid tone through the Process of Low tone Spread. Another point of similarity is the fact that nominal roots with certain types of tone lower to Low tone when followed by a particular kind of High initial suffix, just as Mid tone verbs lower to Low when followed by the High tone incompletive suffix.

Other issues in this chapter concern the melodic nature of the noun and a complication in applying the Association Convention of Left to Right Linking. The matter of linking tones to segments is further complicated by the structural behaviour of certain nominal suffixes. One nominal suffix which, depending on several factors, can undergo various types of segmental deletions, poses problems for the relinking of tones which have lost their segments to deletion. These and other issues, such as the underlying tone of the various nominal suffixes, will be the focus of discussion in this chapter. The discussion of the underlying tone of the nominal roots themselves will, however, have to wait until Chapter 5 where a fuller discussion of the noun phrase as a whole will enable one to examine nominal tonal behaviour in the context of the phrase.

This chapter will first survey the general morphological and tonal structure of nouns as well the different types of nominal suffixing found in Sucite. It

will then examine each type of suffix, providing a descriptive account of its segmental behaviour before describing and analyzing the tonal behaviour.

### A. Noun Structure

Non-complex noun roots are normally composed of a noun root and a suffix. Noun roots are either monosyllabic or disyllabic and contain, at the most, two vowels. The syllabic sequences allowed on noun roots are noted below:

- (1) a. CV        jã    'son'  
       b. CVCV      folò 'owner, chief, head of ...'  
       c. CVV        fìì 'python'

The initial consonant of a noun root may be pre-nasalized.

- d. NCV        ndì        food        (from lì 'to eat')  
       e. NCVCV    ñgura-xo    smoke-suffix (from wó 'to blacken'?)

### B. Noun Classes and Suffixing

All nouns in Sucite are grouped into noun classes which are most frequently marked by a suffix. There are 8 noun classes in Sucite, three singular, three plural, and two mass / collective classes. Each class has an indefinite and a definite suffix. For the purposes of analysis, these classes are grouped into two categories (labeled TYPE I and TYPE II), according to the phonological shape of the indefinite suffixes. Below are examples of definite and indefinite nouns for each noun class with the suffixes being underlined.

(2) Class	Type	Indefinite	Definite	English
1	I	cee-wè	ceè-ŋe	'woman'
2	II	gba-ála	gba-á-bí	'rivers'
3	I	gba-xa	gba-ké	'house'
4	I	gba-ya	gba-nyé	'houses'
5	I	gba-là	gba-à-ŋe	'forehead'
6	II	gbà-ʔala	gbà-ʔà-kí	'foreheads'
7	I	su-ɾà	sù-té	'main dish'
8	I	si-ŋè	sì-m-be	'oil'

### C. Noun Tone

Sucite nouns exhibit nine different tonal patterns. All except one can be found on Class 1 nouns with a 0 suffix. The ninth, Low-High tone, can be found only on nouns that possess a class suffix.

(3)	High <6>*	wéré	'money'
	High-Mid <16>	fyáa	'fish'
	High-Low <5>	jǎ	'pocket'
	Mid <42>	gba	'river'
	Weak Mid <39>	caan	'market'
	Mid-Low <7>	conlǎ	'younger sibling'
	Mid-Low W <42>	jà	'son'
	Low <77>	cà	'child'
	Low-High <22>	gbòn-íǎ	'granary'

Although there are a variety of tonal shapes on nouns, word final tone is

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\* < > = number of examples in a data sample of simple non-complex nouns of all classes.



either High, Mid or Low tone. It will be seen later in Chapter 4 that each of these three tones affects the following verbal element in different ways. On the surface there are also only three levels of tone word initially. However, it will be seen in Chapter 5 that the initial tone of nouns exhibits a four way contrast. The labels, High, Mid, Weak Mid and Low represent this four-way contrast, which becomes evident when the noun in question is preceded by another nominal in a noun phrase.

There are three types of High initial nouns, High, High-Mid, and High-Low. Although all of these nouns can trigger tonal rules, their own tone never changes. Almost all High and most High-Low nouns are loan words. High-Mid nouns seem to be more indigenous to Senúfo<sup>1</sup>. One characteristic of the latter is that they seem to require two tone bearing units. Altogether High initial nouns account for only 27 nouns in the data sample of about 255 nouns. The question that immediately comes to mind is, why such a small number? This question will be dealt with in Chapter 5 when we discuss the underlying tone of nouns.

A distinction is made between weak Mid nouns and Mid nouns because, although they have the same pitch in citation form, they differ in tonal behaviour in other contexts. The weak Mid nouns as well as the Mid-low W nouns, are more susceptible to certain tonal changes than are Mid and Mid-Low S nouns. This will be made clear in Chapter 5.

There are two types of Low initial nouns, Low and Low-High. Low tone nouns form the largest group in the data sample (about 77 nouns). Low initial nouns are subject to a High Spreading rule, which will be described and discussed in chapter 5.

Since most nouns possess a suffix of some type, further discussion of nominal tone can be found in section II-B.

## II. THE INDEFINITE SUFFIX - TYPE I

### A. Structure

As was mentioned above, there are two types of indefinite suffixes. Type I indefinite suffixing is the simplest. Its basic form is -CV. The consonant varies according to class affiliation (See chart (2) above) and the vowel is either the same or very similar to the vowel of the noun root, regardless of class affiliation. The only vowels not allowed on the suffix are the high vowels, /i/ and /u/. It appears, from looking at the examples below in (4), that the suffix vowel is essentially a copy of the root vowel except when the root vowel is [+high], at which point the suffix vowel is [-high], but it acquires the same feature for [+ or - back] as the root vowel (see (4f,g) below). The only feature that seems to be consistent for the Type I suffix vowel, then, is the [-high] feature.

- (4)a. gba-xV → gba-xa 'house'  
 b. cɛn-xV → cɛn-xɛ 'sauce'  
 c. gbɔ̃n-lV → gbɔ̃n-lɔ̃² 'granary'  
 d. fɔ̃-xV → fɔ̃-xɔ̃ 'corn'  
 e. kà-rV → ka-rà 'meat'  
 f. sù-lV → sù-lò 'floor'  
 g. cî-lV → ci-lè 'thigh'

Whether the Type I class suffix vowel is underlyingly featureless or whether it does possess the [-high] feature is an issue that cannot be fully addressed here, within the scope of the thesis. However, investigation of the data in the Noun Lexicon, which is located in the appendix, will reveal the patterns of behaviour very briefly sketched above.

All the nouns of Noun Classes 1,3,4,5,7 and 8 Possess the Type I indefinite suffix. As was mentioned above, the basic shape of the suffix is -CV. However, not all Type I nouns bear this basic shape. Some appear to have no suffix at all. The leftside column of chart (5) indicates that three classes have examples of suffixless nouns. While only the minority of nouns in Classes 3 and 8 are suffixless, the majority of Class 1 suffixes are in this group. One possible reason for this is that the -CV suffix for Class 1 nouns, -wV, was historically reduced to a vowel and then finally deleted. However, at this stage, there is no evidence of an earlier -wV suffix on most suffixless Class 1 nouns (but see discussion of disyllabic noun roots, p.79). Because there is no apparent indefinite suffix on this set of nouns, it is difficult to ascertain at this point to which class they actually belong. However, in chart (90) in section IV, on the definite suffix, class affiliation is made clear by the type of definite suffix used.

(5) Monosyllabic Noun Roots

	Ø Suffix	-CV Suffix	-(N)CV Suffix
Cl.1	jā 'son' <33>**	ce-wə 'woman' <1>	cən-ŋɛ 'antelope' <1>
Cl.3	nā 'fire' <3>	tɛ-xɛ 'Place' <33>	wye-ŋɛ 'leaf' <25>
Cl.4	Ø	tɛ-yɛ 'Places'	wyen'yɛ 'leaves'
Cl.5	Ø	ci-lè 'thigh' <37>	sɛ-nɛ 'sting' <5>
Cl.7	Ø	su-rò 'main dish' <19>	kòò-nò 'cotton' <1>
Cl.8	juu 'speech' <2>	tə-be 'medicine' <1>	sə-mɛ 'millet beer' <10>

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\*\* Numbers in angled brackets indicate the number of like examples in the data sample of simple non-complex nouns, represented by the word in the chart. For example, jā <33> means there are approximately 33 monosyllabic Class 1 nouns, in a lexicon of about 255 simple monosyllabic and disyllabic nouns.

There is another set of nouns which have Primarily nasal indefinite suffixes. Although data on Definite suffixing (see chart (90)) Provides clearer evidence for class affiliation, the right side column of chart (5) Provides examples of nasalized indefinite suffixes for each class. What seems to be happening is that there exists a set of noun roots which Possess a final underlying nasal consonant. When this consonant is followed by an indefinite suffix it assimilates to the indefinite suffix, which in turn, becomes [+nasal]. The two coalesce and become a single nasal consonant, as shown in (6) below.

(6) fuN-xV → fuŋ-xV → fuŋ-ŋV → fuŋV -/-→ fuŋɔ̃ 'inside'

Since there is no such thing as a word that ends in a nasal consonant in Sucite, it may be debatable whether one can Posit an underlying nasal consonant in these cases. An alternative analysis is to suggest final nasalized vowels, which are indeed Plentiful in the language. However, the examples below, (7), indicate that nasalized vowels apparently do not trigger the nasalization of indefinite suffixes:

- (7) a. cɛŋ-xɛ 'sauce' \*cɛŋɛ  
 b. ɟbɔŋ-lɔ̃ 'fireplace' \*ɟbɔŋɔ̃

For this reason, we Propose that it is an underlying final nasal consonant which causes the nasalization of indefinite suffixes. Further research needs to be done, however, on the nature of nasality in Sucite.

Disyllabic roots follow the same Patterns of suffixation. The reader will recall that the types of consonants allowed on unstressed syllables (i.e. non-initial syllables) are extremely limited. As a result, the consonants allowed on the second syllable of nouns are restricted to the ones given below in Row a. of chart (8). Noun roots which are terminated by a nasal are given in Row b.

(8)

	a. -l-	-r-	-ʔ-	-x-
	b. l-VN	r-VN	ʔ-VN	x-VN
Cl.1 a.	folò <22> 'owner'	sáru <10> 'bee'		fyèxù <2> 'earring'
	b.	cárá-ŋɛ <1> 'orphan'		
Cl.3 a.	gbàlè-xè <7> 'well'	ŋgura-xo <12> 'smoke'	kànʔà <6> 'village'	
	b.	nkòrè-ŋɔ̄ <2> 'fallow land'	mɛnʔɛn-ŋɛ̄ <6> 'story'	
Cl.4 a.	gbàlì-yè 'wells'	ŋgura-yo 'smokes'	kàn-yà 'villages'	
	b.	nkòrì-yɔ̄ 'fallow lands'	mɛnʔɛn-nyè 'stories'	
Cl.5 a.		kù-dò <14> 'chair'	sèʔè-lè <1> 'large basket'	
	b.		séʔé-nɛ <1> 'palm nut'	
Cl.7 a.			kòʔò-rò <1> 'dance'	tuxu-rò <2> 'load'
	b.			ndùxà-nò <1> 'seeds'
Cl.8 a.	no examples			
	b.	ferà-mɛ <2> 'urine'		

A couple of Class 1 disyllabic roots shown in chart (8) have a final high backed vowel. It was mentioned earlier that the proposed underlying suffix for Class 1 is -wV, which, in many cases appears to be totally deleted. In the examples given above, however, it appears that the -w- of the suffix may have caused the raising of the final root vowel before being deleted, as shown below:

(9) sárV-wV → sáru-wV → sáru 'bee'

In Class 3 of chart (8), the noun roots that possess a glottal stop appear to have no suffix. It is possible that the suffix coalesces with the glottalized syllable, resulting in a single syllable (kànʔà - xà → kànʔà). When the root is marked for a final nasal, this coalescence does not take place:

(10) mənʔεN - wV → mənʔεŋɛ̃ \*mənʔɛ̃ 'stories'

Class 5 (li) has a number of nouns where the second syllable of the root is underlyingly rV. However, the consonant of this second syllable coalesces with the suffix consonant, ɹ, producing a surface ɹɹ.<sup>3</sup>

(11) kùrV - lV → kùr -lV → kùdò 'chair'

We know that there is an underlying -r- by looking at the Plural class (Class 6) of this group of words. The indefinite Plural of 'kùdò' is 'kòrə-lo'.

### B. The Tonal Nature of Indefinite Nouns - Type I

In isolation, the TYPE I indefinite noun has the following tonal patterns:

(12) Keys:	( ) Class number:	(L) Loanword:	< > Number of examples in data
	1 Syllable	2 Syllables	3 Syllables
a. High <6>	0	wérê (1) <5> 'money (L)'	fálá-xá (3) <1> 'rock (L)'
b. High-Mid <16>	fyáa (1) <4> 'fish'	sáru (1) <8> 'bee'	cérá-ηε (1) <4> 'orphan'
c. High-Low <5>	jǫ (1) <1> 'pocket'	sú-lò (5) <3> 'floor'	bárá-xà (3) <1> 'strength (L)'
d. Mid <42>	gba (1) <8> 'river'	gba-xa (3) <36> 'house'	ηmɔla-xɔ (3) <5> 'dream'
e. Weak Mid* <39>	caan(1) <6> 'market'	sə-xe (3) <28> 'bush'	ferə-me (8) <5> 'urine'
f. Mid-Low <7>	0	conlò (1) 'younger sibling'	0
g. Mid-Low W* <42>	jā (1) <7> 'son'	fu-ηɔ (3) <30> 'inside'	tuxu-rò (7) <5> 'load'
h. Low <77>	cà (1) <18> 'child'	pù-lò (5) <50> 'body'	fàlà-xè (3) <11> 'mat'
i. Low-High <22>	0	gbòn-lǫ (5) <19> 'granary'	ndòrà-xǫ (3) <3> 'yam'

There are many fewer tonal minimal pairs on nouns than there are on verbs.

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\* Mid Weak nouns differ from Mid tone nouns in that they are more susceptible to certain tonal changes, which will be discussed in Chapter 5.

This is likely partially due to the fact that there is more of a variety of tonal shapes on nouns and that the plurality of noun classes alter the segmental shape. The most common minimal pairs seem to involve a Low tone noun. High-Mid nouns are the only High tone nouns involved.

## (13) a. Low vs. Mid-Low

kùddò, kù-ne	'seat, the seat'	kuddò, kũ-ne	'road, the road'
nɔ̀	'cow'	nɔ̃	'mother'
sámɛ̀, sàm-be	'oil'	sámɛ̃, sàm-be	'sorghum beer'

## b. Low vs. High-Mid

sɛ̀ʔəlɛ̀, sɛ̀ʔə-ne, sɛ̀ʔə-ŋi, sɛ̀ʔə-ŋ-ɔ́ 'basket, the basket, baskets, the baskets'  
 séʔéɛ̀, séʔe-né, séʔé-ŋi, séʔe-ŋ-ɔ́ 'Palm nut, the P.n., Palm nuts, the P.n.'

## c. Low vs. Low-High

lùlò, lùù-ne	'bile, the bile'	lùlò, lùù-né	'shea nut, the shea n.'
bàlè, bà-ne	'seed, one of'	bàlɛ̀, bàné	'ground nut, the gr. Pea'

## d. Low vs. Weak Mid

ndàxè, ndà-ke 'root, the root'    òdaxè, òdà-ké 'ear, the ear'

## e. Mid-Low vs. Mid

kɔ̀rə-xɔ̀, kɔ̀rə-ke 'inheritance, the inheritance'  
 kɔ̀rəxɔ̀, kɔ̀rə-ké 'brick mold, the brick mold'

## f. Weak Mid vs. Mid

saxè, sà-ké, ndà sá-ke 'bush, the bush, my bush'  
 saxè, sà-ké, ndà sà-ké 'feather, the feather, my feather'

A tiny handful of minimal triplets have been found which involve morphological tone:



g. Low-High (Fall)	mənê	'a sweet ground nut'
Low High	màné	'the sweet ground nut'
Low Mid	màne	'sweet ground nuts'
h. Low Mid	sìn	'People'
Mid-Low	siìn	'relative, family'
Mid-Low Mid	sìn	'Parents'

Note that there are no minimal Pairs involving Low tone and Mid tone, though there is one contrasting Pair of Low and Weak Mid tone nouns. Note in (13f) that Weak Mid tone nouns are more susceptible to tonal changes than are regular mid tone nouns. These differences will be discussed in Chapter 5.

#### 1. The tone of the Indefinite Suffix - Type I

The first question that must be asked concerns the underlying tonal nature of the indefinite suffix. Upon examination of the examples in chart (12), one sees that the suffix, which is separated from the rest of the word by a hyphen, can have a High, Mid, or Low tone. The tone on the final syllable of the root does not seem to be a factor in determining the tone of the suffix either, for a Low tone suffix can be preceded by a High, Mid or Low tone root. A Mid tone suffix can be preceded by a High or Mid tone root, while Low and High tone can precede a High tone suffix. Since there is such variability for the tone of the suffix, it is rather difficult to discern any underlying tone for the suffix.

We are then faced with the possibility that the indefinite suffix may not be marked for any particular tone. If one surveys the tonal patterns of indefinite nouns, one discovers that the melodic patterns seem to include the indefinite suffix. If a noun is Low tone, one tonal feature, Low, can be used to link to

all the TBU's (tone-bearing units) of the noun, including the indefinite suffix.

(14) cà 'child' pù-lò 'body' fàlè-xè 'mat'

If the noun has a contour tone, such as Mid-Low, the following Pattern emerges. On a noun with a single TBU, the Mid and the Low tone are linked to the same

TBU: jà 'son'

When a noun has two TBU's, the Mid tone links to the first TBU, while the Low tone links to the final TBU, regardless of whether that final TBU is an indefinite suffix or not:

conlò 'younger sibling' fu-ŋò 'inside'

A noun with three TBU's normally consists of a disyllabic noun root and an indefinite suffix. If the tone of the suffix were simply considered to be a tonal copy of the final tone of the noun root, one might expect a Mid-Low-Low Pattern. Instead, a Mid-Mid-Low Pattern emerges:

\*tuxù-ro tuxu-rò 'load'

In fact there are never any cases of a Mid-Mid-Low tonal Pattern to be found on non-complex nouns. Since all nouns which carry a Mid tone and a Low tone have a Predictable way of linking to the segments of the noun, one can suggest that Sucite nominal tone is melodic in nature.

The behaviour of the other contour tones such as High-Low, Low-High, and

High-mid further supports this melodic hypothesis. All of them have a predictable way of linking tone to segments and all of them link tone to segments according to the same pattern described above for Mid-Low nouns. That is, if a noun root with two TBU's as well as an indefinite suffix possesses a contour tone, the second tone of the contour links only to the final TBU of the word. This is shown below for all contour tones.

(15) tuxu-rò 'load'      cǎrá-ŋe 'orphan'      ndǒrǎ-xó 'yam'      bǎrá-xà 'strength'

$\begin{array}{c} \vee \\ \text{M} \quad \text{L} \end{array}$ 
     
  $\begin{array}{c} \vee \\ \text{H} \quad \text{M} \end{array}$ 
     
  $\begin{array}{c} \vee \\ \text{L} \quad \text{H} \end{array}$ 
     
  $\begin{array}{c} \vee \\ \text{H} \quad \text{L} \end{array}$

## 2. Association conventions and the Indefinite Noun

Now that a melodic pattern for these Indefinite nouns has been isolated, it is appropriate to discuss the conventions or rules needed to associate the tones to the segments in a predictable way.

Pulleyblank (1983) proposed the following version for the linking of tone to tone-bearing units on the segmental tier:

(16) "(14) Association Conventions:

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

a) from left to right

b) in a one-to-one relation." (p.31)

Any leftover tone-bearing units, he continues, will be assigned tones according to language specific rules only and any leftover tones will be assigned a TBU only if specified by a language specific rule. This approach is a little different from authors such as Williams (1971) who propose to include the linking of extra tones and TBU's as part of the universal Association Conventions. At this point, there does not seem to be any need to posit separate rules for this extra linking in Sucite. Thus, any extra TBU's will be

associated to the adjacent tone, while any extra tones will be linked to the adjacent TBU, as shown below.

(17) fàlè-xè 'mat'      jà 'son'      jǝ 'Pocket'

Let us consider the convention of Left to Right Linking. If we apply Left to Right linking to nouns with contour tones, we immediately run into Problems. It was stated above that the final tone of the contour is found only on the last TBU of the noun. Linking tones from left to right across the word, however, would incorrectly predict that the second tone of the contour is linked to both the second and third TBU of a three TBU word. From the example with three TBU's above (17), it is clear that the second tone of the contour is not linked to the second TBU of the noun. Considering that the last TBU of a three TBU noun is a toneless indefinite suffix, one could devise adjustment rules in which the second tone of the contour would also link to this final TBU, and then the first tone of the contour would spread onto the second TBU; finally, the second tone of the contour would be delinked from the second TBU, producing an acceptable tonal pattern for the three TBU noun. This proposed sequence of rules is illustrated by the example given below.

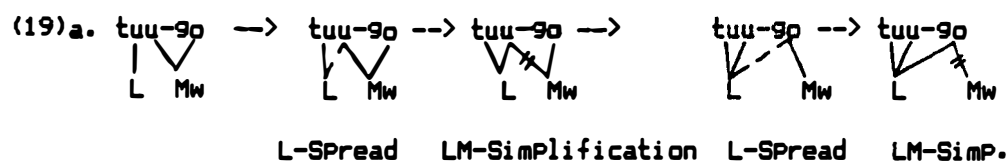
(18) tuxù-rǝ -> tuxù-rò -> tuxu-rò 'load'

Association    Spreading    Delinking

This seems to be a cumbersome way to deal with what seems to be a rather simple pattern. However, before we discard this approach and seek better alternatives, it is interesting to note that the neighbouring Senufo dialect, Supyire, seems

to have evidence supporting the rule of spreading of the first tone of the contour onto the second TBU and motivating a rule delinking the second tone of the contour from the second TBU. In the SuPyire case, however, the first tone of the contour continues spreading to the final TBU of the word as well, and triggers the delinking of the final tone of the contour, such that the surface output of the noun produces no tonal contour. In fact, there are no surface contour tones on indefinite nouns in SuPyire. However, tonal behaviour indicates that certain nouns do have underlying contour tones.

Let us consider one example of this type of spreading in SuPyire. What are called Low-High nouns in Sucite are referred to as Low-weak Mid by Carlson (1985) in SuPyire. He motivates a total Low Spreading rule where a Low is spread onto the following TBU which is linked to a weak Mid tone. This weak Mid tone is then delinked as a result of Carlson's Low-Mid Simplification Rule. The Low-spreading and LM Simplification Rules are then repeated for any remaining TBU's in the word, until all TBU's in the word are linked to Low tone.



Carlson also shows how this pattern of rule application works for Mid-Low nouns<sup>4</sup>.

One wonders, however, whether this is a viable analysis for Sucite. If we motivated these rules for spreading and delinking in Sucite, we would have to block this spreading and delinking from applying to the final TBU of the noun, for unlike SuPyire, the final tone of a tonal contour is preserved on the final

TBU of the noun. The second Problem with this approach involves data that will be dealt with in Chapters 4 and 5. Since a Mid tone spreading rule and a Low tone spreading rule can be motivated elsewhere in the language, it is conceivable that they could also be motivated word internally. However, a High tone spreading rule cannot be motivated in Sucite (though it can in Supyire); therefore it would be somewhat cumbersome to allow a High spreading rule word internally for High-Mid and High-Low nouns while blocking its application elsewhere in the language.

An alternative solution is to forego the linking of tones to the segments until the adding of the indefinite suffix, and then to link the tones from right to left across the word, as seen below.

(20) cǎrá-ŋe 'orphan'    tuxu-rò 'load'    bárá-xà 'strength'    ndǎrǎ-xǎ 'yam'

$\begin{array}{c} \vee \\ \text{H} \end{array}$ 
 $\begin{array}{c} | \\ \text{M} \end{array}$ 
 $\begin{array}{c} \vee \\ \text{M} \end{array}$ 
 $\begin{array}{c} | \\ \text{L} \end{array}$ 
 $\begin{array}{c} \vee \\ \text{H} \end{array}$ 
 $\begin{array}{c} | \\ \text{L} \end{array}$ 
 $\begin{array}{c} \vee \\ \text{L} \end{array}$ 
 $\begin{array}{c} | \\ \text{H} \end{array}$

This approach of Right to Left Linking seems to be a much more efficient way to deal with basic tonal patterns of nouns in Sucite. It eliminates the need for a series of rules word internally, and allows the natural tonal pattern of nouns to be represented in a simple and uncomplicated way. In addition, the arguments presented here will be supported by more evidence in the ensuing chapters.

### 3. Tone and Pre-nasalized Consonants

It was mentioned in Chapter 1 that there exists a set of nouns with pre-nasalized consonants. Careful scrutiny of the tonal behaviour of nouns with pre-nasalized consonants revealed that some of these consonants bear a Low tone while others do not seem to be marked for any particular tone. The distinction

between those that carry a Low tone nasal and those which do not is barely PercePtible in citation form. However, in connected speech, this distinction is made clearer. The low tone of a nasal is often linked to the final syllable of the Preceding word (see 21a and c), while those nouns that do not carry a Low tone Pre-nasal have no aPParent effect on the tone of the Preceding word (b and d).

- (21) a. nda ñkúnà → nda nkúnà 'my wooden bowl'  
 b. nda mgbínê 'my bamboo mat'  
 c. ndi ya ñkúnà nyàà → ndi yà nkúnà nyàà 'I am seeing a bowl'  
 d. ndi ya mgbíné nyàà 'I am seeing a bamboo mat'

Word initial nasal consonants are also sometimes found to be tone bearing. This is represented by doubling the nasal in some cases, though in reality, long nasals are not always PercePtible. Below are list of examples showing that a Low tone nasal can be found Preceding Mid and High initial nouns.

- (22) a. L-Mid S      ñPi (2) 'rabbit'  
                      ñma (1) 'gift'  
 b. L-Mid W      ñbi (8) 'flour'              ñta-ra (7) 'land'  
                      ñnya (3) 'grass'              `ŋmɔ-lɔ (5) 'knife'  
                      ñnyo (3) 'mouth'              ñdà-xe (3) 'ear'  
 c. L-High-Mid    ñáa (1) 'scorpion'              ñnó-lu (5) 'guinea hen'  
                      `ŋáa (1) 'twin'              ñpú-lu (1) 'spider'  
 d. L-High        `zébê (1) 'good luck charm (Loan)'  
 e. L-High-Low    ñkúnà (3) 'wooden bowl'

If one applied the Right to Left Linking Convention to Low initial words

with Prenasalized consonants, however, an incorrect surface form would be produced, as shown below.

(23) \* $\grave{h}j\acute{e}\acute{e}n\acute{e}$           rather :  $\grave{h}j\acute{e}\acute{e}n\acute{e}$  stone  
            $\begin{array}{c} \vee \quad | \quad | \\ L \quad H \quad M \end{array}$

\* $\grave{h}t\acute{i}d\acute{e}$                   rather :  $\grave{h}t\acute{i}d\acute{e}$  'bat'  
            $\begin{array}{c} \vee \quad / \\ L \quad M \end{array}$

This problem could be easily remedied with the suggestion that tone-bearing nasals be specified for Low tone and that this Low tone is linked to the nasal before the application of the Association Conventions. The low tone is linked to the nasal and the remaining tones are linked from right to left.

#### 4. High final nouns

The preceding noun charts have included High final nouns. However, in citation form or in phrase final position these High final indefinite nouns, namely, High and Low-High tone nouns, exhibit a final falling tone.

(24)a.  $nd\grave{o}r\grave{a}-x\acute{s}$                   'yam'  
            $f\acute{a}l\acute{a}-x\acute{a}$                   'rock'

Indefinite nouns which acquire a final High tone through rule application also exhibit a final High falling tone.

b.  $soxo$              $n\grave{a}\grave{a} s\grave{o}x\acute{o}$             'man's mortar'  
       'mortar'       $po\acute{r}u s\acute{o}x\acute{o}$             'daughter's mortar'

This falling tone disappears, however, when the high tone is not in phrase final position.



- (25) waa ndòràx́s wéé 'he looked at a yam'  
 waa ndòràx́s nyà 'he saw a yam'

In contrast, High tone verbs and PostPositions, and High final definite nouns have no final falling tone. The natural first assumption that one is likely to make is that final High falling nouns actually have a final Low tone. In order to test this possibility, one must compare the behaviour of these nouns with those that are known to have a Low final tone. Low final nouns are known to trigger Low tone spreading onto High tone verbs (see Chapter 4 for details):

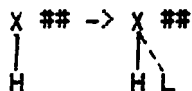
- (26) a. waa m̀l̀l̀ wéé -> waa m̀l̀l̀ wèé 'He looked at rice'

However, fáláxá and ndòràx́ do not trigger Low tone spreading:

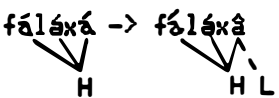
- b. waa ndòràx́s wéé -> \*waa ndòràx́s wèé 'he looked at a yam'  
 c. waa fáláxá wéé -> \*waa fáláxá wèé 'he looked at a rock'

Therefore, one is led to conclude that the falling tone exhibited on High final nouns is a Phonetic Peculiarity which is manifest only when a High final indefinite noun is in Phrase final Position<sup>o</sup>. In order to characterize this Phrase final tonal adjustment, a Low tone insertion rule may be formulated:

- (27) LOW TONE INSERTION: Insert a Low tone to the final TBU of a High final noun when it is in Phrase final Position.



This Low tone Insertion would effectively create a falling tone on a High final

noun: fáǎxá → fǎǎxá 'rock'  


### III. THE INDEFINITE SUFFIX - TYPE II (Classes 2 and 6)

#### A. Structure

We have just examined the tonal behaviour of nouns which use the TYPE I indefinite suffix. The nouns of Classes 2 and 6, however, use a different type of suffix, labeled here as the TYPE II indefinite suffix. As Plural classes, they have the same noun roots as Classes 1 and 5, respectively. Although their indefinite suffixes are underlyingly disyllabic, the surface form is often monosyllabic. Tonally, the two class suffixes behave in the same way. The initial tone of both suffixes alternates between High, Mid and Low tone depending on the tonal environment, while the final tone tends to be a more stable Mid tone. Because of the complexity of both the segmental and tonal processes, I have chosen to discuss the segmental changes first before dealing with tone.

1. **Class 6 Indefinite Suffix.** In Cebara, the Class 6 suffix is -ǎǎǎ, whereas in Supyire, it is -ǎǎǎ or -ǎǎ. In Sucite, we have a variety of suffixing which probably can be attributed to the same underlying morpheme, -xǎǎ. In certain cases, described below, the vowel is high. How vowel height can be accounted for using the present underlying representation, -xǎǎ, will not be discussed here. Examples with the full disyllabic suffix are given below:

(28) CLASS 5	CLASS 6 <24>	
a. Pù-lò	Pò-xǎǎ	'bodies, trunks'
b. ci-lè	cì-xǎǎ	'thighs'
c. nci-le	ncì-xǎǎ	'balaphons'

Sometimes the fricative velar is glottalized:

- (29) CLASS 5            CLASS 6 <11>
- a. co-lò            cò-ʔəlò    'clay pots'
- b. fɔ-lɔ            fɔ-ʔəlɔ    'debts'

Many times, however, the disyllabic suffix is Partially deleted or Practically disappears altogether. A few nouns lose the final syllable of the suffix, -lV in a Process that shall be called SUFFIX FINAL DELETION. When this happens, the suffix vowel is always high.

- (30) CLASS 6 <4> SFD
- a. kòrə - xVlV -> kò-rə-xi    'seat, chairs'
- ti - xVlV -> tif-xi    'cock's combs'

In certain cases, this shortened suffix is also nasalized. Note that nasalization is not triggered necessarily by a nasal environment:

- CLASS 6 <12>
- b. mPũ - xVlV -> mPũ-ŋi            'hills'
- ntàn - xVlV -> ntà-à-ŋi            'courtyards'
- jàrə - xVlV -> jà-rə-ŋi            'breasts'

It is interesting to note that when suffix final deletion takes Place, single TBU roots compensate for the loss of a syllable by lengthening the root vowel to two TBU's (see (31a), while roots with two underlying TBU's do not change (31b).

- (31)a. Single TBU roots
- mPũ-ŋi            'hills'
- ti-í-xi            'cock's combs'
- ntà-à-ŋi            'courtyard'

## b. Double TBU roots

jàrə-ŋi	'breasts'
səʔə-ŋi	'basket'
séʔé-ŋi	'Palm nut'

The final result is that all of the above forms Possess three TBU's. A second look at the data reveals that all Class 6 noun roots with two underlying TBU's seem to require some kind of suffix deletion, in order to maintain the limit of three TBU's for a Type II noun, while single TBU roots with partially deleted suffixes require a lengthened vowel to keep up a three TBU minimum.

SUFFIX INITIAL DELETION is another way to reduce the size of the suffix. Some disyllabic noun roots with a second syllable of the shape, -rV-, trigger the deletion of the first syllable of the suffix instead of the second.

## (32) CLASS 6 &lt;8&gt; SID

kìrə - xVlV	->	kì-rə-le	'countries'
cərə - xVlV	->	cə-ra-le	'eggs'

There are also a few examples where the entire indefinite Plural suffix is reduced to a single vowel (SUFFIX REDUCTION):

## (33) CLASS 6 &lt;4&gt; SUFFIX RED

nyè - xVlV	->	nyì-i	'eyes'
yε - xVlV	->	yè-e	'years'
fǒn - xVlV	->	fù-un	'peanuts'

Note that this set of nouns does not require a final output of three TBU's, as is the case for other forms of the Class 6 suffix.

Finally, there are a few cases where the only indication of Plurality is the tonal change. In the examples below, the Class 5, or singular form, is compared with Class 6:

- (34) CLASS 5            CLASS 6 <3>
- |         |      |                     |
|---------|------|---------------------|
| a. mənê | màne | 'sweet ground nuts' |
| b. bàlê | bàle | 'ground nuts'       |

We will not attempt to formulate rules here to account for suffix reduction and partial suffix deletion. Some Senufc dialects maintain the entire suffix, while others reduce it to a minimal unit. There may be some synchronic phonologically conditioning rules for suffix reduction, but, from these examples, it is not clear that any such rules exist. However, it will be seen shortly that the final tonal shape of a word will depend on the type of suffix deletion.

2. Class 2 Indefinite Suffix. The Class 2 indefinite (Plural) suffix is historically disyllabic also, but in Sucite, the final output is monosyllabic. In Cebara, of Ivory Coast, the Plural form is bale. In Supyire, the Class 2 suffix is either -li, or -mili. In Sucite, the most common form of suffixation is -lv (perhaps through SUFFIX INITIAL DELETION):

- (35) sónlu - CVlv → sónlu - lv → sónla-lə 'Parakeets'

Below are other examples in comparison with their singular counterparts of Class 1.

- (36) CLASS 1 CLASS 2 <38>
- |      |         |              |
|------|---------|--------------|
| Pààn | Pàan-la | 'alligators' |
| fyáa | fy a-la | 'fish'       |

sónlu sónlā-lɔ 'Parakeets'  
 Poru Porá-lo 'daughters'

Nouns with single TBU roots exhibit a long vowel. The second TBU of the long vowel may be a result of compensatory lengthening of the root vowel or it is possible that in these cases, only the initial consonant was deleted.

(37) ja - CVlV → ja - lV → ja-V-VlV → ja-a-la

SUFFIX INITIAL DELETION      VOWEL LENGTHENING.

or ja -CVlV → ja - VlV → ja-ala      CONSONANT DELETION

a. jʔ    jóó-lɔ    'Pockets'

b. jã    jaà-la    'sons'

For reasons that may seem arbitrary for the moment, I shall choose the rule of Suffix Initial Deletion where both the consonant and the vowel are deleted. If we chose Consonant only Deletion, the noun roots with two TBU's (36), would require an additional rule of vowel deletion.

There are examples indicating that the underlying (or historical) form of the suffix may have been -mili or -mVlV. These nouns have dropped the -lV Part of the suffix (SUFFIX FINAL DELETION), but retained the first Part in the form of -mi.

(38) CLASS 1    CLASS 2 <10>    SFD

a. ñnáa    ñnáá-mi    'scorpions'

b. cèŋŋè    cèèŋ-mi    'antelopes'

c. cáráŋe    cárá-mi    'orphans'

Again, as in Class 6 above, there are a few cases where the only indication of indefinite is the addition of a tone-bearing vowel (SUFFIX REDUCTION).

## (39) CLASS 1 CLASS 2 SUFFIX RED

- a. nɔ̃ n̄i 'mothers'  
 b. folɔ̃ f̄e 'owners, chief, head of ...'  
 c. ncà ncàa 'sheep'

It should be noted that in Kangala, a village situated 5 kilometres from Kotoura, the speakers have not allowed Suffix Reduction. Here, instead of saying f̄e 'owners', they retain the -LV suffix: f̄eLe.

3. Summary. The following chart provides a summary of the different types of suffixing for TYPE II Indefinite Nouns:

(40)

<u>Suffix Type</u>	<u>Class 6</u>	<u>Class 2</u>
Full	Pò-xalo <24> 'bodies'	-----
	cò-ʔalo <11> 'clay pots'	-----
Suffix Final DEL	tií-xi <4> 'cock's combs'	-----
	Nasal ntàà-ŋi <12> 'courtyards'	cèèn-mi <10> 'antelopes'
Suffix Initial	kìra-le <8> 'countries'	jaà-la <38> 'sons'
Deletion		
Suffix Reduction	nyì-i <4> 'eyes'	nì-i 'mothers'
Tone Change Only	mà-ne <3> 'sweet ground peas'	-----

Single TBU noun roots can retain the entire suffix as well as undergo any type of suffix deletion. Noun roots with two TBU's obligatorily undergo either Suffix Final Deletion or Suffix Initial Deletion but never Suffix Reduction. Other than these general guidelines, however, there do not seem to be any phonological reasons governing the choice of the shape of the suffix.

### B. Tone of TYPE II Indefinite Suffixes

The two TYPE II Indefinite Suffixes share the same tonal behaviour and thus seem to have the same underlying tone. There are several factors that contribute to the tonal changes of the suffix. First of all, the tone of the noun root does affect the tone of the suffix. Secondly, the segmental changes on the suffix affect the way tone is linked to the word. Finally, it will be seen that the segmental nature of the suffix actually contributes to tonal change of the noun root. The interPlay of these three factors can create a rather complicated tonal situation. The following is an attempt to discuss each separately and also in conjunction with the other factors.

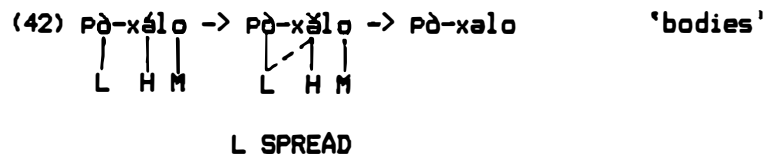
#### 1. Tonal Behaviour of the Suffix

Let us first examine how the tone of the noun root affects the tone of the TYPE II suffix. Basically, if the root is Low tone, the suffix tone is Mid. If the root is High, Mid, or Low-High, then a High-Mid shape generally evolves. After Mid-Low roots the tonal shape of the word is Mid-Low-Mid<sup>6</sup>. In the chart below, the singular form of each noun is also given, under the label, TYPE I. The singular form of the nouns give a clearer idea of the underlying tone of the noun root:

(41) Root tone	TYPE I	TYPE II	English
a. Low	Pù-lò,	Pò-xálo	'body, bodies'
b. Low-High	gbòn-lò,	gbòn-xálo	'granary, granaries'
c. Mid	gba,	gba-ála'	'river, rivers'
d. High	mgbí-nê,	mgbí-nále	'bamboo mat, bamboo mats'
e. Mid-Low	jà,	ja-àla <sup>6</sup>	'son, sons'



In observing the examples in (41) one discovers that the only environment in which a High-Mid tonal shape is not found is when the final tone of the root is Low tone, in which case the tone of the suffix is Mid tone. If an underlying High-Mid suffix is posited, then a rule lowering a High tone to Mid tone must be sought. In Chapter 2, a rule spreading Low tone onto a following High tone was proposed, which in certain cases, resulted in a Low-High contour simplifying to Mid tone. This same Low tone Spread rule (33) can be used here. Consider the example, pò-xálo (41a). If the underlying suffix tone is High-Mid, Low tone can then be motivated to spread onto the High tone of the suffix, as shown in the derivation below.



The lack of High tone in (41e) can also be explained by the application of the Low Spread rule.

The noun ghò-n-xálo (41b) appears to have a Low tone on the noun root. However, a look at the tone of the root in its singular form reveals a Low-High tone. The resulting surface pattern can be explained if we apply the High Delinking rule (37) proposed in Chapter 2, where the High tone of a Low-High contour is delinked if it is followed by another High tone. The application of this rule is illustrated below.

(43) gbǎn-xálo → gbà<sup>k</sup>n-xálo  
 LH H M      LH H M

H DELINKING

## 2. Segmental Deletion and Tonal Behaviour

Segmental deletion of the suffix complicates the analysis somewhat, however, in that some of the suffix tone is linked to segments of the noun root. This may be confusing when trying to determine the distinction between the underlying tone of the noun root and the tone of the suffix. The following discussion will help to clarify these ambiguities and will also attempt to establish a formulation for linking tones to nouns with partially deleted indefinite suffixes.

The chart below provides examples of what happens when the various tones of the noun roots meet up with the various segmental types of suffixing. Since the number of TBU's on the root is a factor affecting the tonal behaviour, examples of noun roots with single TBU's and double TBU's are given. An asterisk indicates that there are no acceptable examples for that particular category, while a dotted line indicates that while it is conceivable that there exists an example, no example has been found to date. In addition, this chart shows that some noun roots are lowered to Low tone in certain environments. This phenomenon will be discussed later in the chapter. These lowered noun roots are marked in bold.

(44) Tone	#TBU	FULL SUFFIX	SUF INI DEL	SUF FIN DEL	SUF RED
LOW	1TBU	pò-xəlo 'bodies'	cò-o-lo 'nets'	ŋmè-è-ŋi 'corners'	ncà-a 'sheep'
	2TBUs	*	kìrə-le 'countries'	jàrə-ŋi 'breasts'	-----
LOW-HIGH	1TBU	gbòn-xálo 'granaries'	-----	mPù-ú-ŋi 'hill'	fù-un 'Peanuts'
	2TBUs	*	màré-la 'elephantiasis'	Pàló-mi 'bucket'	-----
MID	1TBU	la-xála, lə-xəla 'Pregnancies'	gbaála 'rivers'	se-é-ŋi 'stings'	-----
	2TBUs	*	caló-la 'pigs'	-----	-----
WEAK MID	1TBU	fò-ʔəlo 'debts'	-----	-----	-----
MID-LOW	1TBU	cì-xəle 'thighs'	ja-à-la 'sons'	-----	nì-i 'mothers'
	2TBUs	*	njirə-le 'tongue'	ku-ù-xi 'roads'	fə-e 'chiefs'
HIGH	2TBUS	*	mgbíné-le 'bamboo mat'	-----	*
HIGH-MID	2TBUs	*	fyáa-la 'fish'	cáré-mi 'orphans'	*

In the discussion of Type I Indefinite noun tone, it was suggested that the Type I indefinite suffix be added to the noun root before the application of

the Association Conventions, so that the final tone of the root could link directly to the toneless suffix. TYPE II suffixation can also take Place before the application of the Association Conventions. The crucial question to be asked here is, however, should segmental deletion also take Place before the application of the Association Conventions? For many cases, this is a very Practical approach for assigning the correct tones to segments. After the deletion of the various segments, it is a simple matter to link the tones from right to left in a one to one fashion across the word. High, Low-High, and Mid tone nouns are especially amenable to this approach, as shown in the rule derivations below.

(45) a. High tone root - suffix undergoes Suffix Initial Deletion

mɔ́bíné - CVLV → mɔ́bíné - le → mɔ́bíné - le → mɔ́bínále 'bamboo mats'

H    H M
H    H M
H    H M
H    H M

SUF INI DEL      AC (ASSOCIATION CONVENTIONS)

b. 2 TBU Mid tone root - suffix undergoes Suffix Initial Deletion

calə -CVLV → calə - le → ca lá - la 'Pigs'

M    H M
M    H M
M    H M
M    H M

SID      AC

c. 1 TBU Mid tone root - suffix undergoes Suffix Final Deletion

se-ŋVLV → se-ŋi → se-ε-ŋi → seε-ŋi 'stings'

M    H M
M    H M
M    H M
M    H M

SFD      V LENGTH<sup>o</sup>      AC

d. 1 TBU Low-High tone root - suffix undergoes Suffix Final Deletion

mpǔ -ŋVlV -> mpǔ - ɲí -> mpǔ u ɲí -> mpǔúɲi -> mpǔúɲi 'hills'

LH    H M        LH    H M    LH    HM        LH H M        LH H M

SFD            V LENGTH        AC            H DELINKING

Note in (45d) that the rule of High tone Delinking also takes Place, since, after the application of the Association Conventions, a Low and a High tone are linked to the same TBU and are followed by another High tone.

Low tone noun roots which have undergone Suffix Initial Deletion also conform easily to linking tone to segments after segmental deletion of the suffix. Note in the example below, that Low tone spread is triggered once the tones have been linked.

e. 2 TBU Low tone root - suffix undergoes Suffix Initial Deletion

kìrǎ - CVlV -> kìrǎ - le -> kìrǎ-le -> kìrǎ-le 'countries'

L    H M        L    H M        L H M        L H M

SID            AC            L SPREAD

f. 1 TBU Low tone root - suffix undergoes Suffix Initial Deletion

cò - CVlV --> cò -lo --> cò -o- lo --> cò-o-lo -> còolo 'nets'

L    H M        L H M        L H M        L H M        LH M

SID            V LENGTH        AC            L SPREAD

Certain Low final nouns, however, have Problems with applying the Association Conventions after segmental deletion. The derivations below show how such a rule ordering Produces incorrect results.

(46)a. 2 TBU Low tone root - suffix undergoes Suffix Final Deletion.

jàrà-ŋVlV → jərə-ŋi → jàrà-ŋi → jàrà-ŋi → \*jàrà-ŋi 'countries'  
 L H M L H M L H M L H M L H M Rather: jàrà-ŋi  
 SFD AC L SPREAD

b. cèn - mVlV → cən - mi → cè-en-mi → cèènmi → \*cèèn-mi 'antelopes'  
 L H M L H M L H M L H M L H M L H M Rather:  
 SFD LENGTHENING AC L SPREAD cèènmi

c. nca - CVlV → nca - a → \*ncaa 'sheep, Pl.' Rather: ncàa  
 L H M L H M L H M Rather:  
 SFD AC

d. ja CVlV → ja -la → ja a la → jààla → \*jàala 'sons' Rather: jaàla  
 ML H M ML HM ML HM ML HM MLH M  
 SID LENGTH AC L SPREAD

All of these counterexamples consist of a Low final root; the application of AC after segmental deletions produces an incorrect Mid tone on the Penultimate TBU, rather than the appropriate Low tone. It might be suggested that the correct surface form could be arrived at by using a High Delinking rule after Low tone spread, as shown below.

(47) jàrà-ŋi  
 L H M

The problem with this proposal, however, is that there is already a High Delinking rule (37), which works in a very restricted environment. The rule

stipulates that a High of a Low-High contour is delinked if it is followed by a High tone (See Chapter 2, p.54) as shown in (48a) below. It was also shown that before Low and Mid tones the High of a Low-High contour was Prohibited from delinking (48b).

(48) a. wu ya xá kààn nǔú 'He is giving it to him'  
 | | | | |  
 M M H LH H

b. wu ya xá kààn la 'Is he giving it?'  
 | | | | |  
 M M H LH M

Therefore, if one tried to motivate High Delinking in the setting illustrated in (47) above, this attempt would contradict the restrictions set for the High Delinking rule.

If, however, the Association Conventions applied before segmental deletion, the correct surface forms would be produced for the examples below.

(49) a. kàrà-nǔúV → kàrà-nǔ → kàrà-nǔ  
 | | | | | | | | | | | | | | | | |  
 L H M L H M L H M  
 AC SFD L SPREAD

b. cèn - mǔúV → cèn - mi → cèn-èn-mi → cènmi → cèn-mi 'antelopes'  
 | | | | | | | | | | | | | | | | |  
 L H M L H M L H M L H M L HM  
 SFD LENGTHENING L SPREAD

c. nca - CVǔV → nca- a → ncàa 'sheep, Pl.'  
 | | | | | | | | | | | | | | | | |  
 L H M L HM LH M  
 AC SUF RED L SPREAD

Since ordering AC before Segmental Deletions seems to work so well in these cases, let us test this ordering on other TYPE II nouns. In general, if tones are linked before segmental deletion, once segmental deletion and subsequently, vowel lengthening take place, there are free tones and TBU's that will require linking. Although the manner of linking is definitely predictable, the rules needed to motivate correct linking are not immediately clear and the tonal and morphological situation is complex.

One reason for the complexity of tonal patterns is the morphological nature of the suffixes. Nouns which have undergone SID link their tones in a slightly different way than nouns which have undergone SFD. In addition, Mid tone nouns which have undergone SFD, behave in a different way than SFD Low tone nouns. Finally, it is noted that patterns isolated for the previous groups of nouns are violated by certain nouns whose root tone is a contour tone.

The analysis below attempts to account for these varying behaviours. It should be noted that High-Mid and High-Low nouns have been excluded from this present analysis because of their somewhat unpredictable behaviour. A description of their behaviour will be given following the analysis.

Let us first consider those nouns which have undergone Suffix Initial Deletion. Below are examples of nouns which have already undergone SID and Vowel Lengthening but have not yet had tones and TBU's relinked. The final surface form is given alongside each example.

- (50) a. gba-a-la → gbaála 'rivers'      b. cala-la → calála 'Pigs'
- $\begin{array}{c} | \quad | \\ \text{M} \quad \text{H} \quad \text{M} \end{array}$
- $\begin{array}{c} \vee \\ | \quad | \\ \text{M} \quad \text{H} \quad \text{M} \end{array}$
- c. kira-le → kiràle 'countries'      d. co-o-lo → còolo 'Pots'
- $\begin{array}{c} / \quad | \\ \text{L} \quad \text{H} \quad \text{M} \end{array}$
- $\begin{array}{c} | \quad | \\ \text{L} \quad \text{H} \quad \text{M} \end{array}$



e. mɔbina- le → mɔbínále 'bamboo mats'

$\begin{array}{c} / \quad | \\ \text{H} \quad \text{H} \quad \text{M} \end{array}$

In each case, we must deal with a high tone which has lost the segment to which it was linked. In the examples (a) and (d), an extra TBU has been created through Vowel Lengthening. Since both a free tone and a free TBU are found adjacent to each other, the Association Conventions can be reapplied at this point, linking the two.

(51) ɔba-ála

$\begin{array}{c} | \quad | \quad | \\ \text{M} \quad \text{H} \quad \text{M} \end{array}$

The other examples have no free TBU's, however. Judging from the final output of all of the examples, it is clear that High tone does not link to the final TBU. All final TBU's are linked only to a Mid tone. In (50b) there is clear evidence that the High tone is linked to the second TBU. The derivation below shows that the Mid tone must also be delinked from the second TBU in order to simplify the Mid-High contour.

(52) calá-la

$\begin{array}{c} \swarrow \quad | \\ \text{M} \quad \text{H} \quad \text{M} \end{array}$

At this point, I will not discuss the rule of Mid tone Delinking except to note the M, being on the left side of the contour delinks from a TBU linked to High when it already linked to the preceding TBU.

(53) MID TONE DELINKING:

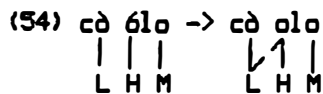
$\begin{array}{c} \text{X} \quad \text{X} \\ | \quad \swarrow \\ \text{M} \quad \text{H} \end{array}$

The surface form of the example in (50c) does not show a High tone on a second TBU, but rather a Mid tone. This can be explained if the free High tone is linked to the second TBU and the Low tone is not delinked, as shown below:



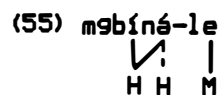
Recall that in Chapter 2 a Low-High contour which was created by means of a Low tone spreading onto a High tone, simplified to a Mid tone on the surface.

In the example in (50d), the High tone is linked to the free second TBU by the universal Principle of tone Association. The final surface Mid tone on that TBU can be explained by triggering Low tone to spread onto the High tone TBU, as shown below:



LOW SPREAD

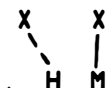
Finally, the free High tone of the example in (50e) can also be linked to the second TBU, though in this case, the linking is hardly necessary, since there is already a High tone from the noun root linked to it.



All five of these examples, then, undergo a Process where the free High tone links to the second TBU. Since this is not, in all cases, Predictable by way of the Association Conventions, a rule must be formulated, specifying the linking. In attempting to formulate a rule, one may Pose a Question as to why the free High tone links to the left rather than to the right. It has been suggested in

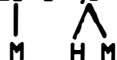
the literature (obtained through Personal communication with C. Kisseberth) that tone will gravitate in the direction of the trigger of the segmental deletion rule. In this case, the left syllable of the suffix was deleted. As a result, the Preceding TBU shoulders the responsibility of carrying the TBU of the suffix. Taking into consideration these observations, then, the rule can be stated as follows:

(56) SUFFIX HIGH LINKING: Link the free High tone of the Type II suffix to the first TBU to the left.



The second set of nouns to discuss are those which have undergone Suffix Final Deletion. In these Particular examples (57), it is the Mid tone rather than the High tone which loses its segment. Unlike the High tone of the Previous examples, the Mid tone here has no choice of segments to link to, and thus it links to the same segment as the High tone.

(57) a. se-ε-ηi → seéηi 'stings'



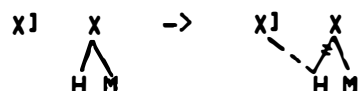
b. ηme-e-ηi → ηmèèηi 'corners'      c. jərə-ηi → jàrà-ηi 'breasts'



We know, however, that the final output does not allow a HM contour on the final TBU, so somehow, the High tone must be delinked from the final TBU. The surface forms of examples (a) and (b) show that High tone of the suffix ends up on the final TBU of the noun root. This can be explained by way of Positioning a

rule labeled High tone Shift, stated as follows:

(58) HIGH TONE SHIFT: Given that 'shift' means delinking a tone from one TBU and relinking it to an adjacent TBU, shift a High tone of a TYPE II suffix linked to the same TBU as a Mid tone of the suffix, to the final TBU of the noun root (i.e. the second TBU of the word).



Such a rule then, can be applied to the noun given in (57a) above, as follows:

(59) a.  $\text{se-ε-ηi} \rightarrow \text{seéηi}$  'stings'

$$\begin{array}{ccc}
 & | & / \\
 & \text{M} & \text{H M} \\
 \text{H SHIFT} & & 
 \end{array}$$

Before jumping to the possible conclusion that this Proposed High Shift rule and the Suffix High tone Link rule (56), which links a free High tone to the TBU on the left, can be generalized into one single rule formulation, the reader is asked to consider the examples in (57b) and (57c). In these examples, it is clear that High tone does not shift to the preceding TBU. What might be the reason for this? One thing these two examples have in common is that they both have a Low tone noun root. Instead of allowing Tone Shift, it appears that these two nouns trigger the Low tone to spread onto the following High tone suffix, as shown in (60) below.

(60)  $\eta\text{m}\grave{\text{a}}\text{-}\grave{\text{a}}\text{-}\eta\text{i}$        $\text{j}\grave{\text{a}}\text{r}\grave{\text{a}}\text{-}\eta\text{i}$


$$\begin{array}{ccc}
 \swarrow \searrow & & \swarrow \searrow \\
 \text{L} & \text{HM} & \text{L} & \text{HM}
 \end{array}$$

Once this happens, the Low and High are simplified to Mid tone, with the final output remaining an acceptable Mid tone.

One way to prevent High tone shift from taking place on these Low tone nouns is to order the High tone shift rule after Low tone spread. If Low tone spread occurs, as in (60) above, there are two reasons for the High tone not to shift: 1) the simplified Low-High tone linked to the same TBU results in a surface Mid tone and thus, since there is no surface contour tone, there is no reason for the High tone to shift; and 2) High tone cannot, by virtue of the well-formedness condition which states that the Association lines cannot cross, link to the preceding TBU without crossing the Association line linking the Low tone to the final TBU.

If the High tone shift rule must take place after Low tone spread and the Suffix High tone Linking rule (56) takes place before Low tone spread, as was illustrated in (54), then it becomes clear that it is theoretically not viable to try to make one rule formulation for the two processes.

Nouns that undergo Suffix Reduction do not produce any additional complications for analysis. When a suffix is reduced to a single vowel, the only tone allowed on the root is Low tone. In the example below (61), we see the Low tone spreading onto the following High tone, creating a Low-High contour tone which simplifies to Mid tone:

(61) ncà-a  


The rules posited so far, however, still do not cover all examples in the data. We have purposely left the nouns with contour tones until last. The two most common contour tones found on nouns are Low-High and Mid-Low. Low-high

nouns do not pose a problem for the analysis, as given thus far. In the first example below, High Linking takes place once the initial part of the suffix is deleted, while in the second example, High Shift takes place after suffix final deletion.

(62) mará - CVLV → màrá - la → mará-la 'elephantiasis'

$\begin{array}{c} | \quad | \\ L \quad H \end{array} \quad \begin{array}{c} | \quad | \\ H \quad M \end{array} \quad \begin{array}{c} | \quad | \quad | \\ L \quad H \quad H \quad M \end{array} \quad \begin{array}{c} | \quad | \quad | \\ L \quad H \quad HM \end{array}$

AC                      SID                      H LINK

pàlá - mVLV → pàlá - mi → pàlá-mi 'pail'

$\begin{array}{c} / \quad | \\ L \quad H \end{array} \quad \begin{array}{c} | \quad | \\ H \quad M \end{array} \quad \begin{array}{c} | \quad | \quad / \\ L \quad H \quad H \quad M \end{array} \quad \begin{array}{c} | \quad | \quad | \\ L \quad H \quad HM \end{array}$

AC                      SFD                      H SHIFT

The following Low-high noun (63) has only one TBU in the root. Vowel lengthening after SFD creates an additional TBU, which acquires a High tone after High tone Shift. A Low-High contour followed by another High then triggers the High Delinking rule, introduced in Chapter 2.

(63) mPŭ-u-ŋi → mPŭ-ú-ŋi 'hills'

$\begin{array}{c} / \quad \backslash \\ LH \quad HM \end{array} \quad \begin{array}{c} / \quad \backslash \\ LH \quad HM \end{array}$

H SHIFT                      H DELINKING

The following Mid-Low noun (64), causes problems, however. Since it undergoes SID, one might expect High tone Linking to occur, after which Low tone Spread would take place. This unfortunately would result in the incorrect surface tone of ML-M-M.

(64) ja-a-la → \*jä-a-la 'sons' Rather: jaàla  
 ML H M ML H M  
 H LINK L SPREAD

It is conceivable to suggest that single TBU noun roots with contour tones are exceptions to the stated rules. Let us suggest then, that if a contour tone (linked to a single TBU) is followed by a free TBU, the relinking of the second tone of the contour to the following TBU takes Precedence over any other linking Possibilities. Let us call this rule the Contour Shift rule (C Shift)

(65) CONTOUR TONE SHIFT:

Given that 'shift' means delinking of a tone and linking it to an adjacent TBU, the second tone of a contour tone linked to the same TBU shifts to any free TBU to the right.



This rule is not part of the Association Conventions. It is a rule that allows for the relinking of contour tones for the purposes of simplifying the contour and giving each tone its TBU. Below is an example of a derivation using the C Shift rule.

(66) jā - CVIV → jā - la → jā a la → ja à la → ja à la  
 ML H M ML H M ML HM M L HM M L HM  
 AC SID V LENGTH C Shift L SPREAD

Since the second tone of the contour is now linked to the second TBU, one may

wonder to which TBU the free High tone of the suffix may be linked. If the High tone Link rule is allowed to operate after the C Shift rule, there is nothing to keep it from linking to the second TBU, too. This, unfortunately would yield an incorrect surface form: \*jaala.

$$\begin{array}{c} \diagup \quad \diagdown \\ \text{ML} \quad \text{HM} \end{array} \quad \text{H LINK}$$

Therefore, High Linking must be prevented from linking after the C Shift rule. If instead, it occurred before C Shift, High Linking would incorrectly eliminate the environment for the C Shift rule: \*jaala.

$$\begin{array}{c} \diagup \quad \diagdown \\ \text{MLHM} \end{array} \quad \text{HIGH LINK}$$

We see, then, that High tone linking can be allowed neither before or after the C Shift rule, but rather, when the C Shift rule applies, it excludes the right for High tone linking to apply, even though the conditions for rule application, outlined in the formulation of the High Linking rule, are met. As a result, in order to predict a correct output, an additional condition will have to be inserted into the formulation of the rule. Below is a restatement of the rule (56) with the new condition.

(67) SUFFIX HIGH LINKING: Link the free High tone of the Type II suffix to the first TBU to the left, on condition that the Contour linking rule has not already linked a tone to that TBU.<sup>10</sup>

$$\begin{array}{cc} \text{X} & \text{X} \\ | & | \\ \text{H} & \text{M} \end{array}$$

The free High tone of jaala, then is not allowed to link to the second TBU through the High Linking rule. The only options left to it are 1) to link to the final TBU, at which point, the Low tone Spread rule would be triggered, spreading the Low tone onto the High tone, thus creating a Low-High Contour



which simplifies to Mid tone (see (68a)) or 2) not to link at all (see (68b)). In either case, the correct surface form would result. My Preference is to link the High tone, if possible, since in general, the High tone tends to be linked to at least some TBU.

(68) a. jaàla                      b. jaàla  
 //    ^                              //    |  
 ML HM                              ML HM

LOW SPREAD

The other contour tone word in this data sample poses no problems for this new C Shift rule. Below is a derivation of mpùúŋi.

(69) mpù-CVlV → mpù-u-ŋi → mpù u ŋi → mpù ú ŋi → mpù ú ŋi  
 ^    |    |                      ^    ^                      ^    ^                      ^    ^                      ^    ^  
 LH   H   M                      LH   HM                      LH   HM                      LH   HM                      LH   HM  
 AC                      SFD & V LENGTH                      C SHIFT                      H SHIFT

The behaviour of suffixed High-Mid nouns is somewhat problematic. When SUFFIX FINAL DELETION occurs, two possible shapes surface: HHM or HMM. The former is more frequent.

(70)a. HHM

vénlu	véénmi	'crickets'
cáráŋe	cárámi	'orphans'
sé?éne	sé?éŋi	'palm nuts'

b. HMM

túu	túumi	'caterpillars'
ñjééne	ñjééŋi	'stone'

When SUFFIX INITIAL DELETION takes place, again both HHM and HMM are possible

tonal shapes of the noun, though in this case, the latter is more frequent.

(71) a. HMM

fyáa	fyáala	'fish'
kélu	kéele	'monkey'
sónlu	sónlələ	'Parakeets'

b. HMM

mPúlu	mPúlálo ?*	'spiders'
kónlɔ	kólálo	'beads'

What is happening here is that two High Mid sequences are vying for the three available TBU's. Possible reasons for a lack of an adequate analysis are 1) the tonal nature of Mid tone in a High Mid noun root is unknown, 2) lack of accurate transcription, 3) arbitrary, lexical exceptions, or 4) simply free variation on the part of the speakers.

The two High-Low nouns in the data sample behave differently from each other. One optionally maintains the Low final root tone, the other does not.

(72) a. jɔ	jóólə	'pockets'
b. súlò	sókàlo, sóxálo <sup>11</sup>	'floors'

It should be noted that since all High and High-Mid tone nouns possess two TBU's, they are all either subject to Suffix Final or Suffix Initial Deletion. There are no instances where the entire suffix has been retained or reduced.

In summary, then, it has been established that the Association Conventions must apply before the segmental deletion rules. As a result, several new rules

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\* Accuracy of tone transcription uncertain.

are required to provide for the relinking of freed TBU's or tones. According to the discussions above, it has been seen that these rules apply in the following order:

Association Conventions

Segmental Deletions: Suffix Initial Deletion, Suffix Final Deletion, Suffix  
Reduction

Vowel Lengthening

(65) Contour tone Shift OR (67) Suffix High Linking

(33) Low tone Spread (Ch.2)

(53) Mid tone Delinking

(58) High tone Shift

(37) High tone Delinking (Ch.2)

### 3. Root tone lowering (High Deletion)

One item that complicates the analysis of the tonal behaviour of nouns with Type II suffixes somewhat is the frequent lowering of the tone of noun roots when the suffix is added. All types of Mid initial nouns as well as Low-High nouns can also be subject to root tone lowering, while High initial noun roots never lower. Below are examples of nouns with lowered root tone:

(73) Underlying	TYPE I	TYPE II	
Root Tone			
Mid	nci-le	nci-xəle	'balaphon, balaphons'
Weak Mid	fo-lɔ	fò-ʔolɔ	'debt, debts'
Mid-Low	ti-dè	tà-r-əle	'liana, lianas'
Low-High	nkàn-lâ	nkàn-ʔala	'tooth, teeth'

In order to analyze the behaviour of Root tone Lowering, both the tonal and segmental environment must be considered. It will be noted in the following discussion that a High tone suffix seems to Play a role in the root tone lowering of both nouns and verbs. In addition, examination of the data reveals that root tone lowering is most common on nouns with either full or reduced TYPE II suffixes, while very little root tone lowering occurs on nouns with partially deleted suffixes (i.e. those which have undergone either Suffix Initial or Suffix Final Deletion.).

Let us first consider the types of tones which have a tendency to lower to Low tone and attempt to determine whether an underlying generalization can be made about them. The examples above in (73) indicate that Mid, weak Mid, Mid-Low and Low-High nouns can all undergo root tone lowering. One possible way to motivate the lowering of the Low-High tone to Low tone is to simply posit a High deletion rule:  $H \rightarrow \emptyset$ . When the High tone is deleted, the Low tone remains. In Chapter 2, it was proposed that Mid tone verbs were underlyingly Lh, that is, they possessed a Low tone on the Primary tier, while being specified on the subregister tier for High tone. It was suggested, there, that Mid tone verbs were lowered to Low tone through the process of subregister High tone deletion:  $h \rightarrow \emptyset$ . The application of this rule then resulted in a remaining Low tone on the Primary tier. If the Mid tones of weak Mid, Mid, and Mid-Low nouns could all be posited as possessing a Low tone on the Primary tier and a High tone on the subregister tier, the rule of subregister High tone deletion could also effectively apply to each of these tones to produce a Low tone. It must be noted, however, that at this point, the underlying tone of Mid tone nouns has not been analyzed; therefore the hypothesis here remains tentative until a thorough investigation of Mid tone nouns is made in Chapter

5. Assuming that the hypothesis is correct, however, we see that the lowering of both Low-High and Mid initial nouns can be triggered by a High Deletion rule for the former the deletion of the High tone on the Primary tier, while the second set undergoes the deletion of the subregister High tone. Since these two Processes Parallel each other in behaviour, let us Propose a single rule to cover for both, labeled simply, the High Deletion rule.

This High Deletion rule will not only indicate that the High tone to be deleted can be on either tier, it must also indicate another fact that all of these Proposed underlying tones have in common, namely a Low tone. In all cases, a Low tone is found on the Primary tier either adjacent to a Primary tier High tone or linked by a High tone on the subregister tier. With this information, the following rule is Proposed:

(74) HIGH DELETION: Delete a High tone on the Primary or subregister tier if a Primary Low tone is found to the left of a Primary High tone or linked to a subregister High tone.

$$\langle H, h \rangle \rightarrow \emptyset / \left\{ \begin{array}{l} L \text{ ---} \\ | \\ L \\ | \\ \text{---} \end{array} \right\}$$

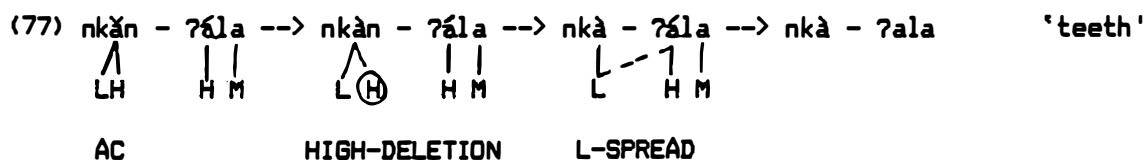
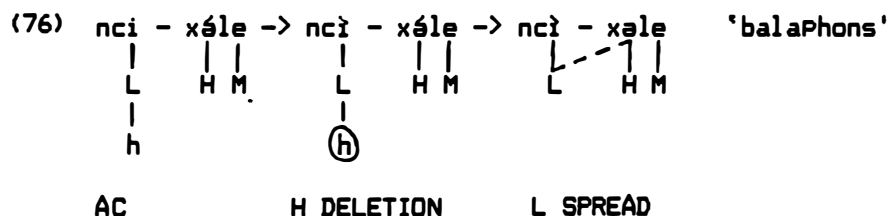
The examples given below show how this rule would work:

(75) LH: nkan-ʔála    M: nci-xále    ML: tirále

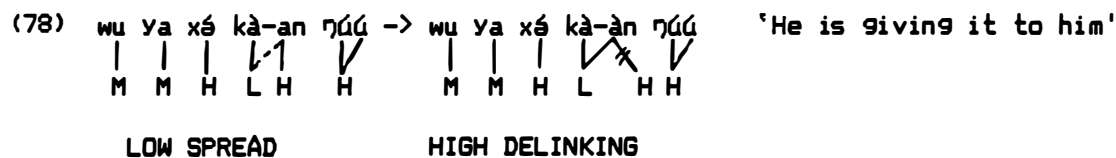
$\begin{array}{c} \wedge \\ \textcircled{H} \end{array}$ 
 $\begin{array}{c} | \\ L \\ | \\ \textcircled{h} \end{array}$ 
 $\begin{array}{c} \wedge \\ L \quad L \\ \wedge \\ \textcircled{h} \end{array}$

Once the root tone is lowered to Low tone, its tonal behaviour is identical

to that of underlying Low tone roots in that the Low tone of the root spreads onto the High tone of the TYPE II suffix, as shown in the example below.



Since High Deletion does Provide the environment for Low tone SPread, it must then be ordered before the Low tone SPread rule. This rule ordering is in contrast to the High Delinking rule introduced in Chapter 2, where a Low tone SPreading onto a High tone TBU contributes to the environment needed for High Delinking. Recall that when an incomplete suffix has been subject to Low tone SPreading, the High tone is delinked if it is followed by a High tone noun class clitic, as is shown in the example below:



The two examples given below, have the same underlying tonal shapes. Yet one undergoes High deletion (a), while the other, for unknown lexical reasons, is

exempt from High Deletion. Instead, it undergoes High Delinking (b).

(79) a. nkàn - ʔála → nkàn - ʔála → nkà - ʔála → nkà - ʔala 'teeth'

$\begin{array}{c} \wedge \\ \text{LH} \end{array}$ 
 $\begin{array}{c} | | \\ \text{H M} \end{array}$ 
 $\begin{array}{c} \wedge \\ \text{L} \text{ (H)} \end{array}$ 
 $\begin{array}{c} | | \\ \text{H M} \end{array}$ 
 $\begin{array}{c} \text{L} \text{---} \text{H} \\ | \quad | \\ \text{L} \quad \text{H M} \end{array}$

HIGH-DELETION      L-SPREAD

b. gbǎn - xálo → gbǎn - xálo 'granary'

$\begin{array}{c} \wedge \\ \text{LH} \end{array}$ 
 $\begin{array}{c} | | \\ \text{H M} \end{array}$ 
 $\begin{array}{c} \wedge \\ \text{LH} \end{array}$ 
 $\begin{array}{c} | | \\ \text{H M} \end{array}$

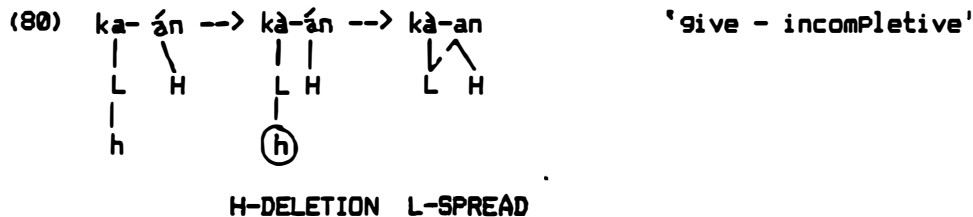
H DELINKING

These two rules clearly yield different results. In the first, the final output is LMM while in the second, it is LHM. If High Deletion were ordered after Low tone spread, the derivation would yield the same results as High Delinking, illustrated in (79b) above. In this set of examples, then, the primary difference between High Delinking and High Deletion is where they are ordered in respect to Low tone spreading. High Deletion takes place at a lexical level of the derivation, whereas High Delinking can take place at both the lexical and the phrasal level.

The above discussion has centered around how the tonal nature of mid initial and low-high tones can contribute to the phenomenon of root tone lowering, now known as high tone deletion. There are, however, environmental factors, both tonal and segmental, which also seem to be present when the root tone of the noun is lowered to low tone. The following discussion will examine each of these factors in an attempt to determine whether they should be considered in the formulation of the high deletion rule.

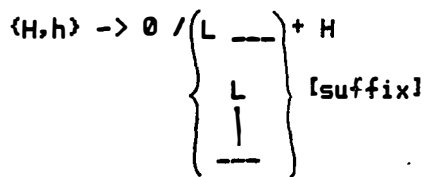
Let us consider first the tonal environment for the high deletion rule. High deletion occurs on nouns when the noun root is followed by a high initial type

II suffix. When one recalls that High Deletion on verb roots also takes Place when followed by the High tone incomplete suffix as in (80), one begins to suspect that Perhaps a High tone suffix is a crucial factor in the application of High tone deletion.



The Proposed revision of the rule would then include the stipulation that High Deletion takes Place when followed by a High tone suffix, as shown below:

(81) HIGH DELETION: Delete a High tone on the Primary or subregister tier if a Primary Low tone is found to the left of a Primary High tone or linked to a subregister High tone, and followed by a High initial suffix.



Note again that the environment for High tone deletion is surprisingly similar to that required for High delinking. In both cases, the High tone is deleted or delinked when followed by another High tone. As mentioned above, however, High Deletion is limited to applying at the word level, while High Delinking can take Place across word boundaries and the two are ordered differently with respect to Low Spread.

Examination of the data shows that not all words with Mid initial or Low-High tones are subject to High deletion when followed by the High initial TYPE



II suffix. Either the choice for High Deletion is Primarily arbitrary or else there is another environmental factor to take into consideration. The data given on the following Pages shows that the segmental environment seems to Play a role in determining which Mid initial and Low-High tones are subject to High Deletion.

It was noted in the introduction to this section that Root tone lowering (now high Deletion) occurs almost without exception on nouns with reduced suffixes and on nouns with full suffixes, while tone lowering is less likely on nouns with Partially deleted suffixes. The three subsections below describe (a) Tone lowering with Reduced Suffixes, (b) Tone lowering with full suffix and (c) Partial Suffix Deletion and resistance to tone lowering.

**a. High Deletion with Suffix Reduction**

When a TYPE II class suffix undergoes Suffix Reduction, the root tone is always Low tone. Any Mid, weak Mid, Mid-Low, or Low-High nouns which undergo Suffix Reduction are also subject to High Deletion.

(82) Mid-Low

	Class 1	Class 2	
a.	nɔ̃	nì-i	'cow, cows'
b.	pɔ̃n	pù-un	'dog, dogs'
c.	tɔ̃	tì-i	'father, fathers'
d.	ceewè	cè-e	'woman, women'
e.	folɔ̃	fè-e	'chief, chiefs'

Mid-Low

	Class 5	Class 6	
f.	nyelè	nyì-i	'eye, eyes'

Weak Mid Class 6 No Suffix Reduction

Mid	No Suffix Reduction	
Low-High		
	Class 5	Class 6
g.	sòlɔ̃	sò-o 'millet sg. and Pl.'
h.	fònlò	fù-un 'Peanut, Peanuts'
i.	bàlɛ̃	bà-le 'ground Pea, ground Peas'
j.	màné	mà-ne 'sweet ground Pea, sweet ground Peas'

Both Cebara and Supyire experience root tone lowering on Mid Low nouns which have reduced suffixes. Interestingly, Mills (1984) and Carlson (1980) have chosen the same examples to illustrate this lowering. Root tone lowering (High Deletion) also takes place in the Sucite cognates of these words, as seen below:

(83)	Cebara	Supyire	Sucite	English
a.	ᑭᑭᑎ, ᑭᑭᑎᑎ	ᑭᑭᑎ, ᑭᑭᑎ-un	ᑭᑭᑎ, ᑭᑭᑎ	'dog, dogs'
b.	ᑭᑭᑎ, cábala	ᑭᑭ-we, ᑭᑭ-e	ᑭᑭ-wè, ᑭᑭe	'woman, women'
c.	sikaà, sikaàala	sika, sikaà-a	sikà, sikàa	'goat, goats'

The latter example is compound in structure. In compounds, only roots in contact with the suffix are susceptible to tone lowering. Carlson (1980) states that in Supyire, most of the Mid Low nouns experience root tone lowering. Mills (1984) calls root tone lowering "irregular", but states that many "li class and some wi class nouns" acquire a Low-Mid pattern, without identifying the original tone of the root. Her examples show High, Mid, and Mid-Low noun roots that have experienced tone lowering.

**b. High Deletion with Full Suffix**

High Deletion also tends to occur on noun roots with the full suffix.

(84) Mid-Low	Class 6	
a. cilè	cì-xəle	'thigh, thighs'
Weak Mid	Class 6	
b. חכמך	חמך-?כמך	'knife, knives'
c. folo	fò-?olo	'debt, debts'
Mid	Class 6	
d. ncile	ncì-xəle	'balaPhon, balaPhons'
e. lala	là-xəla, la-xəla	'Pregnancy, Pregnancies'
f. àmala	àmà-?ala	'bud, buds'
g. Pelɛ	Pè-xəle	'bowl, bowls'
Low-High	Class 6	
h. lùlù	lò-xəlo	'shea nut, shea nuts'
i. nkànlâ	nkàn-?anla	'tooth, teeth'
exception:	j. gbònlí	gbòn-xəlo 'granary, granaries'

All weak Mid nouns (except for a couple of possible contradictory cases) take the full indefinite suffix and all of them undergo High Deletion. There are no weak Mid Class 2 nouns. Cebara has one example, in its list of irregular plurals, of a cognate of a Sucite weak mid noun which lowers when a Class 2 suffix is added:

(85)	Cebara	Sucite	English
	כחכך, חכך?כח	כחמך, חמך?כח	'knife, knives'

It is not known if there is a tonal category of nouns in Cebara which

corresponds to the 'weak Mid' category of Suciite. Weak Mid nouns do exist in SuPyire. In fact, it was Carlson who introduced the term Weak Mid. Of the few Weak Mid examples that Carlson provides, only one one did not undergo root tone Lowering.

## (86) SuPyire

Class 1	Class 2	
fya	fyà-a	'fish, pl.'
shin	shì-in	'Persons'
	Class 5	
sen-ε	séŋ-ii	'stings'
la-a	là-hii	'Pregnancies'

## c. Partial Suffix Deletion and Resistance to High Deletion

It has also been observed that when a suffix has undergone either Suffix Initial Deletion or Suffix Final Deletion, the noun roots are less likely to undergo High Deletion. In the examples below, the few nouns which do undergo High Deletion are marked in bold.

## (87)a. Mid-Low Class 2 nouns

jā	jaàla	'sons'
siìn	siìnle	'family, relatives'
kəlè	kəlèle	'gods'

## b. Mid-Low Class 6 nouns

kuddò	ku(x)ùxi	'roads'
njidè	njiràle	'tongues'
njedè	njèrale	'livers'
tidè	tàrale	'lianas'

## c. Mid Class 2 nouns

gba	gbaála	'rivers'
fiin	fiínle, fiénmi	'blind persons'
calou	calála	'Pigs, Pork'
Poru	Porálo	'daughters'

## d. Mid Class 6 Nouns

lede	lèrálɛ	'times'
nyɛnɛ	nyààŋi	'horns'
tile	ti(x)éxi	'crests of cocks'
sene	sɛéŋi, sɛ̀̀̀ŋi	'stings'
ntide	nterále	'bats'
mPudo	mPorálo	'horn trumpets'

## e. Low-High Class 6 Nouns

mgbìlê	mgbìíŋi	'threshing or beating sticks'
mPùlô	mPùúŋi	'hills'
ntàànlâ	ntàáŋŋi	'baskets (tightly woven)'
fàrà	fàrála	'winnowing baskets'
pàlá	pàlámi	'Pails'

Previous to the discussion of the segmental environment, it was mentioned that High Deletion takes place before Low tone Spreading, so that the derived Low tone can also trigger Low tone Spreading. Now we need to examine the rule ordering of segmental deletions and High Deletion. In the above description it was assumed that High Deletion followed segmental deletion. However, before arguing for this rule ordering, let us take a look at the viability of ordering High Deletion before segmental deletions.

Most nonderived Low tone roots take Partially deleted suffixes, while most derived Low tone roots take full or reduced suffixes. If High Deletion were ordered first, there would be no way to distinguish derived Low tones from Low tone roots, and thus no way to Predict that the derived Low tone roots tend to opt for full or reduced suffixes, while underlying low tone roots Prefer Partially deleted suffixes. In addition, if High Deletion occurred first, deciding which Mid, Mid-Low, or Low-High tone root to lower to Low tone would be Primarily an arbitrary decision.

On the other hand, ordering High Deletion after segmental deletion would bring some Predictability to the rules. While the type of segmental deletion would be Partially an arbitrary decision, once the deletions are made, High Deletion would be obligatory on any Mid initial or Low-High noun with a full suffix or a reduced suffix, and rare on such noun roots with Partially deleted suffixes.

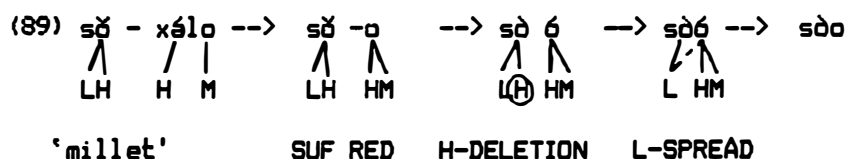
With the segmental Deletions rule ordered before High deletion, then, one can now use segmental information in the formulation of the High Deletion rule. The revised High Deletion rule given below in (88) would now include the information that High Deletion occurs on nouns with full or reduced suffixes.

(88) HIGH DELETION: Delete a High tone on the Primary or subregister tier if a Primary Low tone is found to the left of a Primary High tone or linked to a subregister High tone, and followed by a High initial suffix. If the suffix is a nominal suffix, it must have undergone either no segmental alteration or else have undergone Suffix Reduction.

$$\langle H, h \rangle \rightarrow \emptyset / \left\{ \begin{array}{l} L \text{ ---} \\ L \\ \underline{\quad} \end{array} \right\} + H \quad [\text{suffix - if N, then full or reduced}]$$

This rule may seem somewhat odd in that it includes not only tonal information but also segmental and morphological information as well. However, at this point, these are precisely the factors that seem to govern High tone deletion.

Below is a final example illustrating the ordering of High Deletion after segmental deletion and before Low tone Spread.



This completes a lengthy discussion of the TYPE II indefinite suffix, which are found on the two Plural noun classes, 2 and 6. We have seen that there are several factors affecting the tone of nouns with TYPE II indefinite suffixes. First of all, the tone of the root can alter the tone of the suffix. Specifically, the Low tone of the root can spread onto the High tone of the suffix. Secondly, the types of segmental deletions that take place not only help to determine how the remaining tones and TBU's can be relinked; they can also play a role in triggering High tone deletion (or Root tone Lowering) of the noun root tone.

#### IV. THE DEFINITE SUFFIX

This section discusses the structure and tonal behaviour of the Definite suffix. Since the structure of the definite suffix of the TYPE I nouns is somewhat different from that of TYPE II nouns, they shall be discussed separately. Their tonal behaviour, however, is similar enough that it shall be discussed together in one subsection.

### A. Structure - Type I

The Definite form of TYPE I nouns, that is, nouns which take the TYPE I indefinite suffix, is derived by replacing the indefinite with the definite suffix. In the chart below, the definite form of the noun is given beneath the indefinite form. Those nouns which have a 0 indefinite suffix are given in the first row, while, those with -CV and (N)CV suffixes are given in the succeeding rows.

(90)	Noun Class					
Suffix	1 (wi)	3 (ki)	4 (yi)	5 (li)	7 (ti)	8 (pi)
0	jā <33> jā-ŋe 'son'	nā <3> nā-ke 'fire'	na-yà nā-nyε 'fires'	0	0	juu <2> juubé 'speech'
CV	ce-wè <1> ceèŋe 'woman'	tε-xè <33> tɛ-ke 'Place'	te-yè tè-nyε 'Places'	ci-lè <37> ciì-ne 'thigh'	su-rò <19> sù-te 'mush'	tā-be <1> tā-bé 'medicine'
(N)CV	cèn-ŋè <1> cènŋe 'antelope'	wye-ŋè <25> wɛ̀ŋ-ge 'leaf'	wyèn'yè wɛ̀nyε 'leaves'	sε-ne <5> sε-né 'sting'	kòò-nò <1> kòò-nde 'cotton'	sā-mè <10> sā-mbe 'sorghum beer'

The TYPE I definite suffix is composed of a consonant indicating noun class and definiteness and a Mid front vowel. Generally, the consonants of the indefinite and definite suffix of the same noun class are at the same point of articulation, while the manner of articulation may vary. For example, the consonants in Classes 3 and 7 suffixes are converted from [-stop] to [+stop] (x → k, r → t). This contrasts with the dialectal variation found in some neighbouring villages (Koloko) as well as (to the west) across the border in Mali, where Classes 3 and 7 definite suffix consonants remain the same as those of the indefinite suffix.



- (91) Kotoura Sucite                      Dialectal variation  
       gba-xa, gba-ké (3)     ~     gba-xa, gba-xé 'the house'  
       su-rò, sù-te (7)     ~     su-ro, sù-re 'the mush (main dish)' -

Noun stems with final nasals cause voicing of voiceless consonant suffixes of Classes 3 and 7:

- (92) fuN ke (3) --> fùŋ-ge 'inside'  
       kòðN-te (7) --> kòðn-de 'cotton'

Aside from the nasal influence of some noun roots, nasality seems to be a feature for the definite suffixes of Classes 1, 4 and 5. Instead of a [+stop] consonant replacing a [-stop] consonant, as is the case for Classes 3 and 7, a nasal consonant in the definite suffix is at the same point of articulation as its indefinite counterpart. This is illustrated below.

(93)	Class	Indefinite C	Definite C	Example	English
	1	w	ŋ	ce-wè, ceè-ŋe	'woman'
	4	y	ny	te-yè, tè-nye	'Places'
	5	l	n	ci-lè, ciì-ne	'thigh'

When a Class 5 noun is suffixed for definiteness, the vowel of the root is lengthened. It is possible, in this case, that the indefinite suffix was never totally deleted; with the addition of the definite suffix, the -l- dropped out creating a long vowel<sup>12</sup>. In Supyire, this indefinite -l- never does show up on the surface.

- (94)                      Sucite     Supyire  
 Indefinite    gbòn-lò    gbù-ùn     'granary'  
 Definite      gbòòn-né    gbùùn-né   'the granary'

Vowel lengthening does occur sporadically in the definite suffixation of other

noun classes. However, there does not seem to be any Predictable Pattern as is found in the Class 5 nouns.

The disyllabic roots follow the same Pattern of definite suffixation. The only exception is in the case of Class 5 nouns which have the extended -rV- root. Unlike monosyllabic Class 5 nouns which seem to retain some semblance of the indefinite suffix when adding the definite suffix, these nouns drop both the final syllable of the noun root, -CV-, and the indefinite suffix before adding the definite suffix.

(95) kùdè [kùrà-lò] → kù-ne 'the chair' \*kù-ù-ne \*kùrà-ne

Below is chart (96) with the definite forms of disyllabic nouns. Please refer to (8) for English glosses.

(96)	1 (wi)	3 (ki)	5 (li)	7 (ti)	8 (pi)
-l-	IND folò <22>	gbàlàxè <7>			
	DEF folà-ŋe	gbàlà-ke			
-r-	sáru <10>	ṅguraxo <12>	kùdò <14>		
	sára-ŋé	ṅgura-ké	kù-ne		
r-V(N)	cáráŋe <1>	nkòràŋò <2>			ferame <2>
	cára-ŋé	nkòrà-ŋge			fera-mbé
-ʔ-		kànʔà <6>	sèʔèlè <1>	kòʔòrò <1>	
		kànʔà-ke	sèʔè-ne	kòʔò-te	
ʔ-V(N)		nyaʔaŋà <6>	séʔéne <1>		
		nyaʔà-ŋge	séʔe-né		
-x-	fyèxù <2>			tuxurò <2>	
	fyèxù-ŋe			tuxù-te	
x-V(N)				ndùxàndò <1>	
				ndùxà-nde	

### B. Structure - Type II nouns

The Definite Suffixes of TYPE II nouns are similar in structure to the definite suffix of TYPE I nouns in that the initial consonant of the suffix is at the same point of articulation as the consonant of the indefinite suffix. Thus for class 2, the definite suffix is bilabial, as shown below in (97a) and for Class 6, it is velar.

(97) Class	Indefinite C	Definite C	Indef.	Definite
a. 2	m,b	-> b	ànáá- <u>mí</u>	-> ànáá-m- <u>bí</u> 'sons'
b. 6	x	-> k	pò- <u>xálo</u>	-> pò-xà- <u>kí</u> 'bodies'

In citation form, as given in (97), it appears that the definite suffix of TYPE II nouns is monosyllabic. However, when followed by a vowel initial morpheme, such as the verbal Particle, à, which coalesces to the final vowel of the subject, one observes the appearance of an -l-, as seen below.

(98) Class 6	nyìì- <u>kí</u> 'eyes'	nyìì- <u>kíla</u> -à wù yá	'the eyes hurt him'
Class 2	sakàà- <u>bí</u> 'goats'	sakàà- <u>bíla</u> -à foori	'the goats have gone out'

This observation leads to the hypothesis that the underlying shape of these suffixes are: Class 2 - bííí and Class 6 - kííí<sup>19</sup>.

Instead of replacing the indefinite suffix with the definite suffix, as was the case for TYPE I nouns, TYPE II definite nouns are formed by adding the definite suffix to an indefinite suffixed noun stem. Thus, for the noun nì-i 'eyes', the definite form is nì-ì-kí. However, when the indefinite suffix consists of two TBU's, the addition of the definite suffix causes the reduction of the two TBU suffix to one TBU, as shown in (99).

(99) pò - xàlo - kí → pò - xà - kí 'the bodies'

Root Ind Def

The effect is that definite TYPE II nouns consistently have only three TBU's, the first TBU being reserved for the noun root, the second for the indefinite suffix, and the third for the definite suffix. Below are examples of ways the indefinite suffix of Class 6 nouns is reduced to one mora when followed by a definite suffix.

(100) Class 6

CL 5 IND	CL 6 IND	CL 6 DEF	
a. Pùlò	pò-xolo	pò-xò-kí	'body, trunk'
b. colò	cò-ʔolo	cò-ʔò-kí	'clay pot'
c. jide	jàrà-ŋi	jàrà-ŋ-ǵí	'breast'
d. sene	séé-ŋi	séé-ŋ-ǵí	'sting'
e. tile	tií-xi	ti-xǵ-kí	'cock's crest'
f. kídè	kìrə-le	kìr-à-kí	'country'
g. kudò	kuù-xi	ku-xò-kí	'rule, road'
h. cedé	cerá-le	cer-ǵ-kí	'calabash, gourd'
i. nyelè	nyì-i	nyì-ì-kí	'eye'

Whatever -lV suffixing there was in the indefinite form is deleted with the addition of the definite suffix. However, the initial syllable of the indefinite suffix tends to be maintained (examples a,b). In the case of the nasalized indefinite suffix, the nasal is retained and as a result, it causes voicing of the Class 6 definite suffix consonant (c,d). The extended -rV- roots tend to

retain this extension, causing the segmental deletion of the entire indefinite suffix, (f,h). There is, however, one instance of the -rV- deleting, allowing the first syllable of the indefinite suffix to remain (g).

Class 2 nouns undergo the same type of segmental reduction processes, as seen below:

(101) Class 2

CL 1 IND	CL 2 IND	CL 2 DEF	
a. j̩	j̩óó-l̩	j̩óó-bí	'pocket'
b. fyáa	fyáa-la	fyáa-bí	'fish'
c. Pààn	Pààn-la	Pààn-bí	'alligator?'
d. Poru	Porá-lo	Porá-bí	'daughter'
e. sónlu	sónl̩-l̩	sónl̩-bí	'parakeet'
f. ònáa	ònáá-mi	ònáa-m-bí	'scorpion'
g. n̩	n̩-i	n̩-i-bí	'mother'

C. Definite Suffix Tone

The tone of the definite suffix varies according to the noun of the root. For both TYPE I and TYPE II nouns, the definite suffix is Mid tone when preceded by Low final and High tone roots and High tone when preceded by a Mid final or a Low-High noun. Examples for TYPE I definite nouns are given below in (101). Note that the entire contour of Mid-Low nouns is linked to the noun root when followed by a definite suffix (b), while Low-high nouns link only the Low tone of the contour to the root. This contrast in behaviour will be explained shortly.

## (102) TYPE I Nouns

Root tone	Indefinite	Definite	
a. Low	mɔ̀lɔ̀ -->	mɔ̀lɔ̀-ŋe	'rice'
b. Mid-Low	fu-ŋɔ̀ -->	fũn-ge	'inside'
c. High-Low	sú-lò -->	súú-ne	'floor'
d. High	fɛ́lɛ́-xá ->	fɛ́lɛ́-ke	'rock'
e. Mid	ɔ̀ba-xa -->	ɔ̀ba-ké	'house'
f. Mid W	sə-xe -->	sə-ké	'bush'
g. High-Mid	fyáa -->	fyáa-ŋé	'fish'
h. Low-High	ɔ̀bò-n-lɔ̀ -->	ɔ̀bùùn-né	'granary'

In certain cases to be discussed in Chapter 5, a Low tone root becomes Mid tone when preceded by another Mid tone word. When this happens, the definite suffix is subsequently High tone: mo mɔ̀lɔ̀-ŋe -> mo mɔ̀lɔ̀-ŋé 'your rice.'

Recall that TYPE II definite nouns are formed by adding a definite suffix to an indefinite suffixed noun. Since all TYPE II indefinite noun stems end in a Mid tone, the definite suffix, when added to TYPE II nouns, is predictably High tone. The examples in (103), (104), (105), and (106) make this point clear. In each set of examples, the indefinite singular (of Classes 1 and 5) for each TYPE II noun (plural classes 2 and 6) is given, followed by the indefinite form of the TYPE II noun, and finally in the right hand column, by the definite TYPE II noun.

The examples in (103) are nouns with a Mid tone noun root. The High-Mid tones of the indefinite suffix are both linked to the second TBU of the definite noun. In the structural description of the TYPE II definite noun it was shown that the noun root, the indefinite suffix, and the definite suffix

are each given a single mora. In the examples below, it will be noted that there are no segments that could be labeled as belonging to the indefinite suffix. Yet, the tone of the indefinite suffix still shows up on the second TBU. The same is true for the nouns with Low-High noun roots found in (104).

## (103) M-HM → M-HM-H

	Ind Sg.	Ind. Pl.	Def. Pl.	
a.	gba	gbaála	gbaábí	'river'
b.	ntide	nterále	nteráki	'bat'
c.	calou	calála	calábí	'pig'

## (104) L-HM → L-HM-H

a.	mgbìlê	mgbìíŋi	mgbìíŋí	'threshing stick'
b.	fàrà	fàrála	fàrábí	'winnowing basket'

High-Mid nouns invariably have only a Mid tone linked to the second TBU.

## (105) H-HM or HM-M → H-M-H

a.	mgbínê	ngbínále	mgbínabí	'bamboo mat'
b.	já	jóólɔ	jóobí	'pocket'
c.	fyáa	fyáala	fyáabí	'fish'
d.	séʔéne	séʔéŋi	séʔeŋí	'palm nut'

Low tone noun roots exhibit slightly different behaviour. Recall that the Low tone SPreading rule sPreads the Low tone of the root onto the High tone of the indefinite suffix, creating a surface Mid tone. When a definite suffix is added to such a noun stem, as shown below in (106), the definite suffix is predictably High tone. However, the tone of the second TBU is not Mid tone, as

might be expected, but rather Low tone. The reader is asked to refer to Chapter 5 for a Proposed analysis of this behaviour.

(106) L-MM or LL-M → L-L-H

a. cò	còolɔ	còòbí	'net'
b. ɣmèlè	ɣmèèɣi	ɣmèèɣí	'corner, angle'
c. kìdè	kìrɔle	kèrəkí	'country'
d. lùlò	lòxolo	lòxòkí	'bile'
e. ceewè	cèe	cèèbí	'woman'
f. njedè	njèrɔle	njèrəkí	'tongue'
g. gbonlò	gbònʔɔɔ	gbònʔòkí	'firePlace'
h. folɔ	fòʔolɔ	fòʔòkí	'debt'
i. ncile	ncìxɔle	ncìxìkí	'balaPhon'
j. nkànlâ	nkànʔɔnla	nkànʔànkí	'tooth'

The underlying tone of the definite suffix is not at all straightforward. Although the definite suffix tone is either High or Mid tone on the surface, it also seems to Possess a final floating Low tone which never links to the suffix. This is suspected because it triggers the same type of tonal behaviour as other Low final nouns. It will be seen in Chapters 4 and 5 that Low final nouns trigger Low tone spread onto adjacent High tone verbs and weak Mid and Mid-Low nouns. All definite suffixed nouns also do this regardless of whether the surface definite suffix tone is High or Mid. The examples below show that the definite suffixed noun causes a High tone verb to become Low-High.

- (107) a. waa gbaké Pèré /PÉRé/ 'he sold the house'  
 b. waa mɔ̀lànʔe Pèré /PÉRé/ 'he sold the rice'  
 c. waa gbù̀nné Pèré /PÉRé/ 'he sold the granary'



Early observations revealed that the definite suffix tone was one UP from the final root tone and one down from a high tone root. It was clear, too, that the definite suffix never had the same tone as the final root tone.

If we were to suggest that the definite suffix tone is High(Low), then the Presence of a Mid tone after High tone and Low tone nouns would then have to be explained. We have already Proposed a Low tone sPreading rule in other contexts where a Low-High contour was simplified to Mid tone. Might a Mid tone suffix after Low tone noun root be a result of Low tone sPread onto High tone? Such a Possibility is illustrated by the example below.

(108) mɔ̀lɔ̀-ŋé ' → mɔ̀lɔ̀-ŋə 'the rice'

LOW SPREAD

An observant reader may recall that High tone delinking takes Place in Phrase final Position and before High tones. The lack of any type of High tone delinking taking Place here can be explained by the Pervasive Presence of the final floating Low tone.

Low-High nouns in the definite form Possess only a Low tone root on the surface. They are distinguished from real Low tone verbs, however, by the fact that the definite suffix is High tone and not Mid tone:

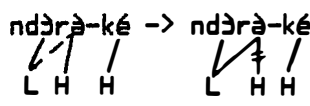
(109)	Ind	Def	
Low-High	bà-lê	→	bà-né 'ground nut'
Low	bàlè	→	bà-ne 'seed'

This can be easily explained by the fact that Low-High roots are not Low final and therefore do not trigger Low tone sPreading onto the suffix. The Low-High example in (109) is also subject to High tone delinking rule (37) in order to

simplify the Low-High contour before a High tone, as shown below:

bà-né      'ground nut'  
  
 L H H

This Process is to be expected here because both the Low and the High are linked to the same TBU. However, the motivation for High delinking is not quite so obvious on Low-High nouns with two TBU's, such as ndòrà-ké. Both left to right and right to left linking conventions would link ndòràké in the same manner and produce the form, ndòrà-ké. However, the final surface form is not ndòràké but rather ndòràké. It appears then, that in addition to the linking conventions that some morpheme internal Low tone spreading has been taking place, followed by High delinking:

(110) ndòrà-ké → ndòrà-ké      'the yam'  
  
 L H H      L H H  
 L SPREAD    H DELINKING

High tone nouns create a Problem, however. Why would a High tone suffix lower to Mid after another High? There are a couple of clues. In Supyire of Farakala (Mali), there is a very productive downstep rule, stating that when two adjacent High's are adjacent to each other, the second automatically downsteps to mid (Carlson, 1983). We do not have this same Productiveness in Suciote but there are a few hints of such a downstep Phenomenon in word formation Processes. Earlier, we observed that the truly Senufo (non-loan) High nouns generally adopted a HM contour. In addition, Mills (1984) states that in Cebara, HM is an allotone of High tone nouns. Secondly, there are variant Pronunciations in some indefinite High tone Class 4 nouns. Normally, the tonal Pattern is HHH but in some cases, it may be HHM. Below is an example of the variant tonal Pattern:

- (111) sárí-ya            'tobaccos',    rather than the expected sárí-yâ  
       mPá76-ya           'Porridges'

The words that accept this variation are forced Plurals, that is, Plurals of words that are not normally Pluralized.

Whatever the motivation may be, there seems to be a kind of downstepping Phenomenon (or lowering of the second High tone) in the definite suffixation Process.

A second alternative analysis is to suggest that the definite suffix is underlyingly Mid tone. It has already been Proposed that Mid tone is a composite of two features Placed on separate but linked tiers. This would be a relatively simple solution for High and Low tone nouns since the Mid tone remains unchanged.

- (112) m̀l̀à-ŋe            'the rice'  
       L    M(L)

- (113) fálá-ke            'rock'  
       H    M(L)

However, after Mid tone nouns and Low-High Nouns, this Mid tone becomes High tone.

- (114) gba-ke --> gba-ké        'the rice'  
       ndòrà-ke -> ndòrà-ké    'the yam'

Perhaps if Mid tone consisted of a complex of High and Low tone features this apparent raising Phenomenon could possibly be explained by some type of Low tone deletion. Earlier in Chapter 2, the Lowering of Mid tone verbs to Low tone was explained by the Process of High deletion of the complex Lh tonal features.

It is Possible that some type of Low deletion Process could be motivated for the definite suffix. However, at this Point, this approach can not be adequately defended. Therefore, the Problem of the definite suffix will be taken up again when the general tone analysis of Sucite has been further developed in Chapter 5.

#### V. CONCLUSION

This chapter has been a discussion of noun morphology and tone. Two types of indefinite suffixes were identified. The Type I Indefinite Suffix was shown to possess no underlying tone of its own while the Type II suffix was posited as having a High-Mid tone. Each suffix type brought with it problems of associating tone to segments. Having established that nominal tone was melodic, it was given a separate tier. Discussion of the Type I indefinite nouns revealed the need to change the direction of associating tones and TBU's from the conventional Left to Right Linking to Right to Left Linking.

The various types of segmental deletions of the Type II indefinite suffix brought up the issue of when tones should be associated to TBU's. It was established that the Association Conventions be ordered before the Segmental deletions. As a result, adjustment rules were required to link leftover TBU's and tones. The reader may refer to P.116 for a list of these rules.

In addition to the problems encountered concerning the association of tones to the segments, tonal variation on both noun roots and suffixes was observed. The lowering of a High tone definite suffix (115a) and the High-Mid Type II suffix (115b) to Mid tone before Low tone roots was explained by proposing the Low tone Spread rule of Chapter 2 (33). This Low Spreading is illustrated below.

- (115) a. Pùù-né 'the body'  
 ↓ ↑  
 L H
- b. Pò-xálo 'bodies'  
 ↓ ↑ |  
 L H M

The High tone Delinking rule of Chapter 2 (37) also found its application in nouns, specifically in Low-High nouns which were followed by a High initial definite suffix (116a) and Type II suffix (116b).

- (116) a. bà-né 'ground nut'  
 A |  
 LH H
- b. gbòn-xálo 'granaries'  
 A | |  
 LH H M

Finally, it was observed that the root tone of some Mid initial and Low-high nouns changed to Low tone when followed by the High tone Type II suffix. It was also seen that the Mid tone verb lowered to Low tone when followed by a High tone incomplete suffix. A tentative solution for both nouns and verbs involved the use of a double tiered approach for tone and the positioning of a High Deletion rule, which initially was formulated in Chapter 2 as deleting a High tone on the subregister tier when linked to Low tone on the Primary tier (59), but revised in Chapter 3 to also include the deletion of High tone on the Primary tier (88). It was acknowledged, however, that this proposed rule remains quite tentative pending a more thorough analysis of Mid tones in Chapter 5.

#### NOTES

1. Mills noted that High tone nouns in Cebara may be followed by a final Mid: "Allotones ['] and [-] are features of the grammatical class of nouns. The final mid tone following high or rising tones occurs only on noun suffixes, on some noun stems, and on adjective stems. This could be extended to noun phrases, as some adjectives bear the high-mid allotone." (1984, p.117)

2. The word final vowel tends to be lowered slightly after High vowel roots.

ci-lV → ci-lì → ci-lè 'thigh'  
 cò-lV → cò-lò → cò-lò 'clay Pot'

Low vowels remain as they are:

cɔn-rV → cɔn-rɔ 'ashes'

Similar behaviour is found in other Senufo languages such as Cebara.

3. See a brief description of a similar type of coalescence in Chapter 2.

4. In Supyire, there is a set of Mid-Low nouns which, in the indefinite form, are realized on the surface as Mid tone nouns. It is only when a definite suffix has been added that the Mid-Low contour surfaces:

	Indefinite	Definite	
Supyire	sika,	sikã-ŋi	'goat, goat-DEF'
Sucite	sikã,	sikã-ŋe	'goat, goat-DEF'

5. There is a set of compound-like nouns exhibiting a High falling tone on the final noun root which do behave like Low final nouns, however. Perceptually there is no tonal difference between the pitch of the underlying final High tone and the tone of the final syllable of this set of nouns. However, like Low final nouns, they trigger Low tone spreading onto High tone verbs, as shown below.

waa nəfãn wée → waa nəfãn wèé 'he looked at a brick'  
 waa kurugbã wée → waa kurugbã wèé 'he looked at a shelter'

These nouns are primarily loan words. They behave like compound nouns tonally and segmentally in that they are composed of two stressed components, each possessing its own tonal melody. If the last component of the 'compound' possesses only one TBU and has a High-Low tonal melody, this High-Low tone being linked to a single TBU produces a High falling tone on the surface, as shown in the two examples, below.

kuru-ɡbã 'shelter (grass overhang)'  
 V     ^  
 M     HL

tãmã-tî 'tomato' (French, tomate)  
 V     ^  
 L     HL

When a High-Low tonal melody is assigned two TBU's, each tone links to a TBU. The second component of the compound nouns given below illustrate this.

fù-ɡbélè 'Senufo basket'  
 |     \ |  
 L     HL

lú-fíí 'water python'  
 |     |  
 H     HL

mPó?à 'Porridge' (Dioula, baba)  
 | /  
 HL

6. Cebara follows a surprisingly similar pattern. Observe the examples below.

High	búru=béle	'bread' (pl)	
Mid	tjari=géle	'calabashes'	
Low	li:gele	'meals'	
Mid-Low	ko-bi:=gèle	'paths'	Mills (1984)

7. In Supyire, the High of the High-Mid suffix shifts to the root of a Mid tone noun, with the result that the Mid tone of the root is completely deleted. Below are a couple of examples with corresponding words in Sucite:

	Supyire	Sucite	English
a.	cáá-li	calá-la	'pigs'
b.	séŋ-ii	seé-ŋi	'stings'

8. Supyire also has a set of underlying Mid-Low nouns corresponding to the same group in Sucite, but this ML contour is simplified to Mid when adding indefinite suffixes. As a result, when adding TYPE II suffixes, the output is a MM sequence instead of MLM. Compare the Supyire and Sucite example below:

Supyire	Sucite	English
céen=lii	ciŋn-le	'younger siblings'
$\begin{array}{c} \vee \quad \vee \\ \text{M L M} \end{array}$	$\begin{array}{c} / \quad   \quad \backslash \\ \text{M L M} \end{array}$	

9. V LENGTH refers to a rule not discussed in this thesis. It frequently happens that if the suffix is partially deleted, a noun root with a single TBU will lengthen its vowel. This process seems to be a part of a more general attempt to maintain three TBU's on nouns with TYPE II indefinite suffixes.

10. This rule refers to the derivational history of the word in its formulation. Although certain authors have used derivational history in the formulation of their rules, this approach has been contested in the literature (through personal communication, C. Kisseberth). While acknowledging the controversial nature to this approach, I shall keep this formulation of the Suffix High Linking rule until such time that a more satisfactory solution may be found.

11. The same informant gave both forms in the space of a couple of minutes. Both were pronounced in isolation.

12. In fact, it is possible that historically, definite suffixes were suffixed to indefinite noun stems. Whether this kind of information would be helpful for synchronic analysis remains to be seen.

13. Cebara definite suffixes for these same classes are bisyllabic: Class 2 - bele, and Class 6 - gele.

## CHAPTER 4 - TONE IN THE SUCITE VERB PHRASE

### I. INTRODUCTION

The Preceding two chapters discussed the tonal behaviour of noun and verb roots with their suffixes. Several rules were Proposed, including Low tone SPreading (33 - Ch. 2), High Delinking (37 - Ch.2), and High Deletion (88 - Ch. 3), which were found to apply to both nouns and verbs.

The Purpose of this chapter is to examine the tone behaviour of verbs across word boundaries. The discussion will be focused on analyzing how the tone of the verb and verbal Particle are affected by the tone of the Preceding nominal and verbal elements. It will be seen that two rules which operate across morpheme boundaries word internally, also occur across word boundaries: Low tone SPread and High Delinking. However, with the introduction of new data, the formulations of these two rules as well as the Association Conventions will be required to undergo minor revisions.

This chapter will first review the domains within which verbal tone may be altered, and then Proceed with a description and analysis of how the final tone of noun objects can affect the tone of the verb. Once the rules have been formulated and thoroughly discussed, the tonal behaviour of verbal Particles will be examined, revealing that rules already Proposed can also apply to verbal Particles.

#### Domain of Verb Tone Behaviour

In Chapter 1, we learned that tonal changes take Place between elements of a verb Phrase. It was also stated that the noun Phrase (NP) immediately Preceding the verb Phrase affects verbal tone. Therefore, as illustrated below, the tone of the subject NP affects the tone of the following verbal Particle,



which in turn, can influence tonal change on the verb.

(1)a. Subject + Verbal Particle + Verb

If a string of verbal elements is split up by the insertion of a direct object, that direct object will also affect the tone of the immediately following verbal element. In contrast, however, the tone of the verbal element cannot affect the tone of the noun object. This barrier to tonal change is illustrated by the use of square brackets below.

b. [Subject + Verbal Particle] + [Noun Object + Verb]

## II. NOUN OBJECT TONE AND THE VERB: DESCRIPTION AND ANALYSIS

### A. Description

Let us first look at how the tone of the noun object affects the tone of the verb. We have already seen that a verb is either High, Mid, or Low tone. Nouns have a variety of tonal shapes; however, in examining their behavior with verbs, they can be categorized into three groups according to their word final tone. High final, Mid final, and Low final nouns and Pronouns affect the verb in different ways.

Low tone verbs undergo one tonal change. When a High or Low final noun precedes it, the Low tone verb undergoes no change. However, after Mid final nouns a Low tone verb becomes Mid-High.

(2)a. L + L → L L

nàà gbàrà 'meet a man'

b. H + L → H L

fáláxá gbàrà 'meet a rock'

c. M + L	--->	M	M H
Poru <u>tě</u>	---	Poru	tě 'show a daughter'
Poru <u>gbàrà</u>	---	Poru	gbará 'meet a daughter'
Poru <u>kàràṅà</u>	---	Poru	karəŋá 'guide a daughter'

It is interesting to note how this resulting Mid-High tonal contour is linked to verbs with varying numbers of TBU's. If a verb has only one TBU, both tones are linked to that single TBU. If there are two TBU's, each tone links to separate TBU's, while on a three TBU verb, the High tone of the Mid-High contour is linked only to the final TBU of the verb.

Mid tone verbs remain Mid after M and L nouns but are lowered to Low after H final nouns when the verb is in sentence final position.

(3)a. L + M	---	L	M
nàà <u>nyà</u>			'see a man'
b. M + M	---	M	M
Poru <u>nyà</u>			'see a daughter'
c. H + M	---	H	L
fáláxá <u>nyà</u> **	---	fáláxá	nyà 'see a rock'
fáláxá <u>tuxò</u> **	---	fáláxá	tùxò 'carry a rock'
fáláxá <u>cə?əlɛ</u> **	---	fáláxá	cə?əlɛ 'insult a rock'

When the Mid tone verb is no longer in Phrase-final position, this tone lowering rule is blocked from applying.

(4) a. wàà fáláxá <u>nyà</u> la	'Did he see a rock?'
*wàà fáláxá nyà la	
b. wàà fáláxá <u>tuxò</u> la	'Did he carry a rock?'

High tone verbs remain High except when Preceded by a Low final noun. Any noun which ends in a Low tone including Mid-Low, High-Low and all definite suffixed nouns, whose final Low tone is never linked to the suffix itself (see Ch. 3), spreads its final Low tone onto the High tone verb lowering all tone-bearing units of the verb except the final unit of multiple TBU verbs. A single TBU verb is simply lowered to L in Phrase final Position.

- (5) a. H + H → H H  
 fáláwá pɛ́ɛ́ 'sell a rock'
- b. M + H → M H  
 gbaxa pɛ́ɛ́ 'sell a house'
- c. L + H → L L H  
 mɔ̀lɔ̀ lɔ́ # → mɔ̀lɔ̀ lɔ́ 'take rice'  
 mɔ̀lɔ̀ wɛ́ɛ́ → mɔ̀lɔ̀ wɛ́ɛ́ 'look at rice'  
 mɔ̀lɔ̀ pɛ́ɛ́ → mɔ̀lɔ̀ pɛ́ɛ́ 'sell rice'  
 mɔ̀lɔ̀ kálàxí → mɔ̀lɔ̀ kálàxí 'spoil rice'

When in non-Phrase final Position, a lowered single TBU High verb is generally Mid (as seen in (6b-d)), while multi-syllabic verbs remain Low-High. However, example (6e) shows that it remains Low if a noun class clitic follows.

- (6) a. waa mɔ̀lɔ̀ lɔ́ 'He took rice'  
 b. waa mɔ̀lɔ̀ lɔ́ la 'Did he take rice?'  
 c. waa mɔ̀lɔ̀ lɔ́ nàŋuù 'He took rice from the man'  
 d. waa mɔ̀lɔ̀ lɔ́ fálákuù 'He took rice from the rock'  
 e. waa mɔ̀lɔ̀ lɔ́ ŋúú 'He took rice from him'

Incomplete verbs which are formed by suffixing an underlying High tone

morpheme to the completive stem, are subject to the same tonal phenomena as completive verbs. Recall that on the surface, the incomplete suffix is Mid tone after Low and Mid tone verbs and High after High tone verbs.

- (7) a. M + L-M ----> M MH  
 gbaxa tàe ----> gbaxa teé 'showing a house'
- b. H + M ----> H L  
 fáláxá tari ----> fáláxá tàrì 'placing a rock (on)'
- c. L + H ----> L LH  
 mǎlǎ lí ----> mǎlǎ lì 'eating rice'  
 mǎlǎ lúú ----> mǎlǎ lúú 'taking rice'

These, then, are the basic tonal changes on verbs. Each tonal category of verbs is affected by one tonal change:

- L(noun) H(verb) ----> L LH  
 M(noun) L(verb) ----> M MH  
 H(noun) M(verb) ----> H L

The following discussion involves the examination and analysis of each one of these tonal changes. It appears that the first two alternations represented above involve spreading rules, whereas the last one seems to display a type of dissimilation phenomenon, which operates only in phrase final position.

## B. Analysis

### 1. Low Spreading Rule

The first tonal change to be discussed here is the matter of the High tone verb acquiring a Low-High contour when preceded by a Low final noun. In

Chapters 2 and 3, a similar Phenomenon was observed where a High tone suffix became Mid tone when Preceded by a Low tone noun or verb root. This lowering to Mid tone was analyzed to be the result of the Low tone of the noun root sPreading onto the High tone of the suffix, creating a Low-High contour which, in most cases, simplified to Mid tone. This Low tone SPread rule was stated in Chapter 2 as follows:

(33) LOW SPREADING - When a Low tone is followed by a High tone across a morpheme boundary, the Low tone sPreads to the right.

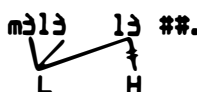


This rule as stated, can also aPPLY across word boundaries. As a result, one can Propose that the Low tone of the noun sPreads onto a following High tone verb. This is Particularly clear on single TBU verbs, such as the one shown below.

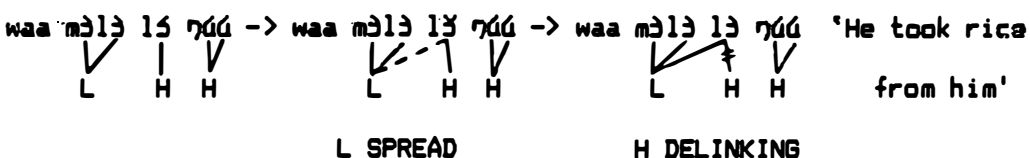
(8) a. mɔlɔ̃ lɔ̃      'take rice'      LOW SPREAD

$$\begin{array}{c} \swarrow \quad \searrow \\ L \quad H \end{array}$$

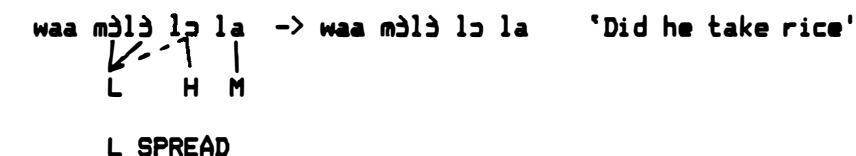
If a High tone verb which has undergone Low tone SPread, has only one TBU and is found in Phrase final Position, the conditions for High tone Delinking are met. Recall that the High tone Delinking rule, as formulated in Chapter 2, states that the High tone of a Low-High contour tone linked to a single TBU will be delinked if found in Phrase final Position or if followed by another High tone. In effect, this is what haPPens to single TBU High tone verbs, as shown in the examPle, below.

b. mɔ̀lɔ̀ ɔ̀ ʔʔ.      HIGH DELINKING  


High Delinking also takes Place after noun class clitics, which are, in this Particular environment, High tone. When a single TBU verb is subject to Low tone Spread, the derived Low-High contour is followed by another High tone. As a result, High Delinking goes into effect delinking the High of the contour tone.

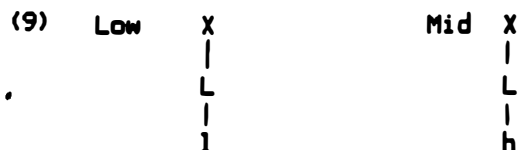
c. waa mɔ̀lɔ̀ ɔ̀ ʔʔ ɔ̀ ʔʔ -> waa mɔ̀lɔ̀ ɔ̀ ʔʔ ɔ̀ ʔʔ -> waa mɔ̀lɔ̀ ɔ̀ ʔʔ ɔ̀ ʔʔ 'He took rice  
  
 from him'

However, if anything but a Noun class clitic follows, the resulting Low-High contour on the High tone verb is simplified on the surface to Mid tone. This Mid tone could be explained by the failure of the High tone to delink in non-Phrase final Position.

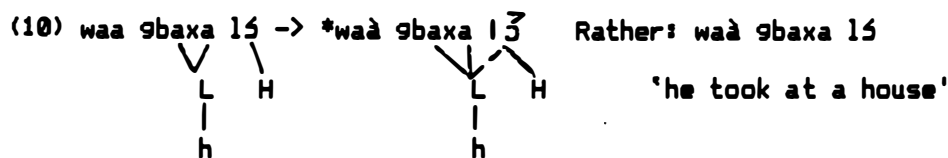
d. waa mɔ̀lɔ̀ ɔ̀ ʔʔ ɔ̀ ʔʔ -> waa mɔ̀lɔ̀ ɔ̀ ʔʔ ɔ̀ ʔʔ 'Did he take rice'  


The above analysis of Low tone SPreading involved the nouns which are Low tone. It has also been suggested in both Chapters 2 and 3 that Mid tone be analyzed as raised Low tone. A distinction of two types of Low tone leads to a double tiered approach to tonal analysis where both types of Low tone are given a Low tone on the Primary tier while the raised Low tone (or Mid tone) is Posited with a High tone on the subregister tier and the Low tone, with a

subregister Low tone, as shown below:



Therefore, if both of these tones Possess a Low tone on the Primary tier, then theoretically both should be able to sPread onto High tone verbs, since the Low tone SPreading rule as stated above, does not sPecify a tone for the subregis- ter tier. The examPle below in (10) illustrates this theoretical Possibility. However, as the derivation shows, a Lh tone sPreading onto a High tone Produces an incorrect surface form. In fact, no tonal alternation occurs on High tone verbs when Preceded by a Mid tone noun.

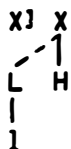


LOW SPREAD

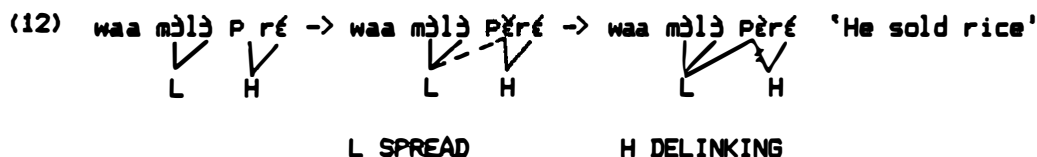
Because Lh tone must be blocked from sPreading the Low tone SPread rule must be reformulated to allow the sPreading of only Ll tones onto High tone nouns. This revised Low SPreading rule is restated below.

(11) LOW SPREAD

When a Ll tone is followed by a High tone across a morpheme boundary, the Low tone sPreads to the right.

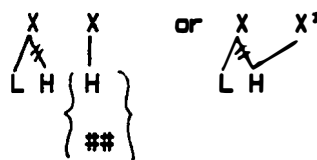


Let us now consider Low tone spreading on High tone double TBU verbs. In the following derivation (12), the Low tone spreads onto the first High tone linked TBU. This results in a Low-High contour on the first TBU of the verb, while the final TBU is still linked to the High tone, thus creating the environment needed for the delinking of the High tone of the Low-High contour.



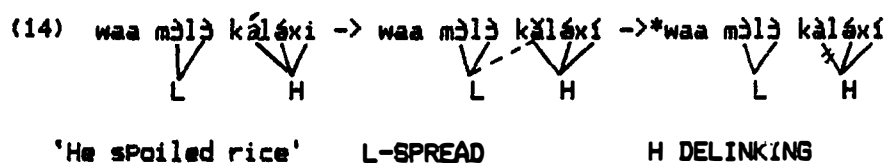
The setting for High Delinking in (12) is slightly different from the situations described earlier (see (37), Ch. 2). In the earlier instances, the second High tone, which, in effect, triggered High Delinking, was linked to the following word or morpheme. In this case, there is no separate High tone linked to a different morpheme. Rather, the same High tone is linked to both TBU's: to the one with the Low-High contour and to the following TBU. Therefore, the High Delinking rule can be generalized to include the delinking of a Low-High contour which is followed by any TBU which is also linked to a High tone regardless of whether that High tone belongs to another morpheme or not. Below is a reformulation of the High Delinking rule.

(13) HIGH DELINKING - Delink a High tone which is Preceded by a Low tone linked to the same TBU, and 1) is followed by a TBU which is also linked to a High tone, or 2) is in sentence final Position.

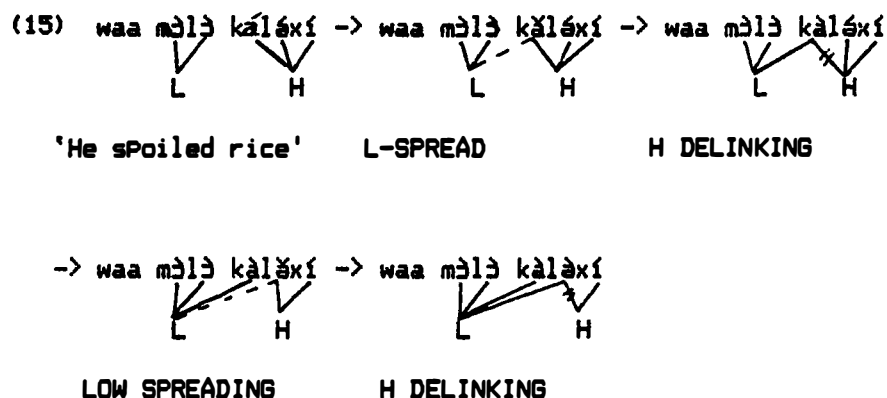




Triple TBU verbs Pose a bit of a Problem. As the derivation below shows, simply applying Low tone Spread and High Delinking does not Produce the correct surface form.



In order to Produce the correct surface form of waa mǎ̀lǎ̀ kǎ̀lǎ̀xǐ, one would have to apply Low tone Spread and High Delinking, a second time, as shown below.



However, allowing Low Spread and High Delinking to apply a second time, in other words, iteratively, seems somewhat cumbersome. In addition, if iterative Spreading were allowed, there is nothing in the rules to Prevent Low tone Spread and High Delinking to apply to the last TBU as well, thus Producing a Low tone on all three TBU's. In fact, the final TBU of a two or three TBU verb is never Low tone in any environment<sup>2</sup>. Therefore any iterative spreading and delinking rules would have to be constrained with the condition that Spreading and Delinking do not occur on the final TBU of a multiple TBU noun.

An alternative solution would be to limit the application of the Association Conventions by having each tone linking to only one TBU. Such a restraint would require the following reformulation of the Association Conventions:

(16) ASSOCIATION CONVENTIONS

Map a sequence of tones onto a sequence of free tone-bearing units

- 1) from right to left
- 2) in a one-to-one relation until all tones have been linked.

Recalling that in Sucite, tones are linked from right to left, a three TBU High tone verb would then initially have only the final TBU linked to the High tone, as shown below:

(17) kalaxi  
|  
H

Delaying the linking of the other TBU's to the High tone would allow more freedom for the SPreading of the Low tone across the word. As the derivation below shows, the Low tone SPreading rule as stated above (11), has the Low tone sPreading and linking to the final High tone linked TBU as well as all of the intervening TBU's:

(18) waa mɔ̀lɔ̀ kalaxí → waa mɔ̀lɔ̀ kalaxY → waa mɔ̀lɔ̀ kàlaxY → waa mɔ̀lɔ̀ kàlaxí

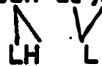
'He spoiled rice'      L-SPREAD                      L DELINKING

Since it already has been stated that a High tone cannot be delinked from the final TBU of a multiple TBU verb, we know that High Delinking cannot apply

here. To Prevent High Delinking from taking Place, a rule delinking the Low tone of the resulting Low-High contour must be formulated.

First of all, Low Delinking involves Delinking the tone on the left side of the contour rather than on the right side as is the nature of the High tone Delinking rule. It must be noted that Low tone does not delink from a Low-High linked segment if it is linked to only one TBU (19a) or if it has spread to only one TBU (19b).

(19) a. sbon-cəŋɛ 'granary-good'



b. waa mɔ̀lɔ̀ lɔ̀ la 'he rice took?'



It delinks only if the Low tone is allowed to link to other TBU's within the word that has been subject to L spreading, as illustrated below in (c)

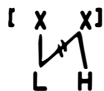
c. waa mɔ̀lɔ̀ kàlɔ̀xí



Therefore, LOW DELINKING can be stated as follows:

#### (20) LOW DELINKING

Delink a Low tone from a Low-High contour when the Low tone has already linked to other TBU's in the word:



There are a few environments where both Low tone Delinking and High tone Delinking can be motivated according to the specifications given above. For example, if a multiple TBU verb which has been subject to Low tone spread is

also followed by the High tone noun class clitic, which, as we have already seen, triggers High tone Delinking of a Preceding Low-High contour, which rule takes Precedence? Such a dilemma is illustrated below.

(21) waa wà gbàxàlé ḡúú 'He made one for him'



In order to make the correct Prediction, one must order Low Delinking before High Delinking. However, when the High tone verb consists of only one TBU, High tone delinking takes Place, as seen in (22) below. Why? We see that the conditions for Low tone delinking cannot be met - Low tone has spread to only one TBU of the word - therefore High tone delinking can take Place.

(22) waa wà lḡ ḡúú

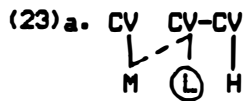


In conclusion, the analysis Proposed here requires the reformulation of the Low tone SPreading rule (11), the High Delinking rule (13), and the Association Conventions for Sucite (16), as well as the addition of the Low Delinking rule (20). The new Low Delinking rule was seen to be ordered after the Low tone SPreading rule but before High tone Delinking.

## 2. High Tone Spreading

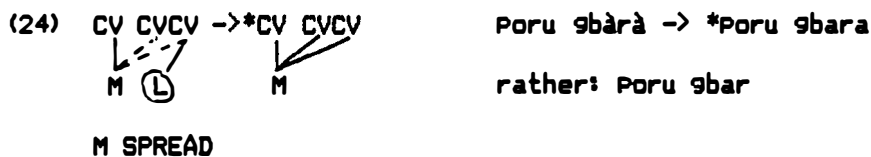
The second tonal Process to be examined here involves the raising of Low tone verbs to Mid-High tone when Preceded by a Mid tone. This Process can be more easily analyzed on Low tone incomPletive verbs than on comPletive verbs. Recall that Low tone incomPletive verbs consist of a Low tone verb root followed by a High tone incomPletive suffix, as seen below in (23). The most

obvious solution would be to motivate a type of Mid tone spreading rule, which would spread the Mid tone onto the Low tone root. Since there is no trace of a Low tone on the verb after this Mid tone Spread, either the Spreading would automatically have to trigger deletion of the Low tone, or a separate Low Deletion rule would have to be formulated.



The difference between Mid Spreading and Low Spreading is that when a Low tone spreads onto a High tone, that High tone can still effect tonal changes on following words, while Mid Spreading onto a Low tone obliterates any Power that Low tone may have had to trigger tonal changes. Thus we say that Mid spreading triggers Low tone deletion, while Low Spreading, on the other hand calls for delinking of the High tone only when certain conditions are met.

We run into Problems, however, when trying to apply the Mid spreading rule as stated above, to Low tone completive verbs. It was stated earlier that a Low tone verb becomes Mid-High when preceded by a Mid tone noun. For incomplete suffixes, all we had to do was to motivate a Mid tone Spreading rule onto Low tone. The resulting Mid tone verb followed by a High tone suffix resulted in a Mid-High tone on the verb. There is, however, no High tone suffix on a completive verb. As a result, simply spreading Mid tone onto a Low tone completive verb would not produce the desired Mid-High tone, as shown below.



It will be seen that Mid Spreading onto Low tone nouns yields the Predict-

able result of a simple Mid tone, so why a Mid-High contour would surface on Low tone verbs is somewhat puzzling. The first attempt at a solution would be to establish whether a completive verb has a tonal structure consisting of a root tone followed by a tonal morpheme. One possible historical explanation is that the completive morpheme did contain a High tone at one stage. In Chapter 2, we suggested that a Mid tone completive verb may have been a raised Low tone. If we speculated that the former Low tone was raised by a High tone completive morpheme, then we can extract a tiny bit of evidence that this High tone came from a historical High tone completive morpheme, whose trace can still be seen in the application of a Mid tone spread rule. Whether this theory holds any validity or not, however, does not really bear upon a satisfactory synchronic solution, because in all other environments, Low tone completive verbs never behave as though they have a final High tone. For example, they contrast with Low tone incomplete verbs (which do have an underlying High tone suffix) when followed by a Noun Class clitic. In (25) below, note that both verbs are Low tone on the surface. However, the clitic is Mid tone (underlined) when preceded by a completive Low tone verb (a) and High tone after an incomplete Low tone verb (b). The example in (c) indicates that the clitic is also High tone after completive and incomplete High tone verbs.

(25) a. Completive Low tone verb

wàà wu wùlò wu là                    'he took (C) it off of him'

b. Incomplete High tone

wu ya fìnù wú là                    'he lied (C) on him'

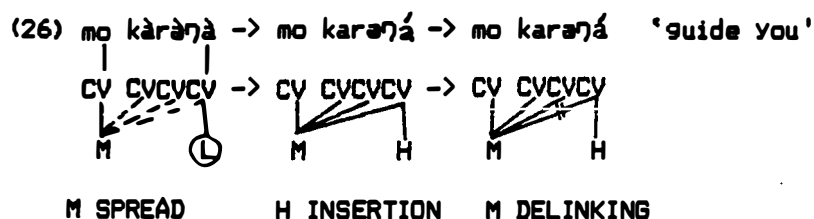
c. Completive and Incomplete High tone.

waa wù lís dúú                    'he took (C) it from him'

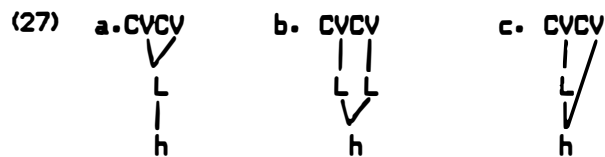
wu ya wú wúú wú là                    'he is taking (IN) it off of him'

Low tone completive verbs, therefore, contrast with High final verbs in behaviour, and as a result, cannot be considered to bear an underlying High final tone.

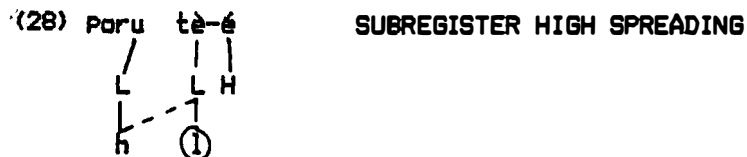
Since Positing an underlying High tone suffix morpheme is not feasible, some type of rule will have to be motivated to allow for a Mid-High contour. One possible solution is that, in addition to Positing a Mid tone SPread and Low Deletion rule on a Low tone verb, a High tone insertion rule is also introduced to insert and link a High tone to the final TBU of the verb. This Particular development would also require the rule of Mid tone Delinking (53), already introduced in Chapter 3 (p.106), in order to simplify a Mid-High contour on a single TBU. This tentative series of rules is illustrated below.



Another possible solution is to take advantage of the suggestion already made in this thesis that the underlying features of Mid tone are best represented on two tonal tiers, with Low tone Posited on the Primary tier and High tone on the secondary or subregister tier, as shown below in (27a). Although Clements did not introduce the idea of linking the two tiers nor the possibility of linking a subregister tone to more than one tone on the Primary tier, (as shown in (b)), nor the unlikely suggestion that tones of the subregister tier may also link directly to the segmental tier (c), the following analysis will propose that these ideas are not only feasible, they also prove to be very practical for this Particular analytical Problem.



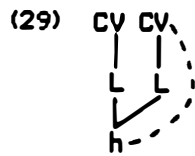
If we allow multiple linking of the subregister tier, then logically tone spreading rules could also be motivated at this level. Returning to Mid tone spreading on incomplete verbs, one can see how the spreading of tone on the subregister tier can create the effect of Mid tone spreading.



When the High tone of the subregister tier spreads to the following Low tone, it triggers the deletion of the subregister Low tone. The reason for this deletion is that the linking of two subregister tones to one Primary register tone cannot be allowed by virtue of the fact that such a construction has no conceivable surface realization. If, historically, Mid tone was considered a raised Low tone, it is conceivable that a raised Low tone could raise the tone of subsequent Low tones. Thus the lower level  $\underline{h}$  represents this 'raising' phenomenon through the spreading to following Low tones.

Let us now consider the more complicated case of Mid tone spreading onto complete verbs where Mid tone spreading results in a Mid-High contour. If the subregister  $\underline{h}$  spreads onto Primary register tones, would it also be possible for the  $\underline{h}$  to also independently link to the segmental tier? If so, then a Mid-High contour could be motivated.





## INDEPENDENT SUBREGISTER SPREADING TO SEGMENTAL TIER

It seems that the lower register high tone not only raised the Low tone through the Process of 'spreading', it continued that raising effect by linking independently to the segmental tier. The effect of independent linking creates a contour tone. The question is whether this is just a fancy mechanism to describe an otherwise inexplicable derived contour tone or whether this approach can be motivated elsewhere in the language or even in other languages.

In Supyire, a neighbouring dialect in Mali, Mid tone does not spread onto Low tone verbs (although a Mid tone spreading rule operates on nouns in the exact same way as it does in Sucite). Instead, Low tone verbs acquire an High-Low contour when preceded by High final or Mid final nouns.

- (30) u nyye na fùn shúù /shùù/ 'he is buying Peanuts'  
 he TA TA Peanuts buy Sucite: wu ya fùn suú
- u nyye na mpà shùù 'he is buying a sheep'  
 he TA TA sheep buy Sucite: wu ya ncà sùù

This slightly different phenomenon could be explained by the independent linking of the subregister High tone to the Low tone segment without linking to the Low tone itself, and thereby creating a High-Low contour.

- (31) fùn shúù 'buying Peanuts' fáǎǎá shúù 'buying rocks'
-

In his analysis of Supyire tone, Carlson refuses to posit an underlying tone for this set of verbs, because Low becomes High-Low in so many environments. The approach presented above can motivate an underlying Low tone verb which has been subject to independent spreading of the subregister high tone.

Therefore, independent subregister High tone spreading does receive some support in Supyire<sup>3</sup>. However, this description still does not explain why independent spreading of a subregister High tone to a segment should take place on verbs but not on nouns.

The question also remains as to whether this notion of independent linking of the subregister tone can be defended within the theoretical framework of autosegmental phonology. The notion of linking and spreading of the subregister level to the primary register level is a rather novel idea in itself. It has been proposed that this subregister level is on a separate tier from the tone on the primary register tier. However, it was pointed out that in accordance with the tone feature system as proposed by Clements, this subregister tier is simply a fine-tuning of the primary register tone, existing only as a function of the primary register tone. Within the Clements system, the subregister tone does not operate as a separate and full tone itself. Therefore, with these limitations in mind, it would be somewhat problematic conceptually, to grant independent linking of the subregister tier to the segmental tier.

One possible approach is to elevate the status of the subregister tone. Clements based his model on the concept of tone-splitting. What if the notion of tone splitting could be further stretched theoretically with the concept of fusing<sup>4</sup> tones from two separate but independent tiers?

(32) CV FUSION



The notion of hierarchy would by necessity still remain. If not, then Hl and Lh would not be distinguishable within the model. In Chapter 5, the necessity of this distinction will be demonstrated. Yet the notion of fusion of two tones would allow possible linking of the lower level tone to independently link in certain limited environments. One may be tempted to speculate that this synchronic fusion process was preceded historically by the presence of a sequence of tones that eventually fused into one. It has already been stated that no precise statements can be made at this time about the historical evolution of tone in Sucite.

For the purposes of this thesis, we shall place the second tier of tones below the first and yet allow the second or subregister tier to link to the segmental tier by process of transformation of the subregister tone to a primary register tone as it passes through the first tier as seen in (33) below.

(33)

X	-	>	X
			/
L			L H
			/
h			h

The effect is that of raising a tone to the extent that it leaves the Low tone register and moves into the High tone register.

Returning to the Sucite example, then, let us examine the environment of subregister High tone linking. The subregister High spreads to the Primary

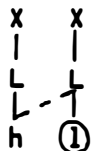
tier Low tone of the verb as well as to the segmental tier only when that subregister High is lexically linked to a Low tone itself, as shown in (34a). If the subregister High was lexically linked to a High tone then no High spreading would take place (34b).



This is in contrast to Supyire where independent High Spreading occurs on Low tone verbs from both Hh and Lh final nouns (see (31) above). At this stage then, a subregister high spreading rule would be stated as follows:

(35) HIGH SPREADING

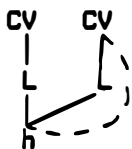
A subregister high, lexically linked to a Low tone, spreads to a following Low tone, thus deleting any subregister tone formerly linked to that Low tone.



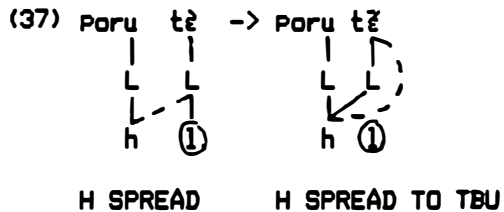
A separate rule must be devised for independent High spreading.

(36) HIGH SPREADING TO TBU

Spread a subregister h, lexically linked to a Low tone, to the final TBU of a Low tone verb.



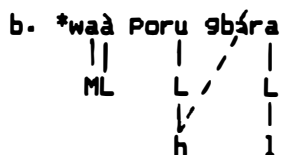
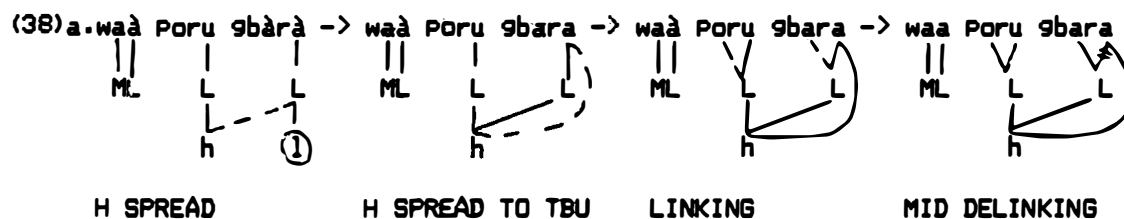
This assumes that High tone has already spread to the Low tone, deleting the subregister Low tone. Below is an example showing both High Spreading rules.



It would be more convenient, perhaps, to state these two rules in one rule, since both of them are triggered by the same environment and one is a follow-up of the other. It will be seen, however, that the first, but not the second rule applies to nouns. Therefore, at this juncture, High spread to the Primary tone register and High spread to a TBU shall remain separate rules.

Low tone verbs with more than one TBU which are subject to High Spreading require some additional adjustment rules in order to link the tones to all the TBU's. From the discussion on Low tone Spreading it was decided that the Association Conventions link tones from Right to Left, linking a tone to only one TBU. Therefore, the Low tone is linked to the final TBU of a Low tone double TBU verb, as shown in the derivation in (38). The High tone Spreading rule specifies that the subregister High tone spreads to the Primary tier Low tone of the verb. Note that if it was allowed to spread to any segments preceding the Primary tier Low tone, an incorrect High-Mid tone would evolve on multiple TBU verbs (b). Therefore, the subregister High tone is restrained to spreading initially to the Primary Low tone. Secondly, we observe the rule of spreading the High tone to the final TBU of the verb and linking it to the TBU after the Low tone of the verb. This now results in a Mid-High contour tone linked to the final TBU and no tone linked to the first TBU. In order to

correct this Problem, some linking adjustments will have to be made. A rule called Linking must be formulated (see (39) below) to link the remaining TBU's of the verb to the verb tone. Whether this is done before or after High tone Spread is not crucial, but such a linking Process must take Place after Low tone Spread so that the Low tone can have the freedom to spread to the right-most TBU (see Preceding discussion on Low tone Spread). After Linking takes Place, then, the Mid-high contour tone is simplified by delinking the Mid tone, that is, the tone on the left side of the contour.



(39) LINKING - Link any free TBU's to the tone of the morpheme to which it belongs.

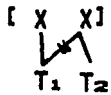


The rule labeled Mid Delinking is very similar to the Low Delinking rule (20) stated above. In both cases, the left side of the contour tone is delinked when that tone is also linked to another Preceding TBU within the morpheme boundary. For this reason, I Propose a more general rule to cover both Mid tone

Delinking and Low tone Delinking - Leftside Delinking (LS Delinking):

(40) LEFTSIDE DELINKING

Delink the tone from the left side of a contour tone when the leftside tone has already linked to other Preceding TBU's in the word.



In example (39a) above, we have seen how LS Delinking applies to verbs. In Chapter 5, it will be shown that LS Delinking is equally applicable to nouns.

The analysis of High tone spread onto Low tone verbs produced the complication of trying to determine how High tone spreading could yield a Mid-High contour. Two rules were proposed to cover for this phenomenon, the High Spread and the High tone Spread to TBU. Although the High tone Spread to TBU rule may seem to pose some theoretical problems, and thus stand on a shaky ground, it will be seen in Chapter 5, that the notion of linking a subregister tone independently to a segment can be further substantiated.

Because the Association Conventions as stated in the discussion on Low tone Spreading limit the linking of tones to TBU's, an additional rule is required to link any remaining free TBU's to tones after the application of the spreading rules. This rule, stated above, has been called the Linking rule (39). Finally, it was considered necessary to revise the Low Delinking rule to include the delinking of any tone on the left side contour tone given the conditions in the rule (40).

In summary, then, the rules are given below:

(35) HIGH SPREAD

(36) HIGH SPREAD TO TBU

(39) LINKING

(40) LS DELINKING

## 3. Mid Tone Lowering

The final rule we shall discuss with in this section is a sentence final rule involving Mid tone verbs. A Mid tone verb is lowered to Low when Preceded by a High final noun or Pronoun and found to be in sentence final Position.

(41)  $M \rightarrow L / H \_ \# \#$ 

CV	CVCV##	→	CV	CVCV##	→	wà	fáláxá	tuxo	→	wà	fáláxá	tùxò
H	M		H	L		H	M	M		H	L	L

'He carried a rock'

Why a High tone would force the lowering of a Mid tone is unclear at this point. At the outset it appears to be a type of a dissimilation process. A few parallels can be drawn with other sentence final phenomena. First of all, recall from Chapter 3 that High final indefinite nouns exhibit a falling tone phonetically when in sentence final position (see (42a) below). A phrase final Low tone insertion rule (27) was proposed. It seems that this tendency for a High tone to fall is transferred to the Mid tone verb, which collapses from the weight of the fall and becomes Low tone (42b). Note that the High final noun, which would normally exhibit a falling tone in sentence final position, no longer falls when followed by a Mid tone verb or any other element. That fall is transferred to a Mid tone verb, however, only as long as the verb itself is



in sentence final position. As soon as something else follows the verb, no falling phenomena takes place, as shown in (42c).

- (42) a. fáláxâ 'rock'  
 b. waà fáláxá tuxo → waà fáláxá tùxò 'He carried a rock'  
 c. waà fáláxá tuxo la 'Did he carry a rock?'

One may ask why a Mid tone verb would be susceptible to this fall but not a High tone verb, for example. If a Mid tone verb is analyzed as a raised Low tone, as has already been suggested, this falling phenomenon could be described as pushing the raised Low tone back to Low, or in terms of features, as h deletion or h delinking.

- (43)
- |    |      |
|----|------|
| CV | CVCV |
|    |      |
| H  | L    |
|    | ‡    |
| h  | h    |

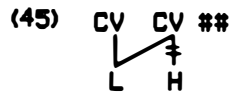
Such a High Delinking rule may be formulated as follows.

- (44) SUBREGISTER HIGH DELINKING: Delink a subregister High tone from a Primary level Low tone when preceded by a Hh tone and in phrase final position.

- |   |      |
|---|------|
| X | X ## |
|   |      |
| H | L    |
|   | ‡    |
| h | h    |

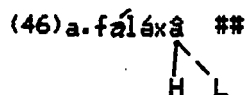
The motivation of this High delinking is not entirely clear, however. Recall,

also, another Phrase final rule, also labeled High Delinking, but which involves the delinking of a Primary tier High tone in Phrase final Position when it shares a TBU with a sSpreading Low tone, as shown below:

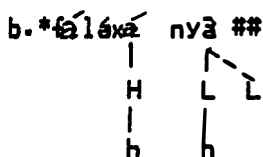


Although the Lh feature bundle is not a sequence of tones and therefore, not a contour, it is possible that some feature simplification Process not unlike contour simplification of delinking a Primary High tone of a Low-High contour, is taking Place on Lh verbs, triggering the delinking of the subregister High from the Low tone.

The falling of the High final noun in sentence final Position and the lowering of Mid tone verbs after High final nouns in sentence final Position may also lead one to suspect that these two Processes are motivated by the same underlying feature. A falling tone on a High final noun can be represented through the insertion of a Low tone feature in sentence final Position:



However, if one inserted a final Low tone after a Mid tone noun, a Mid-Low tone rather than Low tone is Produced, as shown below.



If the Low tone was inserted between the noun and the verb, a Low-Mid contour

would result on the verb. In either event, High Delinking would still have to be motivated, in order to delink the subregister High tone.

In spite of the parallel that can be found between the behaviour of the High final noun and Mid tone verbs which are preceded by High final nouns, there does not seem to be a clear way to capture this generalization in a single rule.

The rule of subregister High Delinking is also very similar to the rule of High Deletion, introduced in Chapter 2. Both rules either delete or delink the subregister High tone of a Lh verb and both have the same effect of lowering a Mid tone verb to Low tone. However, they occur in different environments and at different stages in the derivation. High Deletion takes place early in the derivation before Low tone spread within word boundaries, while High Delinking takes place in a specific phrasal environment. Thus High Deletion appears to be a lexically based rule while High Delinking takes place at the phrase level.

This High Delinking rule, then, is similar to other tonal phenomena found in the language. It takes place at the same stage of derivation as the primary register High Delinking rule and the Low tone insertion rule, and it also produces the same surface form as High Deletion. Any possibility of making a generalization covering all of these similar characteristics will have to wait for further research.

### III. THE VERBAL PARTICLES

This section examines the tonal nature of the verbal Particles in addition to discussing how their tone affects the tone of the verb. As the tone of the verb is sensitive to the tone of the Preceding NP, namely the object, so the Verbal Particle is subject to tonal rules triggered by the tone of the Preceding Subject NP. Verbal Particles are typically never found in isolation; their underlying tone can only be determined in the context of the verb Phrase and sentence. An attempt at analysis is further complicated by the fact that even though Verbal Particles Possess only one, or at the most, two, tone-bearing units, they appear to be tonally complex. This study will attempt to discover what the underlying tones might be, and outline an analysis that would account for this complexity.

#### A. Order Within the Verb Phrase

Before going on to discuss tone, it might be helpful to examine briefly the nature of this Verbal Particle 'slot' within the verb Phrase. A variety of verbal Particles can be inserted in this Position immediately Preceding the verb. A direct object, by its Position in the sentence, however, can separate all of these Particles from the main verb. No nominal elements can be inserted among the verbal Particles. The terms, Tense, Aspect, Modal (TAM) markers, would not adequately cover for all of these Particles, because the negative marker is also included, and there are a couple of Particles Preceding the TAM markers that I simply refer to as Pre-tense markers, for lack of a better label. Preceding even the negative marker, which normally Precedes all Verbal Particles, Pre-tense markers seem to be somewhat adverbial in function. Below is a schema of the allowed order of these Particles. Tense and Modal markers

are often marked for either Completive (C) or Incompletive (I) Aspect (A).

(47)

PRE-TENSE	NEGATIVE - HABITUAL-A	TENSE-A	MODAL-A	
sèn?e	yì	mà?a	níì PAST (C)	sáá'90' (U)
'again'			ǎ PAST (C)	sáa '90' (I)
m		nǎ PAST (U)	caà PAST (C)	
'also'			caa PAST (I)	
				baǎ'come' (U)
Unmarked for aspect = (U)			sî FUT (C)	baa 'come' (I)
(normally indicates completive)			sí da FUT (I)	
Completive = (C)		ya PRES (I)		
Incompletive = (I)		nǎ?ǎ PRES (I)		

Though this list contains most verbal Particles, it is not exhaustive. Within narratives, a number of these Particles also carry discourse functions, combining in numerous ways. It is not within the scope of this thesis to discuss the semantics and discourse Properties of these Particles. The Purpose is to Present most of the Particles and examine their tonal behaviour within the simple sentence. Below are some Possible combinations of Particles.

- (48) a. mo ná      caà      sɔ?ɔ      'You had cooked'  
           you PAST(U) PAST(C) cook(C)
- b. mo ná      caa      sòd̀r̀ì      'You had been cooking'  
           you PAST(U) PAST(I) cook(I)
- c. mo mà?a sí      Pèr̀é      'You will sell habitually'  
           you HAB FUT(C) sell(C)

- d. mo níì saa Péríí 'You went to sell'  
 you PAST(C) M'go'(I) sell(I)
- e. mo senʔé níì Pan 'You have come again'  
 you again PAST(C) come(C)
- f. mo má yì níì Pan mén 'You did not come either'  
 you also NEG PAST(C) come(C) NEG

Note that the translations of these Particles are not Precise. For instance, I have not indicated at what Points in the Past each Past tense marker is used for. Determination of the exact meanings of these Particles is rather complicated and requires a rather rigorous study of the discourse behavior.

#### B. Aspect in the Verb Phrase

Completive aspect on TAM markers is sometimes unmarked, that is, Possessing no segmental or tone features. More frequently, however, the completive aspect is characterized by a final low tone sometimes associated with the vowel -à. The incompletive aspect, on the other hand, is consistently Mid tone and sometimes associated with the vowel -a. Below are some examples of unmarked and marked completives in contrast to their incompletive counterparts.

- |                                   |                                      |
|-----------------------------------|--------------------------------------|
| (49) <u>Completive (Unmarked)</u> | <u>Incompletive</u>                  |
| wu ná sá sòʔò /soʔo/ cook         | wu ná sá-a sòòrì /soori/             |
| wu ná sá Péré sell                | wu ná sá-a Péríí                     |
| 'he had gone to cook, sell'       | 'he had gone to be cooking, selling' |
| <u>Completive (with L tone)</u>   | <u>Incompletive</u>                  |
| wu ná ca-à soʔo la cook           | wu ná ca-a soori la                  |
| 'he had cooked?'                  | 'he had been cooking?'               |

Aspect is marked on connectives between verbs in a verbal chain, as seen in the examples below.

## (50) Completive (C)

- a. wu à Péré à kó --> waa Pèráá kò 'he finished selling'  
 he C sell C finish
- b. wu à wu ló à Pan --> waa wù ló Pan 'he brought it'  
 he C it take C come
- c. wu à tuxi à sùrì --> waa tuxàà sùrì 'He vomited too much'  
 he C vomit C surpass
- d. nde à wéíí à yìrì --> ndaa wèráá yìrì 'I got up early'  
 I C be early C get up

## (51) Incompletive (IN)

- a. wu ya wéíí na sé 'he is hurrying to go'  
 he IN be early IN go(IN)
- b. wu ya fyàlè na má 'He is hurrying and coming'  
 he IN hurry IN come(IN)

## (52) Completive + Incompletive

- a. wu à kó na Pèríí --> waa ko na Pèríí 'He finished selling'  
 he C finish IN sell
- b. wu à kó na soori --> waa ko na sòdrì 'He finished cooking'  
 he C finish IN cook

## 1. The Incompletive Aspect

The Incompletive aspect marker consistently manifests a Mid tone. As a result, one would expect it to be considered underlyingly Lh and thus trigger High tone spread onto Low tone verbs, since this is the behaviour of Mid final

nouns. However, as the example in (53a) shows, such High tone Spreading Produces an incorrect surface form.

(53)a. wu ya tuxi i --> \*wu ya tuxi i 'he is vomiting'

Rather: wu ya tuxi i.

However, the incomplete tone behaves in the same manner as a High final noun by lowering Mid tone verbs to Low tone in Phrase final Position, as shown below:

b. wu ya soori --> wu ya sòdòrì 'He is cooking'

c. wu sí nta soori -> wu sí nta sòdòrì 'He will be cooking'

d. wu ca-a soori --> wu caa sòdòrì 'He had been cooking'

This observation leads us to suspect that the incomplete marker is underlyingly High final. If we propose that the underlying shape of the incomplete marker is a combination of a Low tone and a High tone, the linking of both tones to one tone bearing unit would create a Mid tone on the surface. This High final Particle would then trigger High Delinking on a following H1 verb, as shown below.

(54) wu ca-a soori ## -> wu ca-a sòdòrì ##

^		^	
LH	L	LH	L
			≠
lh	h	lh	h

#### H DELINKING

This discussion, then, shows that there are at least two types of Mid tones in Sucite, the Lh tone tentatively posited for nouns and verbs, and the LH tone for the incomplete aspect. The Lh tone can trigger High tone Spreading while



a LH tone cannot. On the other hand, the LH incomplete can trigger High tone Delinking on a following Lh verb in Phrase final Position. While the Lh tone can be subject to tonal change, through such rules as High Deletion or High Delinking, the LH tone of the incomplete never undergoes tonal changes. It does not even undergo the Primary register High Delinking rule when followed by a High tone verb. Recall that High Delinking takes Place on a Low-High contour when it is followed by another High tone. The example below shows that High Delinking would Produce an incorrect surface form.

(55) wu ya Pérí-í → \*wu yà Pérí-í                    'he is selling'  
           ^          | |          ^          | |  
           LH      H H          LH      H H            Rather: wu ya Péríí  
           | |          | |          | |          | |  
           lh      h h          lh      h h

#### HIGH DELINKING

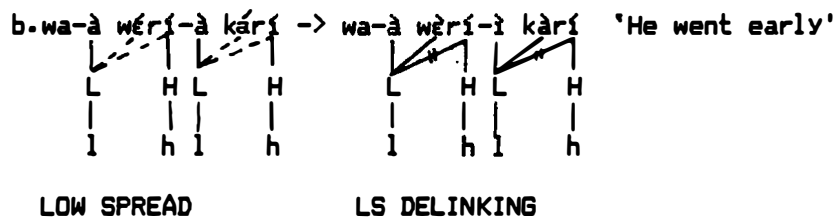
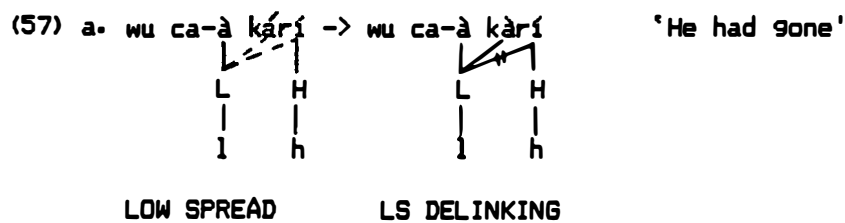
Therefore, it is necessary to block the LH tone of the incomplete from High tone Delinking. Since most Low-High contours found elsewhere in the language do undergo High Delinking, it seems that the only alternative here is to lexically mark the LH incomplete to refrain from High Delinking.

## 2. The Completive Aspect Marker

Earlier, it was noted that the most salient feature of the completive aspect was that it was Low tone, and that it was often associated with the vowel à. Since it is vowel initial, it coalesces with the vowel of the preceding word, be it a verbal Particle (56a), noun or Pronoun (b), or verb (c).

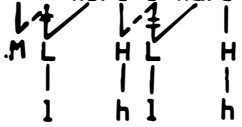

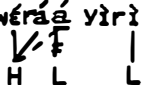
- (56) a. wu ca-à Pan                                    'he had come'  
       b. wu à Pan → wa-à Pan                        'he came'  
       c. wu-à wú ló à Pan → waa wù ló-à Pan    'he took it and came'

Like Low final nouns, the Low tone of the completive aspect marker also triggers Low tone SPreading onto the following verb. This is illustrated in the examples below. In (57b), note that the completive aspect is located in two positions in the sentence, the first immediately after the subject, and the second as a connective between the two verbs. Both trigger Low tone spread onto the following High tone.



The above derivations, however, are not yet quite complete. When the completive marker is followed by a Low tone, the Low tone on the marker is itself delinked and it assumes the tone of the word to which it has coalesced. This happens regardless of whether the Low Spread has taken place or not. Therefore, if the marker has coalesced to a word whose surface tone is Mid tone (58a and c), it becomes Mid tone, and it becomes High tone after a High final word (58b, d, and e).



- b. wa-à wèrí-í kàrí → waa wèríí kàrí 'He went early'  

- c. wu à gbàrà → waa gbàrà 'He agreed'  

- d. ndè ná wèrí à yìrì → ndè ná wéráá yìrì 'I got up early'  

- e. gbaké à Pèlì → gbakáá Pèlì 'the house is big'

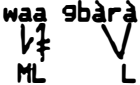
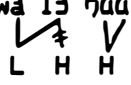
After Low tone words, however, there is a slight deviation from the Pattern given above. As a connective, it remains Low tone (59a), but when in verbal Particle Position, after the subject, it acquires a Mid-Low tone (b and c).

- (59)a. waa tùxì à sùùrì → waa tùxàà sùùrì 'He vomited too much'
- b. wù-ǔ yala na bí gbúún 'We should hit them'  
 we-TA should IN them hit-IN
- c. nàà-ǎ yala mà Kalè tàán wú yó 'Man should love God'  
 man-TA should \_\_ God Please him self-to

This Mid-Low contour shows up only when Preceded by a Low final nominal subject. It is entirely Possible that in this Position, the segment, à, is morphologically complex, containing the completive marker as well as Perhaps some indication of tense, and thus making à more tonally complex. The reason for this slight complication, however, remains unknown at this Particular stage of research.

Let us return to the discussion of the completive Low tone delinking when followed by a Low tone. The issue facing us here is how to formulate a rule for

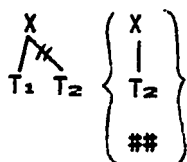
this tonal behaviour. This type of Low tone Delinking appears to be the same type of contour simplification rule as High tone delinking in that both trigger the delinking of the right side of the contour tone when the following tone is the same tone as the right side contour tone. This Low tone delinking is compared with High tone delinking in the examples below.

- (60)a. Low Delinking    waa gbàrà  

- b. High Delinking    waa wà lè ṅúú  


If one made a generalized rule delinking the right side of a contour tone when the following tone is the same as the right side contour tone, then the two tonal Processes illustrated above in (60) can be collapsed into one rule. The only complication that arises is that Low Delinking involves a contour tone on a long vowel, which in Sucié, represents two tone-bearing units, while High Delinking involves only one TBU. Even with this Problem, however, it would not be difficult to propose a single rule for both Processes. This rule, labeled Rightside Delinking, is stated below:

(61) RIGHTSIDE DELINKING: Delete the rightside of a tonal contour of either a long vowel, composed of 2 TBU's or a single vowel, when 1) it is followed by a surface tone which is the same as the rightside tone of the contour, or 2) when it is in sentence final position.

(V, VV)



This rule would work well for the examples given above. Unfortunately, however, this rule does not apply in all cases. In (62a) below, a Mid-Low tone on a single TBU does not undergo RS Delinking when followed by a Low tone<sup>2</sup>, while in (b), a noun with a contour tone on a long vowel is does not submit to the rule.

- (62) a. waà jà gbàrà 'he met a son'  
           ML      L
- b. waà fyáa nya 'he saw a fish'  
           HM      M

Both of these counter examples involve nouns, and neither involve a Low-high tone. Therefore, it appears that this RS Delinking has a fairly limited application - delinking the High of a Low-High contour (this has been attested on nouns as well as verbs), and the delinking of a completive Low tone when it is followed by a Low tone. These problems bring into doubt the feasibility of motivating the RS Delinking rule. However, despite its controversial position, this rule shall be used for the purpose of convenience.

It was mentioned in the RS Delinking rule that the tone of the following TBU must be the same on the surface as the Right side tone of the contour. This means that if a completive Low tone is followed by a Low-High contour which has simplified to Mid tone, then no RS Delinking takes place. This can be seen in the example below.

- (63) wu à lɔ la → waà lɔ la → waà lɔ la           'Did he take?'
- | | | |        | | |        | | |
- M L H M        L H M        L H M
- LOW SPREAD      RS DELINKING N/A

However, if RS Delinking of the Low-High contour on the verb takes place, as shown in (64), then the completive Low tone, which immediately precedes this Low-High contour, also undergoes RS Delinking.

(64)a. waa lɔ́ ɲúú → waa lɔ́ ɲúú  
 || | V      | | V  
 ML H H      ML H H

It is clear from the above example that the RS Delinking of the Low-High contour must take place before the Delinking of the completive Low tone. This may lead one to raise the question that these two tone processes might be better stated in two different rules, and that the one, High tone Delinking, be ordered to apply before the other, Low tone delinking. However, another way to approach the problem is to suggest that RS Delinking applies from right to left across the sentence. Thus, if High tone is delinked from the Low-High contour, a surface Low tone results, creating a suitable environment for the delinking of the completive Low tone, situated to the left of the Low-High contour.

### C. Tense, Modal, and Other Particles

#### 1. The NA Particle

The na Particle is a Past tense marker, but it differs in use from the simple recent Past -á, discussed above. Carlson gives an apt description of na for Sùpyìré, which seems to apply equally well to Sùcité: "The function of na in situating events relative to each other may have something to do with its development into a Past tense marker. As a T/A marker, its commonest use is to set the tense in the first clause of a narrative." (1985, p.12) He goes on to say that na is not used in subsequent clauses. This is also true for Sùcité. In addition, he says "Another function of na is emphatic. It is used to assert

strongly that something did take place when doubt has been expressed."

Although *na* may be accompanied by a completive Low tone marker (65a), it is often occurs alone without any other verbal Particle. When it occurs alone, *na* is consistently followed by verbs in the completive aspect (b).

(65) a. *wu náà kàrí* 'he went'

b. *wu ná kárí* 'he went'

Its tonal behavior is identical to the tonal behavior of High tone verbs. When preceded by a mid or high tone subject, *na* is High tone, as shown in the examples below.

(66) a. *wu ná kárí* 'He has gone'

b. *mo ná kárí* 'You have gone'

c. *Poru ná kárí* 'A daughter has gone'

d. *fáláxá ná kárí* 'a rock has gone'

When preceded by a Low final subject, the Low tone spreads onto *na* creating a Low-High contour, as shown below. This contour tone then simplifies to Mid tone if it is followed by a non high tone verb (67a). However, if followed by a High tone verb, the environment for RS Delinking is created resulting in a surface Low tone for *na* (b).

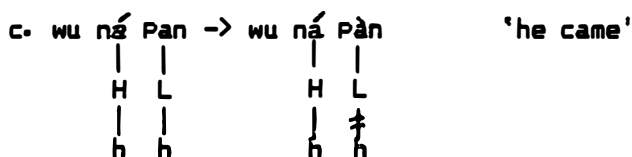
(67) a. *nàà ná gbàrà* → *nàà ná gbàrà* → *nàà na gbàrà* 'A man agreed'

L-SPREADING      LINKING

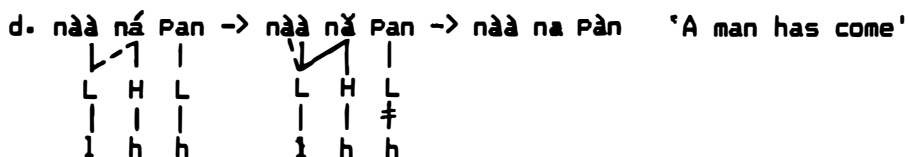
b. *nàà ná kárí* → *nàà na kárí* → *nàà nà kárí* 'A man has gone'

LOW-SPREADING      LINKING & RS DELINKING

Since ná is High tone, it triggers the lowering of Mid tone verbs in final Position through subregister High Delinking (c), even when it has been subject to Low tone Spread (d).



HIGH DELINKING



L-SPREADING

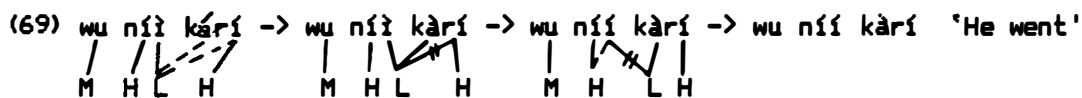
LINKING & HIGH DELINKING

## 2. The NII Particle

The nii Particle signals Past tense. The Precise semantic function of this Particle is not known at the Present time. When used without other verbal Particles, it is always accompanied by a completive verb.

(68) wu níì Pan      'he came'

Níì is composed of a High Plus Low tone. It is believed that this Low tone indicates the Presence of a Low tone completive marker. This Low tone triggers Low tone sPread onto High tone verbs, and then, is itself subject to RS Delinking, as seen below.



L-SPREADING

LS DELINKING

RS DELINKING



When ni is Preceded by a Low tone, it is also subject to Low-sPreading. The resulting LH contour on ni is simplified to Mid tone:

(70)  $\begin{array}{cccc} \text{nàà} & \text{níì} & \text{Pan} & \rightarrow & \text{nàà} & \text{niì} & \text{Pan} & \rightarrow & \text{nàà} & \text{niì} & \text{Pan} & \text{'A man came'} \\ / & // & | & & \backslash & / & | & & & & & \\ \text{L} & \text{H L} & \text{L} & & \text{L} & \text{H L} & \text{L} & & & & & \\ | & | & | & & | & | & | & & & & & \\ \text{l} & \text{h l} & \text{h} & & \text{l} & \text{h l} & \text{h} & & & & & \end{array}$

LOW SPREADING

### 3. The Future Tense

The future tense morpheme is characterized by a H tone segment, sí (n). Because of the final nasal of the morpheme, the consonant of any verbal element immediately following the future marker is nasalized:

$\text{ndà sí n wéé} \rightarrow \text{ndà sí ngèé}$  'I will look'.

However, if an object intervenes, the nasal disappears:

$\text{ndà sí xè wéé}$  'I will look at you'.

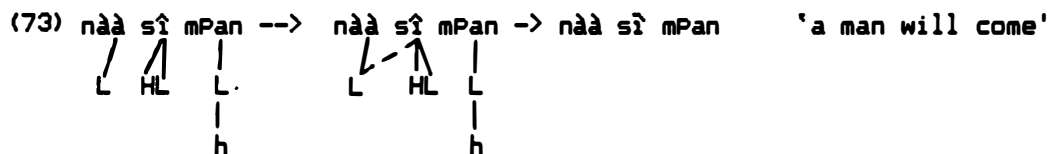
When a future tense morpheme is marked for completive aspect, a Low tone is linked to the Particle, creating a HL contour.

(71)  $\begin{array}{c} \text{mo} & \text{sî} & \text{mPan.} & \text{'you will come'} \\ | & \wedge & & \\ \text{M} & \text{HL} & & \end{array}$

This final L triggers Low tone sPread onto High tone verbs and is subsequently subject to RS Delinking.

(72)  $\begin{array}{ccccccc} \text{wu} & \text{sî} & \text{nkàrí} & \rightarrow & \text{wu} & \text{sî} & \text{nkàrí} & \rightarrow & \text{wu} & \text{sî} & \text{nkàrí} & \rightarrow & \text{wu} & \text{sí} & \text{nkàrí} & \text{'a man will go'} \\ | & \wedge & | & & | & \wedge & | & & | & \wedge & | & & | & \wedge & | & \\ \text{M} & \text{HL} & \text{H} & & \text{M} & \text{HL} & \text{H} & & \text{M} & \text{H L} & \text{H} & & \text{M} & \text{H L} & \text{H} & \\ & & & & \text{L-SPREADING} & & \text{LS DELINKING} & & \text{RS DELINKING} & & & & & & & \end{array}$

When sî is itself subject to Low SPread by a Preceding Low tone, the resulting LHL tonal contour is simplified to Mid-Low, as seen below.

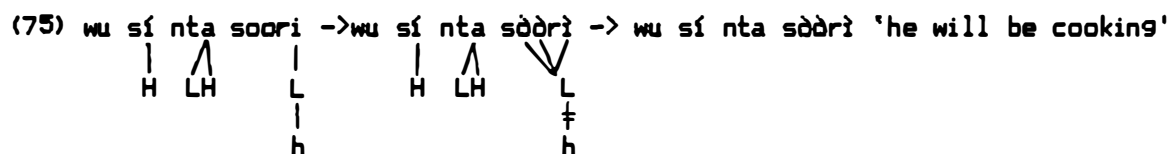


## LOW SPREADING

When the future tense marker is used with the incomplete aspect, it is followed by the incomplete aspect Particle, ta. This Particle is apparent in incomplete imperative forms of the verb:

- (74)  $ta$   $s\acute{e}\acute{e}$  'be going!'  
 $ta$   $w\acute{i}$  'be looking!'

When followed by the future tense Particle, the t is nasalized, producing the phonetic form, [dda] of /nta/:  $wu$   $s\acute{i}$   $nta$   $s\acute{e}$  'he will be going'. The Particle, ta is Mid tone on the surface and is never susceptible to any tonal changes. However, as with other incomplete Particles, ta triggers the High Delinking of Lh verbs and therefore has been posited as being underlyingly Low-High. The derivation below shows how this underlying Low-High tone triggers High Delinking on the Lh verb.



## LINKING

## HIGH DELINKING

The future tense Particle, s\acute{i}, in conjunction with the incomplete aspect Particle, continues to be subject to Low Spread when preceded by a Low final subject, as shown below. In this case, the resulting Low-High contour is simplified to Mid tone.

(76) b.  $n\grave{a}\grave{a}$   $s\grave{i}$   $nta$   $m\grave{a}$  →  $n\grave{a}\grave{a}$   $s\grave{i}$   $nta$   $m\grave{a}$  'a man will be coming'

$\begin{array}{cccc} | & | & \wedge & | \\ L & H & LH & H \end{array}$ 
 $\begin{array}{cccc} | & | & \wedge & | \\ L & H & LH & H \end{array}$

L SPREAD

#### 4. The Incomplete $n\grave{a}ʔ\grave{a}$

The incomplete Progressive Particle,  $n\grave{a}ʔ\grave{a}$ , is also marked for the incomplete LH tone. The latter is attached to the final tone-bearing unit of  $n\grave{a}ʔ\grave{a}$ , creating a HM contour on the final TBU:

(77)  $wu$   $n\grave{a}ʔ\grave{a}$   $m\grave{a}$  'He is coming'

$\begin{array}{ccc} \wedge & & \\ / & \backslash & \\ H & LH & H \end{array}$

When  $n\grave{a}ʔ\grave{a}$  is subject to L-spreading, the following takes place:

(78)  $n\grave{a}\grave{a}$   $n\grave{a}ʔ\grave{a}$   $m\grave{a}$  →  $n\grave{a}\grave{a}$   $n\grave{a}ʔ\grave{a}$   $m\grave{a}$  →  $n\grave{a}\grave{a}$   $n\grave{a}ʔ\grave{a}$   $m\grave{a}$  →  $n\grave{a}\grave{a}$   $n\grave{a}ʔ\grave{a}$   $m\grave{a}$

$\begin{array}{ccc} | & \wedge & | \\ L & H & LH & H \end{array}$ 
 $\begin{array}{ccc} | & \wedge & | \\ L & H & LH & H \end{array}$ 
 $\begin{array}{ccc} | & \wedge & | \\ L & HLH & H \end{array}$

L-SPREADING LS DELINKING

#### 5. The CA Particle

The meaning of  $ca$  seems to indicate action further in the Past than the focal point of the narrative. It is frequently combined with the  $n\grave{a}$  Past tense marker. The Particle  $ca$  may have been derived from the verb  $ce$ , meaning 'to do'. The verb  $ce$  and the Particle  $ca$  are both Mid tone.  $Ca$  is not subject to any tonal rules. It is not known whether  $ca$  is underlyingly Low-High tone or Lh, since  $ca$  is always followed by an incomplete or a complete marker, whose tonal behaviour do not reveal any clues as to the possible underlying tone of  $ca$ .

When followed by a complete Low tone, the resulting complex Particle,  $ca\grave{a}$ ,

triggers Low tone SPreading onto High tone verbs, as shown in (79a). When followed by the LH incomPletive marker, High Delinking takes Place on any following Mid tone verb (80b).

## (79) CompleTive

- a. wu caà soʔo 'He had cooked'  
 b. wu ca-à kàrí → wu caa kàrí 'He had gone' (L SPREADING)

## (80) IncomPletive

- a. wu caa sé 'He had been going'  
 b. wu caa soori → wu caa sòdrì 'He had been cooking' (H DELINKING)

## 6. The Habitual màʔa

When the Habitual marker is in a compleTive Phrase it is not marked with the compleTive Low tone. In fact, in most environments, the difference between the compleTive and incomPletive forms is not Perceptible. The examPles given below show that in both compleTive and incomPletive Phrase, màʔa triggers High tone Delinking on both forms of the Mid tone verb, thus lowering a Mid tone verb to Low tone.

- (81) COMPLETIVE wu màʔa sòʔʔ /soʔo/ 'He cooked habitually'  
 INCOMPLETIVE wu màʔa sòdrì /soori/ 'He is cooking habitually'

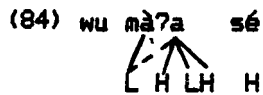
However, when followed by a High tone verb, the compleTive and incomPletive Phrases exhibit different behaviour. In the compleTive Phrase, màʔa is completely Low tone (82a) while in (b) it remains Low-Mid.

- (82) a. COMPLETIVE wu màʔà kàrí 'He usually went'  
 b. INCOMPLETIVE wu màʔa sé 'He was usually going'

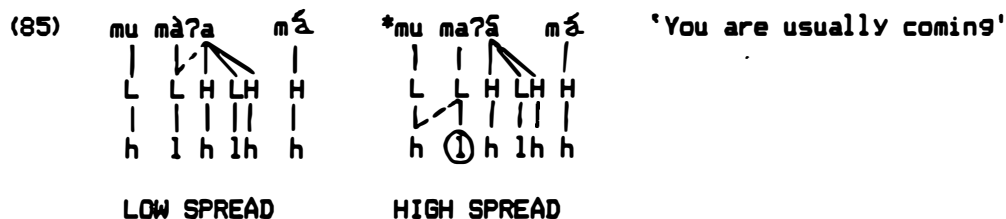
If one posited the underlying tone of màʔa to be underlyingly Low-High, with an internal Low tone SPreading rule sPreading the Low of the first TBU onto High tone of the second TBU, the final syllable of màʔa can then be linked to both a Low and a High tone, creating a final Mid tone, as shown in the first Part of the derivation in (83). Once the Low SPreading takes Place, a Low-High contour followed by a High tone verb is the environment needed for RS Delinking.



However, when the LH incomplete tone is associated to the final TBU of màʔa, RS Delinking is blocked because the sequence of two High tones required for the application of the RS Delinking rule on Low-high contours, has been broken up by the LH marker. This is illustrated below.



Subject tone does not seem to affect the tone of màʔa. One might expect High tone sPreading to take Place when the habitual marker is Preceded by a Mid final subject. This, in effect, does not take Place.



The Completive Low tone is also impervious to High tone sPread, as shown below.

(86) mu à Pan → mò Pan, \*moo Pan 'You came'

Perhaps it is peculiar to verbal particles that they are not susceptible to High tone spread. The reason for such an exception is unknown at the present time.

### The Modals

Modals never occur alone in a verbal particle string. A TA particle always precedes a modal.

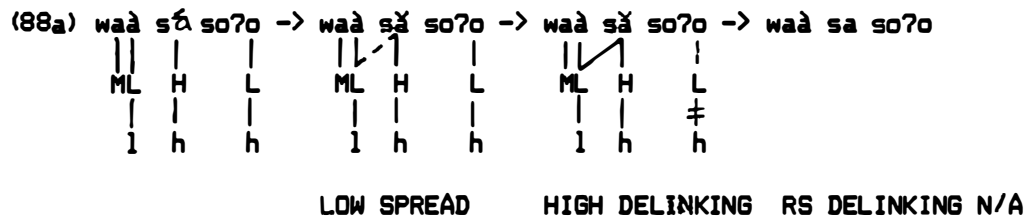
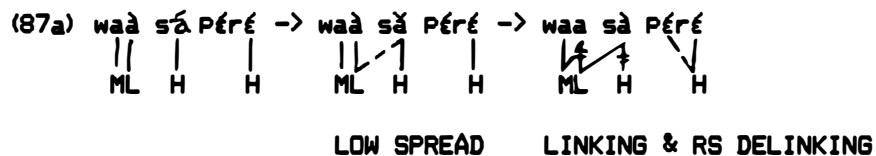
#### 7. The Modal SA

The Modal, sá is derived from the High tone verb, sé, meaning 'to go'. In a completive phrase, sá is unmarked for aspect. Below are two charts facilitating a quick overview of the effect of different combinations of tone within the completive sentence on the modal. In (87), a High tone verb is used while the examples in (88) feature a Mid tone verb. A brief glance at the two charts will reveal that sá alternates between a Low and High tone when a High tone verb follows while it alternates between Mid and High tone before a Mid tone verb. It is also seen in (88) that a Mid tone verb is always Low tone after sá, indicating that in all settings sá has an underlying High final tone. Each of the charts has three rows and two columns. Each row features a different TA marker, while each column features a different subject. Note that the tone of the modal varies according to the underlying tone of the preceding verbal particle. The presence of the two columns shows that while the tone of the TA marker may vary according to the tone of subject, the tone of the modal which follows the TA marker, remains unaffected by the tone of the subject.

(87) TA Marker 'he _ <u>sá</u> sell'	'a man _ <u>sá</u> sell'	Pééré 'sell'
ǎ a.waa <u>sà</u> Pééré	b.nàa <u>sà</u> Pééré	'a man went to sell'
sî(n) c.wu sí <u>zà</u> Pééré	d.nàa si <u>zà</u> Pééré	'a man is going to sell'
ná e.wu ná <u>sà</u> Pééré	f.nàa nà <u>sà</u> Pééré	'a man went to sell'

(88) TA Marker 'he _ <u>sá</u> cook'	'a man _ <u>sá</u> cook'	soʔo 'cook'
ǎ a. waà <u>sa</u> soʔo	b.nàa <u>sa</u> soʔo	'a man went to cook'
sî c. wu sí <u>za</u> soʔo	d.nàa si <u>za</u> soʔo	'a man is going to cook'
ná e. wu ná <u>sà</u> soʔo	f.nàa nà <u>sà</u> soʔo	'a man went to cook'

If one posited sá as being underlyingly High tone, the tonal alternations given above can be easily explained. The first two TA markers in each chart, being Low final, would trigger Low tone Spreading onto sa, which, once having acquired the Low-High contour, undergoes RS Delinking if followed by the High tone verb, but is simplified to Mid tone if followed by a Mid tone verb. The derivations of (87a) and (88a) are given below to illustrate how the tone of both the verb and the Preceding verbal Particle affect the surface tone of sá.



For the incomplete of *sá*, the LH incomplete suffix, *-a*, is added. Since it too is High final, the incomplete form of *sáa* also triggers High Delinking of Mid tone verbs. The examples below, show the incomplete *sáa* with (89a) a High tone verb, (b) a Mid tone verb, and (c) a Low tone verb.

- (89) a. mo ná *sá-a* Píríí 'you Past going agreeing'  
 b. mo ná *sá-a* sòòrì /soori/ 'you Past going cooking'  
 c. mo ná *sá-a* gbàrìì 'you Past going agreeing'

When the incomplete *sáa* is preceded by a Low tone, it is naturally subject to Low tone Spread. However, it no longer undergoes RS Delinking when followed by a High tone verb, because the intervening incomplete suffix destroys the environment for RS Delinking. The resulting surface tone for the incomplete *sáa* is Mid tone. This can be seen in the derivation below.

- (90) waà sa-a Píríí → waà sa-a Píríí 'he was (going) selling'  
 L H LH H L H LH H

#### LOW SPREAD & LINKING

#### 8. The BA Modal

The Modal, *ba* is probably derived from the Mid tone verb, *pa*. It is consistently Mid tone on the surface, though underlyingly, it is clearly High final, since it triggers High Delinking on Mid tone verbs. Thus, *ba* appears to have the same underlying tone as the incomplete aspect, LH. The fact that *ba* appears to have derived from a Mid tone verb which is analyzed as being underlyingly Lh (that is a raised Low tone) may indicate that there is some historical connection between a Low-High contour tone and a raised Low tone.



When used in a completive phrase, *ba* remains unmarked for aspect. When the incompletive suffix, *-a*, is added, it remains Mid tone on the surface but is underlyingly High final. Below is a chart showing *ba* in combination with various verbs and verbal Particles, both in the completive and the incompletive form. In all cases, *ba* remains Mid tone. The sentences in (91b) and (9) show that both the completive and incompletive forms trigger High tone Delinking of Mid tone verbs.

(91) Completive	Incompletive	
a. wu ná ba Péré	f. wu ná ba-a Périrí	'he ____ sell'
b. wu ná ba sòʔʔ /soʔo/	g. wu ná ba-a sòdrì /soori/	'he ____ cook'
c. wu ná ba gbàrà	h. wu ná ba-a gbàrìì	'he ____ agree'
d. waà ba gbàrà	i. waà ba-a gbàrìì	'he ____ agree'
e. waà ba Péré	j. waà ba-a Périrí	'he ____ sell'

### 9. The Pre-Tense Particles

Pre-Tense Particles appear at the beginning of the Verbal Particle string. I have identified two such Particles: *sènʔe* means 'again' indicating that the action of the verb phrase has been repeated a second time. The Particle *máá* seems to have a closer connection with the subject, in that it means 'also'. The subject, in addition to another previously mentioned subject, commit the same act. It appears that this is the only position in the sentence where either Particle is allowed.

Both *sènʔe* and *máá* may be combined with numerous other tense and modal Particles both in the incompletive and completive aspect. They are not marked for aspect themselves. Since they both end in an underlying High tone they behave as typical High final words in that they trigger the High tone Delinking

of Mid tone verbs. Both are susceptible to rules triggered by the tone of the subject.

Let us take a look at máá. As expected, when preceded by a Mid tone, máá remains High (see (92a)), but when preceded by a Low tone, Low tone SPreading goes into effect and a LH contour results (92b and c). Because máá has two TBU's, the LH contour does not simplify to Mid tone.

- (92) a. mo máá ya sòòrì                    'you also are cooking'  
       b. nàà màá ya sòòrì                    'a man is also cooking'  
       c. ceewù màá ya sòòrì                'a woman is also cooking'

The Particle sèn?e remains Low-Mid on the surface (93a and c) until it is preceded by a Mid tone element (d). When this is the case, the Particle is Mid-High in tone. This behaviour can be explained if sèn?e is posited as having an underlying Low-High tone with an internal Low tone SPreading rule. Thus, the Low tone would spread onto the second TBU of the Particle creating a Low-Mid tone. This is illustrated in (a) below. When sèn?e is followed by a High tone verbal Particle, as in (b), it undergoes RS delinking, producing a surface Low tone on the final TBU of the Particle.

- (93) a. nàà sèn?e ya mǎ                    'a man is coming again'  
           |    |    |    |    |  
           L   L   H   LH   H

LOW SPREAD

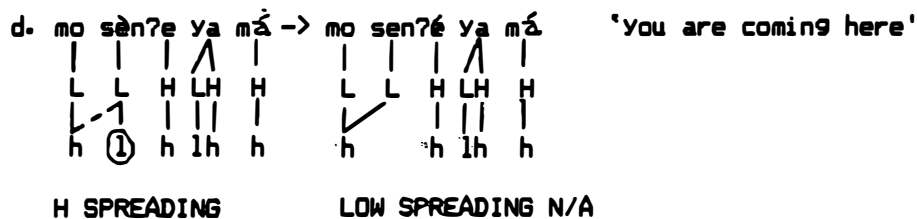
- b. nàà sèn?e ná kǎrí → nàà sèn?è ná kǎrí            'a man has gone again'  
           |    |    |    |    |    |    |    |    |    |    |  
           L   L   H   H    H    L   L   H   H    H    H

LOW SPREAD

LINKING & RS DELINKING

c. fá'láxá sèn?e ya mǎ 'a rock is coming again'

When Preceded by a Mid tone however, it appears that High tone spreading takes place before Low tone spreading has a chance to apply, as the derivation below shows, thus producing a Mid-High tone.



#### 10. The Negative Particle

The negative particle has been dealt with last, but this is not because it is particularly complicated. It is a simple Low tone which triggers the Low Spread rule if the conditions have been met, and optionally vulnerable to High tone Spread. High Spreading onto the Negative Particle seems to be a matter of free variation among speakers of Sùcìtè. yi comes after the Pre-tense Particles mentioned above, but before any other Particles. The Negative sentence is formed by the insertion of yi in the verbal Particle string and by placing the morpheme men at the end of the sentence. The only other element that is allowed to come after men is the yes-no question marker, la. Here, then, are some assertive sentences with their negative counterparts:

(94) Assertive

Negative

a. mu mǎǎ ná Pàn

b. mo mǎǎ yi na Pan men

'you also did not come'

c. mu mǎǎ mà?a sò?ò

d. mu mǎǎ yi mà?a sò?é

'you also did not Hab.cook'

e. wu níí kàrí

f. wiì nii kàrí men

'he did not go'

In (94)f.  $\underline{yì}$  coalesces with the subject:  $wu\ yì \rightarrow wiì$ . With the recent Past Particle,  $\underline{à}$  and the Present incomplete Particle,  $\underline{ya}$ , the tonal Presence of  $\underline{yì}$  is less PercePtible:

(95) Assertive

Negative

a.  $wà\ \underline{Pan}$ b.  $wu\ \underline{yà}\ \underline{Pan}\ \underline{mèn}$ 

'he did not come'

c.  $wu\ ya\ sòdòrì$ d.  $wu\ \underline{ya}\ soori\ \underline{mèn}$ 

'he is not cooking'

Below is an example of free variation concerning the use of the High sPreading rule:

(96)a.  $mu\ nǎ\ \underline{Pàn}$  'You have come'

b.  $muì\ nǎ\ \underline{Pan}\ \underline{mèn}$   
 L L H L H  
 | |  
 h h

LOW SPREAD

or c.  $muì\ nǎ\ \underline{Pan}\ \underline{mèn}$  'You have not come'  
 || | \ |  
 LL H L H  
 | |  
 h h

HIGH SPREAD

In (96b), Low SPreading occurred because High SPreading was not in effect. In (c), however, High SPreading has Preceded Low SPreading thus blocking the latter from aPPLYing.

The sentence final negative morPHEME,  $\underline{mèn}$ , oPerates tonally, much like the definite suffix. It is High tone after Mid tone verbs and Mid after High and Low verbs:

(97)  $wu\ yà\ \underline{Pan}\ \underline{mèn}$  'he did not come' $wu\ ya\ kàrí\ \underline{mèn}$  'he did not go' $wu\ ya\ gbàrà\ \underline{mèn} \rightarrow wu\ ya\ gbàrà\ \underline{mèn}$  'he did not agree' $wu\ ya\ gbàrì-í\ \underline{mèn} \rightarrow wu\ ya\ gbàrì-ì\ \underline{mèn}$  'he is not meeting'

L H H

L H H

LOW SPREAD

RS DELINKING

In the latter example, the incomplete form of 9bàrà Possesses a final underlying High tone incomplete suffix which is subject to Low tone Spread and finally to Right Side Delinking.

#### IV. CONCLUSION

The discussion in Chapter 4 has led to the reformulation of several rules as well as the introduction of new ones. Low tone Spread required only minor revision (11), while the analysis of Low tone Spread onto multiple TBU verbs led to the reformulation of the Association Conventions (16) allowing, in the initial linking of tones to TBU's, the linking of a tone to no more than one TBU. The rule of High Delinking (37 - Ch.2) was renamed RS (Rightside) Delinking (61) to include other contour tones whose rightside tone delinks in a specific environment. In addition, the rule of Mid tone Delinking (53) introduced briefly in Chapter 3, and the delinking of the Low tone in a Low-High contour, were found to take place in the same general environment. Thus, the rule of LS (Leftside) Delinking (40) was formulated to include both Processes.

The new rules introduced were Subregister High tone Delinking (44), Subregister High tone Spread (35), Subregister High tone Spread to TBU (36), and Linking (39). The first three employed the use of the subregister tier to formulate rules depicting respectively 1) the lowering of Mid tone to Low tone in Phrase final environment, 2) the raising of Low tone to Mid tone after Mid final nouns, and 3) the creation of a final High tone on Low verbs which had been raised to Mid tone, respectively. The rule of Linking involved a linking procedure usually assumed to be part of the Association Conventions, and that is, the linking of leftover TBU's of a morpheme to its tones after the application of other rules such as High tone Spread.

These rules, which were formulated in the discussion on the tonal behaviour of the verb were also tested for use on verbal Particles. While it was observed that verbal Particles could trigger Low tone SPread as well as be subject to the same rule, they tend to neither undergo nor trigger High tone SPread onto Low tone verbs. Since they are never found in Phrase final Position, they were also never subject to subregister High tone Delinking.

Since the Mid tone verb behaved slightly differently from the Mid tone verbal Particle, it was Proposed that these two Possessed different underlying tones. The Mid tone verbal Particle, which triggered High tone Delinking was Posited as being underlyingly Low-High, while the Mid tone verb was considered to be a raised Low tone, Lh.

Although not all questions could be resolved in these discussions, it will be seen in the final chapters of this thesis, that the rules Proposed here can be used elsewhere in the language. The following is a summary of the rules in order of their application.

(16) Association Conventions

(11) Low SPread

(35) High SPread

(36) High SPread to TBU

(39) Linking

(40) LS Delinking

(44) High Delinking

(61) RS Delinking

## NOTES

1. One may suggest, as a generalizing feature, to invoke the Obligatory Contour Principle, which simplifies a series of like tones into one and then to posit a rule such as the one below, i.e., delinking a High tone which is linked to the same TBU a Low tone and is also linked to the following TBU. X X

L H

It will be seen in Chapter 5, however, that OCP can apply only in a very restricted environment. Although more research may need to be done, it was not deemed feasible to invoke the OCP in this situation.

2. Spreading of the Low tone to all TBU's of a High tone verb is actually what happens in SuPyire (Carlson, 1983, 1985). Low tone spreads onto High tone verbs and delinks High tone from all TBU's. As a result, the High tone word, wíí, acquires a surface Low tone when followed by a Low final noun, as shown below.

baa9a wíí    ->    baa9a wìì            'it's a house'

3. The use of the double tiered approach for analysis in SuPyire is not used by Carlson, himself, though he does attempt a more traditional autosegmental approach.

4. Kaye et al (1985) introduce the notion of fusing two vowels located on two separate tiers.

5. This statement is debatable. Data will have to be scrutinized more closely to ascertain whether RS Delinking does take place on Mid-Low nouns or not.

6. A brief note should be made of the phonological behaviour of the final negative marker. When a verb ends in a High vowel (not tone), including a diphthongized verb ending in a High vowel, ən remains intact (see 1.). However, if the verb ends in a non-High vowel, the ə is deleted and the remaining vowel coalesces to the vowel of the verb (2). Almost all incomplete verbs end in i or u, and therefore do not trigger ə deletion. Conversely, most complete verbs end in a non high vowel, causing assimilation of the negative morpheme to the verb.

## 1. High final

- a. wu ya gbàrì mén                    'he is not meeting'  
 b. wu ya Pan mén    (from diphthong 'Paon') 'he did not come'

## 2. non High final

- a. wu ya gbàrà mén -> wu ya gbàre            'he did not agree'  
 b. wu ya wèé mén    -> wu ya wèée            'he did not look'

## CHAPTER 5 - TONE IN THE SUCITE NOUN PHRASE

### I. INTRODUCTION

UP until now, we have looked at the tone and morphology of the noun (Chapter 3), and have seen how the final tone of the noun alters the tone of the verb and verbal Particle (Chapter 4). It has been observed that High final nouns trigger the lowering of Mid tone verbs to Low tone (subregister High Delinking), while Mid final nouns raise Low tone verbs to Mid tone (subregister High tone SPreading), and finally, that Low final nouns trigger the sPreading of their Low tone onto High tone verbs (Low tone SPreading).

However, there has been no discussion so far about whether and how nominal tone can be affected by other constituents in the sentence, except in Chapter 1, where it was noted that nominal elements are not sensitive to the Preceding verbal elements.

This chapter focuses on how the tone of nominal elements within the noun Phrase affect each other. In addition, it was noted in Chapter 3 that the underlying tone of nouns could not be adequately examined out of context of the noun Phrase. Therefore, the discussion of the tonal interactions within the noun Phrase will also include an in depth study of underlying nominal tone. Finally, the discussion of the data in this chapter will lead to a more comprehensive examination of the ordering of tonal rules in Sucite.

The discussion will Proceed with an introductory section, mentioning that the semantic cohesiveness of the noun Phrase affects tonal Patterns and giving a general overview of the different tonal shapes of the noun. The next section will discuss the tonal Patterns that occur on a regular basis across word boundaries, as well as across morpheme boundaries within the complex noun. This section will include a thorough discussion of the underlying tonal nature of



the various types of Mid tone in the language, as well the dilemma of ordering the rules that are Proposed. The analysis Proposed will lead to a re-examination of the underlying tone of the Definite noun. Finally, the tonal behaviour restricted to complex noun structure will be discussed. Since these tonal alternations occur at the lexical level rather than at a Phrasal level, a major issue to be discussed here is what theoretical framework for rule ordering is sufficiently adequate for the Proposed tonal rules in Sucite.

#### A. The Effect of Noun Phrase Structure on Tonal Behaviour

The study of tone in the noun Phrase is restricted to the study of tonal interactions within a string of nominal, Pronominal, and nominalized elements. Just as the entire thesis is restricted to the study of tone in simple sentence structure, likewise complex noun Phrase structure is not within the scope of this chapter. A description of simple noun Phrase structure may be found in Chapter 1.

A string of nominal elements and their suffixes operate as a tonal unit in Sucite. This means that the various constituents of the Phrase can affect each other tonally. Pulleyblank (1983) and others have observed that Phonological rules operating at the lexical level are subject to more exceptions than rules operating at the Post lexical level. This type of generalization applies to the Sucite noun Phrase in that the more closely linked the nominal components are semantically, the greater the variety of tonal changes within the Phrase.

The most tightly knit noun Phrase is the complex noun that Possesses a single noun class suffix at the end of the word. Two or more morphemes are strung together before a suffix is added. These morphemes may be nominal, verbal, or adjectival in origin. The noun in (1a) Possesses two morphemes: the

first one is nominal and the second is verbal; the second morpheme of the noun in (1b) is adjectival. In each case, the suffix is underlined.

(1)	Indefinite	Definite	English
	nyù-tò- <u>ṛṛ</u>	nyù-tò- <u>ṛṛ</u>	(head-cover) hat
	nkù-cè- <u>ṛṛ</u>	nkù-cè- <u>ṛṛ</u>	(chicken-good) good chicken

Certain types of noun compounding are more productive than others. Those which are more productive exhibit a more stable pattern of tonal changes. Examples of these changes will be seen as the tonal rules are discussed.

The next level of complex nouns consists of two or more components where the first nominal component retains its indefinite suffix, but definiteness is marked only at the end of the word. The indefinite suffix is underlined in the column of indefinite forms in (2) while only the definite suffix is underlined in the second column. Note that the indefinite suffix is still retained on the first morpheme even when the entire word ends in a definite suffix.

(2)	Indefinite	Definite	
a.	nyù-ṛṛ- <u>fòlṛ</u>	nyù-ṛṛ-fòlṛ- <u>ṛṛ</u>	(head-chief) boss, champion
b.	ca-ṛṛ-nyè- <u>lṛ</u>	ca-ṛṛ-nyè- <u>lṛ</u>	(day-eye) sun
c.	cen-xa-yàrè- <u>xà</u>	cen-xa-yàrè- <u>ké</u>	(sauce-things) sauce ingredients

This group appears to exhibit slightly more tonal stability, though there are still a number of lexical anomalies.

Other constructions found in the noun phrase are more loosely linked, being composed of two or more separate nouns, each with their own noun class suffix. Tonal changes within these phrases are quite regular and form patterns easily defined by rules. Genitive constructions and Noun + number constructions fall

within this category, as shown in (3).

- (3) a. nàà-ŋɛ ɣba-ké 'the man's house DEF'  
 b. ɣba-ya sooní 'two houses INDEF'  
 c. ɣba-ŋyá sòòná-ŋɛ 'the two houses DEF'

This chapter will first deal with the more regular tonal behaviour found across word boundaries as well as across morpheme boundaries within the complex noun. Tonal behaviour which is restricted to complex noun structures will be discussed in the following section.

#### B. Nominal Tone

It was observed that verbs exhibited three levels of tone, High, Mid, and Low tone. Mid tone on verbs was analyzed, with the help of two tonal tiers, as Lh. Nouns were also seen to have three levels of tone. However, tonal composition of nouns appears to be more complex than that of verbs. First of all, contour tones are quite frequent. To date, these contour tones have been labeled High-Low, High-Mid, Mid-Low, and Low-High. Secondly, it was mentioned in Chapter 3 that there are two different types of Mid tone behaviour and two different types of Mid-Low tonal behaviour. At that point, all Mid tones were given the tentative representation of Lh. It will become clear here, however, that different underlying representations are required for each type of Mid tone. As a brief review, the tone patterns allowed on simple nouns are given below:

- |     |          |      |          |
|-----|----------|------|----------|
| (4) | High     | wérɛ | 'money'  |
|     | High-Mid | fyáa | 'fish'   |
|     | High-Low | jɔ   | 'pocket' |
|     | Mid      | ɣba  | 'river'  |

Mid Weak	caan	'market'
Mid-Low S	conlò	'younger sibling'
Mid-Low W	jà	'son'
Low	cà	'child'
Low-High	gbon-lá	'granary'

## II. TONAL BEHAVIOUR WITHIN THE NOUN PHRASE

In this section the behaviour of each tone is discussed separately. Since High and Low tone nouns present the least complications, they will be discussed first.

### A. High Tone Nouns

High initial nouns are never susceptible to tonal changes regardless of the tone of the preceding noun. The examples below show that the High tone noun, fálá-ke, remains High tone when preceded by Low, Mid, and High final nouns.

- (5) a. waà fáláke nya                    'he saw the rock'  
       b. mo fáláke                        'your rock'  
       c. wu ya wú fáláke nyàà        'he is seeing his rock'

Depending on their word final tone, High tone nouns can trigger different tonal changes on the following word. Recall that High-Mid nouns trigger subregister High tone spreading onto Low tone verbs, High-Low nouns trigger Low tone spread onto High tone verbs, while simple High tone verbs trigger subregister High tone lowering.

- (6) High-Mid waà fyáa tùxì    -> waà fyáa tuxí    'he fish vomited'  
       High-Low waà súlò gbéxálé -> waà súlò gbèxàlé 'he floor made'  
       High        waa fáláxá nya    -> waà fáláxá nyà    'he rock saw'

### B. Low Tone Nouns

While High initial nouns are not susceptible to tonal changes, Low tone nouns do become Mid when Preceded by a Mid tone. This includes any noun that begins with a Low tone, whether Low tone or Low-High. There are no Low-Mid tone nouns.

- (7) a. mo mɔ́lɔ́ → mo mɔlɔ                    'your rice IND'  
 b. mo ndòrɔ́xɔ́ → mo ndorɔxɔ            'your yam IND'  
 c. gba-yə sòdóní → gba-yə sooní¹ 'two houses'

This tonal change takes place primarily across word boundaries. There is only one known instance where the same process takes place within a complex noun whose first constituent retains the indefinite suffix:

- (8) a. sɔ-xɔ́ + kàfànlà-ŋà → sɔxɔ-kafaləŋa    'zebra, lit. bush donkey'

In Chapter 4, we proposed that Mid tone was composed of the tonal feature Lh. Placing the Primary and secondary features on two separate but linked tiers, it was proposed that a Low tone verb becomes Mid tone by simply spreading the secondary feature, h of the preceding Mid tone onto the following Low tone (High Spreading (35)). This was followed by a rule spreading the subregister High tone directly onto the segment (High Spreading to TBU (36)), creating a surface Mid-High tone, as shown below.

- (9) waà mo tɛ̀ → waà mo tɛ́                    'he showed you'
- 

H SPREAD

H SPREAD To TBU

The examples given in (7) and (8) show that a Low tone noun becomes Mid tone

after a Mid final element and not Mid-High, as is the case for verbs (see (9)). If one motivated the High SPread rule for nouns, but limited the High SPread to TBU as a rule that applied only to verbs, the spreading of the subregister High tone to the following Low tone would effectively produce a surface Mid tone, as shown in the examples in (10).

(10) mo mɔ̀lɔ̀ -> mo mɔ̀lɔ̀      'your rice IND'  
 |     |     |     |  
 L     L     L     L  
 |     |     |     |  
 h     h     h     h

H SPREAD

ɔ̀baya sɔ̀dɔ̀nɪ -> ɔ̀baya soonɪ      'two houses'  
 |     |     |     |     |  
 L     L     H     L     H  
 |     |     |     |     |  
 h     h     h     h     h

H SPREAD

mo mɔ̀lɔ̀-ɲe -> mo mɔ̀lɔ̀-ɲe      'your rice DEF'  
 |     |     |     |     |  
 L     L     H     L     H<sup>2</sup>  
 |     |     |     |     |  
 h     h     h     h     h

H SPREAD

### C. Mid Tone Nouns

Actually there are at least five types of Mid tone behaviour in Sucite. In Chapter 4, it was seen that the tonal behaviour of the verbal Particle, *ba*, differed from that of the Mid tone verb. It was never subject to tonal change and it triggered different tonal rules than either Mid tone verbs or Mid final nouns. This Mid tone Particle was proposed to be underlyingly [Low-high], with the square brackets indicating that the complex tone is always simplified on the surface as Mid tone.

It has already been mentioned that there are two types of Mid tone nouns. Both behave the same in that they both trigger High tone spreading onto Low tone verbs. However, when preceded by a nominal element, the one type normally does not change while the weak Mid nouns become High tone if preceded by a Mid or High final noun or Pronoun, and Low-High if preceded by a Low final word. This is illustrated below:

(11) Preceding Tone	Mid tone noun	Weak Mid noun
none	gba-ké 'house-DEF'	cɛn-ké 'sauce-DEF'
Mid mo 'your'	mo gba-ké 'your house-DEF'	mo cɛn-ke 'your sauce-DEF'
Low wurà 'his, emphatic'	wurà gba-ké 'his-EMP house-DEF'	wurà cɛn-ké 'his-EMP sauce-DEF'

Although there are no Mid-High tone nouns, there are a number of Mid-Low nouns, most of which undergo tonal changes, while a few undergo no tonal changes. Those Mid-Low nouns which undergo tonal changes behave very similarly to weak Mid nouns. As a result, they will be discussed along with weak Mid nouns below. Mid and Mid-Low nouns and weak Mid and weak Mid-Low nouns trigger tonal changes on following words in accordance with their word final tone. Mid-Low nouns trigger Low tone spreading onto High tone verbs, while Mid tone nouns spread their subregister High tone onto Low tone verbs. Below are a couple of examples showing these tonal alternations:

(12) Mid-Low triggers L Spread onto H verb

waà conlò wéé → waà conlò wèé 'he looked at a younger brother  
or sister'

Mid triggers H Spread onto L verb

waà Poru gbàrà → waà Poru gbará 'he met a daughter'

There is a third type of surface Mid tone, however. It does not show up on simple non-complex nouns, but rather, on a couple of first Person Pronouns and within certain complex noun structures. This type of Mid tone not only triggers a following weak Mid tone to become High tone, it also lowers to Low tone in this environment. The underlined vowels in the examples below illustrate this behaviour.

(13) òdà cenké → òdà cénke 'my sauce-DEF'

gbòn-lèké → gbòn-léke 'old granary-DEF'

This Preliminary description of the varying Mid tones in Suciite does show the necessity of undertaking the analysis of Mid tone features. Using a double tiered approach for tone features, Hyman (1985) suggests four ways to represent Mid tone:

Toneless - that is, segments not marked for tone are assigned Mid tone as a

default tone: X  
|  
M

Lh - where Low tone is in the Primary register and High tone is on the

secondary or subregister tier: X  
|  
L  
|  
h

Hl - where High tone is a Primary register tone and Low is found on

the subregister tier: X  
|  
H  
|  
l



LH - where both Low tone and High tone are found on the Primary register tier and linked to a single TBU: X



Let us, then, explore this Mid tone behaviour in an attempt to determine whether these possible underlying features may be feasible for Sucite. The following subsections discuss and analyze separately the behaviour of Mid and Mid-Low nouns, weak Mid and weak Mid-Low nouns, and the type of Mid tone found on first person pronouns. In anticipation of the analysis, it has been proposed that this latter type of tone is underlyingly Low-High.

#### D. Mid and Mid-Low Tone Nouns

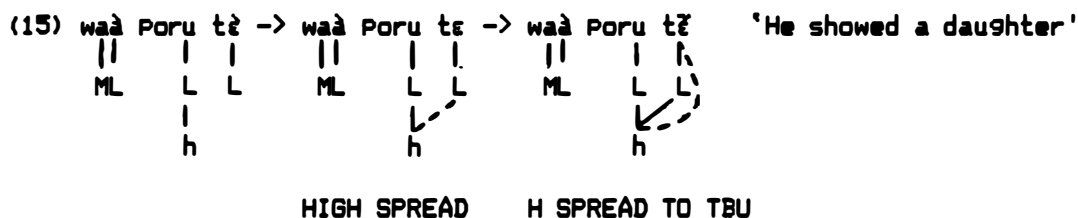
The first set of Mid tone nouns to be discussed are those which are simply labeled as having a Mid tone. These are the nouns which trigger High tone spread onto Low tone verbs and nouns but which themselves are seldom influenced by the tonal environment. If a Mid tone noun does alternate in tone, it shifts to Low tone, but never to High tone<sup>3</sup>. Likewise Mid-Low nouns in this category are not subject to tonal rules. Below are some examples of Mid tone nouns showing the lack of tonal change regardless of what precedes:

(14) Mid tone nouns		Mid-Low nouns
mo gba-ké	'your house'	mo conlà-ŋe 'your younger sibling'
karà gba-ké	'this EMPH house'	wurà conlà-ŋe 'his EMPH y. sibling'
ndòràx sba-ké	'yam house'	búbú conlà-ŋe 'a deaf mute's y. sibling'

In Chapter 4, it was tentatively proposed that all Mid tone nouns were underlyingly Lh. The preceding discussion has shown that it would not be wise

to posit the same underlying tone for all types of Mid tone nouns. The question facing us here is, what is the underlying nature of this type of Mid tone? In Chapter 3, an examination of nominal minimal Pairs revealed that no minimal Pairs contrasting Mid and Low tone nouns had been found (see pp.81-2). In Chapter 2, the fact that a very small ProPortion of minimal Pairs contrasting Mid and Low tone verbs were found, was used as evidence in supporting the hypothesis that Mid tone verbs and Low tone verbs were historically of the same tone (see pp.61ff). It has also been seen that Mid tone nouns and verbs both alternate with Low tone in certain environments. They are both capable of lowering to Low tone when followed by a High tone suffix (by means of the High Deletion rule (88) (see Ch.3, pp.117-127), whereas neither alternate with High tone. The hypothesis that Mid and Low tones may have had the same historical origin led to the development of tonal features that represented a historical tonal split of Low tone, where L1 was the lowered Low tone and Lh, the raised Low tone. Although it is difficult to discuss the tonal features of Mid tone without discussing it in relation to the other types of Mid tone, we shall tentatively posit the Mid tone noun (i.e. the type of Mid tone that rarely changes tone) as underlyingly Lh.

This Lh noun, then, can very easily trigger High tone SPreading onto Low tone nouns and verbs. The example below shows the subregister High tone of a Lh noun sPreading onto the Low tone of a verb as well as onto the final TBU of the verb.



The Mid-Low noun, according to this analysis would be LhL, underlyingly, as shown below:

(16) conlò            'younger sibling'  
 |    |  
 L   L  
 |   |  
 h   |

One may suggest that High Spreading should also take place word internally, creating a surface Mid tone noun. This, however, does not happen. High Spread must be limited then, to spreading across morpheme boundaries. As Low final nouns these Mid-Low nouns do trigger Low tone Spread onto High tone verbs, as illustrated by the derivation below:

(17) waà conlò wée → waà conlò wée → waà conlò wée 'he saw a younger sibling'  
 || | |    |    || | |    |    || | |    |    || | |  
 ML L L H    ML L L H    ML L L H    ML L L H  
 | |    | |    | |    | |    | |    | |    | |  
 h l    h l    h l    h l    h l    h l    h l  
 LOW SPREAD      L<sub>s</sub> DELINKING

#### E. Weak Mid and Mid-Low tone Nouns

Weak Mid (Mw) and weak Mid-Low (ML) nouns can have a variety of tonal shapes depending on the tonal environment. Because of the complexity of their behaviour, this section is somewhat lengthy, including not only an analysis of underlying tone, but also the formulation of rules and a discussion of rule ordering.

### 1. Description

Weak Mid and weak Mid-Low (henceforth referred to as Mid-Low\*) are discussed together here because of the similarity in their tonal behaviour. In fact, the only time they differ in tonal structure is in initial position of a noun phrase as well as in citation form. Their differing tonal structure in these positions also leads them to trigger different rules. In the examples below, note that the Mid-Low noun, karà, triggers Low tone Spreading onto High tone verbs (18a), while the weak Mid noun, cenxe, appears to trigger subregister High tone spreading onto Low tone verbs (18b), as do all Mid final nouns.

(18)a. Mid-Low karà 'meat'

waà karà kà /ká/ 'he chewed meat'

wu ya karà kàá /káá/ 'he is chewing meat'

b. Weak Mid cenxe 'sauce'

waà cenxe tẽ /tẽ/ 'she showed sauce'

wu ya cenxe teé /tèé/ 'she is showing sauce'

However, when subject to tonal changes, weak Mid and Mid-Low nouns undergo the same changes in identical tonal environments. These changes, tentatively labeled Raising and Low tone Spreading, are described below. A full analysis of these alternations will follow the description in the discussion involving the analysis of the underlying features for weak Mid and Mid-Low tones.

(1) Raising: The first tonal change to be described here is what is tentatively called Raising. When preceded by weak Mid, Mid, or High final nouns,

---

\* Weak Mid-Low nouns being much more numerous than regular Mid-Low nouns, discussed in the preceding section, will be referred to as simply Mid-Low from now on, while the regular Mid-Low nouns will not be referred to again in this thesis.

both weak Mid and Mid-Low nouns are High tone, as can be observed in the examples below:

(19)a. Poru so-xo → Poru sóxô 'a daughter's mortar IND'

M + Mw          M    H

b. Poru ka-rà → Poru kárâ 'a daughter's meat IND

M + ML          M    H

c. taxə mexê → taxə méxê 'a tree's name'

Mw + ML          Mw    H

Mw + MW - No examples

d. gbònlís + mexê → gbònlís méxê 'granary's name'

L H + ML          L H    H

e. tùú- tane → tùú-tánê (hoe + small tree) 'hoe handle'

LH + Mw          LH    H

The same Raising behaviour can be found in complex nouns. The examples below show that if the first root of a complex noun is weak Mid, High or Mid tone, it will raise any immediately following weak Mid or Mid-Low noun root to High tone.

(20)a. òmélɛ + juu → mejú-lô 'speech'

Mw + Mw          M    H

voice    saying, words

b. gba-xa -balà → gbabálê 'room of a house'

M + ML          M    H

c. ntara + folò → ntarafólò 'land chief'

Mw ML

d. cen-xe + yara-xa → cenxəyárəxə 'sauce ingredients'

Mw Mw

sauce things

This derived High tone affects the tone of following morphemes in the same way as any other High final noun. Thus any rule ordering would have to reflect the fact that this 'Raising' takes place on a morpheme before the tone of that morpheme triggers any rules on following morphemes. Several examples of such a sequencing of tonal behaviour are shown below. In the first set of examples, (21), the definite suffix becomes Mid tone after the derived High tone (a and b), just like definite the suffix becomes Mid tone after any derived High tone (c).

(21)a. mo so-ké → mo sóke 'your mortar-DEF'

M ML H M H M

b. mo kaàté → mo káàte 'your meat-DEF'

M ML H M H M

c. fálá-ké → fálá-ke 'rock-DEF'

H H

After a derived High tone, other weak Mid and Mid-Low morphemes and nouns will also become High tone. Thus, as shown below, Raising can occur iteratively across the phrase.

(22) mo nyim-balà-ké → mo nyím-balà-ke → mo nyím-bálá-ke 'your night'

M Mw ML M H ML M H H

Raising

Raising

Mid tone verbs are lowered to Low tone in Phrase final Position through High Delinking, if Preceded by a derived High tone (23a), as they do following any High final noun (23b):

(23)a. waà mo karà nya → waà mo kárá nya → waà mo kárá nyà 'he saw your  
 Raising High Delinking (44) 'meat'

b. waà fáláxá nya → waà fáláxá nyà 'He saw a rock'  
 High Delinking (44)

(ii) Low tone sPreading: Low tone sPreads onto High tone verbs. Therefore, one would expect that Low tone would also sPread onto High tone nouns. This however, is not the case, as shown below:

(24) wurà fáláke → \*wurà fálàké 'his REF rock' rather: wurà fáláke  
 High tone on nouns is one of the most stable tones in Sucite. It is never susceptible to tonal change.

Low tone SPreading occurs instead on weak Mid and Mid-Low nouns. When a weak Mid or a Mid-Low noun is Preceded by a Low final noun or Pronoun, the noun acquires a Low-High contour, as illustrated by the examples below:

(25)a. nàà so-xo → nàà sòxó 'a man's mortar'  
 b. nàà ka-rà → nàà kàrú 'a man's meat'  
 c. nàà karaxà → nàà kàràxú 'a man's inheritance'  
 d. gbàrà-tìlè-xe → gbàrà-tìlè-xé 'top of a door'

The examples in (26) show that Low SPread can also occur across morpheme boundaries word internally. Within complex noun structures, Low tone SPreading can occur on Mid-Low nouns but no examples of Low SPreading have been found on

## weak Mid nouns-

(26) L + Mw none found

L + ML

- a. nàà + nyelè (man + eye) → nànyèlè 'friend'  
 b. sàsàn + kuddò (blood + road) → sàsànkùdò 'vein'  
 c. kànʔà + folò (village + chief) → kànʔàfòlò 'village chief'

ML + Mw none found

ML + ML

- a. caŋà + nyelè (day + eye) → caŋànyèlè 'sun'  
 b. nyeʔè + folò (face + chief) → nyeʔèfòlò 'older brother'  
 c. caŋà + tó (day + cover (vb.)) → càntòŋò 'umbrella'

When a noun has been subject to Low tone spread, the resulting final High tone (of the Low-High contour) triggers the same rules as any High final noun. Again, as with Raising, rules must be ordered such that Low tone Spreading must occur on the morpheme involved before the tone of that morpheme can trigger tonal changes on any following morphemes. For example, once Mid-Low or weak Mid nouns acquire a Low-High contour, the final High tone can then lower the Mid tone verb to Low tone (High Delinking) as do any other High final nouns. The examples below show both a weak Mid (b) and a Mid-Low (a) noun, having acquired a Low-High contour through Low Spread, lowering a Mid tone verb to Low tone in Phrase final Position.

- (27) a. nà-nyelè → nànyèlè 'friend'  
       waa nànyèlé nya → waa nànyèlé nyà 'he saw a friend'  
 b. nàà soxo → nàà sòxò 'his-REF mortar'  
       nàà sòxó nya → nàà sòxó nyà 'See his REF mortar!'



In summary, then, weak Mid and Mid-Low nouns trigger High tone spread and Low tone spread respectively when not affected by tonal changes. However, when both become High tone through what has tentatively been called Raising, or Low-high by means of Low tone Spreading, they behave as High final nouns, lowering Mid tone verbs (High Delinking) to Low tone in Phrase final Position, and raising following weak Mid and Mid-Low nouns to High tone. The analysis given below will examine the repercussions of these tonal changes more closely and attempt to propose a viable solution.

## 2. Analysis

There are at least two possible ways to analyze the behaviour of weak Mid and Mid-Low nouns. One is to consider them underlyingly High tone since their tonal behaviour is very similar to that of High tone verbs. A second possibility is to posit an underlying Mid tone of some type that would be subject to Raising and Low tone spreading rules.

### 2a. Mw and ML as Underlyingly High Tone

The first suggestion is that weak Mid and Mid-Low nouns are underlyingly High tone, but become Mid or Mid-Low tone in certain environments. This idea was prompted by the fact that their tonal behaviour is very similar to that of High tone verbs. They are both subject to Low tone Spreading and are High tone if almost anything precedes them within the noun phrase. The only time they are Mid or Mid-Low tone is when they are in initial position of a noun phrase.

This lowering of High tone may, in effect, be a nominalizing feature. Evidence of this surfaces when High tone verbs are nominalized. No High tone verbs become a stable High tone when nominalized. Rather, in (28), they are

shown to be lowered either to Mid, weak Mid or Mid-Low tone:

(28) a. Mid	ημśś	'sleep'	->	'ημκλα-κ	'nightmare'
b. Mw	l6x6	'hear'	->	ηδα-xe	'ear'
	9b6	'kill'	->	9buun	'funeral'
c. ML	γά	'to be ill'	->	ya-mà	'illness'
	kán?án	'be tired'	->	kan?a-rà	'fatigue'

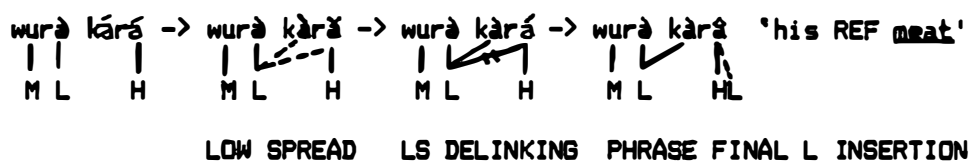
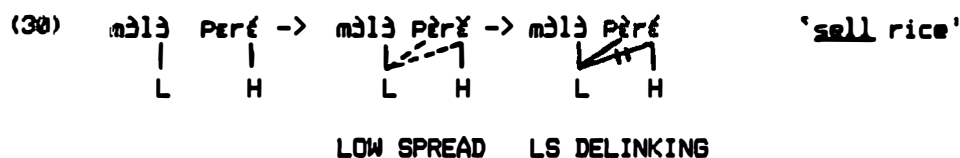
If we suppose that weak Mid and Mid-Low nouns were underlyingly High tone however, we immediately run into one potential hurdle. There already exists a set of High tone nouns in Sucite with the same Pitch level as High tone verbs, which are never susceptible to any tonal rules. As shown in (29), High initial nouns never lower to Mid or Mid-Low, they do not trigger the lowering of the tone of *ηδα*, 'my' (to be seen shortly as a matter of Right Side Delinking of a Low-High contour) nor are they subject to the Low tone Spreading Rule, all in contrast to the behaviour of weak Mid and Mid-Low tone nouns:

(29) <u>High Nouns</u>		<u>ML and Mw Nouns</u>	
fáláke	'the rock'	kaàte	'the meat'
		cenké	'the sauce'
ηδα fáláke	'my rock'	ηδα káàte	'my meat'
		ηδα cénke	'my sauce'
wurà fáláke	'his EMPH rock'	wurà kààté	'his EMPH meat'
		wurà cénké	'his EMPH sauce'

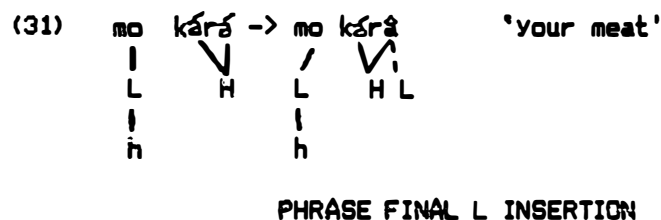
In effect, there seems to be a tonal barrier preventing any tonal rule from applying to High tone nouns. It must be noted that these High initial nouns make up a very small number of the data sample and that more than half can be clearly identified as Loan words. All purely High tone nouns, with one possible

exception, are Loan words. One possible historical development is that the original set of High tone nouns lowered to Mid tone in certain environments. High tone nouns introduced to Sucite, however, were not made subject to this tone lowering phenomenon and as a result, a distinctive tonal contrast between High and Lowered High tone nouns developed.

Should then, this set of lowered High tone nouns be represented as High if there is already a set of High tone nouns? If these surface High tone nouns can be specially marked so as not to undergo any tonal rules, weak Mid and Mid Low nouns can then be posited as underlyingly High tone and as a result, would be subject to the Low tone spreading rule in just the same way as High tone verbs are. Below are examples of Low Spread on both a verb and a noun:



After Mid and High final nouns and Pronouns, this underlying High tone would remain High tone, just as high tone verbs remain High in the same environments, thus eliminating the need for a Raising Rule, as shown below.



How then would one account for the lowering of this High tone to Mid tone? Recall that this 'lowering' Process takes Place when an underlying High tone noun is in Phrase initial Position. One could suggest that there is a split in the High tone register at this Point. While High tone verbs remain High tone, the nouns in Phrase initial Position are designated to a lower level of the High tone register. The splitting of the High tone register is, according to this approach, motivated by the fact that High tone nouns are in Phrase initial Position. Therefore a rule would have to be devised to lower High tone at this Point. This Process can be represented by inserting a Low tone in the subregister tier, to be stated as follows:

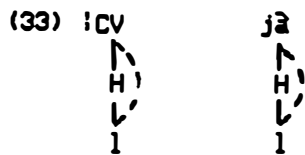
(32) PHRASE INITIAL LOW TONE INSERTION

A High tone noun in Phrase initial Position is marked for Low tone on the subregister tier:  $H \rightarrow Hl / \text{ : } \_\_\_\_\_ \text{ : } = \text{Phrase initial Position}$

a.  $\text{: cenxε} \rightarrow \text{canxε}$       'sauce'

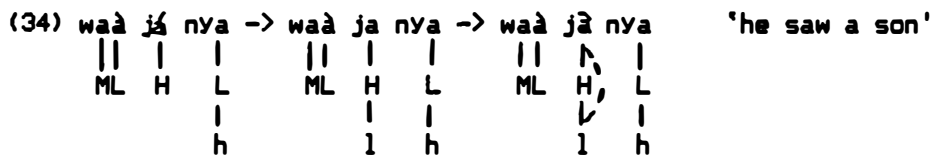
H	H
	l

It has been assumed until now that weak Mid and Mid-Low nouns have the same underlying configuration. The question remains, however, as to how to distinguish between the two, so that when l-insertion occurs, the correct surface form can result. One way to deal with this dilemma is to allow the subregister low tone to link to the segmental tier, thus creating a Mid-Low tone. The subregister Low tone linked to High tone creates a Mid tone while this same Low tone linked independently to the segmental tier creates a surface Low tone, resulting in a Mid-Low contour.



A certain set of nouns, then, are lexically marked for this linking of the subregister Low tone to the segmental tier, while another set (the weak Mid nouns) are blocked from this linking process.

The Problem with this Procedure is that while this subregister Low tone linking to a TBU is lexically governed, the environment which Provides for this Low linking (namely, linking a subregister Low tone to a Primary tier High tone) is created by way of the Phrase level rule, Low tone Insertion. Thus the Phrase level rule must take Place before the lexically marked Low tone linking can occur, as shown below:



LOW INSERTION    LOW LINKING TO TBU

Essentially, there needs to be information in the lexicon that will distinguish between those whose Phrase initial form is Mid and those which are Mid-Low. However, it does not seem Possible that the lexicon can Predict how a subregister Low tone can behave if it is not even specified in the lexicon.

One Possible way to solve this Problem is to Posit a slightly different underlying form for Mid-Low nouns: HL. Phrase level l-insertion would subsequently yield the correct output for both weak Mid and Mid-low nouns. A subregister Low tone linked to a High tone would yield a Mid tone while a subregister Low linked to a HL would yield Mid-Low, as shown below:

(35) weak Mid:      CV                  Mid Low:                  CV  
                          |                                  ^  
                          H                                  HL  
                          |                                  V  
                          l                                  l

That Mid-Low nouns are underlyingly High-Low is not entirely inconceivable when observing the cognates of Mid-Low nouns in certain other Senufo languages. Although numerous other languages such as Cebara also exhibit this Mid-Low contour, Nafara of Bondoukou, which appears to have only a two tone level distinction, provides a High-Low contour for these same cognates.

(36) Sucite	Cebara	Nafara of Bondoukou	
njidè	nyinè	nílì	'tongue'
kɛɛxè	kɔlò	kéè	'hand, arm'
farè	firè	fírè	'excrement'

(Mensah, 1983)

It is possible, therefore, that Sucite Mid-Low nouns are underlyingly High-Low tone. These underlying High-Low nouns would be different from the marked High-Low nouns which never submit to tonal rules.

This High-Low representation does create problems for rule formulation, however. The final low tone would have to be deleted whenever the noun is preceded by another nominal of any tone so that these HL (Mid-Low) nouns can become completely High tone. The example, (37a) shows that this Low Deletion is required after Mid tone nouns, while (37b) provides an illustration of Low Deletion at the output of Low tone Spread.

(37) a. mo kárà → mo kára → mo kára      'your meat'

L	H	L	H	L	H
h		h		h	

LOW DELETION      LINKING

b. nkù-kòrà → nku-kàrá → nkù-kàrá 'chicken meat'

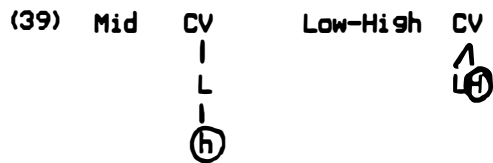
LOW SPREAD    LOW DELETION    LINKING AND RS DELINKING

In fact, the only Place where the Low of the supposed High-Low contour is found is when the noun is in Phrase initial Position, the very same environment in which Phrase Initial Low tone insertion (32) is motivated. Any time that the Low tone insertion rule is not in operation, then, the Low tone of the High-Low Contour is also deleted. The obvious connection between these two rules however, is not made explicit in the derivation of the rules. If the subregister Low tone and the Low tone of the High Low contour are Present or absent in the exact same environments, Perhaps one might speculate that they both may have the same underlying source.

A second Problem for the underlying High tone hypothesis is the fact that these High tones lower to Low tone in certain lexical environments. Recall that weak Mid, Mid-Low, Mid, and Low-High noun roots were lowered to Low tone when followed by a High initial TYPE II suffix.

(38) cî - xále → cî-xále            'thighs'  
       nci - xále → nci-xále            'balaphons'  
       lǒ - xálo → lǒ-xálo            'shea nuts'

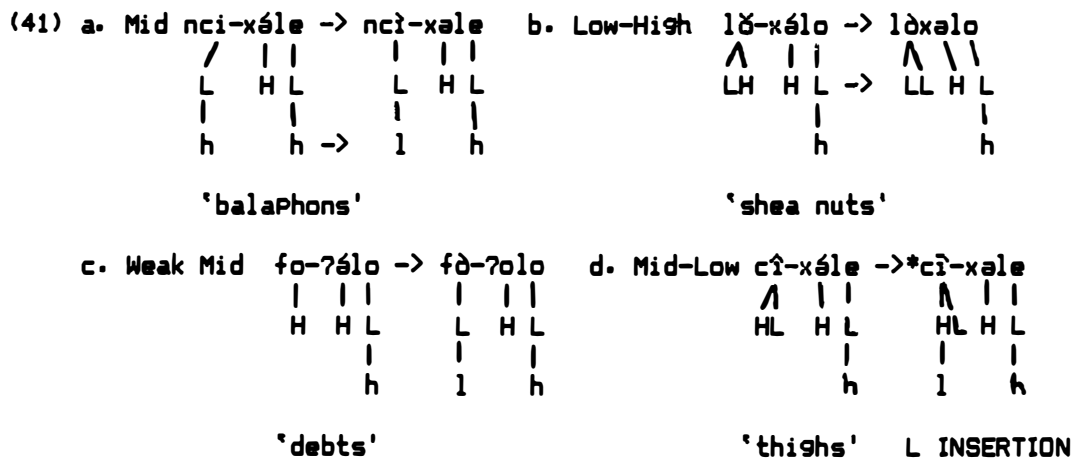
It was suggested in Chapter 3 that this lowering could be accounted for if all four tones possessed both a High tone and a Low tone in their underlying configuration. The simple Process of High deletion would then Produce the same output for all of these tones, as illustrated below for Mid and Low-High tones. High Deletion would leave only a Low tone linked to the TBU.



If weak Mid was Posited as underlyingly High tone and Mid-Low as High-Low, the rule of High deletion would yield a Low tone for HL nouns. However, High Deletion would yield a toneless TBU for weak Mid nouns if they are analyzed as underlyingly High tone at the lexical level.



This Problem could Potentially be overcome by introducing a dissimilatory rule, whereby a High tone on any tier is converted to Low tone when followed by a High tone suffix:  $\langle H, h \rangle \rightarrow \langle L, l \rangle / \_ \_ \_ + H$ . This rule would effectively Produce correct outputs for Mid (Lh), Low-High, and weak Mid (H) nouns (see (41)). Mid-Low nouns, however, would be blocked from this lowering because their High tones are not adjacent to the High tone suffix (41d).





This entire approach continues to assume, of course, that the changeless High tone nouns are barred from the tonal rule Processes and are therefore not susceptible to High tone Lowering.

Verbs also complicate this dissimilation rule. Recall that Mid tone verbs are lowered to low tone before the High tone incomplete suffix. The solution proposed in Chapter 2 involved the deletion of a subregister High tone of the Lh verb suffixed by a High tone morpheme. If the H->L rule was introduced instead, the correct output would be produced for Mid tone verbs (see (42a)). However, this rule would also incorrectly apply to High tone verbs, lowering High tone verbs to Low tone before incomplete suffixes (42b). This, in effect, does not happen. High tone verbs, as a general rule, remain High tone when an incomplete suffix is added.

(42)a.M verbs	CV	su-ú	->	sù-ú	'be buying'
	L	L H		L H	
	h -> l	h		l	

b.H verbs	CV	pérí-í	->	*pèrè-í	'be selling'
	H -> *L	H H		L H	

Positing weak Mid and Mid-Low tones as underlyingly High tone does create some problems for analysis. First of all, we have to separate the changeless High tone nouns and mark them ineligible for tonal change. Secondly, the positing of a underlying High tone poses problems in how to distinguish between weak Mid and Mid-Low tones in the underlying structure and still allow for the formulation of satisfactory rules. Finally, the formulation of a H->L rule for lowering of weak Mid and Mid-Low noun roots to Low tone is found to be lacking

a full generalization: High tone verbs must be excluded from the rule application and Mid-Low nouns which should also be lowered pose difficulties for the formulation of the H->L rule. Although these problems could perhaps be accommodated within the underlying High tone hypothesis, an alternative solution is sought.

### 2b. Mw and ML as Underlyingly Hl

An alternative to positing an underlying High tone in the lexicon and motivating a phrase level rule inserting a subregister Low tone is to mark the subregister Low tone in the lexicon, itself. Mid-low and weak Mid nouns would now be considered underlyingly Hl (or a lowered High tone) rather than simply underlyingly High tone. Where the preceding analysis posited both the unchangeable High tones and the weak Mid nouns as underlyingly High tone, distinguishing the two only by blocking the unchangeable High tone nouns from undergoing any rules, this particular analysis distinguishes the two tones by positing different underlying features for each. Thus the unchangeable High tone nouns bear the feature, Hh, that is, High tone is posited on the primary tier, as well as on the subregister tier. The weak Mid noun, then, is considered the lowered High tone, Hl, with a Low tone on the subregister tier. Both of these designations are illustrated below.

(43) High tone nouns

X  
|  
H  
|  
h

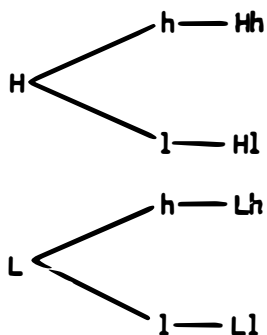
weak Mid and Mid-Low

X  
|  
H  
|  
l

This development now sees both the High tone and the Low tone register split

into two tonal levels (see (44) below). Recall from Chapter 2, that Clements' Proposed tone feature system allows for this Possibility. However, these splits in Sucite do not represent four Phonetic levels of tone, as might be suspected. Rather, it has been Proposed that the regular Mid tone is underlyingly Lh, while weak Mid, which is at the same Pitch level as the regular Mid tone, is Posited as being Hl. Hyman (1985), Proposed both Hl and Lh as Possible underlying representations for Mid tone (see p.209-10). Clements' system (as shown below) does not exclude this Possibility of the two underlying tones having the same Phonetic Pitch.

(44) Clements' Tone Feature System



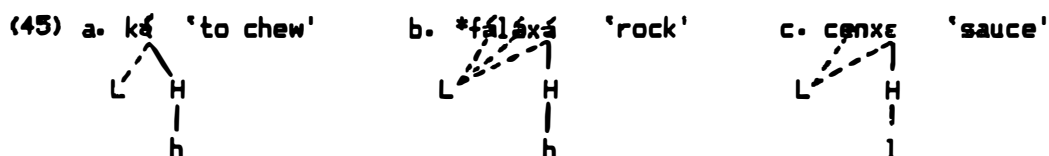
Furthermore, it is entirely Possible that the raised Low tone and the lowered High tone were at one time in the history of the language, distinct in Pitch, but that they lost the Pitch distinction as the tonal system of Sucite developed\*.

This Proposed solution will require, however, the adjustment of tonal rules. In addition to modifying Low Spread so that it will spread onto Hl nouns as well as High tone verbs, a rule will have to be devised that will raise Hl tone to Hh tone when Preceded by High or Mid tone nouns. The issue of how to distinguish weak Mid and Mid-Low nouns using the same underlying representation

of Hl will also be tested and discussed.

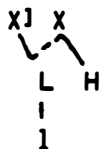
(i) Low tone Spreading

Let us first investigate how this new development alters the formulation of the Low Spreading rule. Previously, it was stated that Low tone spreads onto High tone verbs (a). Here we find that Low tone spreads onto Hl nouns (c) but not High tone nouns (b), as shown below.



Since High tone nouns do not allow Low tone Spreading, they must be barred from any application of the Low tone Spread rule. Once this constraint is placed on the rule, the earlier formulation of the rule given in Chapter 4 would still apply here, since, as shown below, the rule does not stipulate what subregister tone must be linked to the Primary level High tone.

(11) LOW SPREAD: When a Ll tone is followed by a High tone across a morpheme boundary, the Low tone spreads to the right.



As a result, both the Hl and Hh tone words can be subject to the Low tone Spreading rule. However, while Hh verbs present no problems for the analysis as given so far, the Low tone Spreading rule, as stated above does not, in itself,

yield a correct output for Hl nouns. Low tone spreading onto a Hl tone produces a Low-mid contour tone. However, there are no Low-Mid contours in Sucite which are a result of a Low Spread rule. Recall from examples in (25) and (26) that Low tone spreading onto weak Mid and Mid-low nouns yields a Low-High tone, the very same tonal contour which results when a Low tone is spread onto a High tone verb. A very simple way of acquiring a Low-High contour after spreading Low tone onto a Hl noun is to trigger a rule deleting the subregister Low tone. This rule would be stated as follows:

(46) SUBREGISTER LOW DELETION: Delete a subregister Low tone linked to a High tone if a Low tone from the left is linked to the same segment as the Hl tone.



Once the subregister Low tone is deleted, the High tone is left with no specification of tone on the subregister tier. Any tone which is unspecified at the subregister level will by default, acquire the same tone as found at the Primary register level. This shall be called subregister specification (SS).

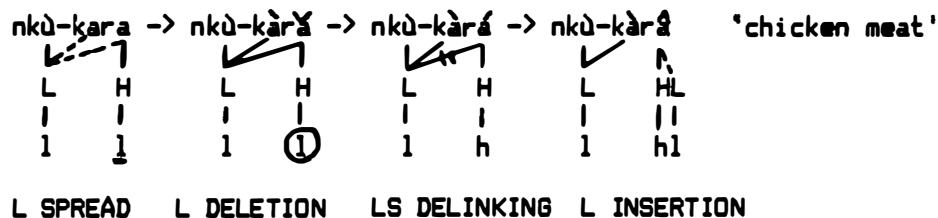
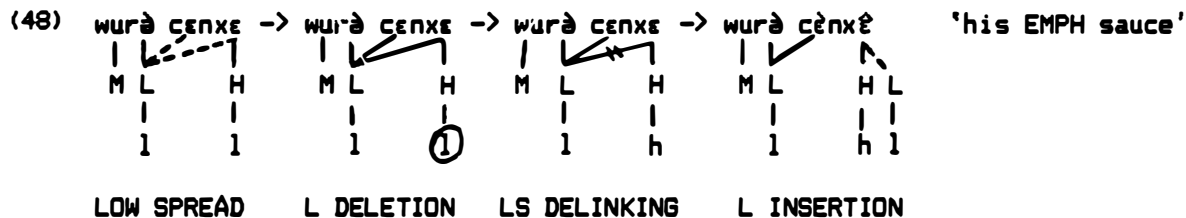
(47) SUBREGISTER SPECIFICATION

$\alpha H \rightarrow \alpha Hh$

In the derivation below (48), as well as in succeeding derivations of rules, Subregister Specification will apply automatically whenever a rule leaves a tone on the Primary tier without a subregister tone. Since the application is

automatic, it will not be necessarily shown as a separate step in the derivation.

Therefore, a H1 noun which is subject to the Low tone Spread rule would have the following derivation:



The motivation for Low Deletion is not totally clear at this point. Possibly it is some type of dissimilatory process, forcing a Pure High tone when it is linked to the same segment as a Low tone. At any rate, subregister low deletion must take place immediately following a Low tone spreading rule.

#### (ii) High Tone Spreading

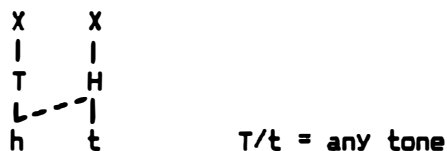
The second tonal alternation that must be dealt with here is what was referred to earlier as Raising. This is the case where weak Mid and Mid-Low nouns become High tone when preceded by Mid or High tone nouns or Pronouns. If weak Mid and Mid-Low nouns are now considered underlyingly H1, motivating the deletion of the subregister Low tone would produce, in a very simple way, a High tone. However, in this case, there is no Low Spreading rule to trigger Low

deletion. Therefore one is compelled to determine the generalization that allows for L deletion after both Mid and High tones. In order to do this, let us look at the underlying tone of Mid and High tone nouns. It has already been seen that High tone nouns are underlyingly Hh, while Mid tone nouns which are not susceptible to tonal changes (as are Hl nouns) are considered to be Lh. In examining both underlying tones, it is seen that both are specified for High tone on the subregister tier.

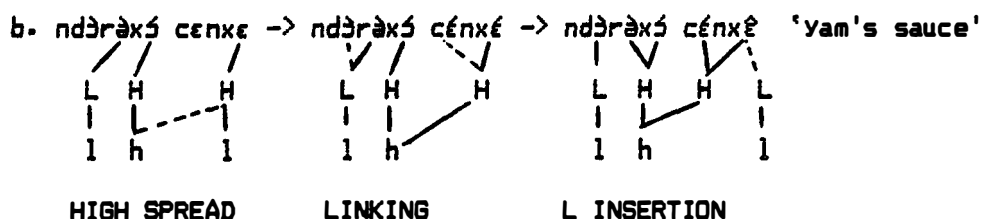
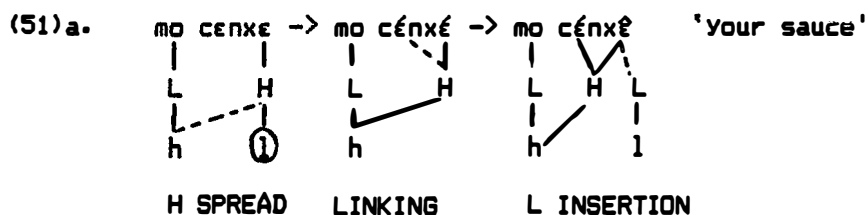
(49)	fóláxá	'rock'	gbaxa	'house'
	H		L	
	h		h	

If placing either before a Hl noun triggers Low deletion, it would not be difficult to postulate that this Low tone deletion was motivated by way of the subregister High tone of a Hh or Lh noun spreading onto the Hl tone. Such a process is illustrated below in (50). Since it is not feasible to allow two subregister tones to be linked to a single tone on the Primary tier, the spreading of the subregister High tone would automatically call for the deletion of the subregister Low tone. The rule might be stated as follows:

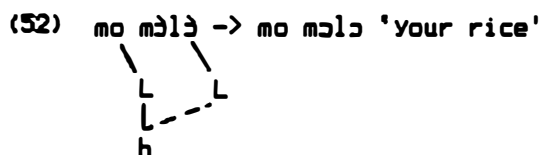
(50) HIGH SPREADING: Spread a subregister High tone onto a following Primary tier High tone and delete the subregister tone linked to that High tone.



This Particular High spreading rule would have the following application:



Recall, however, that the rule of High tone spread has already been introduced. In the environment where Low tone becomes Mid tone after Mid tone nouns, it has been proposed (earlier in this chapter as well as in Chapter 4 (35)) that the subregister High of the Lh tone spreads to the following Low tone, as shown below:



In all cases of High spreading described here, it does seem that there is a tendency for a raised tonal register to raise the register of the tones that follow. For example, a raised Low (or Lh) raises a lowered High tone as well as Low tones, and a raised High tone (Hh) raises following lowered high tones. Thus it may be possible to posit a generalized rule, allowing any subregister High tone to spread to the following Primary tier tone regardless of what that tone may be.



Seeing the value of implementing a high spread rule in the examples above, it is necessary, then, to examine the scope of the spreading of the subregister high tone onto Primary register tones. Below is a list of possible environments where the subregister High tone could technically spread.

(53) a. mo cén-ke      b. mo fálá-ke      c. ndà cén-ke      d. ñda fálá-ke  
       'your sauce'    'your rock'      'my sauce'      'my rock'

L    H  
 L---|  
 h    l

L    H  
 L---|  
 h    h

H    H  
 L---|  
 h    l

H    H  
 L---|  
 h    h

e. mo mólè-ñé  
       'your rice'

f. mo gba-ké  
       'your house'

g. ñda mólè-ñé  
       'my rice'

h. ñda gba-ké  
       'my house'

L    L  
 L---|  
 h    l

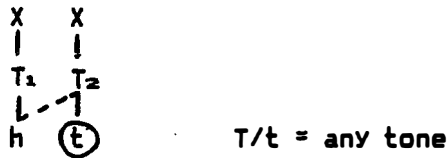
L    L  
 L---|  
 h    h

\* H    L  
 L---|  
 h    l

H    L  
 L---|  
 h    h

Above are all the conceivable examples where a subregister high tone could possibly spread onto a following tone. High tone spreading marked in bold would effectively change the tonal structure of the following word. Those not marked in bold are redundant high spreading processes where no tonal change would take place as a result of the spread. The example in (53g) shows one environment where high tone spread produces an incorrect response, however. A subregister high tone must not be allowed to spread onto a Low tone if that subregister high is not already linked underlyingly to a Low tone. In other words, a subregister high of a Lh noun can spread onto a Low tone (see (53e)) but the same of a Hh noun cannot. In order to allow for this exception, the high tone spread rule must be revised as follows:

(54) HIGH TONE SPREAD: Spread any subregister High tone onto the following Primary register tone, T<sub>2</sub> and delete any subregister tone previously linked to T<sub>2</sub>.



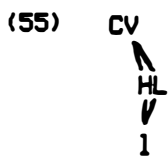
Condition: If T<sub>2</sub> is Low tone, then T<sub>1</sub> must also be Low tone.

(iii) Distinguishing Weak Mid and Mid-Low Nouns

It has been assumed until now that weak Mid and Mid-Low nouns have the same underlying tonal features because of the same behaviour they exhibit when subject to both the Low and High Spreading rules. As a result both have been considered to be underlyingly Hl. However, we already know that when not affected by tonal rules themselves (that is, when in phrase initial position) weak Mid nouns trigger different rules than Mid-Low nouns. Somehow this difference must be accounted for in the underlying representations of the two tones.

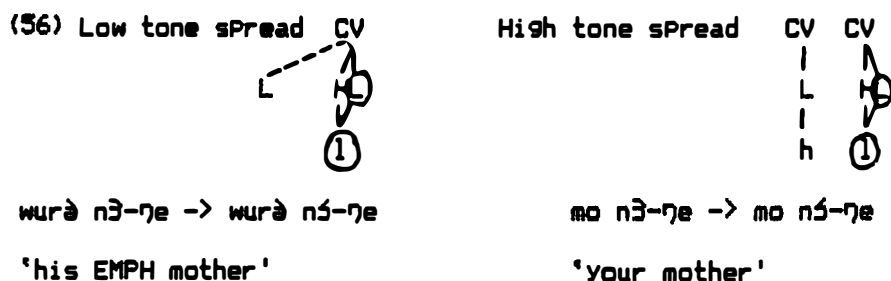
(iv) Mid-Low Tone and Independent Low Tone Linking

It was proposed earlier that Mid-Low nouns were underlying High-Low. If one lexically links a subregister Low tone to both, the final tonal output will be Mid-Low.

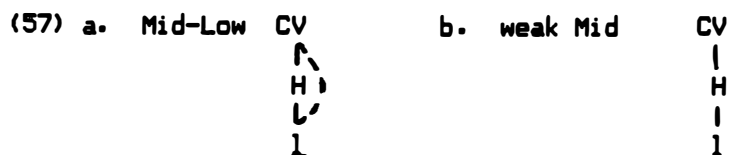


The Problem with this Proposed underlying representation is that every time

the subregister l is deleted after both Low tone sPread and high tone SPread, the Primary register L must also be deleted, as shown below in (56). This makes one wonder whether both the Low tone of the Primary register and the Low on the subregister tier are actually one and the same tone.



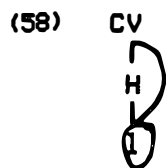
One suggestion for the representation of Mid-Low tone is to posit a simple Hl tone and then to propose a rule linking the subregister Low tone directly to the segmental tier whenever the Hl tone is in phrase initial position. This final independent linking effectively creates a Mid-Low contour tone, as shown below in (57a). Weak Mid nouns, on the other hand, would also possess an underlying Hl tone, but they would not be subject to this independent linking of the subregister Low tone (57b). Thus, Mid-Low nouns would be marked in the lexicon for this extra linking in phrase initial position, while weak Mid nouns would not. In this analysis, we shall represent this marking by underlining the subregister Low tone. H<sub>l</sub>, then, refers to the Mid-Low tone while Hl signifies the weak Mid tone.



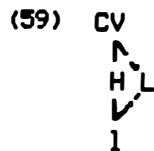
This notion of independent linking of the subregister tier to the segmental

tier has already been introduced earlier and briefly discussed in Chapter 4. Recall that subregister High tone Spreading to the segment was introduced to create a Mid-High tonal contour on underlying Low tone verbs (see pp.161ff for discussion). The reason for Proposing this tone feature representation here is to be able to somehow capture the generalization that exists between weak Mid and Mid-Low nouns and yet still account for their differing tonal shape in phrase initial position. If both can be represented as Hl (weak Mid as Hl and Mid-Low as H<sub>L</sub>), then both can be subject to Low spreading and high spreading as well as undergo the subregister low tone deletion in the appropriate environments.

If the underlying representation for Mid-Low tone, H<sub>L</sub>, can be lexically specified to link the subregister low tone independently to the segmental tier, deletion of the subregister Low tone would automatically delete any trace of Low tone of the Mid-Low contour because its source, the subregister Low tone would have been deleted. This is illustrated below:

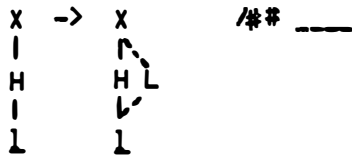


It was mentioned earlier in Chapter 4, that the process of linking the subregister Low to the segmental tier included passing through the Primary register tier. This 'passing through' would effectively transform the Low tone into a Primary register Low tone: l → L.

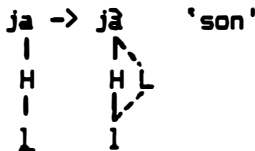


Let us Propose the following rule:

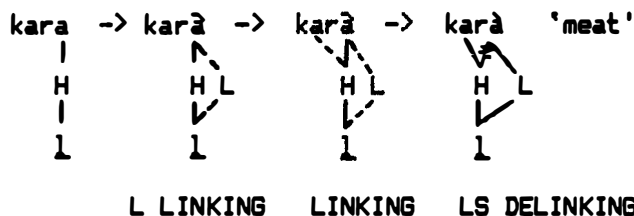
(60) INDEPENDENT SUBREGISTER LOW TONE LINKING: Link the subregister Low of a marked H<sub>L</sub> tone to the final TBU of the morpheme when it is in Phrase initial Position.



The application of the Independent Low Linking rule on a single TBU is a fairly simple procedure:

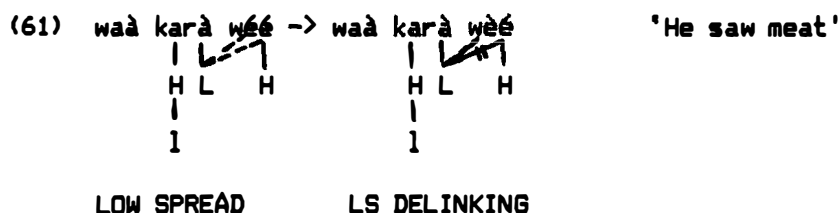


On a word with two or more TBU's, further linking and delinking rules are required, as shown below:



With Right to Left linking, H<sub>L</sub> is first linked to the final TBU, then the subregister l is independently linked to that same TBU. H<sub>L</sub> then links to the first TBU and finally the contour simplification process of LS Delinking takes place and H<sub>L</sub> delinks from the final TBU to leave it to the independently linked Low tone.

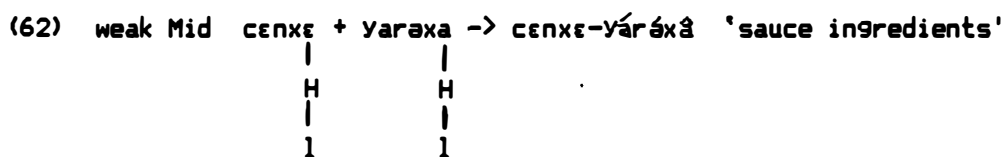
Once this Independent Low Linking rule takes place, then, H<sub>L</sub> nouns can trigger the Low tone spreading rule, as shown below:



If Low Linking did not take place before Low Spread, no Low Spreading would be allowed after H<sub>L</sub> nouns. As a result, Low Linking must take place first before Low tone Spreading. The reader is asked to refer to the subsection (vi) on rule ordering for further discussion.

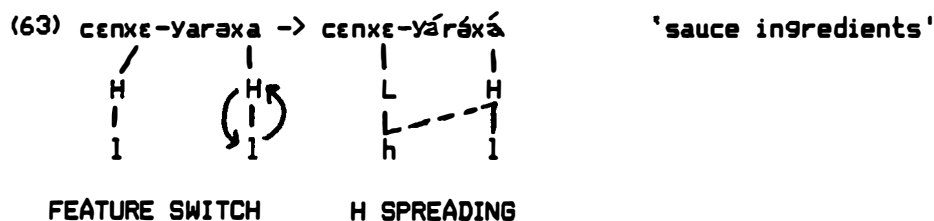
#### (v) Weak Mid Tone and Feature Switch

An observant reader will have noted that while Lh nouns triggered subregister High tone Spreading, it has been suggested that weak Mid (or H<sub>L</sub>) tone is also responsible for the behaviour that changes a following Low tone to Mid tone, or a weak Mid tone to High tone; yet there is no High tone on its subregister tier to motivate a High tone Spreading rule. This is illustrated below in (62), where the first H<sub>L</sub> component of a complex noun in citation form or in phrase initial position seems to be responsible for the raising of the following H<sub>L</sub> component to High tone.



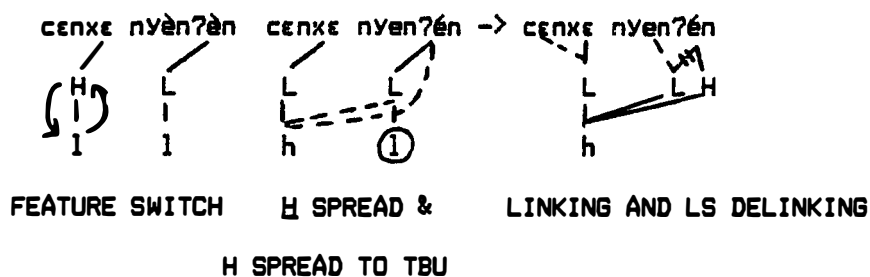
One possible but entirely unconventional solution is to switch the features

of the first component of the complex noun, demoting H to h and bringing l to the Primary tier where it gains the status of L. This is not a totally crazy idea for a language where Hl and Lh tones are at the same Pitch level and therefore could easily be confused by the speaker as fulfilling some of the same functions. Conceptually, the Hl would become Lh when in phrase initial position and then the High tone spreading rule would go into effect.



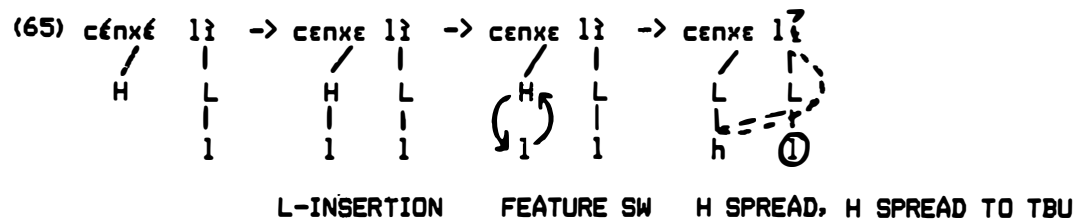
High tone Spread onto Low tone nouns or verbs can also take Place if the weak Mid noun undergoes the Feature Switch rule, as shown below:

(64) High spread



It should be noted that the same type of Problem would surface if lowered High tones were specified as underlyingly High tone as in the earlier analysis. If an underlying High tone were in phrase initial position and it was followed by a Low tone noun or verb, as seen in (65), it would be first subject to Low Insertion by virtue of the fact that it is in phrase initial position. This Low Insertion would not in itself provide the environment for h spreading. However, if Feature Switch took Place, the environment for High tone spreading would be

created.



Therefore, regardless of whether a weak Mid tone is analyzed as underlyingly Hl or High tone, the unconventional feature switching rule is still required for both hypotheses.

The feature switch rule then may be stated as follows:

(66) FEATURE SWITCH: Switch the features of a Hl tone to Lh when the morpheme to which it is linked is in Phrase initial Position.

Hl → Lh /~~##~~ \_\_\_

#### (vi) Rule Ordering

It is clear from the derivations in subsections (iv) and (v) that both Independent Low Linking (60) (for Mid-Low nouns) and Feature Switch (66) (for weak Mid nouns) must occur before weak Mid and Mid-Low nouns can trigger spreading rules.

Let us consider Independent Low Linking first. If Low Linking was ordered after Low tone Spread, as in (67a), kara would not be able to trigger Low tone Spread. Once Low Spread is ascertained to be not applicable, Low Linking would take place creating a Mid-Low tone on kara. Since Low Spread has already been tested for applicability, the derived Low tone cannot trigger Low tone Spreading onto the following High tone verb, producing, as a result, an incorrect surface form. If, on the other hand, Low Linking takes place first (see 67b), a



derived Low tone is Produced, which, in turn, Provides the environment for the Low tone SPread rule.

(67) a. waà kara wéé → \*waa karà wéé 'he looked at meat'

LOW SPREAD N/A    LOW LINKING, LINKING & LS DELINKING

b. waà karà wéé → waa karà wéé → waà karà wèé 'he looked at meat'

IND LOW LINKING    LOW SPREAD    LINKING & LS DELINKING

The same Problem would arise if Feature Switch were ordered after High tone sPread. A weak Mid noun would not be able to trigger High tone sPread without Feature Switch. If Feature Switch took Place afterwards, then it would be too late for the switched features to trigger High tone SPreading, as seen in (68a). The correct surface form can be derived rather, by ordering Feature Switch before High tone SPread as seen in (b).

(68) a. waà cenxe tùxì → waà cenxe tùxì → \*waà cenxe tùxì

H SPREAD N/A    FEATURE SWITCH    LINKING

b. waà cenxe tùxì → waà cenxe tùxì → waà cenxe tuxí

FEATURE SWITCH    H SPREAD, H SPREAD TO TBU    LINKING AND LS DELINKING

Therefore, both Feature Switch and Low tone Linking, being Phrase initial rules, must take Place before the application of either the High tone Spread rule or the Low tone Spread rule across the Phrase.

There is a Question as to whether Low tone Spread and High tone Spread need to be ordered with respect to one another. This issue as well as other aspects of rule ordering will be discussed in Chapter 6 when more data has been Presented.

#### F. Low-High Nouns and RS Delinking

The final set of nouns and Pronouns which Produce a surface Mid tone in certain environments are Low-High nouns. We have already seen that a Low-high tone is created as a result of a Low tone spreading onto a High tone TBU, simplified to a surface Mid tone if the High tone was not delinked. This is true when the Low tone of a verb spreads onto a High tone incomplete suffix (69a), when a Low tone of a noun spreads onto a single TBU High tone verb (69b), and when the Low tone of a noun spreads onto the High tone of the Type II suffix (69c).

- (69) a. waà xə tɛ̀ la                    'Did he show it?'  
   ^ |  
   LH M
- b. waa wà lɔ̀ la                    'Did he take some?'  
   ^ |  
   L H M
- c. pò-xəlo                        'bodies'  
   ^ |  
   L H M

It was also demonstrated that once Low tone Spread takes Place, the High tone of the resulting Low-High contour is delinked when followed by a noun

class clitic, which is High tone in this Particular environment. This tonal behaviour was labeled Right Side Delinking. The examples below show that this is true both for incomplete suffixes as well as for High tone single TBU verbs.

(70) waà xə tɛ̀-ə ɲúú 'He showed it for him'

L H H

waa wà lɔ́ ɲúú 'He took some for him'

L H H

It has already been mentioned that the first Person Pronouns Possess a final Mid tone, (See subsection II.C.) and that this Mid tone not only triggers subregister High tone spreading onto Hl nouns, it is itself lowered to Low tone in this environment (71a,b). The examples given below show that this is the only environment in which this Mid tone is lowered to Low tone. When *àda* is followed by a High initial noun, however, it is not lowered to Low tone (f,g,h). This lack of tonal change conforms to the observation made earlier that High initial nouns are not subject to tonal change and in this case, it appears they also do not Participate in the change involving the lowering of the Preceding Mid tone.

(71) a. Hl àdà soxo → àdà sóxò 'my mortar'

b. Hl àdà karà → àdà k râ 'my meat'

c. L àdà mɔ̀lɔ̀ 'my rice'

d. LH àdà gbɔ̀nɔ̀ 'my granary'

e. Lh àdà gbaxa 'my house'

f. H àdà fáléxâ 'my rock'

g. H-Lh àdà fyáa 'my fish'

h. HL àdà súlò 'my floor'

This lowering of the Mid tone can be easily explained if  $\grave{a}d\grave{a}$ , as well as  $w\grave{u}r\grave{a}$ , are posited as underlyingly Low-High, with an internal Low Spreading rule which spreads Low tone onto High tone resulting in a Low-Mid surface tone.

(72)  $\grave{a}d\grave{a}$  'my'       $w\grave{u}r\grave{a}$  'our'

When followed by a Hl noun, the conditions for High tone Spread and subsequently for RS Delinking are met as shown below.

(73)  $\grave{a}d\acute{a}$   $ka\grave{a}-te$  -->  $\grave{a}d\grave{a}$   $k\acute{a}\acute{a}-te$  -->  $\grave{a}d\grave{a}$   $k\acute{a}\acute{a}-te$  'my meat'

L SPREAD                  H SPREAD                  LINKING & RS DELINKING

b.  $\grave{a}d\acute{a}$   $c\acute{e}n-ke$  -->  $\grave{a}d\grave{a}$   $c\acute{e}n-ke$  -->  $\grave{a}d\grave{a}$   $c\acute{e}n-ke$  -->  $\grave{a}d\grave{a}$   $c\acute{e}n-ke$  'my sauce'

LOW SPREAD      HIGH SPREAD      LINKING N/A      RS DELINKING

An additional bit of evidence that the Mid tone of  $\grave{a}d\grave{a}$  is Low-High rather than Lh, for example, is that  $\grave{a}d\grave{a}$  does not trigger High tone Spread onto Low tone nouns or verbs as do Lh nouns and Pronouns. In the example below, the Lh Pronoun,  $m\grave{a}$ , can trigger High Spreading onto the following Low tone noun while motivating such a rule for  $\grave{a}d\grave{a}$  would yield an incorrect surface form.

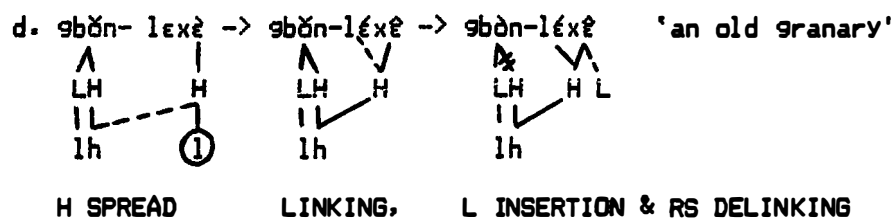
(74)  $m\grave{a}$   $k\acute{o}k\acute{o}m-\acute{r}\acute{e}$  'your rice'



Recall that the High SPreading rule does not allow the sPreading of the subregister High tone onto a Low tone if that High tone is not already linked to a Low tone. As a result, the subregister High of a Lh noun can sPread onto a Low tone, but the same of a Hh noun cannot. If the underlying tone of àdà is considered as Possessing a final Hh, then its underlying rePresentation correctly Predicts that it cannot trigger High tone sPreading onto Low tone nouns and verbs.

Simple Low-High nouns in the indefinite form always consist of at least 2 TBU's and as a result, the Low and the High tone are each linked to separate TBU's (75a). However, when a Low-High noun root is Part of a complex noun, it may have only one TBU for both tones. If followed by a Low or Lh tone noun root, the Low-High tone is simplified to Mid tone, as shown below in (75a, b). However, if followed by a Hl tone, it triggers High tone sPread and is subsequently subject to RS Delinking (c).

- (75) a. gbòŋ-lɔ                                      'granary-IND'
- 
- b. gbòŋ-noʔo-lo → gbɔnnoʔo-lo      'dirty granary-IND'
- 
- c. gbɔn-cèŋ-ŋé                                      'good granary-IND'
-



e. zànʔá + kɛlɛxɛ̃ → zànkálɛxɛ̃ 'first rain'

### B. Conclusion of Mid tone behaviour on Nouns

In subsection II.C., HYMAN'S four PROPOSED underlying representations for Mid tone, two of which use the double tiered approach for tone features, were PRESENTED. In the succeeding discussion, all but one of these representations were PROPOSED for use in SUCITE. Mid tone as a default tone, to be linked to toneless TBU'S, has so far not been considered as a POSSIBLE way to REPRESENT Mid tone in SUCITE. It would be difficult to consider any of the Mid tones discussed above as simply toneless, to be assigned a default Mid tone at a PARTICULAR stage of the derivation. MY PRESUMPTION is that toneless segments are not disposed to triggering tonal rules, since they themselves do not POSSESS any tone. Yet, it has been seen that those nouns with Lh or Low-high tone do effectively trigger the High tone SPREADING rule. If either one were considered toneless, it would have to acquire the Mid tone before the APPLICATION of the rules; even then, this default Mid tone would not POSSESS the PROPERTIES required for triggering High tone SPREADING<sup>6</sup>. If, on the other hand, one attempted to suggest that Hl nouns were underlyingly toneless, there would be no way to explain how this toneless noun becomes Low-High when PRECEDED by Low final nouns. Thus it seems that each of the Mid tones discussed here needs to be fully SPECIFIED for tone so that tonal rules can be motivated to trigger

Predictable behaviour.

### III. THE DEFINITE SUFFIX REVISITED

A concern that must be dealt with here is the tone of the Definite Suffix. Recall that the definite suffix is Mid tone after Low final and High tone noun roots and High tone after Low-High and Mid tone noun roots:

(76) Noun root tone

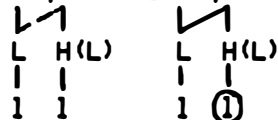
High	fálá- <u>ke</u>	'the rock'
Low	mòlè- <u>ke</u>	'the rice'
Mid-Low	kaà- <u>ke</u>	'the meat'
Low-High	ndòrè- <u>ké</u>	'the yam'
Mid	gba- <u>ké</u>	'the house'
Weak Mid	cɛn- <u>ké</u>	'the sauce'

The Possible nature of the underlying form of the definite suffix was briefly discussed in Chapter 3, but without the help of the subsequently acquired knowledge of the different possible feature configurations of Mid tone. The question was posed at that time as to whether the definite suffix was underlyingly High tone or some type of Mid tone, essentially the same problem posed for weak Mid and Mid-Low nouns in this chapter. We know for sure that the definite suffix is not the unchangeable High tone belonging to a very restricted set of nouns, because it does alternate between Mid and High tone. We also know that it has a final floating Low tone which is never linked to the suffix itself but can trigger Low tone spreading.

Suppose, first of all, that the definite suffix was underlyingly H1. Both Low tone spread and High tone spread would produce satisfactory results in the

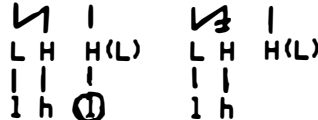
following derivations:

(77)a. mɔ̀lɔ̀-ŋe → mɔ̀lɔ̀-ŋe 'the rice'



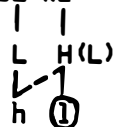
LOW SPREAD    LOW DELETION

b. ndɔ̀rɔ̀-ke → ndɔ̀rɔ̀-ké 'the yam'



HIGH SPREAD    RS DELINKING

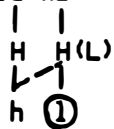
c. ɔ̀ba-ke → ɔ̀ba-ké 'the house'



HIGH SPREAD

After High tone noun roots, the definite suffix is Mid tone. A High tone Spread rule, however, would incorrectly produce a High tone on the suffix, as shown below:

(78) fáǎ-ke → \*fáǎ-ké 'the rock'    Rather: fáǎ-ke



HIGH SPREAD

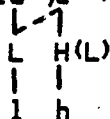
If an underlying Hl tone is adopted for the definite suffix, then somehow the High SPREAD rule must be blocked from applying in the setting as described in (78).

An alternative solution is to consider the definite suffix as underlyingly High tone. The same noun types that posed no problems for derivation above in (77) also pose no problem here, as can be illustrated below. Note, however,

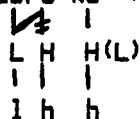


that if the suffix is considered underlyingly High tone, there is no longer a need for a High SPread rule. Thus, the noun in (c) requires no rules.

- (79) a. mɔ̀là-ŋe → mɔ̀là-ŋe 'the rice'      b. ndɔ̀rà-ké → ndɔ̀rà-ké 'the yam'

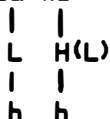


LOW SPREAD



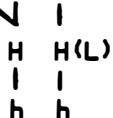
RS DELINKING

- c. ɔ̀ba-ke → ɔ̀ba-ké 'the house'



The definite suffix as underlyingly High tone, however, still does not produce a satisfactory result for High tone nouns. In the example below, the definite suffix remains an incorrect High tone.

- (80) \*fálá-ké      Rather: fálá-ke



Although positing Hl for the definite suffix would necessitate the blocking of the High SPread rule from High tone roots to the definite suffix, while still permitting it with Low-High nouns, positing an underlying High tone would require the formulation of a new rule in which the High tone suffix is lowered after High tone noun roots but not after Low-High roots. Whatever the solution may be, it does appear that we are dealing with an exception that does not conform nicely to the rules already proposed thus far. For that reason, there does not seem to be any strong argument for choosing one solution over another.

If one does choose to Posit an underlying High tone, however, there is a way of ordering the rules such that the formulation of a rule to lower the High tone suffix to Mid tone after a High tone noun will not apply to Low-High nouns. Let us first formulate this High tone lowering rule to involve the insertion of a Low tone on the subregister tier of the High tone suffix. This rule, to be called High tone Downstep, is stated below.

(81) HIGH TONE DOWNSTEP:

Link a subregister Low tone to the High of tone definite suffix if it is Preceded by a High tone linked to a TBU.


X -	X	->	X -	X
H	H(L)		H	H(L)
h	[DEF]		h	l

Thus the noun fálá-ke would have the following derivation:

(82) fálá-ké -> fálá-ke

H	H	H	H
h	h	h	l

A Low-High noun, according to the rule formulation above, would also be subject to the Downstep rule. However, it is already known that the definite suffix does not lower after Low-High nouns (see (79)). A solution to this contradiction can be found if RS Delinking is ordered to take place before Downstep and if a delinked High tone is blocked from triggering Downstep. Such a derivation is illustrated below.

(83) a. ndòrà-ké -> ndòrà-ké 'yam'  


RS DELINKING DOWNSTEP N/A

Thus, Positing an underlying High tone for the definite suffix does effectively Provide for a viable analysis. If one Posited an underlying Hl tone, it would also be Possible to Produce a correct surface form for High tones by stating simply that there is an exception to the High tone SPreading rule when a High tone noun (and not Low-High) is followed by a definite suffix. For Perhaps arbitrary reasons, I have chosen the analysis where the definite suffix is considered to be underlyingly High tone.

#### IV. TONAL BEHAVIOUR OF THE COMPLEX NOUN

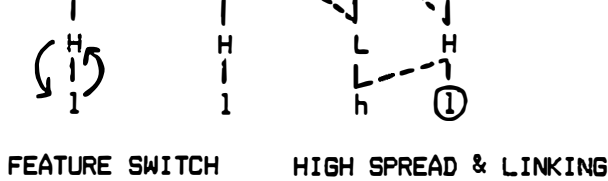
The Previous section examined tonal interactions within the Noun Phrase. It was also seen that the same tonal rules that occur across word boundaries also occur across morpheme boundaries within the complex noun. This section focuses on the complex noun. Two types of tonal alternations will be examined: first, those which change as a result of the tonal environment, and secondly, those whose tonal changes seem to be governed Primarily by semantic and structural considerations. The latter will be discussed under the heading, 'Lexical Changes' (see IV.C.).

##### A. Complex Nouns (Hl + Hl) and the Obligatory Contour Principle

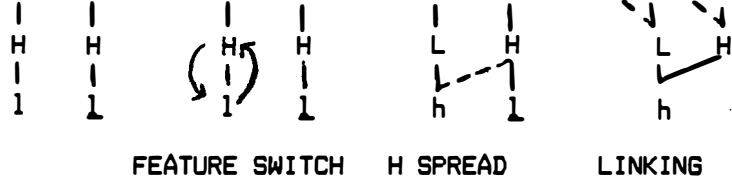
When Hl and Hl noun roots are strung together in a complex noun, interesting tonal alternations take Place. First of all, the rules which occur across word boundaries also take Place across morpheme boundaries within a complex noun.

If, for example, the first morpheme of a complex noun is H<sub>l</sub> (weak Mid) and the second morpheme is H<sub>l</sub> or H<sub>L</sub> (weak Mid or Mid-Low), Feature Switch takes place on the first H<sub>l</sub> morpheme. The resulting Lh tone then can spread its subregister High tone onto the following H<sub>l</sub> tone, as shown in the examples in (84).

(84)a. cen-xe + yara-xa → cenxayáxâ 'sauce ingredients' (sauce things)



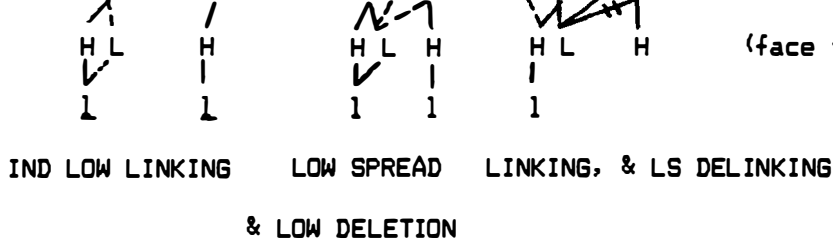
b. ntara+folɔ → ntara-folɔ → ntara-fólɔ → ntara-fólɔ́ 'land chief'



c. àme + juu → mejú-lâ 'speech' (voice + saying, words)

Low tone Spreading can also take place across morpheme boundaries within a complex noun. If the first noun root is a marked H<sub>L</sub> noun root (or Mid-Low), Low Linking can take place, followed by Low tone Spread, as shown below:

(85)a. nyeʔè + folɔ → nyeʔèfòlɔ → nyeʔè-fòlɔ́ 'older brother' (face + chief)



b. caŋà + nyelè (day + eye) → caŋànyèlè 'sun'

c. caŋà + tó (day + cover(vb.)) → cāntòŋò 'umbrella'

There is a restricted set of H<sub>l</sub> and H<sub>l</sub> complex nouns, however, that behave a little differently. Instead of the first H<sub>l</sub> triggering a High or Low tone Spreading rule onto the following H<sub>l</sub> noun root, the entire noun takes on a Mid-Low contour. This means that the last TBU Possesses a Low tone while all preceding TBU's are Mid tone. Either noun root may be H<sub>l</sub> (weak Mid) or H<sub>l</sub> (Mid-Low), yet the resulting tonal structure is the same. Observe the examples below.

- (86) a. ceewù + Polò → ciPolò (woman + husband) 'groom'  
           H<sub>l</sub>    H<sub>l</sub>  
           H<sub>l</sub> + H<sub>l</sub>    no examples
- b. nyime + balè + xe → nyambalaxè (shade + unit) 'night'  
           H<sub>l</sub>    H<sub>l</sub>
- c. yaraxa + taxà → yataxè (thing + tree) 'neck'  
           H<sub>l</sub>    H<sub>l</sub>
- d. nyame + balè + wə + lo → nyabalawolò (shade + unit + black) 'darkness'  
           H<sub>l</sub>    H<sub>l</sub>

Let us consider first (86a). The noun ciPolò is composed of two H<sub>l</sub> nouns. Since these are marked for Independent Low Linking, it might have been expected that first noun root would undergo Low linking while the second would be subject to Low tone spread, as we saw in (85) above. However, in this case, only the second noun root undergoes Independent Low Linking, while the first remains H<sub>l</sub>:

- (86) a. ci-Polò  
           /        \        /        \  
           H        H<sub>l</sub>    H<sub>l</sub>    L  
           |        |        |        |  
           L        L        L        L

Apparently some as yet unspecified rule or condition must take place to block the linking of the first subregister Low tone to the segmental tier. In (86c), we see a combination of two H1 noun roots, neither of which are marked for Independent Low Linking, and yet the final noun root is subject to Independent Low Linking.

(86) c. ya - taxè  
 /            \  
 H            H L  
 |            |  
 l            l

Again, it seems apparent that some rule Preceding Feature Switch, which would normally apply in this setting, must trigger the Low Linking on certain complex nouns consisting of two H1 nouns.

As we begin this analysis, it must be emphasized that not all H1 complex nouns behave in this way and those which do seem to do so for unknown reasons. Although there appear to be no phonological or syntactic reasons for this behaviour, the following is an attempt to provide a analytical description for this peculiar type of tonal behaviour.

### 1. The OCP Solution

One possible solution is to introduce the Obligatory Contour Principle as a language specific rule that would apply only to this designated set of H1 complex nouns. The OCP would collapse a series of H1 tones into one, and as a result of that collapsing process, the subregister Low tone would be marked for Independent Low tone Linking. This is illustrated in the example given below.

(87) ya + taxə → yataxə → yataxə (thing + tree) 'neck'

OCP            IND LOW LINK, LINKING, AND LS DELINKING

As a rule in Sucite, the OCP may be stated as follows:

(88) OBLIGATORY CONTOUR PRINCIPLE: A series of H1 tones within a semantically defined unit are collapsed into one H1 tone.

H            --->    H  
|                    |  
l                    l

This OCP rule would not work on those complex nouns whose first components trigger rules onto following components as seen above in (84) and (85). If these nouns submitted to the OCP, incorrect forms would result, as shown below.

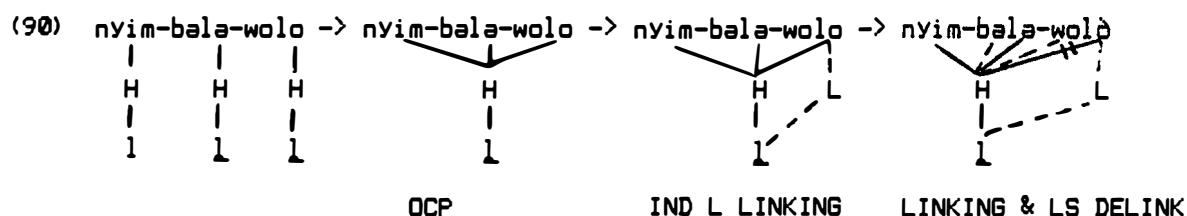
(89) nyeʔə + folə (face + chief) → \*nyeʔəfolə 'older brother'

Rather: nyeʔəfòlə  
(See (85b) for correct form)

Therefore, the OCP must not be allowed to apply everywhere. Each noun to undergo OCP must be lexically marked for the application of that rule.

## 2. Rule Ordering for the OCP

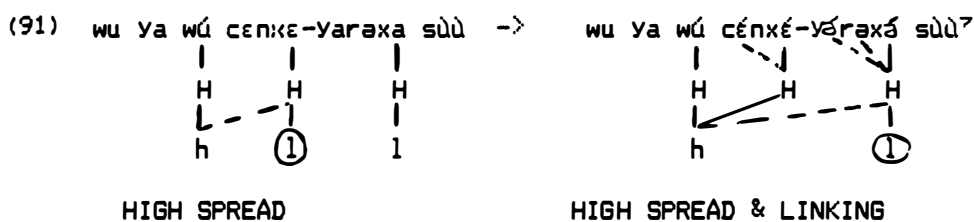
Those noun compounds which do undergo OCP do not allow Feature Switch or Low Linking on the first components of the compound. Rather OCP goes into effect and then independent Low tone Linking applies only at the end of the word.



Therefore, the OCP must apply before the application of the Feature Switch or the Independent Low Linking Rule. If either applied before the OCP, they would adjust the tone features in such a way that OCP would no longer be possible. The OCP, on the other hand, must apply obligatorily in this setting, and therefore must not be blocked under any condition by Feature Switch or Independent Low tone Linking. In addition, it is seen in (90) that the rule of Independent Low Linking is required after the application of the OCP.

### 3. High Spreading and OCP

When High tone Spreading takes place on Hl complex nouns, they all end up with the same results regardless of whether they were subject to OCP or not. High Spreading on Complex nouns which do not undergo the OCP is illustrated below. In the example below, the subregister High tone spreads onto the following Hl tone. The same High tone then spreads to the next Hl tone.

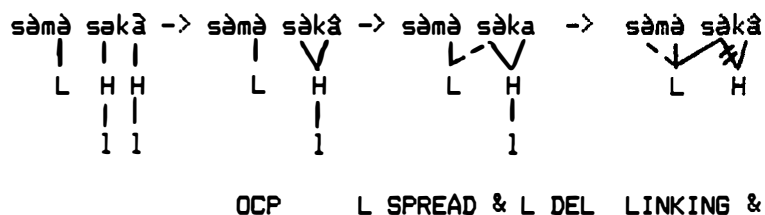
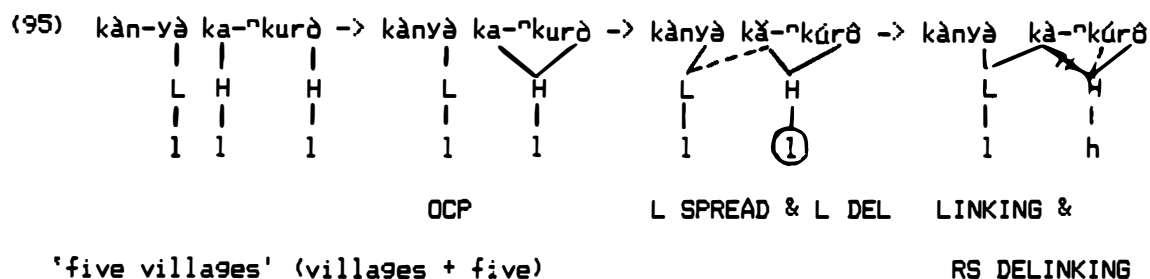


Nouns which have undergone OCP are also subject to High tone Spreading and produce the same result as those nouns which did not undergo the OCP, as shown below:





Although complex nouns which undergo the OCP yield the same results when subject to Low tone spreading, the manner in which those results are arrived at is a little different. Once the OCP has collapsed all the H1 tones into one (as shown in (95)), the Low tone spreads onto the first High linked TBU and Low tone deletion takes place. Since this subregister Low tone is linked to the High tone which is in turn linked to all the components of the complex noun, all the components are affected by its deletion and, as a result, become High tone. This is unlike the case for non OCP complex nouns where High tone spread must be motivated to trigger Low tone deletion on the remaining components of the complex noun (see 94).

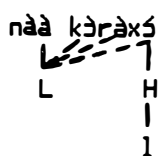


## 5. OCP and the Association Conventions

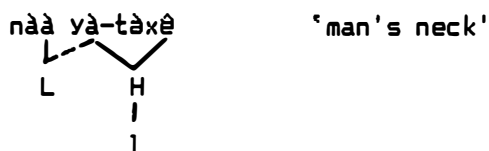
In Chapter 3, it was assumed that the Association Conventions involved the linking of all tones and TBU's. In Chapter 4, the search for a satisfactory analysis for Low tone Spread brought to light the need to modify the

Association Conventions such that 1) tones associated with TBU's in a Right to Left fashion across the word and 2) the initial linking did not involve the linking of more than one TBU to a tone. With the introduction of OCP, one sees again the need to PostPone the linking of tone to all TBU's until Low tone sPreading takes Place. This becomes clear when comparing Low tone SPread on a simple three TBU noun with Low SPread on a complex noun with two or three noun roots.

On words with only one noun root, the Low tone sPreads to the final TBU of that root.



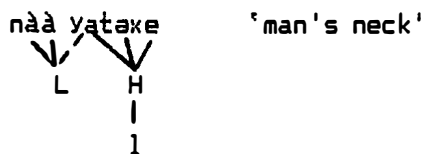
On words with more than one noun root, the Low tone sPreads to the final TBU of the first morpheme only.



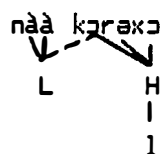
The way the rules have been set up thus far allow for this correct Prediction in behaviour. If, for example, all TBU's were linked to tones before the application of the tonal rules, the application of the OCP would immediately create an ambiguity between the word with a single noun root versus one with two or more noun roots, as shown in (96). In both cases, tone would be linked to all TBU's. When Low SPreading takes Place, Low would sPread only to the first TBU. There is nothing in the linking Pattern to indicate that Low must also sPread to the second TBU if the noun concerned is a simple three TBU noun, but must not sPread a second time if the second TBU is another noun root. This

ambiguity created by such a linking Procedure makes it impossible for the Low tone Spreading rule to distinguish these two types and thus treat them differently.

(96) multiple noun roots



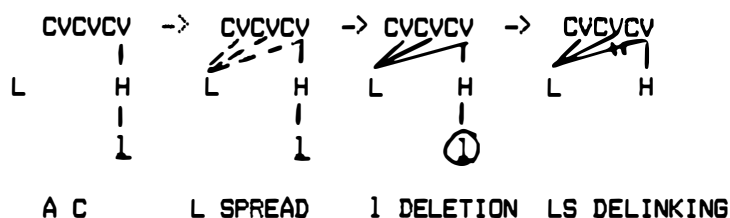
single noun root



Pulleyblank's (1983) Proposal to limit the Association Conventions to link a tone to only one TBU serves a useful Purpose here. The effect of linking one tone to one TBU signals, except in the cases of underlying contour tones, the Presence of a single noun root. If, after the Association Conventions, the Application of the OCP results in a single tone being linked to several TBU's, we are thus informed that there are as many noun roots as linkages to the tone. The Low tone spreading rule, then, is limited to spreading only to the first Hl tone linked TBU. On a single noun root with three TBU's, this means that the Low tone will spread to the final TBU, since that is the first (and only) TBU that is linked by the Hl tone. On the noun with two noun roots, the Low tone will spread only to the first TBU that is linked. In (97) below, is an illustration of how the tonal rules interact to Produce correct forms for (a) a three TBU single root noun and (b) a compound noun.

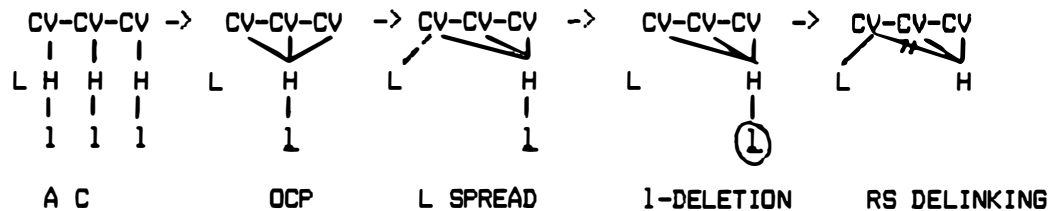
(97) a. single root

wurà kɔrɔxɔ → wurà kɔrɔxɔ 'his EMPH inheritance'



## b. multiple root

wurə̀ nyim-bələ-wolo → wurə̀ nyimbáǎwóló 'his EMPH darkness'

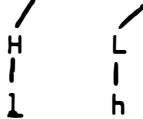


The final question that remains is whether the application of OCP is really needed to allow a correct tonal output. In terms of Spreading rules, it appears that the application of the OCP is not essential for producing correct results. Whether a noun has undergone OCP or not, both High and Low Spreading onto a compound noun produces the same results. However, we recall that OCP was introduced in an effort to deal with a select set of complex nouns which behaved like simple non-complex nouns in phrase initial position. The non-application of the OCP in this situation would have required at least some other kind of rule or condition to a rule to block the application of Feature Switch and Independent Low Linking in all positions except in word final position. The blocking of these two rules word internally would have to be restricted to this special set of nouns, however, for we have already seen how both rules can be applied word internally on other complex nouns. Such a condition would be feasible if it were suggested that Feature Switch and Independent Low tone Linking were sensitive to the cohesiveness of a particular complex noun. If a complex noun functioned as a semantic unit, then FS and Low Linking may be blocked from applying, while they still apply to the end of each morpheme within complex nouns which were less cohesive in nature.

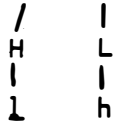
We see this lack of FS and Low Linking in another setting where the OCP

cannot be motivated, but where a condition blocking the two rules could be applied. When a Hl noun root is followed by a Lh noun root within certain complex nouns, neither FS nor Low Linking are allowed to apply.

(98) a. sonxə + naŋa → sonnaŋa 'horse's tail'



b. tɛxɛ + son → tasəŋe (Place + sacrifice) 'altar for sacrifice'



c. səkã + nyeʔe → səkanyeʔere (sheep + be alot) 'alot of sheep'



Therefore, it may be feasible to attach a condition to FS and Low Linking, blocking their application in certain word internal environments, instead of proposing the OCP rule, which does not cover for the examples given above in (98). Unfortunately, time and space do not allow for a thorough investigation of this possibility.

### B. High Delinking

Earlier, it was pointed out that although Hl (weak Mid) usually behaves differently than Lh, there are situations where it triggers the same tonal rules as Lh nouns. In order to accommodate this behaviour, a rule called Feature Switch was implemented to change Hl to Lh. This process did not change the surface tone; it simply changed the underlying tone so that it could

trigger the same rule as Lh nouns.

It was suggested that this confusion of identity for these different types of Mid tones was due to the fact that their identical Pitch value contributed to the overlapping of tonal behaviour. The following is a discussion of a type of Mid tone that appears to be Lh in certain settings, while in other environments, it behaves more like a Hl or a Low-High tone.

This type of Mid tone is never found in word initial position and it is always preceded by a Low tone. When followed by no tone or by a Low or Mid tone (Lh), it is Mid tone. When followed by a Hl tone or H tone, it is Low tone. The underlined vowels in the examples below are linked to these particular types of Mid tone.

(100) kà-l <u>a</u> -xa	'sorghum-IND'	kà-l <u>à</u> -pó-ló	'bundles of sorghum-IND'
		kà-l <u>a</u> -pò?əlo	'bundles of sorghum-DEF'
kà-j <u>i</u> -xe	'wood-IND'	kà-j <u>ì</u> -pó-ló	'bundles of wood-IND'
		kà-j <u>i</u> -pò-?əlo	'bundles of wood-DEF'
kà- <sup>h</sup> t <u>u</u> -xo	'back-IND'	kà- <sup>h</sup> t <u>u</u> -yá-ná	'back-ache-IND'

This type of behaviour parallels very closely the tonal behaviour of Low-High contour tones which are linked to a single TBU (see pp.243ff). If these particular Mid tones are considered underlyingly Low-High, then one can motivate the Rightside Delinking rule, which delinks a High tone of a Low-High contour when it is followed by another High tone. Such a derivation is illustrated below.

(101)	kà	la	pó	ló	->	kà	là	pó	ló
	/	/	/				/		
	L	LH	H			L	LH	H	
	l	lh	l			l	lh		
	HIGH SPREAD					RS DELINKING			

However, if the segment -la is underlyingly Low-High, the two tones should link to separate TBU's when followed by an indefinite suffix, as shown below. Unfortunately, this produces the wrong surface form.

(102) \*kà-là-xá 'sorghum'      Rather: kà-la-xa  
 |    |    |  
 L   L   H  
 |   |   |  
 l   l   h

In addition, kàlaxa triggers High Spreading onto Low tone nouns and verbs, something a Hh final noun cannot do. If one posits an underlying Lh tone for -la, then its subregister High tone can spread onto a following Low tone, as shown below.

(103) wu ya kà-laxa teé 'He is showing sorghum'  
 |    /    ^  
 L   L   LH  
 |   L - |  
 l   h   h

HIGH SPREAD

If we consider that the underlying tone is Lh, however, some explanation must be found for the lowering of this Lh tone of -la to Low in kàlapólá. Another rule will have to be formulated whereby the Lh tone becomes Low tone when preceded by a Low tone and followed by a High tone. A simple way of performing the mechanics of this tone lowering is to delink the subregister High tone in this environment:

(104) kàla Pólá  
 | | /  
 L L H  
 | ≠ |  
 l h h

Such a rule would be stated as follows:



(105) HIGH DELINKING: Delink a subregister High tone linked to a Low tone if it is Preceded by a Ll tone and followed by a Hh tone, within the domain of the word.

X	X	X
L	L	H
	≠	
l	h	h

The reader may recall that an earlier High Delinking rule (44) was introduced in Chapter 4 to motivate the lowering of a Mid tone verb after a High final noun and in a Phrase final Position. Because these two High Delinking rules take Place in different environments, they shall be considered separate rules at this Point.

This Process is quite reminiscent of the RS Delinking of a Low-High contour, except in this case, the Lh is not a contour but rather a complex bundle of features. Perhaps, though, the motivation for this type of rule is similar to that of RS Delinking. RS Delinking was concerned with the simplification of contour tones. This High tone Delinking seems to be motivated by some kind of desire to simplify the complex Lh feature in an environment where the Lh tone is caught between a Low and a High tone. Like RS Delinking, the High Delinking rule also takes Place after the application of the sPreading rules, as shown below.

(106) a. kàla + polò → kàla - polò → kàlà-pólò 'bundle of sorghum heads'

/	/	/
L L	L L	L L
l h	l h	l h

H SPREAD

/	/	/
L L	L L	L L
l h	l h	l h

LINKING & H DELINKING

(sorghum + tie.n.)

b. vândiŋe + kɛɛxɛ (shirt + arm) → vândì-kééxɛ 'sleeve'

A similar Phenomenon occurs on nouns with TYPE II suffixes. When a noun ends in a TYPE II indefinite suffix, the final tone is Lh, and it can trigger High tone spread onto following words, as shown in the derivation below.

(107) nkàn-ʔála tɛ̃ → nkàn-ʔala tɛ → nkàn-ʔala tɛ̃ 'show teeth'

LOW SPREAD      HIGH SPREAD      HIGH SPREAD TO TBU

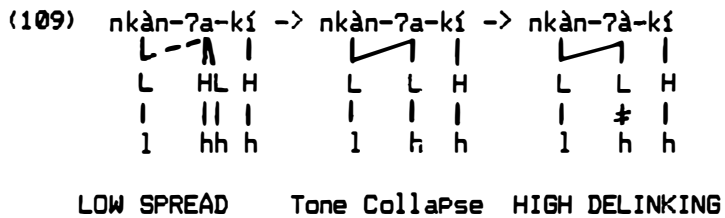
However, when a noun with a TYPE II suffix is completed by a Definite Suffix, the TYPE II suffix becomes Low tone: nkàn-ʔa-kí → nkàn-ʔà-kí 'the teeth'. It would appear that High Delinking is also taking place here. However, in observing the example below in (108), the underlying tonal structure of the TYPE II suffix presents a slightly more complicated situation. After the Low tone of the noun root spreads onto the High tone of the TYPE II suffix, a total of three tones are linked to the single TBU, -ʔa.

(108) nkàn-ʔa-kí 'the teeth'

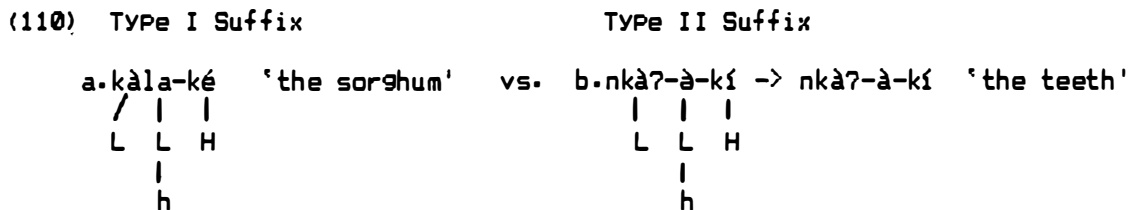
LOW SPREAD

In order to motivate the lowering of all these tones to Low tone, it seems that both RS Delinking and High Delinking would have to take place. However, Hh is blocked from Delinking because it is not followed by a High tone but rather by a Lh tone, and the subregister High tone of the Lh tone cannot be delinked

because it is not preceded by a Low tone. One possible solution is to somehow collapse this complex of tones, L1-Hh-Lh into a simple, more manageable combination such as Lh. Unfortunately time and space do not allow a discussion of the theoretical implications of such a move. However, such a process would permit the High Delinking rule to take place, resulting in a correct surface representation, as shown below.



One might think the Lh tone of kàla- would also undergo H Delinking when followed by the High tone Definite Suffix. However, as the first example in (110) indicates, no High Delinking occurs. It seems then, that this High Delinking occurs before definite suffixes only on TYPE II suffixes. Compare (a) with (b) below.



The primary difference between these two nouns is that the noun which does not undergo High Delinking is a TYPE I noun, while the second is a TYPE II noun. Other examples confirm that definite suffixed TYPE I nouns do not allow High Delinking immediately preceding the definite suffix, in contrast to TYPE

## II nouns.

The rule of High Delinking (105), then is formulated in the attempt to account for the lowering of a Lh tone situated between a Low tone and a High tone in a complex noun. The discussion above exposes some complications involved in its application. At this point, however, a more thorough analysis will have to wait until more research is done.

### C. Lexical Changes

The Previous two tonal alternations, the OCP and High Delinking, took Place in a Particular tonal environment. However, it was noted that sometimes their application was blocked for reasons not always clear. This section deals with tonal alternations which I call lexical changes. These tonal changes operate at the lexical level (i.e. within word boundaries) and are, for the most Part, not governed by the tone of adjacent morphemes, but take Place after noun roots are combined to form complex nouns. The following discussion will deal with each of these changes and Propose the way in which these changes may be formulated.

#### 1. High Deletion

High Deletion takes Place in two types of environments. The first takes Place in an environment that is both tonal and morphological, while the second seems to be a function of the semantic and morphological structure of the noun. For the sake of convenience, they shall be labeled High Deletion I and High Deletion II.

##### a. High Deletion I

In Chapter 2, it was mentioned that Mid tone verbs lowered to Low tone when an incompletive suffix was added. The Proposed analysis Posited the Mid tone of

a Mid tone verb as underlyingly Lh. A High Deletion rule was then formulated to trigger deletion of the subregister High tone of the Lh verb when followed by a High tone incomplete suffix (See (59)). In Chapter 3, it was also found that certain tonal sets of nouns also lowered to Low tone when the High initial TYPE II indefinite suffix was added. Although, at that point, the underlying features of the various types of Mid tones had not been discussed, it was suggested that High Deletion could apply here, too. The High Deletion rule as proposed in Chapter 3 is restated below:

(88) HIGH DELETION: Delete a High tone on the Primary or subregister tier if a Primary Low tone is found to the left of a Primary High tone or linked to a subregister High tone, and followed by a High initial suffix. If the suffix is a nominal suffix, it must have undergone either no segmental alteration or else have undergone Suffix Reduction.

$$\langle H, h \rangle \rightarrow \emptyset / \left( \begin{array}{c} L \text{ ---} \\ L \\ | \\ \text{---} \end{array} \right) + H \quad [\text{suffix} - \text{if N, then full or reduced}]$$

This rule assumes that all Mid tones were underlyingly Lh or Low-High. However, now that Hl tone has been posited for weak Mid and Mid-Low tones, High Deletion, as formulated above, would not delete the High tone, which is now on the Primary tier. One therefore will have to modify the rule to allow for the deletion any time that High tone is combined with and linked to the same TBU as a Low tone:



surface form. If High Spread were allowed to take place and spread onto a H1 noun before High Deletion, this High Spread would effectively block the environment for High Deletion, as shown in (b).

(113)a.  $\grave{a}d\acute{e} \text{ ni-i-bí} \rightarrow \grave{a}d\acute{e} \text{ nì-i-bí} \rightarrow \grave{a}d\grave{a} \text{ nì-ì-bí} \rightarrow \grave{a}d\grave{a} \text{ nì-ì-bí}$  'my mothers'

L H H HL H	L H (H) HL H	L H L HL H	L H L L H
l h l h h	l h l h h	l h L h h	l h l h h

HIGH DELETION      LOW SPREAD      T COLLAPSE & H DELINKING<sup>2</sup>

b.  $\grave{a}d\acute{e} \text{ ni-i-bí} \rightarrow * \grave{a}d\grave{a} \text{ nì-ì-bí}$  'my mothers'

L H H HL H	L H H HL H
h (1) h	h h

HIGH SPREAD      HIGH DELETION N/A

Below (114) is an example of a complex noun with several noun roots. The second noun root, which is Lh, spreads its subregister High tone onto the following H1 morpheme. This is followed by a High Delinking rule.

(114)a.  $k\grave{a}-j\grave{i}-p\acute{o}-l\grave{a} \rightarrow k\grave{a}-j\grave{i}-p\acute{o}-l\acute{a}$  'bundle of wood'

L L H	L L H
l h (1)	l h (1)

HIGH SPREAD      LINKING & HIGH DELINKING

However, when this same complex noun is followed by a TYPE II suffix, the final noun root, being adjacent to the High initial suffix undergoes High deletion, as shown in (115). One may expect, then, that the subregister High of the preceding Lh morpheme would spread onto the following Low tone, but as (115a) shows, this produces an incorrect result.

(115) a. kà-ji-Po-ʔálo → \*kà-ji-Po-ʔálo 'bundles of wood'

L	L	Ⓜ	H	L	L	L	L	H	L
l	h	l	h	h	l	h	l	h	h

HIGH DELETION                  HIGH SPREAD

Instead, the derived Low tone spreads onto the High tone of the suffix, as shown in (115b).

b. kà-ji-Po-ʔálo → kà-ji-Pò-ʔálo 'bundles of wood'

L	L	Ⓜ	H	L	L	L	L	H	L
l	h	l	h	h	l	h	l	h	h

HIGH DELETION                  LOW SPREAD

It appears, from the example above, that the High spread rule must be blocked from spreading onto any Low tone that is a result of a High Deletion rule. If this is the case, High tone Spread should also be prevented from occurring in the example below, where a Mid tone verb which has undergone High Deletion is preceded by the Lh Possessive Pronoun, ndi. However, as seen in the derivation, in order to produce the correct surface form, the subregister High tone of the Lh Pronoun must spread onto the derived Low tone.

(116) ndi ya mo nya-á → ndi ya mo nya-á → ndi ya mo nya-á 'I see you'

L	H	LH	L	L	H	L	LH	L	L	H
l	h	lh	h	h	h	h	Ⓜ	h	l	h

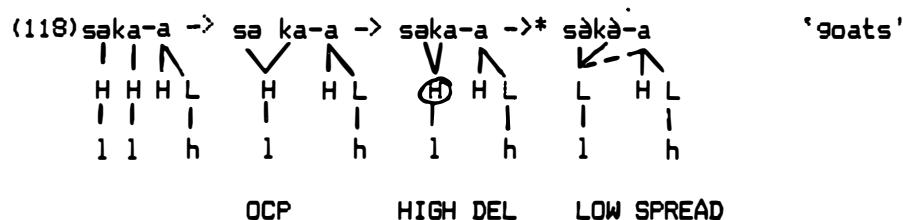
HIGH DELETION                  HIGH SPREAD

The proposed generalization that no spreading is allowed onto derived Low tones, then, meets up with a contradiction. It is possible that there is a

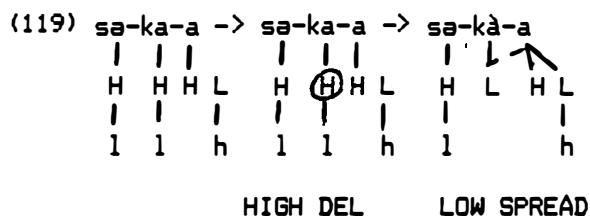


distinction in the applicability of the Spreading rules between spreading across word boundaries and spreading across morphemes within word boundaries. This matter needs more research before it can be resolved.

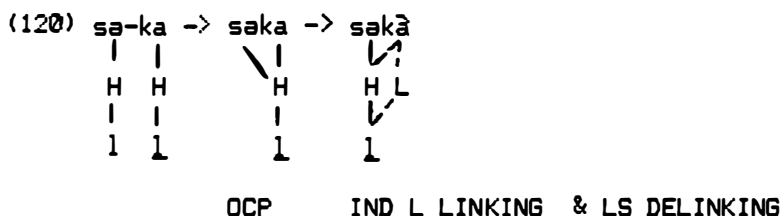
The ordering of High Deletion with the OCP is also crucial. If the OCP applied before High Deletion, as shown in (117), High tone would be lost all across the word, producing an incorrect surface form.



However, if High Deletion takes place before OCP, the environment for OCP would then be lost and the correct surface form would be produced.



Note that the OCP occurs on this word when it is not followed by a TYPE II indefinite Suffix, as shown below.



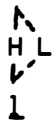
High Deletion then is a rule that takes place after Association Conventions but

before any other rules at the Lexical level.

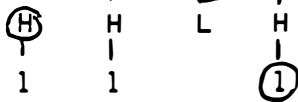
### b. High Deletion II

This second type of High Deletion involves the same Process of deleting a High tone which is in combination with a Low tone. However, the environment for this High Deletion II is different. It takes Place Primarily when a Hl noun root is followed by some other noun root in a noun compound. The nature of the tone of the root does not seem to be crucial for the application of the rule. Below are some examples of High Deletion II. In the following example, the noun, pɔ̃n 'dog' is H<sub>L</sub>, and exhibits a Mid-Low tone as a simple noun (121a). When it is followed by adjectival modifiers, however, it undergoes High Deletion. In (121b) High Deletion takes Place, and then the remaining Low tone triggers Low tone Spreading onto the following Hl noun root. When followed by Lh or Low tone, the remaining Low tone triggers no tonal rules, as seen in (c) and (d).

(121)a. pɔ̃n 'a dog'



b. pɔ̃n-lɛxɛ̃ → pɔ̃ngɛ̃xɛ̃ 'an old dog'



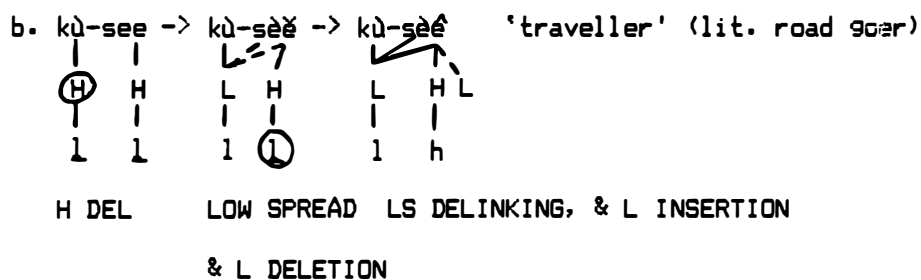
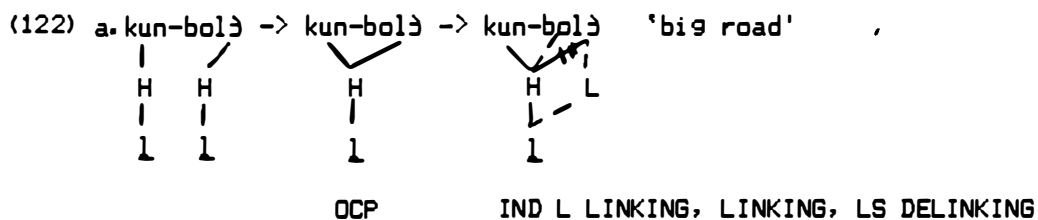
H DELETION    LOW SPREAD & L DELETION    AND L<sub>S</sub> DELINKING

c. pɔ̃n-cɛ̃nɛ̃ 'a good dog'

d. pɔ̃n-kalaxa 'a spoiled dog'

In other cases, a Particular word may undergo High deletion in certain

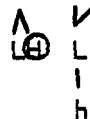
semantic environments, while in other semantic environments, it does not. The noun, kudà 'road' is such an example. In (122a), it does not undergo High deletion in contrast to examples (b) and (c). Therefore, in some cases, application of High deletion may be semantically defined.



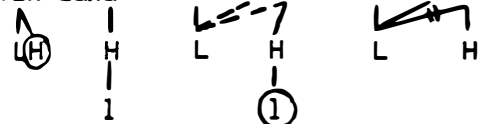
c. kù-sèlê 'trip' (lit. road going)

Some LH nouns also undergo High Deletion when in word initial position. The word fònlá 'Peanut' is one such example.

(123) a. fònlá → fònlá 'the Peanut seller'



b. fònlá → fònlá → fònlá (caxà) 'Peanut stalks'



H DELETION    LOW SPREAD    LS DELINKING  
& L DELETION

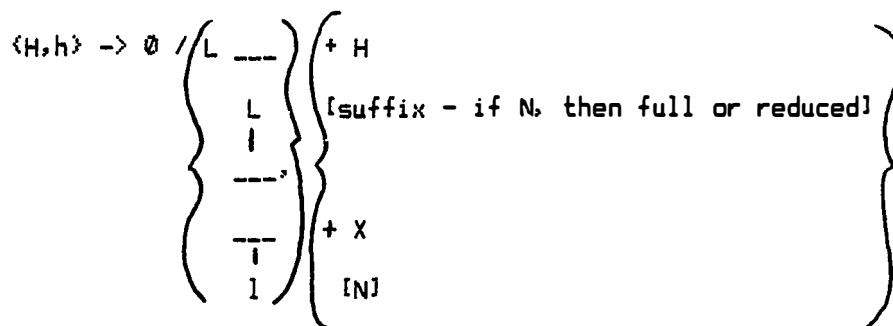
c. Summary

High Deletion I and II both involve the deletion of a High tone in combination with a Low tone, though High Deletion II seems to involve primarily H1 noun roots. Both take place in lexically marked environments, in that not all High tones in combination with a Low tone undergo High Deletion. It was seen that High Deletion I accounts for the deletion of High tone of certain lexically marked noun roots when these noun roots precede a High initial TYPE II suffix or an in-completive suffix. The morphological structure of that suffix also has a bearing on whether High Deletion takes place. High Deletion II, on the other hand, occurs on lexically marked H1 noun roots which find themselves in initial position of certain complex nouns.

They both occur at the same stage of rule derivation. Recall from the discussion on p.274 that High Deletion I must take place before OCP as well as before the spreading rules. Although rule ordering was not discussed for High Deletion II, the examples in (121) indicates that High Deletion needs to take place before Low tone spread. An examination of (122) will reveal that OCP must also take place after High Deletion II. If OCP took place before High Deletion, the entire complex noun would undergo High Deletion, whereas in reality, only the first noun root is subjected to the deletion of its High tone (see (122b)).

Therefore, while the environments of these two rules are different from each other, they both take place at the same stage of rule derivation, and they both involve the deletion of a High tone in combination with a Low tone. For these reasons, it may be more efficient to combine these two rules into one rule, as stated below.

(124) HIGH DELETION: On words lexically marked for High Deletion, delete a High tone on the Primary or subregister tier if a Low tone on the Primary or subregister tier is linked to the same TBU as the High tone and 1) followed by a High initial TYPE II or incomplete suffix (If the suffix is a nominal suffix, it must have undergone either no segmental alteration or else have undergone Suffix Reduction.) OR 2) followed by a noun root in a complex noun.



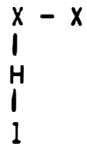
## 2. Low Deletion

While some H1 noun roots in a complex noun undergo High Deletion and thus acquire a derived Low tone, there is another very small set of H1 nouns which are raised to high tone in the same morphological environment. Below are a couple of examples involving the H1 noun take.

- (125)a. tá-cèrè                      'a good tree'  
       b. tá-kalaxa                    'a ruined tree'

Within the double tiered approach, this 'raising' can be effected by means of deleting the subregister Low tone of the H1 noun root. Such a rule may be stated as follows.

(126) LOW DELETION: Delete the subregister Low tone of a H1 noun root, lexically marked to do so, when followed by another noun root within a complex noun.



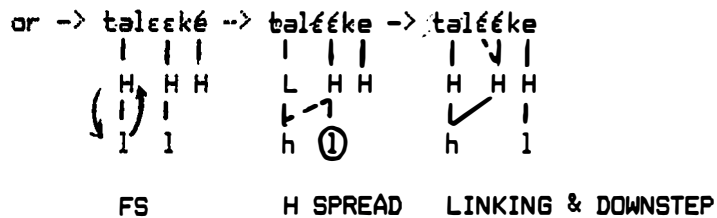
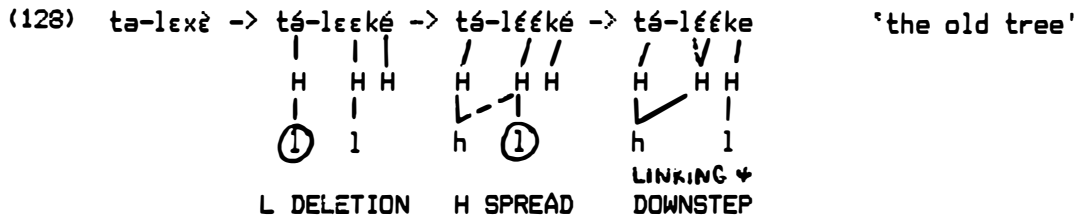
It must be stipulated that the H1 noun root has to be lexically marked for Low Deletion, because only a selective set of H1 noun roots undergo this rule. An example of Low Deletion is illustrated in the example below.

(127)    tǎ-soonŋùké                    'the second tree'  
           |    √  
           H    L  
           |    |  
           l    h

The reader may recall another Low deletion rule (46) which was proposed earlier in this chapter. Like Low Deletion (126) above, it also deleted a subregister Low tone of a H1 morpheme. However, these two rules differed both in the tonal environment and in the stage of the rule derivation in which they occurred. Low Deletion (126) as a lexical rule, occurs at the same stage of the derivation as the High Deletion rule (i.e. before OCP and the spreading rules (see (124)), while Low Deletion (46) takes place on a H1 noun root after Low tone spread. Because of these differences, then, it seems wise to keep these two as separate rules.

There is at least one case where L Deletion (126) seems to be optional (see (128) below). In the examples below, the first noun root is optionally High tone (a), having undergone Low Deletion (b), or Mid tone, that is, both the H and the subregister Low tone of the H1 noun root remain in place. Note that,

regardless of whether L Deletion takes Place or not, High tone SPread occurs because in each case, there is a subregister High tone to sPread onto the following Hl noun root.



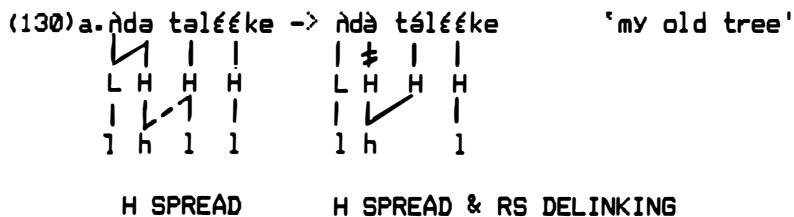
In a few cases shown below, Low Deletion does not take Place at all on ta-xa when it is Part of a compound.

(129)a. ta - Panlà → taPánlâ (tree - cleared) 'clearing, new field'

b. ta - kalè - ké → takáláke 'the first tree'

However, even if the lexical rule of Low Deletion does not take Place, the initial Hl noun root can be subject to High tone SPread when Preceded by a subregister High final word, as shown below. The result of this High SPread is a surface form that is identical to nouns that have undergone Low Deletion.

(Compare (128) and (130)).



b.àdà tákáláke → àdà tákáláke 'my first tree'

The examples above show that High sPread occurred after Low Deletion. This can be effected by assuming that a default subregister High tone is Placed on the subregister tier after the deletion of the subregister Low tone. However, there are some examples where no High tone SPread occurs after Low Deletion. This is illustrated below.

(131) t́á - Padà → t́á-Padà (tree + to cross) 'beam' \*t́áPádà

H	H	H	H
①	L	h	l

L DELETION      H SPREAD N/A

The reason for this lack of High tone SPread is not known at this time. In further examples below, the original tone of the first noun root is not known. They do not behave as High final nouns, however, in that they do not trigger High tone SPread. It might be suggested that these Particular High tone noun roots are followed by a floating Low tone. However, if this was the case, then the Mid-Low (H<sub>L</sub>) noun roots, which follow these Peculiar High tones, should be subject to Low tone SPread, which does not happen. Below are some examples of complex nouns with an initial High tone noun root followed by Mid-Low noun roots.

(132) ḱá -	Para-xà	(thing + to cross)	'floor, as in second floor'
ḱá-tonṅò	(thing + iron)?		'rust'
ḱáá-taxè			'bridge'
máʔá-njò			'beard'
ḱará-mɔlò			'type of snake'
sá-ṛtù			'quail'



The High tone Demonstrative Pronoun exhibits similar behaviour in that it too does not trigger High tone SPread onto H<sub>L</sub> or H<sub>L</sub> nouns, as shown in (a) and (b) below<sup>7</sup>.

- (133) a. ntá meeté            'this cord'  
       b. ndá kũne            'this road'

Since demonstratives have not undergone Low Deletion and are not Part of a complex noun, it is clear that this lack of High tone SPread in certain cases, is not a result of the Low Deletion rule. Whether or not this Problem can be resolved will have to wait until more research can be done.

### 3. Other Lexical Changes

There are other tonal changes, found in complex noun formation, that do not currently have any clear explanation. For example, the Low tone noun, nàà 'man', usually remains Low tone when another noun root is attached to it:

- (134) nàà + nyelè (man + eye)            -> nànyèlè            'friend'  
       nàà + pèlì + lè (man + big + age) -> nàpèlèè        'a very old man'

However, this Low tone is raised to Mid in certain cases (or in double tiered terminology, is subject to High tone insertion on the subregister tier):

- (135) a. nafolò (man + chief)            'man's in-laws'  
       b. nandaà                            'bachelor'  
       c. nayerù                            'friend'

In all three of these instances the second root is a ML tone. It is not known why this ML root forced the raising of Low tone instead of allowing the Low tone to sPread onto it.

There are a few examples where Low tone is raised to H1 or High tone. In the first example below, the second noun root, normally Low tone, is High tone when preceded by the noun root sa-, while, in the second example, both Low tone noun roots are raised to High tone.

- (136) saxe + nɔ̄ (bush + cow) → sanɔ̄ 'buffalo'  
 lùxò + fìì (water + python) → lɔ̄fìì 'water python'

There are other exceptions found in the data. However, not enough data has been collected to determine whether there are patterns of behaviour among these exceptions to merit consideration for rule formulation.

#### 4. Tone on Nominalized Verbs

The tone of verbs in a nominal setting deserves mention here. Low tone verbs are usually Low when nominalized.

- (137) kɔ̄ʔɔ̄ 'dance' → kòʔòrò 'dance'  
 kù 'die' → kù 'death'

Lh verbs either remain Lh or become H1.

- (138) a. → Lh se 'give birth' → 'zi 'birth'  
 jooli 'sew' → jola-xɔ̄ 'sewing'  
 waʔa 'dry' → wa-xa 'drought'
- b. → H1 jo 'speak' → juu 'speech'  
 (Mw) fyeeeri 'urinate' → ferə-mɛ 'urine'  
 koori 'peel, clear' → kooro 'peelings'
- c. → H1 tuxo 'carry' → tuxu-rò 'load'
- (ML)

High tone verbs also either become Lh or H1.

- (139) a.-> Lh ḡmɔ́lɔ́ 'sleep' -> ḡmɔ́lɔ́-xɔ́ 'nightmare'  
 b.-> Hl lɔ́xɔ́ 'hear' -> ḡdɔ́-xe 'ear'  
 (Mw) gbɔ́ 'kill' -> gbuun 'funeral'  
 c.-> H<sub>L</sub> yá 'to be ill' -> ya-mà 'illness'  
 (ML) kánʔán 'be tired' -> kanʔa-rà 'fatigue'

Within compounds, verbal elements are most commonly in non-initial position. Once verbal nominals have undergone the tone feature changes described above, their derived tone is then subject to the appropriate tonal rules already described earlier. In all of the examples below (140, 141, and 142), the nominalized verb is the second element of the complex noun. When a nominalized Low tone verb is preceded by a H<sub>L</sub> or a Low-High noun, as shown below, no tonal changes take place on the verbal element, as might be expected.

(140) Low verb

- a. H<sub>L</sub> + L nà + nyì (fire + to light) -> na-nyìḡḡ 'flame'  
 b. LH + L sòlò + ndòxò (millet + to sow) -> soondùxù 'millet sowers'

Note that the LH in (b) simplifies to Mid tone before a Low tone. When a High tone verb or a Lh verb becomes Lh in nominal position it behaves as any other Lh noun in that it is not affected by the tone of the preceding nominal element.

(141) High verb or Mid verb -> Lh

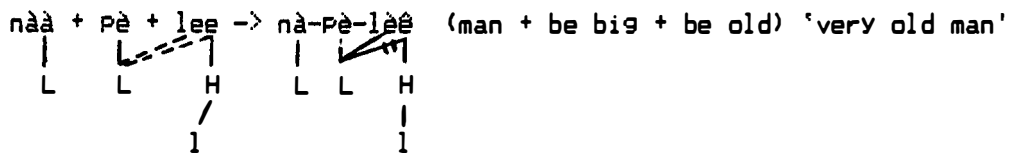
- a. L + Lh nkù + cɔ́ (chicken + gather) -> nkùcɔ́-xɔ́ 'cage'  
 lùxò + yéré (river + stand) -> lùyera-be 'water hole'  
 b. H<sub>L</sub> + Lh tɛxè + waʔa (place + dry) -> tawa-xa 'dry place'

- c. Hl + Lh yaraxa + gba (thing + drink) → yaɣba-xa 'Party'  
     yaraxa + gbéxálé (thing + create) → yaɣbelaxe 'creation'
- d. Lh + Lh gbaxa + waʔa (house + dry) → gbawaxa 'dry house'  
     gbaxa + nyíŋé (house + cool) → gbanyíŋe 'cool house'
- e. LH + Lh tùùxò + koori (hoe + clear) → tùùkora-xo 'hoe for weeding'  
     sòlò + gberi (millet + uProot) → soogbero 'millet uProoter'

When a High tone or a Mid tone verb become Hl when nominalized, it can be subject to Low tone SPread if the Previous noun root is Low final (a), and also to high tone SPread if the Previous noun root Possesses a subregister High tone (b).

(142) High verb or Mid verb → Hl

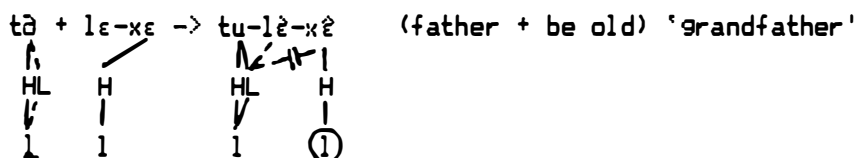
a. L + Hl → L - LH LOW SPREAD



L SPREAD & L DELETION LS DELINKING

vààŋà + tó (cloth + to cover) → v à à n t ò ŋ ò 'sheet, blanket'

b. Hl + Hl → ML - LH LOW SPREAD

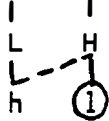


L LINKING L SPREAD, L DELETION & LS DELINKING

caŋà + tó (day + cover) → cāntò-ŋô 'umbrella'

c. Lh + Hl → Lh-H HIGH SPREADING

gba + lɛ → gba-léxê (house + old) 'old house'

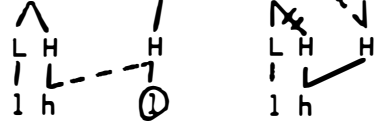


H SPREAD

gba + són (house + spend night) → gbsónxô 'bedroom house'

d. LH + Hl → L-H HIGH SPREAD AND RS DELINKING

gbòn + lɛ-lɛ → gbòn-léɛlê (granary + be old) 'old granary'



H SPREAD

LINKING & RS DELINKING

Nominalized Hl verb roots can also undergo the OCP when preceded by either Hl or Hl noun roots, as shown in the examples below.

e. Hl + Hl → M-ML

nye + Pen-lɛ → nyi-Penlê (eye + be displeased) 'jealousy'



OCP

L LINKING, LINKING, LS DELINKING

ceewù + jé (woman + enter) → cijè-rè 'adultery'

f. H1 + H1 -> M-ML

ya + gbon-xò (thing + hit) -> yaḡbonxò 'axe'

The nominalizing of these verbs, and thus the tone feature changes that accompany these nominalizations take place before the Spreading rules as well as before the application of the OCP. This is at the same stage of the derivation of rules as the lexical rules of High Deletion and Low Deletion.

However, the tonal changes that accompany nominalizations do not follow a clear enough pattern to formulate any rules. We have already seen that High tone verbs, when nominalized in second position of a complex noun become either Lh or Hl. There are some clues that indicate that the semantic make-up of the noun may play a role in the determination of nominal tone of verbs. For example, when preceded by ta- (from taxè 'Place', the verb perè always acquires a Mid-Low contour (Hl): taPeràke 'the selling Place'. All other high verbs acquire this same Mid-Low contour when preceded by this same noun root. However, when preceded by other noun roots and placed in Class 1, peré becomes Lh. This behaviour is illustrated by the examples below.

- (143) a. càlà + peré -> càáperé-ḡé 'the bean seller'  
 b. mólò + peré -> mòperé-ḡé 'the rice seller'  
 c. karà + peré -> kaPeré-ḡé 'the meat seller'

On the other hand, when verbs are at the beginning of a complex nominal, they seem to retain their original tone. For example, the High tone verbs remain High. The examples below consist of sentences containing a High verb initial complex noun (underlined).

- (144) a. Ndi yà péré kóná cén mé 'I do not know how to sell'  
 I VP-Neg. sell manner know not
- b. Ndaà péré kóná cón 'I know how to sell'  
 I-VP sell manner know
- c. pérévóláŋe 'seller'
- d. Ndi yà pérévóláŋe cèn mé 'I do not know who sold'  
 I VP-Neg sell-chief-DEF know not

Although these nominals do acquire a noun class suffix, they are more verbal in function than the other complex nouns we have been examining up to now. Other gerund-like nominals include nouns which begin with the following Prefixes, ta- (from taxè 'place'), ni-, and sometimes ka-.

- (145) a. ta- Yézù bi nya bi takoròxi ngé, kii mPen wiì  
 Jesus them see them chasing-PP CLAUSE, it-VP disgust him-PP  
 'When Jesus saw them chasing them, it disgusted him.'
- b. ni- Bi nizeəhí la, Yézùù ŋmólí  
 their goings on, Jesus-VP sleep 'As they were going, Jesus slept.'
- c. ka- wu kacexéki Punáŋe nyi kacəŋŋi. 'All that he does is good'  
 his doings all are good.

#### D. Conclusion of Study of Complex Nouns

This sketch is only the beginning of the study of complex nouns. It is an attempt to outline the tonal patterns observed on complex nouns and propose tentative rules such as High Delinking (105), OCP (88), High Deletion (124), and Low Deletion (126).

Mills, who has been studying Cebara for about 30 years, has come up with a

description of the various tonal types of complex nouns in that language. Her bountiful data has allowed her to class complex nouns into three major categories, according to morphological and tonal information. Without attempting to explain these categories, I shall simply list them with the examples she gives to typify each category:

"(235) 1. <u>margin-core</u>	2. <u>core-margin</u>	3. <u>core-core</u>
si-sjɔ́:n=rɔ	su-pe:=rè	si-sjɔ́:=rɔ
[su=rɔ + sjɔ́:n]	[su-rɔ + pé:]	[su=rɔ + sjɔ́:nri]
food+stay(overnight)+suf	food + bad+suf	food + suck in + suf
'leftovers'	'bad food'	'flies'" (1984,p.181)

The Mid-Low root in initial position takes on three different types of tone depending on the type of compounding. Mills gives an extensive description of the tonal patterns found in each category, citing numerous examples for each category. She does not, however, attempt to formulate any rules to account for these patterns. At first glance, tonal patterns in Sucite seem to cross these categories. A much more extensive study will need to be done on complex nouns in Sucite to determine whether the type of compounding will have an effect on the tonal behaviour within the complex noun.

## V. CONCLUSION

### A. The Double tiered Approach to Tonal Analysis

All of the discussions in this chapter assumed the use of the double tiered approach to tonal analysis. As mentioned in earlier chapters, this notion of positing tone on two tiers originated with the concept of tone-splitting of tonal features, introduced by Yip and Clements. Evidence has been brought forth



to argue for the feasibility of this somewhat novel approach. First of all, it was seen that there was more than one type of Mid tone in Sucite. In an effort to distinguish between the two, it was suggested that one, weak Mid, was a split off from the High tone register, since its tonal behaviour was almost identical to that of High tone verbs, while the other, Mid tone, was situated in the upper part of the Low tone register. Both possessed the exact same pitch. The representation of these tones, Hl (lowered High tone) and Lh (raised Low tone) led to the positioning of these double featured tones on two separate tiers, the second being subsidiary to the first or Primary register.

Secondly, it was seen that if tone on the subregister tier was allowed to link by way of rule to the segmental tier, then some explanation could be given for the underlying Hl tone whose surface representation in isolation is Mid-Low, and for the Mid-High tone that results on Low tone verbs after the application of High tone spread.

Thirdly, this double tiered approach greatly enhances the opportunity to capture generalizations that a single tiered approach would not be able to do. This is especially true for the High tone spreading rule. In a similar dialect, Supyire, Carlson (1985) proposed three (or four) tonal rules that could easily have been covered by the high spreading rule. In the double tiered approach, the subregister High tone spread took care of Low tone words being raised to Mid tone after Mid tone nouns, and weak Mid words raising to High tone after both Mid and High tone nouns, by the simple act of spreading onto the following Primary register tone.

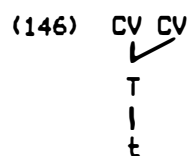
Fourthly, it was seen that the double tiered approach facilitated the explanation of tone feature changes at the lexical level. Instead of introducing rules of tone lowering and raising, rules concerning High or Low Deletion

were introduced. The notion of High deletion, was especially helpful for instance, when the High tone could be found on any tier in conjunction with a Low tone. The effect of this simple rule was the ability to lower a variety of tones to Low tone: Low-High, H<sub>1</sub>(weak Mid), L<sub>h</sub> (Mid), and H<sub>1</sub>(Mid-Low). This generalization would have been almost impossible to capture if the double tiered approach had not been implemented.

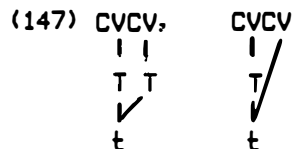
Finally, it must be acknowledged that not all problems are solved through the use of the double tiered approach. For example, the identity of the two types of Mid tones is sometimes confused in the application of tonal rules. The Feature Switch Rule was introduced to allow the weak Mid noun to induce High tone spreading along with its Mid tone counterpart, while the tentative High delinking rule was inserted to take care of the lowering of a Mid tone in an environment where it seemed that Low tone spreading was taking place. Hopefully further research will uncover some answers for the analysis of this phenomenon. It is not at all certain, however, that these problems could be dealt with any more easily through the use of a single tiered approach to tonal analysis.

In summary, then, the double tiered approach to tonal analysis states that tone can be represented on two tiers, especially in cases where the primary tone registers have suffered tonal splits. On the primary tier is found the tone which represents the primary tone register. This tone is either High or Low tone. The tone on the secondary or subregister tier fine tunes or specifies where, within the primary tone register, this particular tone is found.

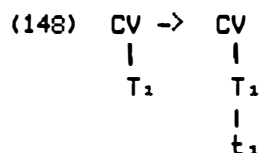
When the tone on the primary tier spreads, the tone on the subregister tier is carried along by virtue of the fact that it is linked to the primary register tone:



On the other hand, when the tone on the subregister tier spreads it does not carry the Primary register tone along with it. It spreads on its own, usually to the following tone on the Primary tier; but it can also link to the segmental tier by first passing through the Primary tier:



If a Primary tone is not specified for tone on the subregister tier, a default tone is inserted at the appropriate stage in tonal derivation. This default tone is a copy of the Primary register tone inserted on the subregister tier:



The rule inserting this default tone has been called Subregister Specification.

Using this double tiered approach, then we have identified five different underlying tones: L<sub>1</sub>, L<sub>h</sub>, H<sub>h</sub>, H<sub>l</sub>, and H<sub>l</sub>. The three underlying contour tones that have been isolated are H<sub>h</sub>-L<sub>h</sub> (High-Mid), H<sub>h</sub>-L<sub>1</sub>, and L<sub>1</sub>-H (Low-High).

### B. Summary

This chapter has discussed the tonal behaviour within the structure of the noun phrase. It was seen that rules that operated on the verb phrase were also found on nouns. However, the more complicated structure of nouns required a thorough examination of the underlying tones and their implications for rule formulation.

The tones that caused the most difficulties were those initially dubbed as weak Mid and Mid-Low. Since both reacted to tonal rules in the same way, it seemed convenient to give them similar, if not identical underlying tones. Two proposals concerning their underlying tone were put forth, one suggesting that these tones were underlyingly High tone, the other that it was a lowered High tone, H<sub>l</sub>. After discussing the merits and drawbacks for both approaches, the lowered High tone approach was chosen, since the latter seemed to involve fewer problems for analysis. The rules of Low Spread (11) and High Spread (54) were then re-examined and reformulated in order to account for the tonal changes on the H<sub>l</sub> noun.

Once the issue of the underlying tone for these weak Mid and Mid-Low nouns was settled, the matter of distinguishing between weak Mid and Mid-Low tones were dealt with. It appeared that both were marked lexically for the application of certain rules to take place at the phrase level. Weak Mid (H<sub>l</sub>) nouns underwent the Feature Switch rule (66), while Mid-Low (H<sub>l</sub>) nouns triggered the independent linking of the subregister Low tone to the segmental tier (60). Both of these rules, it was seen, were more easily stated if the subregister Low tone was part of the lexical make-up of weak Mid and Mid-Low tones rather than inserted at phrase level.

In the light of these new developments, the underlying tone of the definite

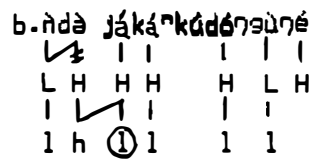
suffix was re-examined, revealing that although either an underlying High tone or a Hl tone could be Posited for the definite suffix, there seemed to be a very slight advantage to choosing a High tone as the underlying representation.

The final section of this chapter discussed tonal behaviour within complex nouns. In many cases it was found that the High and Low tone SPreading rules which were attested to operate across word boundaries, also took Place across morPheme boundaries within the complex noun. In addition to these rules, however, tonal behaviour was found that was Peculiar to the complex noun. All of them seemed to be somewhat limited in their application.

First of all, the value of applying OCP (88) to a very select set of complex nouns was discussed. It was decided that although one could Perhaps have found a way to eliminate the need for the OCP, it more easily Provided a correct output on complex nouns that required Independent Low tone Linking. Secondly, the Problem concerning the lowering of a Mid tone between a Low tone and a High tone was very tentatively resolved through the application of the High Delinking rule (105). Finally, tonal behaviour that seemed to be governed by Primarily lexical considerations was described, although only two rules, High Deletion (124) and Low Deletion (126), were Proposed.

At various Points in this chapter, ordering of the Proposed rules was discussed and argued. It was seen that the Lexical rules of High Deletion and Low Deletion must take Place first, followed by the OCP, Feature Switch and Low Linking, Low tone SPreading and High tone SPreading, Linking, LS Delinking, RS Delinking, and finally Downstep. However, ordering was not thoroughly discussed for all rules. A more thorough discussion involving the interaction all rules Proposed in this thesis will be Presented in Chapter 6.





The iterative High Spreading which takes Place here will be discussed in the section on Complex nouns.

6. See pp. 289ff at the end of this chapter for a fuller argument in support of the double tiered approach for tone features and rule application.

7. Only a partial tonal derivation of these sentences are given in order to simplify the discussion at hand.

8. See section IV.B. on High Delinking for explanation of High Delinking and T Collapse.

9. There are a couple of examples, however, that seem to indicate that, in certain instances, the Demonstrative Possesses a final floating Low tone. In the examples below, this supposed floating Low tone spreads onto the following verb (a) and noun (b):

a. nká kón ná 'ṅmɔlií → nká kón ná 'ṅmɔlií 'cut that with a knife'  
 that cut with knife-with

b. nká lara nye jòdri yè → nká lara nye jòdri yè 'How much is that?'  
 that Price is how-many Q

## CHAPTER 6 - THE SUCITE SENTENCE

### A. Introduction

The Previous chapters focused on tonal behaviour of nouns and verbs individually and then analyzed tonal behaviour across word boundaries. This has led to an extensive discussion about the representations of various surface tones - in Particular, those which are Mid tone.

This chapter completes this study of tonal behaviour in Sucite by analyzing the tonal behaviour of a few more aspects of the Sucite sentence and then by reviewing all of the rules Presented in the thesis and examining how these rules should be ordered with respect to one another.

### B. The Adverbial Phrase

The adverbial Phrase may consist of a simple adverb or a Phrase consisting of an NP and a PostPositional Particle. Below are a number of common adverbs:

(1) tánjà	'yesterday'
wàà Pan tánjà	'he came yesterday'
nínjà	'today'
nyì'pàŋa	'tomorrow'
tánjê	'last year'
nánʔán	'here'
wàà Pan nánʔán	'he came here'
wà	'there'
waa kàrí wâ	'he went there'

Most adverb Phrases, however, consist of a noun Plus a PostPosition. These adverbs and adverb Phrases are located in Postverbal Position in the sentence.



Below are some examples showing the location of the adverb phrase, which is underlined.

(2)a. katàke nyè nda là

Hunger is me on 'I am hungry.'

Subject Vb. Pro PP

b. ndi ya fyà7ò nàkàlàbí nyà7ò là 'I am afraid of thieves'

I am afraid thieves' face on

Sub.VP Vb. Noun Noun PP

c. waa wà ti ndùú

he some weave me-for 'He wove some for me'

Sub-VP Obj. Vb. Pro-PP

The tone of the noun phrase within the adverbial phrase affects the tone of the PostPosition in much the same way as the tone of nouns affects the tone of following verbs. High tone PostPositions are High after Mid or High final nouns, but are subject to the Low tone spread rule when preceded by a Low final noun. The major processes affecting PostPositions after nouns are illustrated in the data in (3). The examples in (3a) and (b) show two different High tone PostPositions preceded by a Lh noun, while (c) shows how a Low-High Pronoun does not affect the tone of the following High tone PostPosition, but is itself subject to RS Delinking. In (d) and (e) are examples of a Low final noun spreading its Low tone onto the following High tone PostPosition. In (d), the PostPosition is only one TBU and is located in Phrase final Position. Once Low Spread takes place, RS Delinking delinks the High tone of the resulting Low-High contour when it is in Phrase final Position.

(3) a. waa wà kan mo-ú 'he gave some to you'  
 | |  
 L H  
 |  
 h

b. wu nye mo táán 'he is beside you'  
 | |  
 L H  
 |  
 h

c. waa wà kan òdà-ú → waa wà kan òdù-ú 'he gave some to me'  
 | |  
 L H H

RS DELINKING

d. waa wà kan nà-nye- ú → waa wà kan nà-nyu- ù 'he gave some to the man'  
 | | | |  
 L H(L) H L H(L) H

LOW SPREAD

RS DELINKING

e. wu nye nà-ke táán → wu nye nàka táán 'he is beside the fire'  
 | | | |  
 HL H(L) H HL H(L) H  
 | |  
 L L

LOW SPREAD

LS DELINKING

Mid (Lh) tone PostPositions remain Mid tone after Mid tone and Low tone nouns, but are subject to High Delinking (44) when Preceded by an underlying High final noun.

- (4) a. katəke nye mo la 'you are hungry'  
 katəke nye ñdə la → katəke nye ñdə là 'I am hungry'
- |  |   |
|--|---|
| $\begin{array}{c} \swarrow \quad   \\ L \ H \ L \\   \   \   \\ l \ h \ h \end{array}$ | $\begin{array}{c} \swarrow \quad   \\ L \ H \ L \\   \   \ \neq \\ l \ h \ h \end{array}$ |
|--|---|

## HIGH DELINKING (44)

- b. táǵá xé la → táǵá xé là (touch it on) 'touch it'

There is no data showing Low tone PostPositions, thus there is no way of knowing whether Low tone PostPositions would be subject to High tone Spread if Preceded by a Mid tone noun, as is the case for Low tone verbs.

The initial element of an adverb Phrase is not affected by the tone of the Preceding verb. Thus, a High tone verb does not trigger High tone Spreading onto H<sub>L</sub> nouns of an adverb Phrase. Rather, as example (5) illustrates, the H<sub>L</sub> noun at the beginning of the adverb Phrase undergoes Low Linking (60), a rule, the reader may recall, which links a subregister Low tone of a H<sub>L</sub> noun to the segment when that H<sub>L</sub> noun is in Phrase initial Position.

- (5) waa là Pééré nǵ-ŋu - ù → waa là Pééré nǵ-ŋu - ù 'he sold it to the mother'
- |  |  |
|--|--|
| $\begin{array}{c}   \quad \swarrow \quad   \quad   \\ H \ HL \ H(L)H \\   \quad \vee \quad   \quad   \\ h \quad \perp \quad h \quad h \end{array}$ | $\begin{array}{c}   \quad \swarrow \quad \nearrow \quad \neq \\ H \ HL \ H(L)H \\   \quad \vee \quad   \quad   \\ h \quad l \quad h \quad h \end{array}$ |
|--|--|

LOW LINKING

LOW SPREAD &amp; RS DELINKING

This lack of tonal interaction between the verb and the adverb Phrase is in keeping with a statement made in Chapter 1 that there is a barrier for tonal change between a verb and a following nominal element.

### C. The Noun Class Clitic

The noun class clitic has been mentioned in earlier chapters. However, its complex tonal behaviour has required delay of its analysis until now. Each noun class has its own clitic. However, all noun class clitics, regardless of class affiliation possess the same tone. The noun class clitic can be found in subject and object position, or as part of an adverb phrase. It can also function as a possessive pronoun. Below are a few examples showing the clitic in (6a) subject position, (b) object position, and (c) as a possessive pronoun.

- (6) a. wu ya má                    'he is coming'  
       b. ndaà wu nyà                'I saw him.'  
       c. wu kaà nye nánʔón        'His meat is here'

It has been referred to by other authors, such as Mills (1984), as a general class pronoun. The reason that it is labeled a clitic is because of its tonal behaviour within the sentence. It was mentioned earlier that tonal boundaries existed between verbal elements and following nominal elements. Noun class clitics, however, break down that tonal barrier if placed in initial position of the noun phrase, and are subject to tonal rules from the preceding verbal element. The altered tone of the clitic can then affect the tone of succeeding elements of the noun phrase. In addition, when the noun class clitic functions as a possessive pronoun, it cliticizes to the following noun. The following discussion will describe the behaviour of the noun class clitic within various tonal environments. First, we shall look at how the clitic affects the tone of following constituents, and secondly, how the tone of the noun class clitic is affected by the tone of the preceding verbal element. The complications of the clitic's tonal behaviour will be examined in the light of the present analysis

in an attempt to seek out a viable solution.

In sentence initial Position, the noun class clitic exhibits a Mid tone as seen in (7) below. The question immediately comes to mind as to what type of Mid tone it is. If one examines its behaviour in subject Position, there is an indication that the clitic tone may be Lh. In (7a) below, the subject mo 'you' has a Lh tone. When sènʔé, a Pre-tense marker, follows, it is subject to High tone spread from the Preceding Lh subject, resulting in a Mid-High tone. When sènʔé is Preceded by the noun class clitic, it acquires the same Mid-High tone, as can be seen in (b).

(7) a. mo sènʔé ya má → mo senʔé ya má 'you are coming again'  
 | | |  
 L L H  
 \ /  
 h

HIGH SPREAD

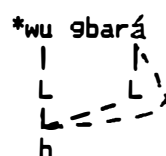
b. wu senʔé ya má → wu senʔé ya má 'he is coming again'  
 | | |  
 L L H  
 \ /  
 h

HIGH SPREAD

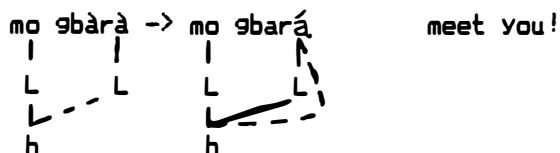
On the other hand, the tone of the clitic does not trigger High spreading onto the Negative marker as is optionally the case for regular Lh nouns<sup>1</sup>.

However, when Put in object Position or in an adverbial Phrase, the story changes. First, it must be noted that noun class clitics in object Position never trigger High tone spreading onto Low Tone verbs. Note below, that when a Low tone verb follows a clitic, it does not acquire a Mid-High tone (8a), as it does when Preceded by the Lh Pronoun (8b).

(8) wu gbàrà 'meet him!'



HIGH SPREAD, HIGH SPREAD TO TBU



H SPREAD      H SPREAD TO TBU, LINKING, LS DELINKING

The clitic, then, cannot be allowed to trigger high tone SPreading onto following verbs particularly, when it functions as an object. As a result, the clitic does not seem to be underlyingly Lh after all. A possible explanation for this discrepancy in tonal behaviour is that the underlying tone of the subject clitic is different from that of a clitic in object position.

Since it appears that clitics are not underlyingly Lh tone in object position, their behaviour needs to be further examined. When preceded by a clitic, a mid tone verb or postposition is lowered to low tone (9a and b). This same lowering phenomenon is observed when a mid tone verb is preceded by a high final noun (9c).

- (9)a. wu tuxo → wu tùxò 'carry it!'  
 b. wu la → wu là 'on him'  
 c. fáláxá la → fáláxá là 'on a rock'

This lowering was analyzed in Chapter 4 as High tone Delinking (44), where the subregister High tone of a Lh verb is delinked when preceded by a high final noun and in phrase final position (see (10)).

(10) fáláxǎ tuxo → fáláxǎ tùxò      'carry a rock'

H	L	H	L
			±
h	h	h	h

HIGH DELINKING (44)

If the PostPosition is also analyzed as underlyingly Lh, the same High Delinking rule can be motivated when the PostPosition is Preceded by a High final noun such as fáláxǎ.

(11) fáláxǎ la → fáláxǎ là

H	L	H	L
			±
h	h	h	h

HIGH DELINKING (44)

Although the clitic is not High tone on the surface, it could also motivate a High Delinking rule if the clitic is analyzed as Low-High. A Low-High tone linked to the same TBU would create a surface Mid tone while at the same time triggering High Delinking of the following Lh verb or PostPosition. Such a derivation is illustrated below.

(12)a. wu tuxo → wu tùxò      'carry it!'

^		^	
LH	L	LH	L
			±
lh	h	lh	h

HIGH DELINKING

b. wu la → wu là      'on him'

^		^	
LH	L	LH	L
			±
lh	h	lh	h

HIGH DELINKING

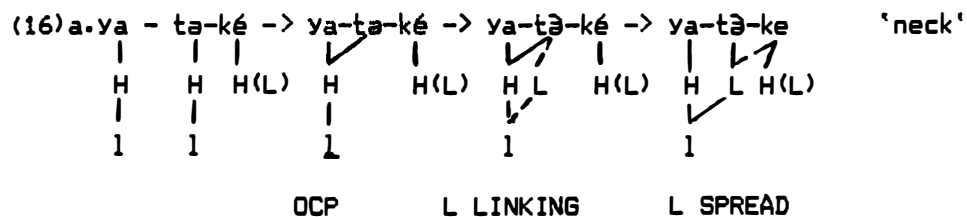




followed by a weak Mid (Hl) noun, that weak Mid noun becomes Mid-Low, as shown in (d,e):

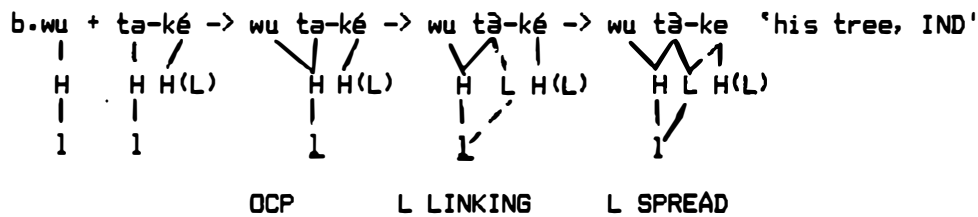
- (15) a. wu mɔ̀là-ŋe 'his rice'  
 b. wu gba-ké 'his house'  
 c. wu jà-ŋe 'his son'  
 d. wu tǎ-ké → wu tǎ-ke 'his tree'  
 e. wu so-ké → wu sɔ̀-ke 'his mortar'

This is exactly what happens when certain complex nouns are composed of two or more Hl or H<sub>L</sub> noun roots. As shown in the example (16) below, the first noun root remains Mid tone, while the final noun root acquires a Mid-Low tonal contour. Recall from Chapter 5, that this behaviour was accounted for through the use of the OCP rule (88), which collapsed two Hl tones into one H<sub>L</sub> tone, which subsequently underwent Independent Low Linking (60) in Phrase initial Position.



If one posited the clitic as being underlyingly Hl, it could also be motivated to undergo the OCP when followed by a Hl noun, as shown in (b) below.

Independent Low Linking would then take place on the final TBU creating a Mid-Low contour.

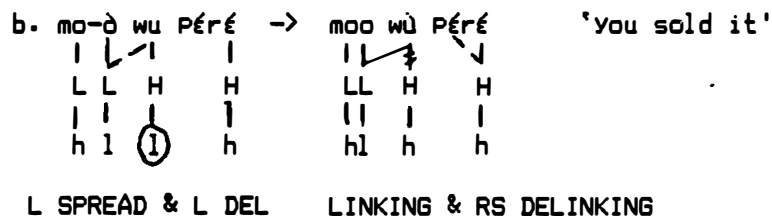
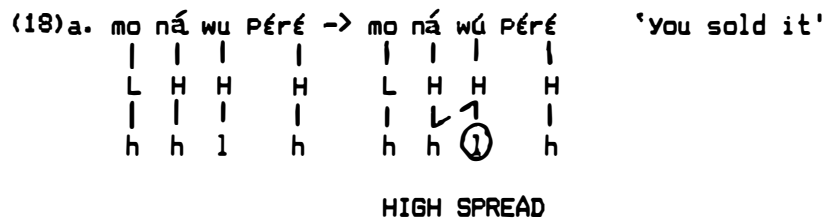


In summary, then, the noun class clitic continues to give conflicting signals concerning its underlying nature. As a subject, it seems to be Lh. As a noun object in sentence initial position, it seems to be both High final and Low final depending on the tone of the verb which follows. When followed by a Hl noun, it behaves as a Hl component of that noun and Participates in the OCP.

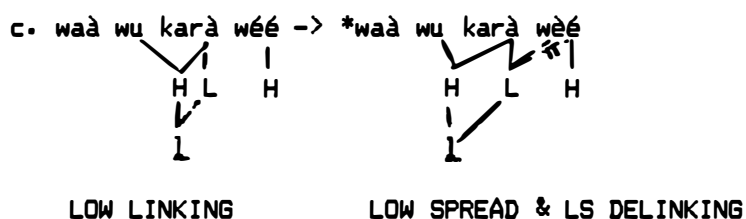
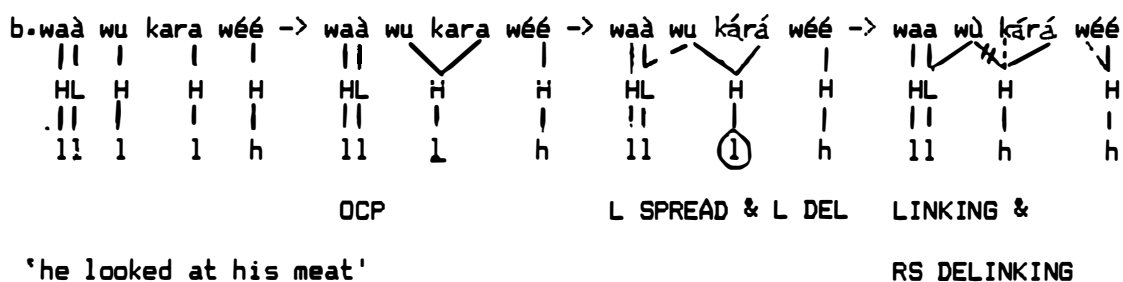
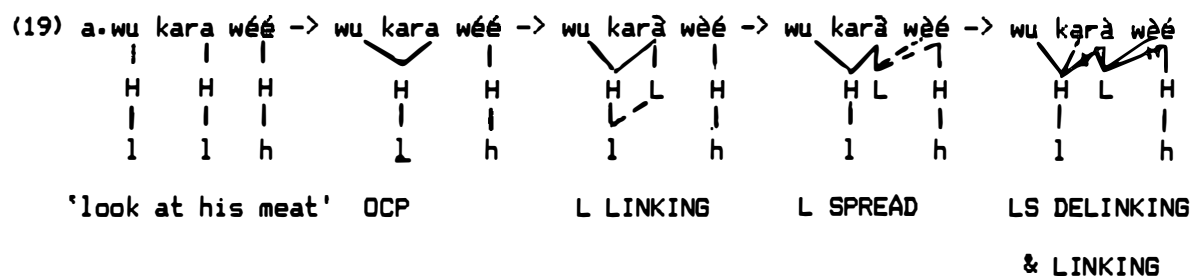
The preceding discussion examined how the clitic affects the tone of following nouns, verbs and verbal particles. The noun class clitic is also affected by preceding verbal particles and verbs. The reader will recall that normally a noun in phrase initial position is not affected by the tone of a preceding verbal (see Chapter 1). However, when a clitic is in initial position of a noun phrase, any preceding verbal can alter the tone of the clitic, which can in turn, alter the tone of following nominals and verbs. For example, when a clitic is in sentence initial position functioning as an object, it can trigger low tone spreading onto high tone verbs, as seen in (17a) below. However, when preceded by a high final verbal particle, as in (b), the clitic is itself high tone, as well as the high tone verb. Whatever floating low tone there may have been underlyingly is deleted in this environment. When preceded by a low tone particle, as in (c), however, the clitic is low tone, while the following high tone verb is high.

- (17) a. wu PÉÉ → wu PèÉ  
 b. mo ná wu PÉÉ → mo ná wÚ PÉÉ 'you sold it'  
 c. mod wu PÉÉ → moo wù PÉÉ 'you sold it'

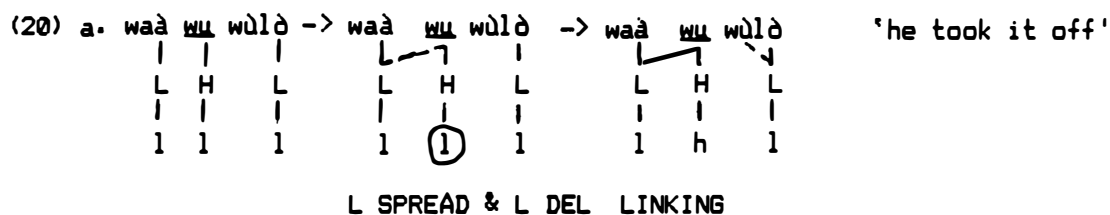
It would appear that, in this case, the clitic behaves as a H<sub>L</sub> noun and is subject to both High tone and Low tone SPread, as shown in the derivations below.



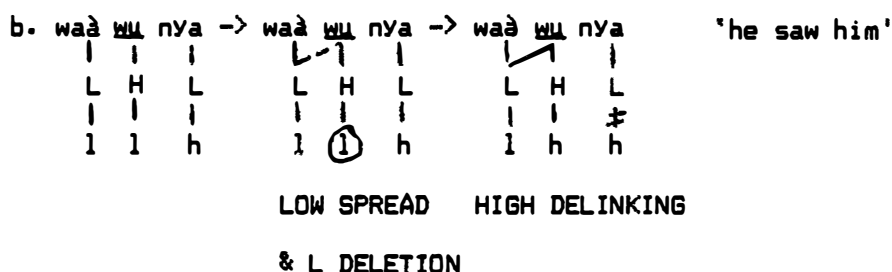
A clitic which functions as a Possessive Pronoun can also be subject to Low tone or High tone sPreading, which in turn can affect the tone of following constituents in the Phrase. Compare the derivations of (19a) and (19b) below. In (a), the Possessive Pronoun and the following H<sub>L</sub> noun undergo OCP. Since they are in sentence initial Position, Low Linking takes Place, which then results in Low tone sPreading onto the following High tone verb. In (b), wu kara is still in Phrase initial Position, so one might expect Low Linking to take Place. However, if this happened, an incorrect surface form would be produced, as shown in (c). Instead the clitic is subject to Low tone SPreading from the Preceding Low tone verbal Particle. Once the subregister Low tone of wu kara is deleted, Linking and RS Delinking take Place, thus Producing a surface Low tone on the clitic and a High tone on the noun.



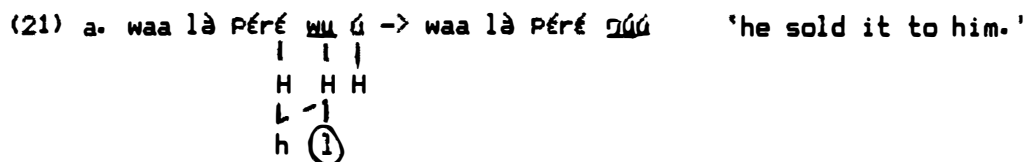
When a clitic which has undergone Low Spread is followed by a Low tone verb, the resulting Low-High contour remains linked to the clitic, creating a Mid tone, as shown below:



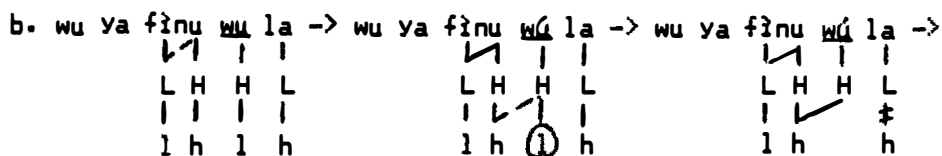
When a clitic which has undergone Low Spread is followed by a Mid tone verb, the verb undergoes High Delinking, as shown below:



Noun class clitics are also subject to tonal rules when in initial Position of an adverb Phrase. In the examples below, the High tone verb, as well as the High tone incompletion suffix on Low tone verbs, trigger High Spread onto the clitic (21a,b,c), while the Low tone verb can trigger Low tone Spread (21d).



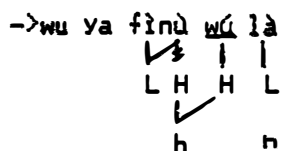
HIGH SPREAD



LOW SPREAD

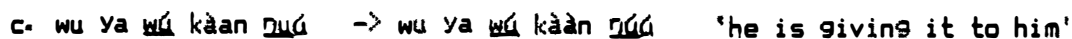
HIGH SPREAD

HIGH DELINKING



RS DELINKING

he VP lie-INC him on      'he is lying on him'



d. waà ḡmuuná cù wu nyuḡḡé mPaḡa i → waà ḡmuuná cù wu nyuḡḡé mPaḡa-i →

L	H	H	H(L)	H	L		L	H	H(L)	H	L
l	l	l	h	l	h		l	l	h	l	h

OCP

->waà ḡmuuná cù wu nyuḡḡé mPaḡa i → waà ḡmuuná cù wu nyuḡḡé mPaḡa-i

L	H	H(L)	H	L		L	H	H(L)	H	L
l	①	h	l	h		l	h	l	h	h

L SPREAD &amp; L DELETION &amp; LINKING LS DELINKING, RS DELINKING &amp; DOWNSTEP

'he-VP knife grab his head above-PP 'he grabbed the knife above his head'

It must be noted, however, that Mid tone verbs cannot, as their structure should Permit, trigger High tone sPreading onto noun class clitics. The effect is that clitics do not become High tone after Mid tone verbs, as illustrated below. Rather, in (22a) the clitic triggers High Delinking, while in (b) it undergoes Low Linking and subsequently sPreads its Low tone onto the High tone PostPosition.

(22)a. katəke nye wu là 'hunger is on him'

L	H	L	
h	l	h	HIGH DELINKING (44)

b. waà wu kan ḡḡ - ḡḡ → waà wu kan ḡḡ 'he gave it to him'

L	HL	H	
h	l	h	LOW LINKING, LOW SPREAD, LS DELINKING

Recall that verbal incomplete suffixes, analyzed as underlyingly High tone, were also Mid tone after Mid tone verb roots, as shown in (23a). However, this apparent underlying High tone does not trigger High tone SPreading onto a noun

class clitic (b).

(23)a. ta - ri            'be cooking'

b. wu ya ta-ri wu là -> \*wu ya ta-ri wú là 'he is cooking on it'

At this time, there does not seem to be a clear answer for this lack of High tone SPreading. It is Possible that historically Mid tone verbs had a different tonal origin than Mid tone nouns. Perhaps further development of the analysis in the future can yield more concrete answers.

How to explain the variety of behaviour on the noun class clitic eludes us at this Point in time. Rules which have already been discussed are used in connection with the noun class clitic. However, the variety of rules used brings about a confusing array of hypotheses concerning its underlying tone. As a subject, it sometimes appears to be Lh. In object Position, it appears to be High final if followed by a Mid tone verb, and yet in the same Position, it triggers Low tone sPread onto following High tone verbs. We can explain the Low tone sPread, as well as its being subjected to Low sPread and High sPread if we posit the underlying form as H<sub>L</sub>. However, a H<sub>L</sub> word normally does not trigger High Delinking (44) unless it has itself been subject to subregister Low tone deletion. This seems to be a case where a lowered High tone, H<sub>L</sub>, while normally functioning as a H<sub>L</sub> tone, also functions in certain instances as a Hh tone and triggers High Delinking on following Mid tone verbs, even when there is no indication that the subregister Low tone has been deleted. It may be Possible to come uP with some kind of solution to explain these idiosyncracies. At this time, however, I shall let the matter rest until further research can be done.

D. Yes-No Questions

Yes-No Questions are formed by adding *la* to the end of the declarative statement.

- (24) waà Paon 'he came' waà Pan la? 'did he come?'  
 waa kàrí 'he went' waa kàrí la? 'did he go?'  
 waa gbàrà 'he agreed' waa gbàrà la? 'did he agree?'

The Question marker is consistently Mid tone after verbs regardless of the tone of the verb. However, after nouns, variations can be found, as shown by the examples below:

- (25) a. òdè là me?  
 b. wùrì là us?  
 c. yìrì là you,Pl.?  
 d. mo là you,s9.?  
 e. wurì là him?  
 f. m̀l̀l̀ là rice?  
 g. ceewù là a woman?  
 h. gbaxa là a house?  
 i. nd̀r̀r̀k̀ là a yam?  
 j. m̀l̀l̀ŋe là the rice?  
 k. gbaké là the house?  
 l. nd̀r̀r̀k̀é là the yam?

These examples give four possible surface tonal shapes for the question marker, Mid, High-falling, Mid-falling, and Low tone. When it follows a verb, one is tempted to say that it is underlyingly Lh, while after nouns, it could be considered underlyingly High tone, or perhaps even Low tone. At this point,



it is unknown what the tonal analysis for the question marker might be. It is only clear that its tone shape is indeed affected by the tone of the preceding word, especially if that word is a noun.

### E. Wh Question Formation and Frontshifting

Wh questions are formed by frontshifting the question word to initial position of the sentence. The sentence then terminates with yè. Below are a few examples:

- (26) a. Sán waa kàrí yè 'Where did he go?  
 where he-VP go Q
- b. Sán waà wu nya yè 'Where did he see him?'  
 where he-TA him see Q
- c. Dìi nàà mèxé nye yè 'What is a man's name?'  
 how man's name is Q
- d. Dìi ceewù mèxé nye yè 'What is a woman's name?'  
 how woman's name is Q
- e. Nyà?a mu ya kun yè 'What are you doing?'  
 what you TA do Q

The tonal behaviour of the sentence final question marker yè is not unlike that of the completive aspect marker à discussed in Chapter 4. It is generally Low tone. However, like the completive aspect marker, when it is preceded by a Low tone, a Mid-Low tone materializes, as seen below:

- (27) a. Sán waà wu gbàrà yè → Sán waà wu gbàrà 'Where did he meet him?'  
 where he-TA him meet Q

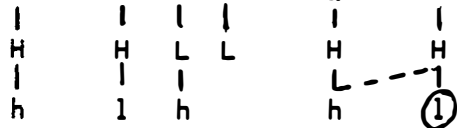
Compare with

- b. nàà-à yala mà Kàlè tàón wú yó 'Man should love God'  
 man-TA should \_\_ God Please him self-to

Whether both of these words Possess an underlying Mid tone or whether they both submit to some type of tone insertion rule (either Mid or High tone) is a question that shall be left unanswered at this time.

The front-shifted Question Phrase does not interact tonally with the following Subject noun Phrase. If the High Spreading rule were allowed between the two Phrases, an incorrect surface form would be Produced, as shown below.

(28) a. Sán ceewù nye yè ->\* Sán cééwú nyeè 'Where is a woman?'



HIGH SPREAD

b. Nyà?a ceewù ya kun yè ->\*Nyà?a cééwú ya kun yè 'What is a woman doing?'



HIGH SPREAD

This restriction is true for any object or adverbial Phrase which has been frontshifted. In (29), gbaxa has been front shifted. If it allowed its subregister High tone to spread onto the subject clitic, the clitic would acquire an incorrect High tone.

(29) gbaxa wu ya nyàà -> \*gbaxa wú ya nyàà 'A house he sees'



HIGH SPREAD

Tonal rules which operate across the sentence apply after the frontshifting. In (30a) the object, gbaxa, triggers High tone spreading onto the Low tone verb, while in (b), the frontshifted object can no longer trigger High tone

sPreading because it is no longer adjacent to the verb.

- (30) a. ndi ya gbaxa nyáá → ndi ya gbaxa nyáá 'I a house see'  
 b. gbaxa ndi ya nyáá → gbaxa ndi ya nyáá 'a house I see'

If the tonal rules must wait until after frontshifting, then, the resulting adjacent noun Phrases at the beginning of the sentence must have tonal boundary dividing them so that the tone of the first noun Phrase will be blocked from affecting the tone of the following noun Phrase.

#### F. Rule Ordering

Rule ordering has already been discussed somewhat briefly in earlier chapters of this dissertation. It was argued in Chapter 2 (pp.67-68) and further confirmed in Chapter 5 (pp.271ff) that the lexical rule of High Deletion (124) must take Place before the SPreading rules.

In Chapter 3, we saw that Association Conventions were best ordered before Segmental Deletion rules (pp.100ff) while adjustments made in relinking tones after the Segmental Deletions were made both before and after Low tone SPread. (see P.116 for list of rules).

Chapter 4 introduced new rules but few environments were found to test the ordering of rules. It was noted that LS Delinking must take Place before RS Delinking (p.157) and that both occur at the output of Low tone SPread. In addition, it was seen that the Association Conventions involved the linking of tones to TBU's in a one-to-one relation and that the Linking of any leftover TBU's took Place after the application of the Low tone SPread. The rule to account for this additional linking was simply labeled Linking.

Chapter 5 introduced another set of rules and data which brought more

opportunities to observe the interactions of the rules. In Section IV.C., it was shown that the following rules must take place in the following order.

(124) High Deletion, (126) Low Deletion

(88) OCP

(66) Feature Switch, (60) Low Linking

After these rules, which take place with word boundaries, are the two spreading rules: High tone Spread and Low tone Spread. Until now, however, two issues concerning these spreading rules have not been discussed: 1) their ordering with respect to one another and 2) whether they take place on two different levels, that is, the lexical and the postlexical level, using the terms of lexical Phonology.

Let us deal with the latter issue first. Do the spreading rules take place within word boundaries before they occur across the syntactic phrase? There are a few cases where Low Spread does occur at the lexical level first. Double TBU Low-High nouns undergo what appears to be a Low Spread rule. The High tone of the resulting Low-High contour is then delinked through the process of RS Delinking, as shown below:

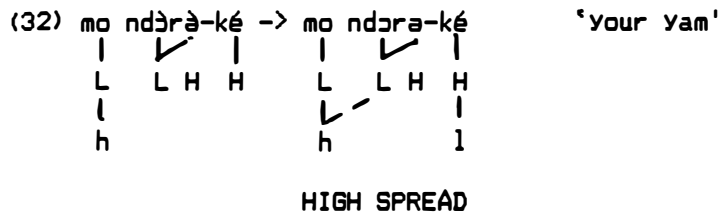
(31) ndàrá-ké → ndèrǎ-ké → ndàrà-ké      'the yam'

			↓↑		↘	
L	H	H	L	H	H	L

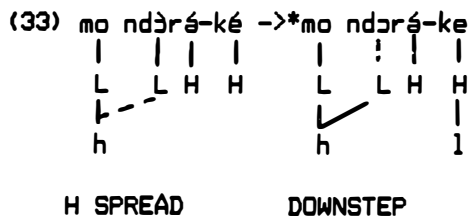
L SPREAD      RS DELINKING

The resulting surface tone for the noun root, then, is completely Low tone.

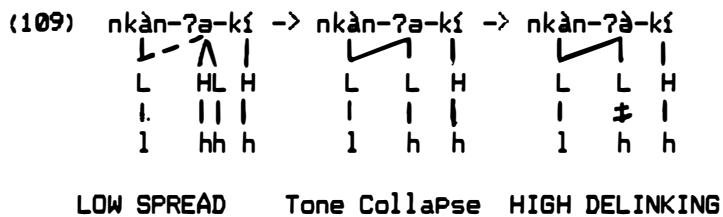
If the noun ndàrà-ké were preceded by the Lh Possessive Pronoun, na, the subregister High tone would spread onto this Low tone, producing a Mid tone on both TBU's of the noun root, as seen below:



If the subregister High tone were allowed to spread before the internal Low Spreading rule, the following incorrect surface form would be produced:



Another set of examples which seems to confirm the necessity of applying Low Spread at two different levels are Low tone nouns which possess both a Type II suffix and a definite suffix. In Section IV.B. of Chapter 5, the tentative rule of High Delinking (105) was introduced. Within this section, Type II definite nouns were discussed. As the example (109) from that section shows, it appears that a series of rules are required in order to produce the correct surface form. One of these rules is Low tone Spread.



When this noun is preceded by mo, it is clear that the above rules have already taken place before the subregister High tone of mo is spread onto the

noun; when High Spread takes Place, both the Low tone of the root and the derived Low tone of the TYPE II suffix acquire a surface Mid tone (34a). If Low Spread, Tone Collapse and subsequently High Delinking had not taken Place before High Spread, only the first TBU would become Mid tone while the suffix tone would incorrectly remain High-Mid, as shown in (b).

(34)a. mo nkà̀n-ʔà-kí → mo nkan-ʔa-kí

L	L	L	H	L	L	L	H
h		h		h		h	

HIGH SPREAD

b. mo nkà̀n-ʔà-kí → \*mo nkan-ʔa-kí

		^					
L	L	HL	H	L	L	HL	H
h	l	hh	h	h	Ⓛ	hh	h

HIGH SPREAD

There is yet another example where there seems to be word internal spreading before spreading across word boundaries. The word *kanà* is a HL noun meaning 'manner'. It is used as the final constituent of a noun phrase for expressions that would be translated into English as 'how to'. A few examples are given below:

- (35) a. ndaà soʔo-kanà cyòn 'I know how to cook'  
 I-TA cook-manner know
- b. ndaà péré-kaná cyón 'I know how to sell'  
 I-TA sell-manner know
- c. ndaà xə cèlì-kaná cyón 'I know how to dry it'  
 I-TA it dry-manner know

d. ndaà fini celi-kaná cyón 'I know how to dry fonio (a grain)'

I-TA fonio dry-manner know

In the examples above, note the tonal variation of kaná. In (a) this H<sub>L</sub> noun is Mid-Low when Preceded by a Mid tone nominalized verb, while it is High tone after a High tone verb and Low-High after a Low tone verb. This behaviour can be easily explained if High tone SPreading accounted for the High tone kaná in (b) and Low tone SPreading for the Low-High kaná in (c). A derivation of (c) is given below:

(35) c. ndaà xa cèlì-kana cyón → ndaà xa cèlì-káná cyón

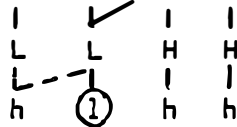


L SPREAD & L DELETION

LS DELINKING

When the Phrase is Preceded by a Mid tone noun, it appears that internal Low SPreading has already taken Place when High tone SPreading occurs as shown in (36a), for if High SPread occurred before internal Low SPread, the former would block the application of the latter, as seen in (36b), Producing an incorrect surface form.

(36) a. ndaà fini cèlì-káná cyón → ndaà fini celi-kaná cyón



HIGH SPREAD

b. ndaà fini cèlì-kana cyón → \*ndaà fini celi-káná cyón

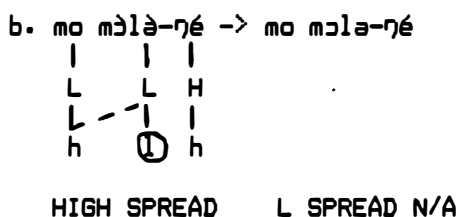
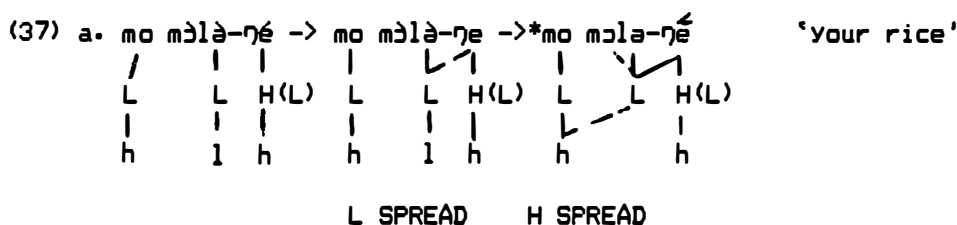


HIGH SPREAD

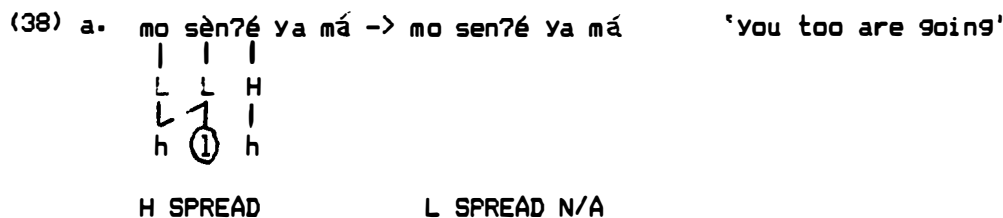
HIGH SPREAD, LOW SPREAD N/A

Again, it appears that word internal spreading must take place before Post-lexical spreading.

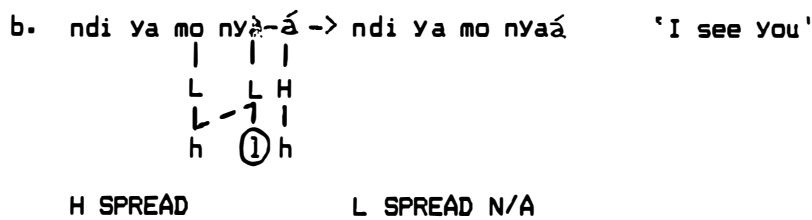
For other cases in Sucite, however, having the spreading rules operate first at the lexical and then at the Postlexical level creates complications. For example, if a Low tone Type I definite noun is preceded by mo, one would expect the Low tone of the root to spread onto the suffix first and then to have the subregister High tone spread onto the noun. Unfortunately, this gives an incorrect surface form, as shown in (37a). In order to produce the correct surface form, High tone must spread first, which results in eliminating the environment for Low tone spread (37b).



A couple of other examples show that Postlexical High Spread must take place before lexical level Low Spread.

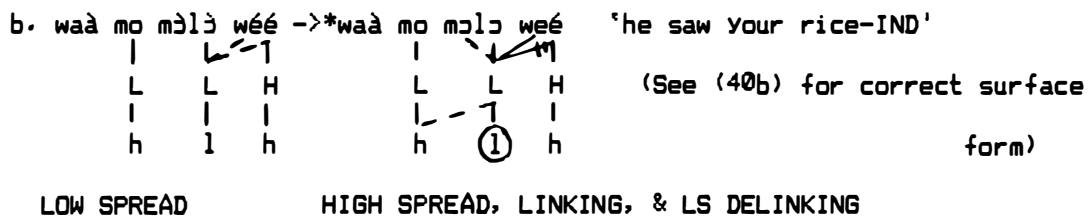
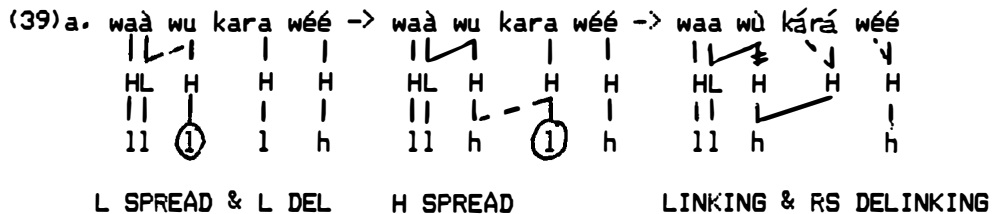






These examples pose a dilemma. On the one hand, there does seem to be some need to posit a Low Spreading rule at the lexical level. Other cases, however, require a Postlexical application, even within word boundaries. It is entirely possible that a solution can be found for this problem. However, time and insufficient data do not allow for a full investigation.

The second issue to deal with here is how to order Low tone and High tone Spreading with respect to one another. If we order Low tone Spreading first, the derivation in (39a) will produce a correct output, while the one in (b) will be incorrect.



On the other hand, if High Spreading was ordered first, (40a) would be incorrect while (b) would produce the correct surface form.

(40)a. waà wu kara wée → waà wu kara wée → \*waà wu kara wée (see (39a) for  
 || | | | HL H H H HL H H H HL H H H correct surface  
 || | | | || | | | || | | | || | | | form)  
 11 1 1 h 11 ① 1 h 11 h 1 h  
 H SPREAD N/A L SPREAD & L DEL LINKING

b. waà mo mɔ̀lɔ̀ wée → waà mo mɔ̀lɔ̀ wée 'he saw your rice-IND'  
 | | | | | | | |  
 L L L H L L H  
 L - L ① | |  
 h h h h  
 HIGH SPREAD L SPREAD N/A & LINKING

Therefore, it appears that strict ordering for these two rules produces incorrect results. If, however, High and Low Spreading operated in some type of cyclic fashion across the sentence, where either High or Low Spread would occur first, depending on which could apply first in scanning the sentence from left to right, a correct surface form would be produced in each case. Note that in (39a) above, Low tone Spread was the first applicable spreading rule encountered, while in (40b), High Spread occurred first. Below are a few more examples to illustrate this interaction of rules.

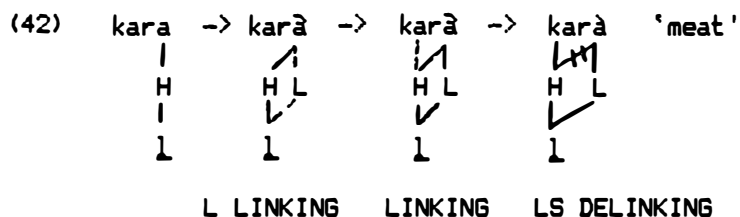
(41)a. wu ya wu kàán ɲu-ú → wu ya wú kàán ɲuú → wu ya wú kàán ɲuú →  
 | ^ | | | | | | | | | ^ | | | | | | | | |  
 H LH H LH H H H LH H LH HH H LH H LH HH  
 | | | | | | | | | | | | | | | | | | | | |  
 1 lh 1 lh 1 h 1 lh ① lh lh 1 lh 1h lh lh  
 HIGH SPREAD LOW SPREAD

→ wu ya wú kàán ɲuú 'He is giving it to him'  
 | ^ | | | | | | | | |  
 H LH H LH HH  
 | | | | | | | | | | | | | | | | | | | | |  
 1 lh 1h lh  
 HIGH SPREAD & RS DELINKING

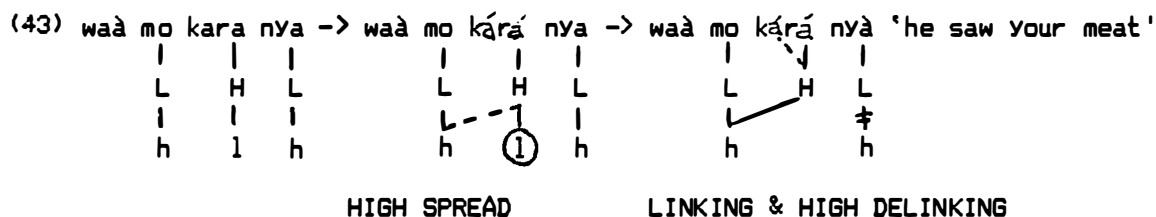


'He is giving you to him'

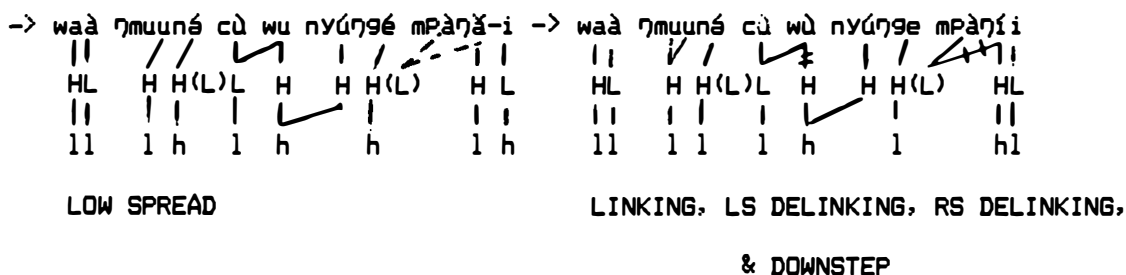
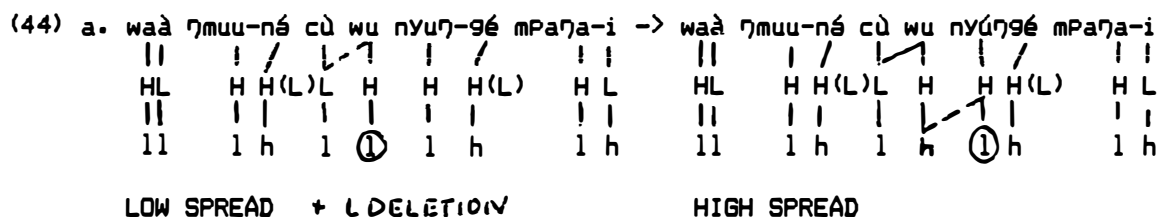
After the spreading rules, then, Linking rule (39) takes place. From Chapter 4 we know that the Linking rule was devised as a separate process from the Association Conventions so that extra TBU's would not be linked to tones before the application of Low tone Spread (see pp.155). After Linking, LS Delinking takes place. An example from Chapter 5 illustrates the need to order Linking before LS Delinking. In (42) below, Independent Low Linking takes place, resulting in both the Mid and Low tone linked to the same TBU. Normally, this is an accepted contour tone in Sucite. However, if the first tone of the contour is linked other TBU's of the morpheme, then the left side tone can be delinked. Thus, Linking must take place first.



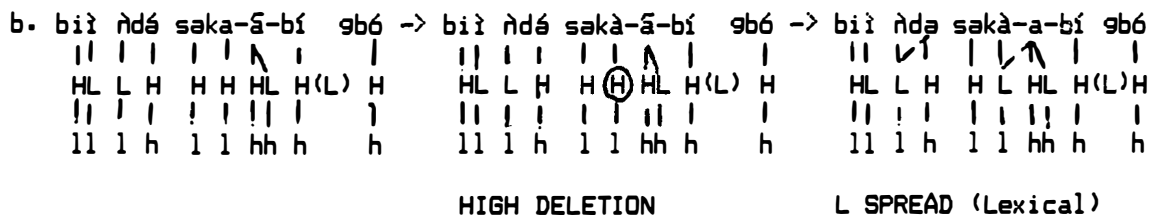
Next, RS Delinking takes place. The High Delinking rule (44) would also take place at this stage of the derivation. It is crucially ordered in reference to High tone Spread and Low tone Spread. As the example below shows, High Spread provides the environment for the High Delinking of the Mid tone verb.



The Low tone Insertion rule (27) (introduced in Chapter 3) which produces a falling tone on High final nouns in sentence final position would also be ordered anytime after High Spread. Finally, as mentioned before, the Downstep rule takes place. The derivations below are examples of this ordering of rules.

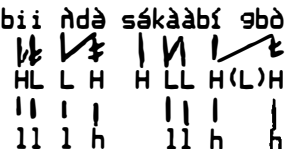


(he-TA knife held his head above-PP) 'He held the knife above his head'



-> biì òdà sákà-à-bí gbó -> biì òdà sákààbí gbó -> biì òdà sákààbí gbö  

  
 HL L H H L L H(L) H    HL L H H LL H(L) H    HL L H H LL H(L)H  
 11 1 h 1 1 h h    h    11 1 h 1 1 h    h    11 1 h    11 h h  
 Tone CollapSe & H DELINK    HIGH SPREAD    LOW SPREAD

-> biì òdà sákààbí gbò (they my goats killed) 'They killed my goats'  

  
 HL L H H LL H(L)H  
 11 1 h 1 1 h h  
 RS DELINKING

### 9. Concluding Notes

This entire dissertation has considered in detail the tonal behaviour within a simple sentence of Suciite, a Senufo dialect. It was seen that some problems could be easily solved while others defied a clear analysis. The theoretical approach used here extends the autosegmental approach into the implementation of two tonal tiers, borrowing from the recent developments in non-linear Phonology. It was seen that this approach greatly enhanced the ability to adequately describe the tonal phenomena of Suciite while at other points, some nagging questions still remain unanswered. Further research will be required to pursue these questions which, if answered, could contribute to modifications of the above analysis. It is my hope, however, that the present description and analysis of Suciite will serve to provide a springboard for future analyzes of tone in Senufo languages as a whole. The double tiered approach itself needs to be tested for its viability in other languages. However, whether the double tiered approach holds up in other languages or not, it does remain clear that a traditional autosegmental approach to analyzing the

tone of Sucite falls terribly short of adequately describing its complicated tonal Processes. Again it is hoped that further investigation and the presentation of more data will resolve the questions that remain unanswered at this point.

#### NOTES

1. The reader may also recall that High tone spread as a rule is not as productive between subjects and verbal particles as elsewhere in the sentence (See Chapter 4).

1.

## BIBLIOGRAPHY

- Anderson, Stephen R. (1978). "Tone Features." V. Fromkin (ed.), Tone: A Linguistic Survey. pp. 133-175.
- Balla Diallo (1981). Atlas du Mali, Les Atlas de Jeune Afrique. Imprimerie Rellure Tours, 2ème Trim, Paris.
- Bendor-Samuel, John T. (1971). "Niger-Congo, Gur." Thomas A. Sebeok (ed.), Current Trends in Linguistics, Vol. 7. Mouton, Paris.
- Clements, G. N. (1981). "The Hierarchical Representation of Tone Features," in G. Clements, ed., Harvard Studies in Phonology, vol. 2. Indiana University Linguistics Club, Bloomington.
- Clements, G.N. and J. Goldsmith (eds.) (1984). Autosegmental Studies in Bantu Tone. Foris Publications, Dordrecht.
- Ewen, Colin and John M. Anderson, eds. (1985). Phonology Yearbook 2. Cambridge University Press, London.
- Fromkin, Victoria (ed.) (1978). Tone: A linguistic survey. Academic Press, London.
- Greenberg, Joseph H. (1966). The Languages of Africa. Indiana University, Bloomington.
- Herault, George, dir. (1983). Atlas des langues Kwa de Côte d'Ivoire Tome 1: Monographies. Institut de Linguistique Appliqué, Abidjan.
- Herault, Georges (1983). Atlas des langues Kwa de Côte d'Ivoire Tome 2: Listes lexicales et études comparatives. Institut de Linguistique Appliqué, Abidjan.
- Hyman, Larry (1985). "Word Domains and Downstep in Bamileke-Dschang," in C. Ewen and Anderson, eds., Phonology Yearbook 2, pp. 47-85.
- Hyman, L.M. and R.G. Schuh (1974). "Universals of tone rules: evidence from West Africa." Linguistic Inquiry 5:81-115.
- Kaye, J. and H. Koopman (1982). "Les tons du système verbal en bété (gbadi)." Presented at 13th annual con. Afr. Ling., Montreal.
- Kaye, J., Lowenstamm, and Vergnaud (1985). "The internal structure of Phonological elements: a theory of charm and government," in C. Ewen and Anderson (eds.) Phonology Yearbook 2. Cambridge University Press, Cambridge.
- Kiparsky, Paul (1982). "From Cyclical Phonology to Lexical Phonology, in van der Hulst (1982), pp. 131-176.

- Lavergne de Tressan (1953). Inventaire linguistique de l'Afrique occidentale française et du Togo. Mémoires de l'IFAN, no.30, IFAN, Dakar.
- Le Saout, Joseph (1976). Etude descriptive du Gban (Côte d'Ivoire) Phonétique et Phonologique. SELAF, Paris.
- Maddieson, Ian (1974). "A Possible new cause of tone-splitting evidence from Cama, Yoruba, and other languages." The Tone Tome, UCLA Working Papers in Phonetics, 27:28-46.
- Manessy, G. (1975). Les Langues Oti-Volta. SELAF, Paris.
- Mensah, E.N.A. and Z. Tchagbale (1983). Atlas des langues sur de côte d'Ivoire. Institut de Linguistique Appliqué, Abidjan.
- Odden, David (1986). "On the role of the Obligatory Contour Principle in Phonological Theory," in Language 62/2:353-383.
- Person, Y. (1966). "Des Kru en Haute-Volta." Bull. de l'IFAN, T 28, ser. B, nos. 1-2:485-492.
- Pulleyblank, Douglas G. (1983). Tone in Lexical Phonology. Phd. Dissertation, M.I.T., Cambridge, Massachusetts.
- Trifkovic, Mirjana (1977). "Tone Splitting: Lendu." Studies in African Linguistics, Supplement 7, pp.223-234.
- van der Hulst, Harry and Norval Smith (eds.) (1982). The structure of Phonological representations (Part I). Foris Publications, Dordrecht.
- Westermann, Diedrich and M.A. Bryan (1970). Languages of West Africa, Part II. International African Institute, London.



BIBLIOGRAPHY OF SENUFO LANGUAGES

- Anonymous (n.d.). A Grammatical Sketch of the Katiola Dialect of the Tagbana Language. ms.
- Anonymous (1961). Word List: Tvebara-English. Mission Baptiste, Korhogo.
- Boese, Linnea (1983). Nyarafolo Narratives and Procedurals: A discourse analysis. M.A thesis, University Microfilms, Ann Arbor.
- Boese, Linnea (1983). Description of Basic Nyarafolo Syntax. ms.
- Boutin, Pierre (1981). Eléments pour une systématique du Fandandà. Thèse du D.E.A., Université de Paris III.
- Boutin, Pierre (1982). "Relations de détermination en fodonon (Parler sénoufo de la région de Dikodougou, Côte d'Ivoire)." Afrique et Langage 18.2:5-36.
- Burdon, Stephen and Claudia (1984). The Syllable, Word and Tone in Toussian. ms.
- Carlson, Robert (1983). "Downstep in Supyire." Studies in African Linguistics 14/1:35-46.
- Carlson, Robert (1980). A description of Supyire tone. draft.
- Carlson, Robert (1983). The function of the Conjunctions kà and ma in Supyire Narrative. ms.
- Carlson, Robert (1986). Grammaticalized Verbs in Supyire. Presented at the 16th Conference of African Linguistics, 1986.
- Carlson, Robert (n.d). Language Learning Lessons (Supyire). ms.
- Carlson, Robert (1981). Sketch of Supyire Noun Classes. ms.
- Carlson, Robert (1985). Supyire Tone. ms.
- Cheron, G. (1925). Le Dialecte Sénoufo du Minianka. Librairie Orientaliste Paul Geuthner, Paris.
- Clamens, G. (1953). "Des Noms Vernaculaires du TYPHLOPS dans quelques dialectes Senoufo." Notes Africaines 58, 59.
- Clamens, G. (1951). "Anthroponymie nyarafolo." Notes africaines, IFAN 52:120-122.
- Clamens, R.P. (1952). "Essai de grammaire senoufo-tagwana." Bulletin de l'IFAN XIV, no. 4:1402-1465.
- Clamens, G. (1950). "Des noms de Personnes en dialecte tagwana." Notes

- Africaines, IFAN 46:52-54.
- Clamens, G. (1951). "Langues secrètes du Poro." Notes Africaines, IFAN 52:93-4.
- Cremer, J. (1919). "Essai sur la langue Minianka." Bull. Com. Et. his. et Scient. de l'A.O.F 4:560-616.
- Garber, Anne (1980). "Word order change and the Senufo languages." Studies in the Linguistic Sciences, 10/1:45-57.
- Herauld, G., et J. Mlanhoro (1973). "Le TakPer (Tagbana de Niakaramandougou) Esquisse Phonologique et corpus lexical." Université d'Abidjan, Annales, Serie H, 6/1:133-178.
- Holas, B. (1957). Les Sénufos (y compris les Minianka). P.U.F, Paris.
- Jordan, Dean L ( ? ). NVarafolo Tense-Aspect in the Folk Tale, in Papers on Discourse, pp. 84-90.
- Laughren, Mary (1973). Analyse plérematique du tyebari (un dialecte sénoufo). Thèse du Doctorat du 3e cycle, Nice.
- Laughren, Mary (1976). "Serial Verbs." Bull. de l'IFAN T.38, ser.B, no.4:872-889.
- Mills, Elizabeth (1978). The Senufo Noun and Pronoun. ms.
- Mills, Elizabeth (1978). Theme in Senufo Narrative Discourse. ms.
- Mills, Dick and Betty (1967?). Tyebara Grammar. The Conservative Baptist mission, Korhogo.
- Manessey, G. (1966). "Recherches sur la morphologie du verbe senufo." Bull. IFAN, 28(p) 3/4:690-722.
- Prost, R.P.A. (1964). Contribution à l'étude des langues voltaïques. M.I.F.A.N. no. 70, IFAN, Dakar.
- Rapp, E. (1933). "Die Nafana-sprache auf der Elfenbeinküste und auf der Goldküste." M.S.O.S. 36, 3, 1933:66-69.
- Welters, W.E. (1950). "Notes on two languages in the senufo group. I Senadi, II SuP'ide in Language." Journal of the Linguistic Society of America, vol. 26, no 1:126-146, and no 4:494-532.
- Wichser, Madlen (1983). Description de Karaboro. ms.

## APPENDIX

The diacritics for each tone are given below:

- Low ˘
- Mid unmarked vowel
- High ˊ
- Low-High Rise ˋ
- Low-Mid Rise ˋ
- Mid-High Rise ˋ
- High-Low Fall ˆ
- Mid-Low Fall ˋ
- High-Mid Fall ˋ

## NOUN LEXICON OF SUCITE

Each noun has up to five entries each separated by a semi-colon. Within each entry two possible forms may be given, separated by a comma. These indicate a variation in pronunciation of a particular word. The symbol ?T indicates that the tone marking is uncertain. The five entries, in order of appearance, are:

Singular Indefinite; Singular Definite; Plural Indefinite; Plural Definite; 'my (nda) - Singular Definite'.

Some nouns have no plural. The last entry is given only for a restricted number of nouns.

## b

bàʔà; bàʔàke; bàʔàvà; bàʔànyɛ: Poison

bàlá; bàlàŋé; bàlála, bàláya; bàlǎbí, bàlǎnyé: ball, bullet?

bàʔdòʔʔ; bàʔdòʔŋé; tàʔdòʔòyʔ; bàʔdòʔònyé: sesame

bàràntân; bàràntáŋe; bàràntánya; bàràntánnyé: banana

bàróxà; bàràke: strength

bàlè; bàne; bìya; bìyakí: seed

bàlê; bàné; bàle; bàlàkí: ground Peas

bàlòù, bàlòù?T; bàlàŋe; bàlàle, bàlale?T; bàlàbí; nda bàlàŋe: slave

bɔrɔxɔ: bɔrɔkɛ́: bɔrɔyɔ: bɔrɔnyɛ́: ????: bag, sack

búbù: búbúŋe: búbúlɔ: búbúbí: mute

búrúxo: búrukɛ́: búrúyo: búrunyɛ́: bread

bùxùrò: buxute: addition to a village

## ɛ

cà: càŋe: nà̀kooɔ: nà̀kooté: child

caan: caankɛ́: caan'ya: caannyɛ́: ndà cásánke: market

càlâ: càlâŋe: càlíya: càlìnyɛ́: beans

calou: calaŋe: calála: calámbí: nda calaŋe: pig

càncólô: càncóóne: càncóóɔ: càncóóŋkí: pipe (for smoking)

càntòŋò: càntòŋe: càntònyò: càntònyɛ́: nda càntòŋe: umbrella

caŋà: càŋe: kannà: cànnyɛ: ndà cánbané: day, sun

caŋànyèlè: caŋànyìné, caŋany-, caŋànyì: caŋànyìkí: ??: sun, lit. eye of the  
day

cedɛ: cené: ?ceráɛ~cèrale: ?ceráki~cèràki: nda cené: calabash, gourd

ceewè~ceewù: ceèŋe: cèe: cèèbí: nda ceèŋe: woman

céfólô: céfóláŋe: céfèe: céfèèbí: diviner

cégburoxo: cégburokɛ́: cégboriyo: cégboranyɛ́: Piece of wood -?

cere: ceté: ndà céte: body

cèŋŋè: cèŋŋe: cèènmí: cèènmbí: antelope

cènràxè: cènràke: cènràyè: cènrànye: lion

cenke: cenkɛ́: cen'ye: cennyɛ́: ndà cénke: sauce

cenxayáráxá: cenxayáráke: sauce ingredients

cijèrè: cijète: ??: adultery (of man)

cikɔn: cikɔŋe: cikùun: cikùunbí: ??: bride, lit. excised woman

cikɔnrò: cikɔnte: ndà cíkɔnte: wedding

cilè: ciìne: cìxàle: cìxàkí: ndà cííne: thigh

cégboraxo: cégborakɛ́: cégborayo: cégboranyɛ́: cleaning, calabash ?

cilùù: cilàŋe: cilàle: cilàbí: nda cilàŋe: Potter

cinndèè: cinndèèŋe: cinndèèlé: cìnnndèèbí: ??: elder woman

ciPɔlò: ciPɔlâŋe: ciPèe: ciPèèbí: ??: groom

céráŋe: céraŋe: cérámi: cérambí: nda céraŋe: orphan

cíwúlò: cíwúúne: cíwùu, cúwùu?: cíwùùkí: week

colò: codne: cò?olɔ: cò?òkí: ndà cóóne: clay pot

conlò: conlâŋe: ciìnlɛ: ciìnbí: nda conlâŋe: younger brother, sister

cò: còŋe; còolɔ; còòbí: net  
 cɔnrɔ; cɔɔnté; cɔn'yo; cɔnnyé; ndà cɔ́nte: ashes

## d

dàgbànŋà; dàgbànŋe; dàgbànnà; dàgbànye: ginger  
 dàʔàsalu; dàʔàsaləŋé; dàʔàsalála; dàʔàsǎlabí: fish (species)  
 dàʔàsónŋo; dàʔàsónŋgé; dàʔàsón'yo; dàʔàsónnyé: toad  
 dànáà; dànáàŋe; dànáàyà; dànáànye: red pepper  
 danbùrùŋŋ; danbùrùŋgé: dirt  
 dàsùlò; dàsùləŋe; dàsùlo; dàsùlèbí: elephant  
 dósonlɔŋo, -nk-?; dósonlɔŋgé; dósonlɔnyo; dósonlɔnyé: duck  
 doᵐpəŋè; doᵐpəŋe; doᵐpənyè; doᵐpənye: vulture  
 dùxù'cà; dùxù'cəŋe; dùxù'càa; dùxù'cààbí: sheep

## f

faaciì; faaciìŋe; faaciì; faaciìbí; ndə faciìŋe: cultivator  
 fala; falaŋé; ?????: agriculture, cultivating  
 fáláxá; fáláke; fálíyá; fálínye: rock  
 fànʔànfòlɔ; fànʔànfòlòŋé; fànʔànfèe; fànʔànfèèbí: king  
 fanlà; fanləŋe; fanlála; fanlèbí; ndə fanləŋe: crutches  
 fanŋa; fanŋgé; fannya; fannyé; ndə fanŋgé: cemetery, grave  
 ferame; ferambé; ndə férámbe: urine  
 fɛnlɛ; fiiné; fènʔɛnlɛ; fènʔɛnkí; ndə fííne: Penis ??  
 fiì; fiìŋe; fiìle; fiìbí: python  
 fiin; fiinŋé; fiínle, fiénmi; fiínbí, fiénmbí, ?fiínbíndə fiinŋé: blind person  
 fine; finaŋé; ndə finaŋé: fonio, grain from crabgrass family  
 fàlàrî; fàlàrəŋe; fàlàríye; fàlàrɔnyé: flower (French)  
 fàlàxè; fàlàke; fàlìyè; fàlànye: mat  
 fànetári; fànetáŋe; fànetárale; fànetárabí: window (French)  
 fàrà; fàràŋé; fàrála; fàrábí: winnowing basket  
 fərə; fəte; fanýè; fənye; ndə fáte: excrement  
 fokanzaxè; fokanzàke; fokanziyè; fokanzinyé; ndə fókánzáke: wing  
 fólókide; fólókidakí: legend  
 folò; foləŋe; fèe; fèèbí; ndə fóləŋe: owner, chief  
 folɔ; fooné; fòʔolɔ; fòʔòkí; ndə fóóne: debt  
 fònlò; fùùnè; fùun; fùùnkí: Peanut  
 fòŋŋò; fòŋŋe: Poverty

fòxò: fòke: fùvò: fùnve: corn  
 fù: fùne: fùulo: fùùbí: greeting  
 fucedè: fucène: fuceràle: fucèràkí: ??: stomach (generic)  
 fùfen?en: fùfen?enké: fùfen?enye: fùfen?ennyé: Palm leaf  
 fùgbélè: fùgbééne: fùgbéxéle: fùgbéxakí: Senufo basket  
 fùjòkulo: fùjòkuuné: fùjòkòxalo: fùjòkòxakí: cup  
 fùjòxò: fùjòke: fùjòvò: fùjònye: water Pot  
 fukanxà: fukànke: fukan'yà: fukànyé: ndà fúkánke: shoulder  
 funkyaxe: funkyaxaké: funkyaxaye: funkyaxenyé: nda funkyaké: diarrhea  
 fùnmò: fùnmbe: sweat  
 fuṛò: fùṛge: funyò: fùnye: ndà fúṛge: insides  
 futaxè: futàke: futiyè: futīnye: ndà fútáke: trainer (for Yam Plants)  
 fyáa: fyáaṛé: fyáala: fyáabí: fish  
 fyèxù: fyèxàṛe: fyèxale: fyèxàmbí: earring  
 fyenxè: fyènke: fyen'yè: fyenyè: ndà fyénke: worm

**gb**

gba: gbaṛé: gbaála: gbaábí: nda gbaṛé: river  
 gbabálê: gbabáne: gbabiya: gbabiyakí: nda gbabáne: room (of a house)  
 gbalà: gbaàne: gbà?ala: gbà?àkí: ndà gbááne: forehead  
 gbàmbúluṛò: gbàmbúluṛge: gbàmbúluṛnyò: gbàmbúluṛnye: bamboo  
 gbàràmgbàbàlê: gbàràmgbàbàné: gbàràmgbàbiya: gbàràmgbàbiyakí: lice  
 gbàrètìlaxè: gbàrètìlaxé: gbàrètìliyè: gbàrètìlinyé: top of the door  
 gbàràxà: gbàràke: gbàriyà: gbàrinye: door  
 gbasónxò: gbasónke: gbasón'yò: gbasónnye: nda gbasónke: bedroom  
 gbaxa: gbaké: gbaya: gbanyé: nda gbaké: house  
 gbèsè: gbèséṛe: gbèsééle, gbèsíye: gbèséébi, gbèsīnye: machete  
 gbìin: gbìinbe: light  
 gbàlaxè: gbàlaxé: gbàliyè: gbàlinyé: well  
 gbo: gbuṛé: kulo: kulobí: nda gbuṛé: corpse  
 gbonlò: gbuṛne: gbòṛ?alò: gbòṛ?àkí: ndà gbúṛne: fireplace  
 gboxo: gboké: gbuvo: gbunyé: nda gboké: tam-tam  
 gbòṛṛò: gbòṛge: gbòṛnyò: gbòṛnye: gorilla  
 gbun, on?, oon?: gbuunbé: ??????: funeral  
 gbunnàṛò: gbunnàṛge: gbunnànyò: gbunnànye: nda gbunnàṛge: wall  
 gbùsàn: gbùsànṛe: gbùsàanla: gbùsàànbí: frog

## i

jã: jãŋe: jaàla: jaàbí: ndà jáŋe: son  
 jatɔɔɔ: jatɔké: jatoyɔ: jatonyé: nda jatɔké: roof  
 jàxácii, jàxə̀ə̀bùŋ: jàxáciiŋé: jàxáciíle: jàxáciíbí: trader  
 jexe: jeké: jive: ndà jéke: soap  
 jide: jiné: jərə̀ŋi: jərə̀ŋí: nda jiné~?ndà jíne: breast  
 jìfù̀nə̀mè: jìfù̀nə̀mbé: Potassium  
 jì̀zi: jì̀zə̀ŋé: jì̀ziye, jì̀ziíle: jì̀zinyé, jì̀zìbí: thread (Dioula)  
 jì̀laxè: jì̀laxé: jì̀liyè: jì̀linye: nut  
 jərə̀mè: jərə̀mbé: ???????: milk  
 jòkù̀rə̀xò: jòkù̀roké ?T: jòkù̀ríyò: jòkù̀rinyé: mumps  
 jolɔ: jooné: jò?olɔ: jò?òkí: ndà jóóne: testicle  
 jɔ́: jɔ́ŋe: jóóɔ: jóóbí: nda jɔ́ŋe: pocket  
 jɔ̀laxɔ: jɔ̀laké: jɔ̀liyɔ: jɔ̀linyé: nda jɔ̀laké: sewing  
 juu: juubé: ndà júúbe: speech

## k

kààfoxe: kààfoké: outside village limits  
 káátaxè: káátə̀ke: káátiyè: káátə̀nye: bridge  
 kàcèrè: kàcèté: kàcìyè: kàcìnyé: stalk (of a plant)  
 kacènnè ? : kacèŋe: ???????: the good  
 kacenle: kaciinné: kacééŋi: kacééŋí: nda kaciinné: fetish  
 kacilaxè : kacilə̀ke: kaciliyè: kacilinye: nda ká́cíláke: bone  
 kacilaxè: kacilə̀ke: kaciirè: kaciite: nda ká́cíláke: skeleton  
 kàcɔɔɔ: kàcɔké: kàcoyɔ: kàconyé: Pen or enclosure  
 kàcù: kàcùŋe: kàcùlo: kàcùlùbí: mouse  
 kádérî: kádéríŋe: kádérále: kádérábí: nda kádéríŋe: door frame  
 kàfànlə̀ŋà: kàfànlə̀ŋe: kàfànlə̀nyà: kàfànlə̀nye: donkey  
 kàfòlɔ: kàfòlə̀ŋé: kàfèe: kàfèèbí: lord  
 káfórò: káfóríŋe: káfóríyo: káfórínyé: nda káfóríŋe: eggplant  
 kafulò: kafuðne: kafoxòlo: kafoxòbí: ???????: surprise  
 kafuxò: kafùke: kafuyò: kafùnye: ndà káfúke: vapor, steam, hot season  
 kafyenə̀njide: kafyenə̀jiné: kafyenə̀jìrale: kafyenə̀jìràkí: nda kafyenə̀jiné:  
 whirlwind  
 kafyexè: kafyèke: kafyeyè, -feyè?V: kafyènye: ndà káfyéke: wind, harmattan  
 winds, cold season

kaḡbolò: kaḡboòne: kaḡbòʔolɔ,-ḡboxàlE9: kaḡbòʔòkí: ndà káḡbóóne: miracle  
 kàjiixe: kàjiiké: kàjiiye: kàjiinyé: firewood  
 kàjikɔrɔxɔ: kàjikɔrɔké: kàjikɔriyɔ: kàjikɔrɔnyé: bark  
 kajinnè: kajinne: kajinne: kajinnàkí: ndà kájinne: bracelet  
 kàjìpólɔ: kàjìpóóne: kàjìpòʔolɔ: kàjìpòʔòkí: bundle of firewood  
 kàkonxɔ: kàkɔnké: kàkon'yɔ: kàkonnyé: cold, cough  
 kàlàpólɔ: kàlàpóóne: kàlàpòʔolɔ: kàlàpòʔòkí: ndà kàlàpóóne: sheaf of sorghum  
 kàlaxa: kàlaké: kàlaya: kàlanyé: sorghum  
 kalelè: kaleène: kaleèni: kaleèniḡ: ???????: customs  
 kàlòxɔ: kàlòke: kàlùvò: kàlùnye: shower room  
 kàmáʔaḡa: kàmáʔaḡé: kàmáʔanya: kàmáʔanyé: Paille en corné\*\*  
 kàmene: kàmené: kàméni: kàményé: left hand:  
 kàmene: kàmené: kàméni: kàméniḡ: sparrow hawk  
 kámeḡe: kámeḡé: kámeve: kámenyé: dew  
 kàmḡbilé: kàmḡbiléne: kàmḡbiléni: kàmḡbiléniḡ: man's cane  
 kàmólu: kàmóləḡé: kàmóómi: kàmóómi: ant  
 kàmónzaxe: kàmónziké: kàmónziye: kàmónzinyé: ndà kàmónziké: ant with wings  
 kàmóonyélu: kàmóonyéine: kàmóonyéne: kàmóonyéeté: ant (species)  
 kàmózorù: kàmózorəḡe: kàmózorəlo: kàmózorəbí: ant (species)  
 kàmʔtúxàdò: kàmʔtúxàné: kàmʔtúxàrò: kàmʔtúxàte: anteater  
 kàmpelè: kàmpène: kàmpèḡele: kàmpèʔákí: ndà kámpééne: finger  
 kàmpenəḡḡ: kàmpenəḡḡḡé: kàmpenəḡḡḡlɔ, -ḡòvḡ: kàmpenəḡḡḡbí: Pouce: thumb  
 kámpənnəḡè: kámpənnəḡe: kámpənnənyé: ?kápəninye: ndà kámpənnəḡe: stick, stake  
 kàmpèrəḡè: kàmpèrəḡe: kàmpèrənyé: kàmpèrənye: ndà kàpèrəḡe: cricket  
 kàmpulò: kàmpuùne: kàmpòxəlo: kàmpòxəkí: ndà kámpúúne: muscle  
 kàncinḡè: kàncinḡe: kàncinnyé: kàncinnye: ndà káncinḡe: nail (finger)  
 kàndəxe: kàndəké: kàndiye: kàndinyé: right hand  
 kànʔà: kànʔake: kàn'yà: kànnye: village, town  
 kànʔənfòlɔ: kànʔənfòlòḡé: kànʔənfèe: kànʔənfèèbí: village chief  
 kànʔəḡaḡa: kànʔəḡḡé: kànʔəḡḡnyé: kànʔəḡḡnya: kànʔəḡḡnyé: Piège: trap  
 kàntalà: kàntaàne: kàntàʔàla: kàntàʔákí: ndà kántáséne: hand  
 kàntawilè: kàntawiine: kàntawèxəle: kàntawèxəkí: ndà kántáwíine: Palm  
 kàntuxo: kàntuké: kàntuyo: kàntunyé: back  
 kàntúvəná: kàntúvəne: kàntúvənyá: kàntúvənye: back ache  
 kànyəkúnyḡ: kànyəkúne: kànyəkúnɔ: nape (of neck)



káParaxà: káParàke: káPariyà: káParìnyε: floor (as in second floor)  
 kaPeline: kaPeliné: kaPeliíηi: kaPeliíηí: ndà káPéliné: ring  
 kàPeηε: kàPeηgέ: kàPenyε: kàPennyέ: broom  
 kaPεnlέ: kaPεnne: kaPεnxέλε: kaPεnxàkί: ?????: sadness  
 kaPicii: kaPiciiηέ: kaPicíile: kaPicíibí: ??????: evildoer:  
 kaPilè: kaPiíne: kaPèxàle: kaPèxàkί: ndà káPííne: curse, bad  
 kaPànàcànlà: kaPànàcàanne: kaPànàcànxala: kaPànàcàànxàkί: ndà káPànàcàanne:  
 sauce stirring stick  
 kàPòη: kàPòηgέ: kàPùun: kàPònyέε: Praying mantis  
 karà: kaàte: ndà kááte: meat  
 kórámwλú: kórámwληε: kórámwλèλw: kórámwλèbί: ndà kórámwληε: snake (species)  
 kórólòxò: armpit  
 kàsàkùùn: kàsàkùùnηέ: kàsàkùùnw: kàsàkùùnbi: soldier  
 kàsanaηmèlè: kàsanaηmiíne: kàsanaηmèèηi: kàsanaηmèèηí: elbow  
 kàsàxè: kàsàke: kàsìyè: kàsìnyε: war  
 kàtantáxé: kàtantáke: kàtantíyê: kàtantínyε: ladder  
 katèlèlè: katèlène: katèlèle: katèèηí: ?????????: habit  
 katexè: katèke: katiyè: katìnyε: ndà kátéke: hunger  
 kátonηú: kátòηε: kátonnyú: kátònnyε: ndà kátòηε: rust  
 kàvìlè: kàvìliné: kàvìíηi, kàvèxale: kàvìíηí, kàvèxàkί: compound  
 kàzènxe: kàzènke: kàzèn'yè: kàzènyε: ndà kàzènke: squirrel  
 kélu, éé?: kélaηé: kéelε: kéebí: monkey  
 kèrèxé: kèrèηé: suffering  
 kèzè?è: kèzè?èηε: kèzè?elε: kèzè?èbί: chance, lot  
 keεxè, keè: keàke, kèke: keyè: kènyε: ndà kéáke: hand  
 kerexè: keràke: kerayè: kerànyε: ?????: field  
 kìdè: kìne: kèrèxi: kèrèkί: people, country  
 kalè: kalèηε: kalèle: kalèbί: ?????????: god, God  
 kò?òrò: kò?òte: dance  
 kolofwλ: kolofolòηε: village chief  
 kònlú: kùùnne: kònxàw: kònxàkί: tomb  
 koolò : koðne: ndà koðne: cough  
 kòðnò: kòðnde: cotton  
 kooro: kooté: koriyo: korinyέ: ndà kóóte: peelings  
 kóóru: koràηé: kóralo: kórabi: button

kónlɔ́: kónlɔ́ŋe; kónlálɔ́, kónláyɔ́; kónlábí: beads (Dioula)  
 kɔ́rédàŋɛ̀: kɔ́rédàŋɛ̀ŋe; kɔ́rédànyɛ̀; kɔ́rédànyɛ̀: glue  
 kɔ́rɔxɔ́: kɔ́rɔ́ke; kɔ́riyɔ́; kɔ́rɔnyɛ̀; ndà kɔ́rɔ́ke: heritage  
 kɔ́rɔxɔ́: kɔ́rɔ́ké; kɔ́riyɔ́; kɔ́rinnyɛ̀; ndà kɔ́rɔ́ké: brick mold  
 kɔ́ru: kɔ́rɔ́ŋé; kɔ́rálɔ́; kɔ́rɔ́bí; ndà kɔ́rɔ́ŋé: boat (French)  
 kù: kùŋe: death  
 kùdò: kùne; kòralo; kòràkí: seat  
 kuddò: kùne; kuùxi; kuxòkí; ndà kúne: rule, road  
 kùlugbaxa; kùlugbaké; kùlugbaya; kùlugbanyé: ancestor house  
 kúnàgàŋɛ̀, -nkan-?: kúnàgàŋɛ̀ŋe; kúnàgànnɔ́: kúnàgànnɔ́ŋe: centipede  
 kunboxò: kunboxòne; kunboxòlo; kunboxòkí: large or main road  
 kùnnàŋɛ̀: kùnnàŋɛ̀ŋe; kùnnànyò, -iyo?: kùnnànyɛ̀: turtle  
 kùnnàŋɛ̀: kùnnàŋɛ̀ŋé; kùníyɔ́; kùnnànyɛ̀: mushroom  
 kunnòŋ: kùnnè; kùnnon; kùnnàkí; ?ndà kùnnè~ndà kúne: navel  
 kùntàràŋɛ̀: kùntàràŋɛ̀ŋe; kùntàrànyɛ̀; kùntàrànyɛ̀: ant  
 kúnnyúŋɛ̀: kúnnyúŋɛ̀ŋe; kúnnyúnnyɛ̀; kúnnyúnnyɛ̀: owl  
 kurugbá: kurugbáŋe; kurugbáala, kurugbáya; kurugbáabí, kurugbányɛ̀; hangar:  
 shelter (grass overhang)  
 kùsèè: kùsèèŋé; kùsèéle; kùsèébi: traveller  
 kùsèlɛ̀: kùsèèné; kùsèxále; kùsèxákí: trip  
 kùsèrɛ̀: kùsèté: trip  
 kùtunno, nk-?: kùtunnàŋɛ̀; kùtuxalo; kùtuxàbí: monkey  
 kùzə̀n: kùzə̀ŋé; kùzùúlo; kùzùúmbí: forked stick  
**L**  
 laálaŋe; laálaŋɛ̀ŋé; laálanɔ́; laálanyé; ndà laálaŋɛ̀ŋé: butterfly  
 lala; laané; làxála, laxála; làxàkí, laxákí; ndà laané: pregnancy  
 lámá: lámáŋe; lámála; lámábí: blade (French)  
 lámə̀na; lámə̀naŋé; lámə̀nɔ́la; lámə̀nábí; ndà lámə̀naŋé: sling  
 lànmbá: lànmbáŋe; lànmbáala, lànmbáyɔ́; lànmbáabí, lànmbányɛ̀: lamp  
 laxa; laké; laya; lanyé; ndà láke: stomach  
 lede; lené; lèralɛ̀; lèràkí; ndà lené: time.  
 leŋe; leŋɛ̀ŋé; lenyɛ̀; lenyé; ndà leŋɛ̀ŋé: intestines  
 lɛ̀rasííle; lɛ̀rasíílane; ??: beginning (of time)  
 loɔ́; loɔ́ké; loɔ́yɔ́; loɔ́nyɛ̀; ndà lóɔ́ke: water  
 loɔ́kutaraŋe; loɔ́kutaraŋɛ̀ŋé; loɔ́kutaranɔ́, -iye; loɔ́kutaranyé; ndà loɔ́kutaraŋɛ̀ŋé:

## hippopotamous

lɔɔɔ; lɔtɛ; lɔnyo; lɔnyɛ; ndà lɔtɛ: vegetable  
 lɔɔɔ; lɔtɛ; lɔɔɔ; lɔnyɛ; ndà lɔtɛ ?T: Price  
 lúfíì; lúfíìŋe; lúfíìle; lúfíìbí; ndà lúfíìŋe (?): water python  
 lùlò; lùùné; lòxalo; lòxàkí; shea nut  
 lùlò; lùùne; lòxolo; lòxòkí; bile  
 lùṛtide; lùṛtiné; lùṛtèrale; lùṛtèràkí; ankle  
 lùxànyò; lùkánnyoké; lùyènyòyò; lùnyényonyé; riverside, or mouth of the river?  
 lùxò; lùke, lòxòke; lùyò; lùnyɛ: creek, stream  
 lùyerabe; lùyerabé; lùyeriye; lùyeranyé: water hole (stationary water?)  
 lùzù; lùzùŋe; lùzùlɔ; lùzùlòbí; hunter  
 iùzùfòlò; : chief hunter, expert hunter?

**Ṁ**  
 mǎʔánjò; mǎʔánjòŋe; mǎʔánjòòlɔ, mǎʔánjòyò; mǎʔánjòòbí; barbe: beard  
 mǎmbélɛ; mǎmbélɛŋe; mǎmbélɛle; mǎmbéllàbí; car  
 màrà; màràŋé; màréla; màràbí; elePhantiasis  
 màràfa; màràfaŋé; màràfáɔla, màràfaya; màràfáábí, màràfanýé: gun  
 màsɛnɛ; màsɛnɛŋé; màsɛnɛlé; màsɛnɛbí; needle  
 mejúlò; mejúúne; mejóxòlɔ; mejóxòkí; ndà mejúúne: voice, cry, speech  
 mɛrəŋɛ; mɛrəŋŋe; mɛrənyɛ; mɛrənyɛ; ndà mɛrəŋŋe: viper  
 metànxà; metànke; ndà metànke: good name  
 metrî; metrəŋe; metrərale; metrərabí; ndà metrəŋe ???: teacher (French)  
 mɛnʔɛnŋɛ ?; mɛnʔɛnŋŋe; mɛnʔɛnnyɛ; mɛnʔɛnnyɛ; ndà mɛnʔɛnŋŋe: story  
 ñɛɛ ?nT; ñɛkɛ; ñɛyɛ; ñɛnyɛ; ndà ñɛke: name  
 mɔbìlɛ; mɔbìlɛné; mɔbìlɛŋi; mɔbìlɛŋí; beating or threshing stick  
 mɔbínɛ; mɔbínɛŋe; mɔbínɛlé; mɔbínɛbí; bamboo mat  
 mǎʔcɔ; mǎʔcɔŋe; mǎʔcàa; mǎʔcààbí; ndà mǎʔcɔŋe: elder sister  
 mànɛ; màné; màne; mànàkí; sweet ground pea ??  
 ñma; ñmaŋé; ñmaɔla, ñmaya; ñmaabí, ñmanyé; ndà ñmaŋé: gift  
 ñmala ?nT; ñmaané; ñmàʔala; ñmààkí; ndà ñmaané: bud  
 ñmɛle; ñmiinɛ; ñmɛʔɛnle; ñmɛʔɛnkí; ndà ñmíine: voice  
 ñmɛle; ñmiinɛ; mɛʔɛle; ñmɛʔɛki; ndà ñmíine: rope  
 mòndɔrɔ; mòndɔrɔŋe; mòndɔrɔlɔ; mòndɔrɔrabí; timePiece (French)  
 mòPiin; mòPiinŋé; mòPiinle; mòPiinbí; enemy  
 mòPiinfólɔ; : enemy

motò: motóŋe; motóɓɓ, motóɓɓ; motóobí, motóonyé; nda motóŋe: motorcycle  
 mɔ̀lɔ̀: mɔ̀lɔ̀ŋe; mɔ̀lɔ̀yɔ̀: mɔ̀lɔ̀nyɛ: rice  
 múnala; múnanaané; múnàʔànlá; múnàʔànkí: nose  
 múnawílê; múnawííne; múnawèxale; múnawìxàkí: nostril  
 múʔkúddì; múʔkúne; múʔkùrəlo; múʔkùrəkí: cheek  
 mùzónŋaŋ, mùzɔ̀ŋaŋ; mùzónŋé; mùzónŋmi, muzɔ̀ŋaŋ; mùzónmbí: builder  
 mùzɔ̀rɔ̀; mùzɔ̀rɔ̀ŋe; mùzɔ̀rɔ̀lɔ̀; mùzɔ̀rɔ̀bí: scarf (French)

### MP

mPa, mPàʔT; mPaŋé, mPàŋeʔ: above  
 mPáʔà; mPáʔéŋe; mPáʔáya; mPáʔanyé: watery Porridge  
 mPánlà; mPááŋne, mPáàŋne; mPááŋrà; mP nte: Pigeon  
 mPe; mPiŋé; mPiíle; mPiíbí: rabbit  
 mPàdéxè; mPàdàke éʔáʔ; mPàdáyè; mPàdányɛ: rib  
 mPoxofólɔ̀; mPoxofóláŋe; mPoxofee; mPoxofeebí; nda mPoxofólóŋe: clown  
 mPudo; mPuné; mPorálo; mPoráki; nda mPuné: horn trumpet  
 mPùlò; mPùlóné; mPùlŋi; mPùlŋi: hill  
 mPúlu; mPúluŋé; mPúlálo ʔT; mPúlábí: spider  
 mPuŋa; mPuŋé; mPunɔ̀; mPunyé; nda mPuŋé: ceiling

m̀bì; m̀bìbè; nda m̀bìbe: flour  
 mbaxe; mbaké; nda mbaké: Powder

### N

nà; nàke; nayà; nànyɛ; nda náke: fire  
 nàà; nààŋe; nàmaa; nàmaabí: man  
 náná; nánáŋe; nánámi; nánámbí: scorpion  
 naawaxa; naawaké; naawaya; naawanyé; nda naawaké: boil  
 naaxà; naàke; naayà; naànyɛ; nda náke: sore, infected wound  
 nafolɔ̀; nafolàŋe; nafèe; nafèèbí; nda nafolàŋe: Parents-in-law of a husband  
 nàfùlò; nàfùlòŋe; nàfùlòlo, nàfùlòyò; nàfùlòbì, nàfùlònyɛ: riches  
 nambùxù; nambùxùŋe; nambùxùmi; nambùxùmbí; nda nambùxùŋe: firefly  
 namèmè; namèmbe; nda námèmbe: soot, ashes  
 nàʔPonŋa; nàʔPonŋé; nàʔPuun; nàʔPuunbí; nda nàʔPonŋé: visitor, stranger  
 nanàlù; nanàlòŋe; nanàlòla; nanàlòbì; nda nanàlòŋe: fresh water fish (species)  
 nandaà; nandaàŋe; nandaàla; nandaàbì; nda nandaàŋe: bachelor  
 nàʔjide; nàʔjiné; nàʔjìrəle; nàʔjìrəkí: silhouette, ghost

nànjìlù; nànjìlèḡe; nànjìlale; nànjìlèbì; young man  
 nànkàlù; nànkàlèḡe; nànkàlala; nànkàlèbì; thief  
 nà'koováárá; nà'koovááte: red measles  
 nànyèlè; nànyèlèḡe; nànyèlèlé; nànyèlèbì; friend  
 nanyìḡè; nanyìḡe; nanyìyè; nanyìnyè; ndà nánnyìḡe: flame  
 ònaḡa ?nT; ònaḡe; ònanya; ònanyé; ndà ònḡe: tail  
 naḡḡ; naḡḡe; naḡḡsíl; naḡḡsíbì; nda naḡḡe: garden  
 nàpèlèè; nàpèlèèḡe; nàpèlèéle; nàpèlèèbì; a very old man  
 nàPunnáPáíá; nàPunnáPáíḡe; nàPunnáPáíya; nàPunnáPáínyé: melon seed (type)  
 nasàmú; nasàmúḡe; nasàmúlo; nasàmúmbì; nda nasàmúḡe: spark  
 naverù; naverèḡe; naverèlé; naverèbì; ndà náyèrḡe: friend  
 nàzod; nàzone; nàzòral; nàzòràkì; ladle, dipper  
 nèjòbò; nèjòbe; nèjòyò; nèjònyè: cow manure  
 nènà?àò; nènè?àḡe; nènà?àmi; nènà?àla; nènà?àmbì; cattle herder  
 nèrà; : bad luck, misfortune  
 neràdàjan?a; neràdàjan?aḡe; father's maternal uncles  
 nèràfòl; : someone who brings misfortune  
 nèràfòl; : relative through a daughter of Pat.family  
 nerù; nerèḡe; nerèlé; nerèbì; nda nerèḡe: maternal uncle  
 nèxàsù; nèxàsúḡe; nèxàsúlo; nèxàsúblàbì; bicycle  
 nèfàn; nèfḡe; nèfḡan'ya; nèfḡannýé: brick  
 náfííle; náfííne; náfèxale; náfèxàkì; buttocks  
 náḡùḡò, -nk-?; náḡùḡe, ná?; náḡùḡnyò; náḡùḡnyè: knee  
 ná'pécínḡe; ná'pécínḡe; ná'pécínnyè; ná'pécínnyè: toenail  
 ná'cén?énnè; ná'cén?énnè; ná'cén?énnýè; ná'cén?énnýè: saliva  
 nàncí; nàncíḡe; nàncii; nànciibì; neighbour, Partner, co-wife  
 nàndeè; nàndeèḡe; nàndeèlé; nàndeèbì; nda nàndeèḡe: middle-aged elder  
 nànjaramè: cow's milk  
 ná'tácìlè,-dùlò; ná'tácìine,-dùlè, ?; ná'tácìḡi,-dùlḡi; ná'tácìḡí,-dùlḡí:  
 heel  
 nàḡè; nàḡe: root?  
 òḡak cíláké; òḡak cíláke; òḡak cílíyè; òḡak cílínýe; nda òḡak cíláke: spine  
 nàpànlà; nàpàanne; nàpàànrà; nàpàante: mosquito  
 nápélè; nápééne; nápèḡèlé; nápèḡèkì: toe  
 náporoxo; náporaké: nudity

naɓuŋa; naɓuŋaɓe; nda naɓuŋaɓe: the whole  
 násííláxê; násííláke; násíílíyê; násíílínye: foundation  
 nolèxê; nolèké; nolèyê; nolèyê; nda nolèké: grandmother  
 nòxàñ mbàlê; nòxàñ mbàné; nòxàñ mbíya; nòxàñ mbíyakí: boy  
 nɔ, nèŋè; nèŋe; nènye; nènye: cow  
 nɔ; nɔŋe; nɔi; nɔbí; ndà nɔŋe: mother  
 ñnɔlu; ñnɔlɔŋe; ñnɔɔmi; ñnɔɔmbí: guinea hen  
 nɔnɔnɔnɔ?, nɔnɔnɔ Ny; nɔnɔnɔké; ???????: underneath

#### nc

ncà; ncàŋe; ncàa; ncààbí: sheep  
 ncàñà?àðñ; ncàñà?àŋe; ncàñà?àla; ncàñà?àmi; ncàñà?àmbí: berger: shepherd  
 ncàʼkònlɔ; ncàʼkònlàŋe; ncàʼkònláɔ; ncàʼkònláɔbí: wild cat  
 ncasá; ncas ŋe; ncas la; ncas abí: encampment, small hamlet, settlement  
 ncile, j-?; nciiné; ncixale; ncixakí; nda nciiné: balaphone  
 ncananya, j-?; ncananyaŋe; nda ncananyaŋe: world (Dioula)  
 ñca, j-?, ñ-?; ñcaŋe, -oo; ñcaɔɔ, -oó-; ñcaɔbí, -oó-; ndà ñcaŋe, -o-: top

#### nd

ndà; ndàŋe: belief (Dioula)  
 ndi; ndiŋe: food  
 ndàrà; ndàte: indigenous medicine (cf. tabe)  
 ñdaxe; ñdaké; ñdiye; ñdinyé; ndà ñdáke: ear  
 ndàxà; ndàke: root  
 ndàràxɔ; ndàràké; ndàràyɔ; ndàrànyé: yam  
 ndàxàndò; ndàxànde: seeds  
 ndàxàvire; ndàxàvité; ndàxàviye; ndàxàvinyé: seedling  
 ndàxò; ndàke; ndàyò; ndànyé: odour

#### ng

ñguraɔo; ñguraké; ñguruyo; ñguranyé; ndà ñgúrake: smoke

#### ni

njedè; njène; njèrale; njèràkí; ndà njéne: liver  
 ñjéene; ñjéené; ñjéeni; ñjéeniŋe: stone  
 njidè; njîne; njiràle; njiràkí; ndà njîne: tongue  
 njarazanlà; njarazaàne; njarazànxàla; njarazànxàkí; nda njarazaàne: epilepsy  
 njàràxɔ; njàràke; njàràyɔ; njàrànyé: mud:

**nk**

nkànaàn: nkànaànḡe; nkànaànla; nkànaànbi: packrat  
 nkànjáà: nkànjáne; nkànjáḡi; nkànjáḡi: toothache  
 nkànlá: nkàànné; nkàḡanla; nkàḡànkí: tooth  
 nkànmà: nkànmbe: gravel  
 nkèdè: nkène: a part, side  
 nkèènmgbàà: nkèènmgbàne; nkèènmgbàrala; nkèènmgbàràkí: necklace  
 nkèènmgbórò: nkèènmgbórḡe; nkèènmgbóráló; nkèènmgbórábí: chameleon  
 nkèèḡjòlḡ; nkèèḡjòdòné; nkèèḡjòḡolḡ; nkèèḡjòḡòkí: throat  
 nkèḡḡ: nkèḡḡe; nkènyè; nkènye: branch, chicken's stomach  
 nkòràḡḡ; nkòràḡḡe; nkòrìyḡ; nkòrìnye; ndà nkòràḡḡe: fallow land  
 nkùcòxḡ; nkùcoké; nkùcòyḡ; nkùcònyé: chicken cage  
 nkùlexe; nkùleké; nkùliye; nkùlinyé; ndà nkùleké: cockroach  
 nkùlò; nkùlḡḡe; nkùu; nkùùbí: chicken  
 àkúnà: àkúnàke; àkúnàvà; àkúnànye: wooden bowl  
 nkùḡton; nkùḡtonḡe; nkùḡtoónlḡ; nkùḡtoónbí: lizard  
 nkùnyelebe; nkùnyelebé; nkùnyeliye; nkùnyelanyé: rooster's crow  
 nkùpòlḡ; nkùpòlḡḡe; nkùpèe; nkùpèèbí: rooster  
 nkùtunḡ; nkùtunḡḡe; nkùtùxolo; nkùtùxàbí: red monkey?

**nt**

ntàànlá: ntàànné; ntàḡḡi; ntàḡḡi: basket (tightly woven)  
 ntámgb ḡá; ntámgb ḡḡe; ntámgb nyá; ntámgb nye: dust  
 ntànlá: ntàanne; ntàḡḡi; ntàḡḡi: courtyard  
 ntana sp?: da plant, the leaves and flowers are used in cooking  
 àtara; àtaté; ndà àtḡte: land  
 àtarafólḡ; àtarafólḡḡe; àtarafee; àtarafeebí; ???: land chief  
 àtazééxé; àtazééke; àtazééyḡ; àtazéénye; ndà ntazééke: dirt, soil  
 ntide; ntiné; nterále; nterḡkí; ndà ntiné: bat  
 àtò ḡḡ; àtòḡḡe; ndà àtòḡḡe: burial  
 ntònlḡ; ntònlḡḡe; ntònlíyḡ; ntònlínye: termite  
 ntòḡḡ; ntòḡke; ntòḡyḡ; ntòḡnye: pestle  
 ntùḡḡ; ntùḡḡe; ntùnyḡ; ntùnye: chest

**ny**

ànya; ànyaké; ànyaya; ànyanyé; ndà ànyáke: grass, straw  
 nyaḡḡà; nyaḡḡḡe; nyaḡḡà; nyaḡḡnye; ndà nyaḡḡḡe: cloud

nyaŋa; nyaŋgɛ́; nyaya; nyanɣé; nda nyaŋgɛ́: mountain  
 nyàpɔ́lɔ́; nyàpóóne; nyaPò?olɔ́; nyaPò?òkí; nda nyàpóóne: bundle of grass  
 nye?efòlɔ́ ; nye?efòlèŋé; nye?efèe; nye?efèèbí; nda nye?efòlèŋé: older brother  
 nye?è; nye?èke; nyeɣè; nyènyɛ; nda nyé?éke: face  
 nyelè; nyiine; nyii; nyiikí; nda nyíine: eye  
 nyene; nyené; nyèèŋi; nyèèŋgí; nda nyené: horn  
 nyèxè; nyèke: morning  
 nyibalawòlò; nyibalawòóne; nyibalawɔ́xàlɔ́; nyibalawɔ́xàkí; nda nyíbaláwóóne:  
 darkness  
 nyìgbànxà,-P-?; nyìgbànke; nyìgbàn'yà; nyìgbànnɣe: dry season  
 nyímbádè ?T; nyimbène T?; nda nyimbène: darkness  
 nyimbalaxè; nyimbalàke; ??: night  
 nyimè?; nyĩmbe; nda nyímbe: shadow  
 ànyame ?ml; ànyambé; nda nyámbe: shadow  
 nyamèdòŋò,-nt-?; nyamèdòŋge; nyamèdònyòŋ; nyamèdònnɣe; nda nyamèdòŋge: earthworm  
 nyimgbò?ŋ; nyimgbò?òkè; nyimgbò?òyɔ́; nyimgbò?ònyé: rainy season  
 nyìŋè; nyìŋge; nyìyè; nyìnyɛ: ground  
 nyiPɛnlè; nyiPiine; nda nyíPíine: jealousy, lit. unPleasant face  
 nyisamè; nyisámbe; nda nyísámbe: tear  
 àyɔ; àyoké; àyoyɔ; àyonyé; nda àyóke: mouth, beak  
 nyó?óŋ; nyó?oŋgɛ́; nyó?óyɔ; nyó?onyé; nda nyó?oŋgɛ́: camel  
 àyon?òŋ?ànlá; àyon?òŋ?àànné; àyon?òŋ?àáŋŋi; àyon?òŋ?àáŋŋgí; nda àyon?òŋ?àànné:  
 chin  
 àyonŋmen?ɛŋŋe; àyonŋmen?ɛŋŋgɛ́; àyonŋmen?ɛnnɣe; àyonŋmen?ɛnnɣé; nda àyonŋmen?ɛŋŋgɛ́:  
 jaw  
 àyosɛɛxè; àyosɛèke; àyoseeyè; àyoseènyɛ; nda àyósééke: lips  
 ànyo?tànlá; ànyo?tàànné; ànyo?tàn?ala; ànyo?tàn?akí; ??: chin  
 àyotoŋɔ́; àyotòŋge; àyotonyɔ́; àyotònyɛ; nda àyótóŋge: lid, cover  
 ànyɔfanlanxa; ànyɔfanlanké; ???: Promise  
 ànyɔjù; ànyɔjùbe; nda ànyɔjùbe: sPeech, lit. mouth words  
 nyùdunnɔ́, -nt-?; nyùdunnɔ́gɛ́; nyùdunnɔ́lɔ́; nyùdunnɔ́bí; nda nyùtunəŋé: deaf  
 nyùgòɔɔ, -nk-?; nyùgóné; nyùgòrɔ́lɔ́; nyùgòrɔ́kí: skull  
 nyùPènxè; nyùPènké; nyùPènyè; nyùPènnɣé: bad luck  
 nyùnjòòrò; nyùnjòòtè; nyùnjùyò; nyùnjùnyɛ: hair  
 nyù?tànxa; nyùtànke; nyù?tàn'yà; nyùtànnyɛ: good luck



nyùŋjàŋá: nyùŋjàŋgá: nyùŋjànyá: nyùŋjànyé: headache  
 nyùŋòŋ: nyùŋgá: nyùnyòŋ: nyùnyé: head  
 nyùŋùfòlŋ: nyùŋàfòlòŋé: nyùŋàfee: nyùŋàfeebí: champion, boss, supervisor  
 nyùPàràrà: nyùPàràràmbé: brain  
 nyùtile: nyùtiiné: nyùtixale: nyùtixàkí: Peak underside  
 nyùtòŋò: nyùtòné: nyùtòóŋi: nyùtòóŋgí: hat  
 nyùvedé: nyùvené: nyùvèrale: nyùvèràké: headband (worn by certain old women)  
 nyùzaaxa: nyùzaaké: nyùzaaya: nyùzaanyé: comb

## ŋ

`ŋáa: `ŋáaŋé: `ŋááŋmi: `ŋáambí: ndà `ŋáaŋé: twin  
 ŋgbà?àŋá: ŋgbà?àŋgá: ŋgbà?àŋnyá: ŋgbà?ànyé: bamboo bed  
 ŋmèlè: ŋmìine: ŋmèèŋi: ŋmèèŋgí: corner, angle  
 ŋmo`kaŋà: ŋmo`kàŋgá: ŋmo`kannyá: ŋmo`kànnnyé: ndà ŋmo`kàŋgá: breath  
 ŋàkɔ: ŋàsuuné: ŋàkɔ?kɔ: ŋàkɔ?kɔkí: ndà ŋàkɔ?kɔ: knife  
 ŋmɔkɔxɔ ɔ? : ŋmɔkɔkɔ: ŋmɔkɔiyɔ: ŋmɔkɔlinyé: ndà ŋmɔkɔkɔ: nightmare

## p

Pààn: Pàànŋe: Pàànla: Pàànbí: a carnivorous reptile, 2-3 m. long  
 Pàlà: Pàlàŋé: Pàlámi: Pàlámbí, Pàlányé: bucket  
 Pándàlá: Pándàlàŋé: Pándàlálá: Pándàlálbí: pants  
 Pàvasí: Pàvasíŋe: Pàvasíle: Pàvasíibí, Pàvasíinyé: mattress  
 Pélé: Peené: Pèxalé: Pèxàkí: ndà Peené: bowl  
 Pénxé: Pénke: Pen'yé: Pénnyé: ndà Pénke: compound  
 Pexé: Péké: Pevé: Penyé: ndà Péké: large clay pot  
 Pàcɔ: Pàcɔŋé: Pàcaa: Pàcaabí: girl  
 Pàjènxé: Pàjènké: Pàjènyé: Pàjènnnyé: tick  
 Pà`Pánnnyéxé: Pà`Pányàké: Pà`Pánnnyéyé: Pà`Pányènyé: baby  
 Pànŋé: Pànŋgá: Pànnnyé: Pànnnyé: wooden drum  
 Pìŋé: Pìŋgá: Pìnyé: Pìnyé: hive  
 Parandíi: Parandíiŋé: Parandííle: Parandíibí: ndà Parandíiŋé: apprentice (French)  
 Páé: Paté: Píve: Pínyé: ndà Páte: bamboo leaf  
 Polò: Polàŋe: Pèe: Pèèbí: ndà Pólóŋe: male, husband  
 Polù: Polàŋe: Polàkɔ: Polàbí: ?????: catfish  
 Pondíi: Pondíiŋé: Pondíími: Pondíimbí: ndà Pondíiŋé: nails (French)  
 Poró: Pooté: ndà Pooté: mud, banco  
 Poru: Poráŋé: Porálo: Porámbí: ndà Poráŋé: daughter

Pɔ́n; Pɔ́nɛ; Pùun; Pùùnbí; ndà Pɔ́nɛ: dog  
 Pùlò; Pùùne; Pòxolo; Pòxòkí: body  
 Púnyèxè; Púnyèke; Púnyèyè; Púnyènyè: clay  
 Puserí; Pusáraɛ; Puseríyè; Puserɛnyé; nda Puseráɛ: dust (French)  
**Ɔ**  
 sacenlè; saceène, iìn?; sacènxele; sacènxènkí; ???????: bird  
 sáǰónʔǰ; sáǰónʔóɛ; sáǰónʔíyɔ; sáǰónʔɛnyé: sand  
 sàlà; sàlàke: laziness  
 sàlàfòlɔ; : lazy Person  
 sà̀cɛnɛ; sà̀cɛnɛɛ; sà̀cɛnnyè; sà̀cɛnnyé: cat  
 sanɔ̀; sànnɛ; sannya; sànnɛ; nda sànnɛ: the rest  
 sà̀tù; sà̀tùɛ; sà̀tùlo; sà̀tùlàbí: quail  
 sà̀tùɔ̀; sà̀tùɛɛ; sà̀tùnyɔ̀; sà̀tùnyè: hyena  
 sà̀piin; sà̀piinɛ; sà̀piínlè; sà̀piínbí: enemy  
 sà̀rá; sà̀ràɛ; sà̀ríyá; sà̀rɛnyé: salary (Dioula)  
 sà̀rá; sà̀ráɛ; sà̀ríyá; sà̀rinyé: tobacco  
 sà̀ru; sà̀ràɛ; sà̀rálá; sà̀rarábí: bee  
 sà̀de; sà̀dàkí: hip  
 seePɔ́xɔ; seePɔ́kè; seePɔ́yɔ; seePɔ́nyé; nda seePɔ́kè: belt  
 sèʔèlè; sèʔène; sèʔèni; sèʔènyé: basket (large, loosely woven)  
 séʔéne; séʔéné; séʔéni; séʔényé: Palm nut  
 sènyɔ̀ʔàɔ̀; sènyɔ̀ʔàɛ; sènyɔ̀ʔànyɔ̀; sènyɔ̀ʔànyè: wax  
 sènzénéxè; sènzénaké; sènzéníyè; sènzéninyé; nda sènzénaké: hepatitis  
 sePɛnxè; sePɛnke; nda séPɛnke: boredom  
 serenyerè; serenyeráɛ; serenyerálè; serenyerarábí; nda serenyeráɛ: door latch  
 seɛxè; seɛke; seeyè; seènyè; nda sééke: leather, skin  
 sene; sené; seéni~sèèni; seényé; nda sené: stinger  
 senre; senté; sen'yè; sennyé; nda sénte: honey  
 sɛ; sɛɛ, sɛɛɛ: life  
 sà̀cà; sà̀càɛ; sà̀pále; sà̀pálábí: Person  
 sà̀càʔàná; sà̀càʔàne; sà̀càʔàni; sà̀càʔànyé: shaker, rattle  
 sacere; saceté; nda sácéte T?: madness  
 sà̀cerafólɔ; sà̀cerafólɛ; sà̀cerafee; sà̀cerafeebí: crazy Person  
 sacirè; sacíte; nda sácíte: crowd, the People  
 sà̀cirè; sà̀cíté: tagba language

sàcòŋɔ, sàcòŋɔ,; sàcòŋɔe, sàcònde: foolish  
 sàgànlà, -nk-?: sàgànlàŋe; sàgànlàlala; sàgànlàbí, sàgànlànye; Poêle: frying Pan  
 siin; siinŋe; siinle; siinbí; ndà síinŋe: family  
 sùrè, sùne; sùte, sùnde; sùvè; sùnye: nest  
 sajìnŋé; sajìnŋé; sajìnnýé; sajìnnýé; nda sajìnŋé: carp  
 sàkà; sàkàŋe; sàkàa; sàkààbí; ? : goat  
 sàkòlɔ; sàkòdòné; sàkòdòŋi, sàkòxáɔ; sàkòŋɔ, sàkòxákí: woman's cane  
 sàmá; sàmàŋé; sàmáya; sàmáŋé: harvest (Dioula)  
 sàmbuxo; sàmbuké; sàmbuyo; sàmbunýé: swarm of bees  
 sàmè; sàmbe: oil  
 samè; sàmbe; ndà sàmbe: sorghum beer  
 sàmPoxò; sàmPòke; sàmPuyò; sàmPùnnye; ndà sàmPóke: vagina  
 sàŋò; sàŋŋe; sàŋɔ; sàŋòbí; nda sàŋŋe: buffalo, bush cow  
 sàŋtaaxà; sàŋtaàke; sàŋtaayà; sàŋtaànye; ndà sàŋtaàke: bow  
 sànyèlɛ; sànyèlŋe; sànyèi; sànyèibí; ?? : sibling of same mother and father  
 sàŋe; sàŋé; sànye; sànyé; nda sàŋé: worship, sacrifice  
 sare; sàté; sàye; sànyé; ndà sàte: skin  
 sàrawílè; sàrawíne; sàrawixale T?; sàrawixákí; ? : Pore  
 sàsàn; sàsànke: blood  
 sàsànkùdò; sàsànkùné; sàsànkùúxi; sàsànkùúki: vein  
 sàsónŋa; sàsónŋé; sàsónnyɔ; sàsónnyé: fly  
 sàtàʔà; sàtàʔàke; sàtàʔàya; sàtàʔànye: arrow  
 saxe; sàké; siye; sànyé; ndà sàke: fields, bush  
 saxe; sake; siye; sànyé; nda sàké: feather  
 sàxacalu; sàxacalŋé; sàxacalála; sàxacalábi; nda sàxacalŋé: wild Pig (bush Pig)  
 sàxakafanlŋa; sàxakafanlŋé; sàxakafanlanya, -iya?; sàxakafanlanyé: zebra  
 sòlɔ; sòdòné; sòo; sòdòkí: millet  
 sónlu; sónlŋé; sónlɔ; sónlábí: Parakeet  
 sonnaŋa; sonnaŋé; sonnaya; sonnanyé; nda sonaŋé: horse's tail  
 sonxɔ; sònke; son'yɔ; sònnye; ndà sònke: horse  
 sɔ; sòŋe; sòlɔ; sòdòbí; stag, hart:  
 sɔŋɔ; sɔŋe; sɔnyɔ; sɔnye: mound for sweet Potatoes, Yams  
 súlò; súúne; sóxàlò~sóxálo; sóxàkí: floor  
 surò; sùte; ndà sùte: staple dish  
 susoŋobaxa; susoŋobaké; susoŋobaya; susoŋobanyé; nda susoŋobaké: kitchen

suumò; suùmbe; ndà sùúmbe: salt  
 suxo; suké; suyo; sunyé; ndà súke: mortar  
 ɛ  
 tàànbàlê; tàànbàné; tàànbìya; tàànbìyàkí T?: arrow  
 tafaxà; tafàke; tafayà; tafānyé; ndà táfàke: village centre  
 tagbèlàxè; tagbèlàke; tagbèlìyè; tagbèlìnyé; ndà tǎgbèlàke: wound, injury, cut  
 tàlìnê; tàlìné; tàlìíŋi; tàlìíŋgí: Proverb  
 tàràtí; tàràtíŋe: tomato  
 tanʔanʔa; tanʔanʔgè; tanʔanya; tanʔanyé; ndà tánʔǎnʔŋe: shoe, sandal  
 taPuŋa; taPuŋgè; ndà táPuŋgè: virgin land  
 tasəŋe; tasəŋgè; ?????: alter for sacrifice  
 tètəŋa; tètəŋgè; tətanya; tətanyé: Senufo Pancake  
 tawaxa; tawaké; tawaya; tawanyé; ndà tǎwaké: dry Place  
 tèmê; tèmèŋé; tèmélɛ; tǔmɛbí: sifter, sieve  
 tɛxɛ; tɛke; tɛyɛ; tɛnyɛ; ndà tɛke: Place, location  
 tabe; tabé; tiye; tinyé; ndà tábe: medicine  
 tàbàlàrà; tàbàlàte: respect, honour  
 tidè, tade NY; tìne; tàrale; tàràkí; ???????: liana, tropical creeper  
 tàgaanfóló; tàgaanfóləŋe, -nk-?; tàgaanfee; tàgaanfeebí: sorcier: sorcerer  
 tile; tiiné; tixáxi; tixǎkí; ???????: crest of the cock  
 tímboxalaxo; tímboxaláké; tímboxaliyo; tímboxalanyé: climbing plant  
 tənɛ; tənɛbe; tìn'yè; tìnnyɛ: noise  
 tányùŋò; tányùŋgè; tányùnyò; tányùnyé: stump of a tree  
 təŋe; təŋgè; tanye; tanye; ndà tǎŋe: log  
 tápadà; tápàne; tápàrala; tápàràkí: beam, wooden cross  
 tàpǎnlá; tàpǎnləŋe; tàpǎnlíya; tàpǎnlínyé; nda tàpǎləŋe: new field, clearing  
 tàpine; tàfiné; tàpiíŋi; tàpiíŋgí: flute  
 tápɔɔ; tápooné; tápɔɔlɔ; tápɔɔkí: tying wood  
 tarapánê; tarapáne; tarapàne T?; tarapànakí; nda tarapáne: grinding stone  
 taraxa; taraké; taraya; taranyé; ndà tǎrəke: grinding stone  
 taxɛ; také; tiye; tinyé; ndà táke: tree  
 tɔ; tɔŋe; tii; tìibí; ndà túŋe: father  
 tɔnlò; tɔnləŋe; tɔnlɔɔ, tɔnləyɔ; tɔnlàbí, tɔnlànyɛ: Profit  
 tɔntonxɔ; tɔntonké; tɔnton'yɔ; tɔntonnyé: lung  
 tɔxò; tɔke: leprosy

tòxòfòlís ; tòxòfòlòhḡḡḡ; tòxòfḡḡ; tòxòfḡḡḡḡḡ: leper  
 tḡ; tohḡḡ; toólc, toyc; toḡbí, tonyḡḡ; nda tohḡḡ: society, group, club  
 tḡḡḡḡ; tḡḡḡḡḡ; tooyḡ; toonyḡḡ; ndà tḡḡke: paw, foot, leg  
 tucicíḡḡḡḡ ; tuciciḡḡḡ: younger brother of father, lit. little fa.  
 tuculumḡ; tuculumbe; ndà túcúlúmbe: health  
 tḡḡudo, -nk-?; tḡḡunḡḡ; tḡḡùralo; tḡḡùràkí: pimple  
 tḡḡkoraxo, ùú?; tḡḡkorakḡḡ; tḡḡkoriyoy; tḡḡkorinyḡḡ; nda tḡḡkorakḡḡ: hoe for weeding,  
 scratching earth  
 tulḡḡxḡḡ; tulḡḡkḡḡ; tulḡḡyḡḡ; tulḡḡnyḡḡ; nda tulḡḡkḡḡ: grandfather  
 tḡḡlḡḡxḡḡ; tḡḡlḡḡke: ethnic group  
 tḡḡtuḡḡḡ; tḡḡtuḡḡḡ; tḡḡtuḡḡnlo; tḡḡtuḡḡnbí: messenger  
 tḡḡturo; tḡḡtuté: commission, errand  
 tḡḡtúḡḡ; tḡḡtúḡḡḡḡ; tḡḡtúḡḡllo; tḡḡtúḡḡubí: night blindness  
 tḡḡtuxo; tḡḡtukḡḡ; tḡḡtuyo; tḡḡtunyḡḡ; bran or millet, fonio, corn  
 tḡḡtuxo; tḡḡtukḡḡ; tḡḡtuyo; tḡḡtunyḡḡ: bean cake  
 tḡḡú; tḡḡuḡḡḡ; tḡḡumi; tḡḡubí: caterpillar  
 tḡḡùtḡḡḡḡ; tḡḡùtḡḡḡḡ; tḡḡùtḡḡḡḡ; tḡḡùtḡḡḡḡḡḡ: hoe handle  
 tuḡḡtḡḡḡ; tuḡḡtḡḡḡḡḡ; tutḡḡḡḡ; tutḡḡḡḡḡḡ; nda tuḡḡtḡḡḡḡḡ: blacksmith  
 tḡḡùxḡḡ; tḡḡùkḡḡ; tḡḡùyḡḡ; tḡḡùnyḡḡ: hoe  
 tuxurḡ, toxorḡ; tuxùte, toxḡḡte; tuxuyḡ, toxoyḡ; tuxùnyḡ, toxḡḡnyḡ; ndà tḡḡxḡḡte, tḡḡxḡḡte:  
 load

#### Y

vḡḡḡḡḡḡḡ; vḡḡḡḡḡḡḡḡḡ: cloth  
 vḡḡḡḡḡḡḡḡḡ; vḡḡḡḡḡḡḡḡḡḡḡ; vḡḡḡḡḡḡḡḡḡḡ; vḡḡḡḡḡḡḡḡḡḡḡ: cover  
 vḡḡḡḡḡḡḡ; vḡḡḡḡḡḡḡḡḡ; vḡḡḡḡḡḡḡḡḡ; vḡḡḡḡḡḡḡḡḡḡḡ: wrap-around cloth  
 vḡḡḡḡḡḡḡḡ; vḡḡḡḡḡḡḡḡḡḡḡ; vḡḡḡḡḡḡḡḡḡḡḡ; vḡḡḡḡḡḡḡḡḡḡḡḡḡḡ: weaver  
 vḡḡḡḡḡḡḡḡḡḡḡḡ; vḡḡḡḡḡḡḡḡḡḡḡḡḡ; vḡḡḡḡḡḡḡḡḡḡḡḡ; vḡḡḡḡḡḡḡḡḡḡḡḡḡḡḡ: sleeve  
 vḡḡḡḡḡḡḡḡḡḡḡḡ; vḡḡḡḡḡḡḡḡḡḡḡḡḡḡ; vḡḡḡḡḡḡḡḡḡḡḡḡḡ; vḡḡḡḡḡḡḡḡḡḡḡḡḡḡḡḡ: shirt, blouse  
 véḡḡḡḡḡ; véḡḡḡḡḡḡḡḡḡḡ; véḡḡḡḡḡḡḡḡḡḡ; véḡḡḡḡḡḡḡḡḡḡḡḡ: cricket  
 vḡḡḡḡḡ; vḡḡḡḡḡḡḡḡḡ; vḡḡḡḡḡḡḡḡḡḡḡ; vḡḡḡḡḡḡḡḡḡḡḡḡ: shelter  
 vyḡḡḡḡḡ; vyḡḡḡḡḡḡḡḡḡḡḡ: well ladder (footholds in wall)

#### W

wḡḡḡḡḡḡḡ; wḡḡḡḡḡḡḡḡḡḡḡ; wḡḡḡḡḡḡḡḡḡḡḡḡ; wḡḡḡḡḡḡḡḡḡḡḡḡḡḡ; wḡḡḡḡḡḡḡḡḡḡḡḡḡḡḡḡḡ: sickle, reaping hook  
 waxa; wakḡḡ; waya; wanyḡḡ; nda wakḡḡ: drought  
 wḡḡḡḡḡ; wḡḡḡḡḡḡḡḡḡḡḡ; wḡḡḡḡḡḡḡḡḡḡḡḡ; wḡḡḡḡḡḡḡḡḡḡḡḡḡḡḡḡḡ: money

weramisɛ̃n; weramisɛ̃nŋe; weramisɛ̃nye; weramisɛ̃yɛ; nda weramisɛ̃nŋe: change (Dioula)  
 wodè; wòne; ?wɔrɔ̀lɔ̀~wɔ̀ralɔ̀; ?wɔrɔ̀kí~wɔ̀ràkí; ndà wóne: star  
 wɔ̀; wòŋe; wòlɔ̀; wò̀̀bí: snake  
 wulacìin; wulacìinŋe; wulacìinle; wulacìinbí; nda wulacìinŋe: crocodile, cayman  
 wyerɛ̀; wyɛ̀ŋe; wyen'yɛ̀; wyɛ̀nye; ndà wyɛ̀ŋe: leaf

## Y

yaara; yaaté; yariya; yarinyé; ndà yááte: garbage, thing  
 yacedè; yacène; yacèrale; yacèràkí; ndà yácíne: pregnancy  
 yafalaxe; yafalaké; yafaliye; ndà yáfalaké: reptile  
 yagbaxa; yagbaké; yagbaya; yagbanyé; nda yagbaké: Party  
 yagbexalaxe; ndà yágbexalaké: creation  
 yagbɔntanè; yagbɔntàne; yagbɔntàne; yagbɔntànəkí; ndà yágbɔntáne: handle of axe  
 yagbɔnɔ̀; yagbɔnke; yagbɔn'yɔ̀; yagbɔnye; ndà yágbɔnke: axe  
 yagbuù; yagbuùŋe; yagbuùlo; yagbuùbí; ?????: he who kills for sacrifices  
 yakùkárá; yakùkàáte; yakùkáyá; yakùkánye; ndi yakùkàáte: debris  
 yàlonɔ̀; yàlonɔ̀gé; yàlonɔ̀; yàlonyé: okra  
 yamà; yámbe; ndà yámbe: sickness  
 yàràfen; yàràfeŋé: black berry  
 yaraxa; yaraké; yariya; yarinyé; ndà yáráke: things:  
 yasinne; yasindé; yasinnye; yasinyé; nda yasindé: fruit  
 yataraxe; yataraxaké; yataraxaye; ndà yátáraxáke: creature  
 yataxè; yatàke; yativè; yatìnye; ndà yátáke: neck  
 yeɛ; yeené; yèe; yèèkí; ????????: year  
 yiŋà; yìŋe; yinyè; yìnye; ?????: moon, month  
 yírífaxe; yírífiké; yírífive; yírífinyé: albinos  
 yaru; yaraŋé; yarále; yarsbí; nda yaraŋé: Porcupine  
 yà̀̀rò; yà̀̀te; yù̀̀yò; yùnnye; inside of tree  
 yoxo; yoké; yuyo; yunyé; ????????: quarrel

## Z

zànʔàn; zànʔàné; zàn'yá; zànnyé; ndà zànʔàké: rain  
 `zanlùlò; `zanlù̀̀né; `zanlòxəlo; `zanlòxəkí; ndà `zanlù̀̀né: kidney  
 zàŋm̀̀lákɔ̀; zàŋm̀̀láké; zàŋm̀̀líyɔ̀; zàŋm̀̀línye: rainbow  
 zènxè; zèнке; zèntiyè; zèntìnye: baobab tree  
 `zi; `ziŋé; ndà ziŋé: birth  
 zíPù; zíPùŋe; zíPùulo; zíPù̀̀bí; ndà zíPùŋe: skirt, (French)

zòn: zònŋe; zòcnlc, zòðnmí; zòðnmbí; ndə zòŋe: heart  
 zònjànà, -ŋ-?: zònjàné; zònjànyà; zònjànyé, zònjààŋgí: heart sickness

## VERB LEXICON OF SUCITE

Each verb Possesses two forms, the Compleitive and the Incompleitive. Following the English translation of the verb is an example sentence with translation.

### b

bàʔà; bàʔíi: accuse. bi bàʔà wu la nàʔkàlèkè la: they are accusing him of him of thievery.  
 bàʔá; bàʔíí: be exhausted, be tired out. ndaa bàʔá: I am exhausted.  
 báráxá; báráxó: thank (loan word from Arabic). wu ya mó báráxó: they are thanking you.  
 bí; bíí: raise (animal), feed. nkùu ndi ya bíí: I raise chickens.  
 bálé; bálíí: gather, harvest ground Peas. waa fùcàŋé bálé: he gathered up the kernels of corn.  
 bàlì; bàlèxo: respect, obey, honour, be thick. bi bì nóŋe bàlì: they respected their mother.

### c

ca; càa: look for. wu ya səkà càa: he is looking for a goat.  
 cán; cáán: lay an egg, drop, be Possessed, destroy. nkùlùŋaa cèrala cán: the chicken laid eggs.  
 ce, ci; kun: do. wu sí za tùʔturo cye: he will do some errands.  
 céʔé; céʔíí: laugh. céʔé fànʔàn la: laugh loudly.  
 ceʔelɛ; cèʔèlu: insult. nàʔkɔtá ya rá yé cèʔèlù: the children are insulting each other.  
 célé; célíí: divine. wu ci wí sa célé, Tʔ-sa: have him go to divine.  
 cèlì; cèdi: spread out. pècòŋáa vannya cèlì: the girl laid out her clothes (to dry).  
 cèlì; cèli: tremble, shiver, shudder. weèta ya wú cèlì: the cold made him shiver.

cén; céní:	know, be convinced, persuaded. ndè ná ánnàa wù ye cén: Anne and I, we know each other.
ceraxe; cèràxo:	dislocate, disperse. nènnyaà ceraxe: the cattle have dispersed.
cyé; cyèxo:	refuse. yāṅa ya yalaté cyèxò: the sick person refused food.
cèrì; cèdi:	sneeze. kàkonxa fólá mà?a cèdi: he who has a cold, sneezes.
cari; cadi:	Peel (eggs), shell (peanuts). waa fù̀nkí cari la: did he shell the peanuts?
cáráxé; cáráxó:	faint. wàa na?án kù̀ wu mà?à cáráxé T?: if someone is going to die, he faints.
cònrì, ò; còndi:	embarrass, worry. cà mà?a cònrì nàmpone téxíi la: the child embarrasses the stranger.
còrì; cùdi:	strangle. m̀eetá mà?à ncá wà còrì: the cord can strangle someone.
ca; cùu:	gather. nànjèlèbí ya m̀á?ángbòrèṅá cùu: the boys are in the process of gathering mangoes.
cɔn; cùun:	tear. nda v̀ànddiṅṅá cɔn: my shirt is torn.
cɔɔnri; cò̀nru:	sort, choose, settle (an affair). nda sí za kaàna là còonri : I am going to settle an affair.
córí; córíí:	plant. wù̀ yala na tayi córíí: we should plant some trees.
cúlúṅn; cúlúṅ:	heal, recover, be in good health. yāmbí ya cúlúṅ: the sick people are recovering.
cùrì; cùdi:	plunge, sink, swamp. ndaa nà t́́ska cùrì nj̀r̀àkii: I stuck my foot in the mud.
cù̀lò; cù̀lu:	belch (or burp?). moó l̀itə mo mà?a cù̀lò: when you eat well, you belch (or burp?).
cùxì; cùxii:	be deep. balakaa cùxì: the well is deep.
cyù; cyórí:	catch. biì nkù̀lè cyù: they caught a chicken.
d	
dálé; dəlíí:	pull (a cord). wu cù ma dəlí T? ma: grab it and pull.



## f

- fá: fáálú: enlarge. m̀əzoŋá ya ɔ́baxa fáálú: the mason is in the Process of enlarging a house.
- fáálá: fáálú: balance, swing. wu sí źá fáálú ñeetá la: let's go swing on the rope.
- fáánlá: fáánlú: flatter, tempt. wu ya wú fáánlú: we are tempting, flattering her.
- faanri: fàanru: construct, build. ngá waà ɔ́bakó faanre: this is the one who built the house.
- fáí: fádí: exchange, replace. bi ná wérá fáí: they made change.
- fálú: fálú: till, cultivate. wu ná wú ḱéráxó fálú: he cultivated his field.
- fánlá: fánlíí: to lose (the voice), limp. ndè mííni ya fánlí: I lost my voice.
- fe: fiú: run, drive. ndaà yalə na mambélé fiú: I must drive a car.
- f̀enl̀è: f̀enl̀ii: incline, dip, be at an angle. c̀əŋgə ya f̀enl̀ii: the sun is sinking.
- fənri: f̀endi: pinch, put in a corner. ma mà yé fənri nké: are you in a tight spot?
- fì: fiú: germinate, sprout. s̀ò̀d̀k̀ílaa f̀iú: the millet has germinated.
- fiinni: fiinnu: be clean. c̀ɔ̀naà fiinni: the clay Pot is clean.
- fiínní: fiínnú: cancel. `z̀ankaa falə fiínni: the rain canceled the cultivating.
- fale: f̀al̀ii: approach. f̀ali ẁòŋə la: approach the snake.
- filé: filíí: pound (a floor). ntàne bi ya filíí: it is the courtyard that they are pounding.
- fal(ə)le: f̀al(ə)lu: crawl. l̀ùz̀òŋaà fal(ə)le: the hunter crawled.
- fane: f̀anu: tell a lie. wu ya f̀anu: he is telling a lie.
- fánéxé: fánéxó: make white, be white, make clean. v̀ànl̀əŋə ya fánéxó: the cloth is getting white (becoming clean).
- f̀ari: f̀aréxó: pierce. ǹèx̀àsúŋaa f̀ari: the bicycle is pierced (has a flat tire).

fo; fu:	emigrate. fálabílaà fo: the fulani emigrated.
fó; fúú:	flow. lo?oké ya fúú: the water is flowing .
fòn; fòni:	lose. wòraa fòn lotaró?i: we lost at the lottery.
fori; fùdi:	go out, appear. yì?gaà fori: the moon came out.
fóxáló; fókálú:	pound ?. bi náa àbi fúkálú, T?-náa: they pounded the flour.
fɔ; fùu:	blow, winnow, swell. ngé waà náke fɔ: this is the one who is blowing the fire.
fɔ; fúú:	roast in the fire. wu ya ànólu fúú: he is roasting a guinea hen.
fòn; fòni:	miss, fail. waà sa fòn ánnì: he missed Anne.
fulo; fùlìi:	Push. wu ya fáláká fùlìi: he pushed a stone.
fùn; fùnni:	sweat. kafùka ya bí fùnì: the heat makes them sweat
fùxì; fúrí:	glean. wu ya fùn fúrí: he is gleaning peanuts.
fúkí; fúrí:	extinguish. ná bi fúrí T?: it's a fire they are extinguishing.
fuxari; fùxàru:	rummage, ransack, search. wùri ya gbaké fùxàrù: we searched the house.
fúxáí; fúxáru:	to frighten, tremble. sàntù?gaa bì fúxáí: the hyena frightened them.
fyá; fyèxo:	be afraid, fear. ánnì ya fyèxò: Anne is afraid.
fyàlà; fyàlu:	hurry up. ta fyàlù: hurry up.
fyeeri; fyèèru:	urinate. waà fyeeri: he urinated.
fyè?è; fyè?ìi:	be quiet. bì wu yari wìi fyè?è: they called him, but he stayed quiet.
fyen; fiin:	suck. sukárá waà fyen: it was sugar that he sucked.
fyén; fiín:	flower. taká ya fiín: the tree is flowering.
fyènrì; fyènrù:	whip, beat. wòra ya wò?a fyènrò: we are beating the snake .
fyénxé; fyénxó:	sob. càà gbéxélaà nyeli wu mà?an fyénxó T?: when a child has really cried, he sobs.

**gb**

- gba; gbùu: drink. ndaà bierá gba la: did I drink beer?
- gbàrà; gbàrìi: agree, meet, welcome. waa gbàrà sí da sí ná móí: he is in agreement to go with you.
- gbèlì; gbèdi: wound, injure. nèxàśúŋaa wu gbèlì: the bicycle injured him.
- gbere; gbèrèxo: be short, shorten. wu kùne gbere: let's shorten the road (let's take a short cut)
- gbèxè; gbèxìi: fall asleep. càŋaa gbèxì: the child fell asleep.
- gbéxálé; gbéxálú: arrange, make, form, design, repair. wu ya ñáa gbéxélú: he drew a scorpion.
- gberi; gbèdi: uproot (millet). bi sòòkí gberi: he uprooted the millet.
- gbéráxé; gbéráxó: dispute, quarrel. cèèbí ya bí yé gbéráxó: the women are quarrelling.
- gbó; kúlí: kill. Posonáŋa ya nkúlí: the poison kills.
- gbòxò; gbòxìi: meet together, put in piles, in groups. nàmaabílaa bì yé gbòxò: the men met together.
- gbón; gbúún: hit, beat, dig ground peas. bi ya bí yé gbúún: they are beating each other.
- gbúlí; gbúláxó: get fat. nàŋa ya gbúláxó: the man is getting fat.

**i**

- ja; jìi: shoot, break. waà ñnólu ja: he shot a guinea hen.
- já; jání: be able to, succeed at. wu ná já kàrí: he was able to leave.
- jí; jíí: wash. wu ya ñŋmɔɔ jíí: he washed a knife.
- jí; cyén: enter. bi ya ncyén gbakíi: they entered the house.
- jiili; jìllu: cross (a river). biì kùna jiili: they crossed the road.
- jo; yu: speak, say, recount. sàpálábí ya yù: the people are talking.
- jó; jóórí: swallow, forage. nkùlàŋa ya jóórí: the chicken is foraging.
- jooli; jòòlu: sew. wu vàŋgaà jooli: his cloth is sewn.

jɔɔxi: jɔɔxɔ:	sharpen. ndi ya `ŋmuuné jɔɔxɔ: I am sharpening the knife.
<b>k</b>	
ká: káá:	chew. ánnì ya búróxo káá: Anne is chewing bread.
káájú: kááyù:	criticize, order (something). wu ná tùùxó káájó mí káí: they ordered a hoe and then left.
kaala: kààlu:	suffer. yãŋa ya nkààlù: the sick person is suffering.
káálá: káálú:	disapprove, deny, pardon. waà wéráŋa yù míi xé káálú: he stole money and he denies it.
kàcaa: kàcàa:	pay attention, supervise, consider, take care. wu ya wà kàcàa mén: he does not consider anybody.
kàʔàri: kàʔàru:	scratch, spit. wu ya nyiŋŋa kàʔàrù: he scratches the soil.
kálá: kálíí:	fry. wu ya sàmàyóora kálíí: she is frying doughnuts.
káláxí: káláxó:	be spoiled, erase, destroy, be sad. ndòròkáá kàlàxí: the Yam is spoiled.
kàlì: kàdi:	teach, read, swear. waà sébáŋa kàlì: he read the letter.
kan: kàan:	give, lend. Cèbàa karè kan ánnùù: Tieba gave meat to Anne.
kán: kání:	boil. loʔaké ya nkání: the water is boiling.
kánʔán: kánrí:	be tired, tire, punish, to make suffer. ndi ya kánrí sákíi: I tire in the fields.
kanla: kànlii:	uproot (ground peas, peanuts). moo fùun kanla: you harvested peanuts.
kàŋà: kànŋu:	lather, foam. jeké ya nkànŋù: the soap is lathering.
kàrì: kédí:	inhabit, live at. ndi ya kédú òròdaʔe: I live at Orodara.
káí: sé:	go, leave. ánnàa kàrí Kanadáí: Anne has gone to Canada.
kàrəŋà: kà-rəŋu:	govern(a country), translate(a language), turn. sòðkí kàrəŋà: Pour the millet into another container.
kéráxé: kéréxó:	tease, mistreat. cà bi kéréxú: it's a child they are mistreating.
kén: kíin:	groan. yãŋa ya nkíin: the sick person is groaning.

kàlàxè; kàlàxo:	be intelligent. waa kàlàxì: He is intelligent.
kó; kónlákó:	tear from. kafèèkaà taxa kó: the wind pulled up a tree.
kó; kóri:	draw (water). sá lo?o kó: go and draw some water.
kò?ò; kò?ii:	dance, play. waa kò?ò míi sé: he danced and then he went .
kó?ó; kó?íí:	hope, anticipate.
koló; kòlìi:	cough. ceèŋa ya nkòlìi: the woman is coughing.
kònlì; kònlàxo:	slit a throat, kill. bi nòn konli: they killed a steer.
koori; kòòru:	work the soil, clean off the land. wu ya keràka kòòrù: they are working the field.
kóri; kúdí:	nail. gbàràxà bi kúdí: it's a door that they are nailing.
kó; kúú:	finish, terminate, end. wéráŋa ya nkúú: the money is running out.
kón; kúún:	cut, dig (a well), circumcise. bàlàxà bi kúún: it's a well they are digging.
kóri; kódí:	chase, punt. sàkàa bi kódí: it's a goat they are chasing.
kù; kúfí:	die. nkùùbí ya kúfí: the chickens are dying.
kú; kúfí:	to endure. kan?ànta kù má yê: you must endure fatigue.
kùlì; kùdi:	shave. ndaà má?ájòŋa kùlì: I shaved the beard.
kuli; kùdi:	gather. bi fùùnkí kuli: he is gathering up the peanuts.
kúláló; kúlálú:	cry out. faciŋa ya kúlálú: the cultivator is crying out.
kùlù; kùlu:	roll. wu ya nèxàsúŋa kùlù: he is rolling the bicycle.
kún; kúrí:	crunch. wu ya wòré kúrí: I am crunching the kola.
kùrì; kùdi:	fold. fàlàka kùrì: fold the mat.
kúráló; kúrálú:	fold. weèŋa ya nkórálú: the leaf is folding.
kúrání; kúrání:	stumble, bump into. waa wù yé kúrání: he stumbled.
kuraro; kùrèrù:	snore. wu ya ŋmólí na nkùrèrù: he snores while sleeping.
kùùxò; kùùxo:	walk on all fours. càŋa ya kùùxò: the child is walking on all fours.

kyexi; kyèxo: break, dig and take out yams. ndà kéeékaa kyexi: my arm is broken.

## L

laala; lààlu: lick. pðŋaa tasáŋa laala: the dog is licking the Plate.

lááwùlò; lááwúú: make fun of, ridicule. bi ya wú láawúú: they are making fun of him.

láʔá; lárí: return. láʔá Pan nánʔán: come back here.

láʔáá; láʔáálú: Peel. ku manderé wu ya láʔáálú: it's a Potato that he is Peeling.

lèèlè; lèèlu: lower, bend over. ndi ya lèèlù: I am bending over.

léxálé; léxálú: tickle, Prickle. yia yi yè léxálú: go tickle yourself.

lé; lèxo: grow old, be old. ndà túŋaà lé: my father is old.

lèrè; lèrèi: hide, camouflage. nànkàlù màʔalèrè: a thief hides (habitual).

lèrèxi; lèrèxo: crack (by heat). nyìŋgaà lèrèxi: the ground is cracked.

lì; lí: eat. maá lì mí sá sáné: when you have eaten, go and lie down.

lílí; lílíxó: be far away. maá lílí wù sa kàrí: if you go far away, we will leave you.

lís; lúú: take, hire. bi ya fòtòlè lúú: he takes Pictures.

lóxó; ndúú: understand, hear, listen. mo ya ndúú na kaciináà fori: you hear that the fetish has come out.

lúxí; lúrí: climb, go up. wu ya lúrí takíi: He is climbing the tree.

## M

màrà; màrèi: glue, conserve, stick together. papínyá màrà yi yé là: the Papers are stuck together.

mèni; mbèdi: light, Plaster. làmbáŋa mèni: light the lamp.

mání; máníí: assemble, add, collect. bi ya wéré máníí: they are collecting money.

mo, mon; m̀oni: stay a while, last. ́nni s̀ mon kanadáí: Anne will stay a while in Canada.

**mb**

mbííré; mbíírú: think about, meditate. ndi ya mbíírú mo la: I am thinking of you.

mb̀x̀i; mb̀rí: suck. càŋe ya ñetá mb̀rí: the child sucked the néré bean.

mb̀x̀í; mb̀rí: open, reveal. ceèŋaà wu nàŋa non?on mb̀x̀í: the woman revealed the secret of her husband.

mb̀x̀áí; mb̀x̀áí: roll up. waa nciizi mb̀x̀áí wú ḱéka la: he rolled up the string around his arm.

**mp**

mpá; mpáá: protect, defend. munc̀ŋa ya mpáá col̀ŋa la: the big sister protects the younger sibling.

mpééíé; mpééíú: glide (hover?). s̀nc̀iina ya mpééíú: the bird is gliding.

mpánné; mpánnú: stutter. wu j̀ŋe ya mpánnú: his son stutters.

**n**

na?ala; nà?álu: twist, wind, writhe. k̀naà na?ala: the road is twisted.

ne; ǹni: put, wear (clothing). nd̀ sí za v̀andiŋane: I am going to wear a shirt.

néŋé; néŋú: bring in. sak̀ bi néŋú gbak̀: it's a goat that they are bringing into the house.

no, non; ǹni: bite, arrive, achieve. ẁ waà wu ǹn: a snake bit him.

nón?ó; ǹnrí: dirty, be dirty. ndaa ǹn?ón: I am dirty.

**nd**

ndúnr̀ŋón; ndúnr̀ŋún: retreat, reject, reimburse. bi ya bí ndúnr̀ŋun: they are withdrawing them.

ndúnx̀áí; ndúnx̀áí: smell, sniff. p̀ŋŋa ya nà mponŋa ndúnx̀áí: the dog is sniffing the stranger.

nd̀x̀ú; nd̀rí: sow, or plant. waa f̀x̀à nd̀x̀i: he sowed, or planted, corn.

ndúxú: ndúxó: dunk (in a sauce). wu ná rá ndúxó cenkíi: he dunked it in the sauce.

### nt

ntá: ntáá: believe, create. kalàa sàcà nta T? sàcà: God created man (generic).

### ny

nya: nyàa: see. fiin ya nyàà mén: a blind Person does not see.

nya: nyání: float, swim. ndi ya nyání: I am swimming.

nya, nyaun: nyàni: dissolve, dilute, reduce (swelling). sukáréhaà nyaun lo?akíi: the sugar is dissolved in the water.

nyáláhá: nyáláhú: ripen, be red. má?ágbòráa le wu mà?à nyáláhá: when a mango is mature, it is red.

nyeli: nyìni: cry. càha ya nyìni: the child is crying.

nyèn?èn: nyè?èin: taste. waà kaàta nyèn?èn: he tasted the meat.

nyèeri: nyèèru: walk around. wu sí sá sàxà nyèeri: let's go hunting (lit. let's go walk the bush).

nyééri: nyééró: ask for, Pray. kalè wu nyééro: it is God he is Praying.

nyén?ín: nyén?ín: stir, move. cenká nyén?ín: stir the sauce.

nyì: nyìni: fill. cònaa nyì: the clay Pot is full.

nyì: nyíún: shine, light. càhgi ya nyíú: the sun shines.

nyí: nyíni: wake up. sá wú nyí yí da sé: wake (sg.) him up and go (Pl.).

nyáhé: nyáhú: be wet, be cold, cool. mpá?ána ya nyáhú: the broth is cooling.

nyo: nyòhko: be good, be Pretty. vàhgaà nyo: the cloth is Pretty.

### ŋm

ŋmon: ŋmùun: draw a bow or slingshot. waà mpána ŋmon ná ferambíi: he shot at the turtle-dove with a slingshot.



- ḡmón: ḡmóní: rest, breathe. wu ná kánʔán mí ḡmó: he was tired and he rested.
- ḡmól: ḡmólí: sleep. moóḡmól bí sí sũta lì: if you sleep, they will eat the mush.
- ḡmòri: ḡmòdi: nurse. càḡa ya ḡmòdi: the child is nursing.
- ḡmòrèḡò: ḡmòrèḡun: Push roughly, jostle. bi ya bí yé ḡmòrèḡùn: they are jostling each other.

## E

- Pàlà: Pàlìi: surprise. wu yambaà nda Pàlà: his sickness surprised me.
- Pan: má: come, arrive. nàḡoḡáà Pan: the stranger has arrived.
- Pèlì: Pèlèxo: be fat. takáá Pèlì: the tree is fat.
- Peo, Pe: Pèni: shell (locust bean). ba ñetá Peo: come and shell the locust bean.
- Pen: Pènxo: disPlease, disgust, not content. ñdá modò ci ḡḡé laà Pèn ndi: what you did disgusted me.
- Pééré: Péríí: sell. mòlà wu Péríí: it's rice she is selling.
- Pèni: Pèdi: lose. wéráḡaa Pèni: the money is lost.
- Pèni: Pènu: spin (cotton). wu ya kònè Pènu: she is spinning cotton.
- Pèri: Pèdi: fight. bu bi yé Pèri: they fought each other.
- Piu, Pi: Pìni: be ripe, be well cooked. kaàti ya Pìni: the meat is getting well done.
- Pɔ: Pùu: tie. kànciya waa Pɔ: it's wood that he is tying.
- Pó: Púú: sweep. ntànnà wu Púú: it's the courtyard she is sweeping.
- Pórá: Póráxó: do better, be happy. yāḡe ya Póráxó: the sick person is doing better.
- Pu: Pùni: swell. wu ɓbèʔeḡḡáà Pu: his cheek is swollen.

## S

- sáári: sááru: greet. ndi ya mó sááru: I am greeting you.

sááxí; sááxó:	sharPen, comb, carve, hew. kàrìnyôn ndà sááxó: it's a Pencil that I am sharPening.
sàn?àn; sà?an:	chew. karè ndà sà?òn: it's meat that I am chewing.
sán?án; sánrí:	untie, reach out (the hand). bi ná wú sán?án: they untied him.
sán?ánlá; sán?ánlú:	stretch out. waa wù yé sán?ánlá fàlèka la: he is stretched out on the mat.
sàni; sàni:	vaccinate. dòxàtsràa wu sàni: the nurse vaccinated us.
sàrà; sàri:	Pay. folè ndaa sàrà: it's a debt that I Paid.
sárí; sárií:	Prick, rend, snag. nkaanáá ndà sárí: the stick Poked me.
sébé; sébíí:	write. ndi ya sébíí: I am writing.
si; si:	be born, give birth. ndà cóŋaà see: my wife gave birth.
sien; sèni:	Produce. takáà sien: the tree Produced.
siili; siíli:	be strong. facií siili: a cultivator is strong.
síínlé; síínlú:	aim (to shoot something). wò ndi ya síínlú: it's a snake that I am aiming at.
síí; sídí:	begin. waà gbaxa síí: he began a house.
sáláxé; sáláxó:	be shy, timid, be ashamed. Pùcòŋá ya sáláxó: the girl is timid.
sáné; sànu:	lie down. bi ya sìnù: they are lying down.
sàxe; sàxi:	wait. mo ndi ya sàxi: it's you that I am waiting for.
so?o; sori:	PrePare, cook. waà so?o mí sé: she PrePared (food) and then went.
son; sònni:	worshiP, adore. kacenla bií son: it's a fetish that they are adoring.
són; súún:	sPend the night. ndà sí zà sòn kánkà?i: I am going to sPend the night at Kangala.
sóxí; sórí:	burn. gbaxa xə sórí: a house is burning.
so; sùu:	buy, be saved, escaPe. nkùlùŋaà so: the chicken escaPed.
su; sùni:	defecate. ndi ya sí za sù: I am going to defecate.

sú; súlí:	Pound. fòxà bi súlí: it's corn they are Pounding.
sú; súxálú:	Poke, jab. māsènéhásá ndè sú: the needle Poked me.
sùùrì; sùùru:	exaggerate, be too much. wu ya lí mà sùùrì: he ate too much .
suxàlo; sùxàlu:	crouch. hàhàà súxálo: the man is crouched.
suxàri; sùxàru:	sift. àbiibé suxàri: sift the flour.
súxàrí; súxàrú:	shake. mambéleshà ya wòrà súxàrú: the car is shaking us.

## t

ta; tàa:	receive, find. ndaà mo tuṅtudá ta: I received your commission.
taala; tààlu:	carress, Pat. ndi ya ná Pónhà tààlù: am Patting my dog.
taanla; tàànlu:	align, lign up. bù bcranyá taanla: they ligned up the sacks.
táánlá; táánlú:	measure, compare. sò nda táánlú: it's millet that I am measuring.
táánlá; tàanntàan:	like, please, be content. mo ná ba ndè sáári ka ná táán ndi: You came to greet me, that Pleased me.
taʔa; tari:	Put on the fire. wu ya colè tari: he Put a Pot on the fire.
tálá; tálíí:	share, divide among, distribute. fùun ndè tálíí: it's Peanuts that I am distributing.
tanba; tànbi:	learn, teach. ndi ya mekanazen yà tànbi: I'm learning to be a mechanic.
tánʔá; tánrí:	stomp. waa ndè tánʔán: he stomped me.
tánʔánlá; tánʔánlú:	stomp. wu ya fina tánʔánlú: he is stomping fonio.
tánlán; tàan:	be good (to eat). makcránshàa tànlá talaxi: the macaroni is good to eat.
tánʔá; tánjú:	touch. wu ya ntánjú fyáabi la loʔakii: they are touching the fish in the water.
tará; tárií:	stick, glue, bind. tembúru tárá letéreshà la: stick a stamp on the letter.
tèlì; tàdi:	be used to. kanʔataà nda tèlì: I am used to fatigue.

- te: tè: show. ma nààŋa tè: show your husband (to me).
- téén, tíín; téún: sit down. wu ya téún wà yèrí men: he doesn't sit down at anybody's house (fig.).
- ténlámé; ténlámú: bargain for, haggle over, barter for. vàndiŋe ndà ténlámú: it's a shirt that I am bartering for.
- tèrè; tèrìi: slide, slip. waa tèrè: he slipped.
- téxí; tédí: Place, put, set (a date), help. ba ná téxí baaráŋa la: come and help me in the work.
- tì; tí: braid, weave. waa vànlà tì: he is weaving a cloth.
- tàn; tàni: make a noise, rumble, crash (thunder). kalèŋi ya tàni: the thunder is crashing.
- tare; tàrìi: grind, crush. waa sò tare: he is grinding millet.
- tàràxè; tàràxo: lodge at, unload. nàmpoŋa waa tàràxè ndùú: a stranger stayed at my place.
- táún, tín; tání: be full. waa lì tàún: he ate until he was full.
- tàxì; tárí: descend. nda sí tàxì lùkii: I will go down to the creek.
- to; tu: fall down. ndaà to: I fell down.
- tó; tóní: bury, close. gbu wù ya tóní: it's a corpse that we are burying.
- tonlɔ; tònlàxo: be long, make long. ndaà tonlɔ: I am tall.
- tóró; tórií: Pass. tóró maa sé: Pass on and go.
- tóráxó; tóróxú: accompany, have sent, send. ndà sí za sébá tóróxó moó: I will send you a letter.
- tónʔón; tónrí: dilute, draw out. ndaà mbii tónʔón: I am mixing water with the flour.
- tárí; tódí: count. ndi ya sakàa tódí: I am counting goats.
- tun; tùnni: send somebody on an errand. bi yà nda tùnni: he sent me on an errand.
- tuuxo; tùùxo: clean, wipe, rub. wu ya wú kénya tùùxò: he is rubbing his hands.
- tùxì; tùxìi: vomit. càŋa ya tùxìi: the child is vomiting.

túxí: túrí: dig, deePen. kacù ndi ya túrí: I'm digging for a mouse.  
 tuxo: tuxii: carry transPort. mòlè ndaà tuxo: it's rice that I carried.

## W

wá: wáá: throw, misPlace. wu ná wá wú yárányi: he misPlaced some of his objects.  
 wa?a: wari: dry, be courageous, be hard, difficult. mbibáà wa?a: the flour is dry.  
 wéé: wíí: look, visit. maà nta ná wíí men: don't look at me.  
 wéréṅé: wéréṅú: heat, bother, be a Pest, annoy, vex. mo ndà wéréṅé: you bug me.  
 wérí: wéráxó: be raPid, be in a hurry. wérí má kàràkíli: hurry uP with what you're doing.  
 wó: wúú: be black, forget. ndà fúṅáá wò: I forgot (lit. my insides blackened).  
 wu: wùni: Pour, make bricks. wu ya nàfán wùni: he is Pouring bricks.  
 wúlí: wúdí: wash. ndi ya wúdí: I am washing myself.  
 wùlò: wúú: take out, clean uP/clear out a well. bàlèkùṅáá bàlèkè wùlò: the well digger cleared out the well.  
 wúráxí: wúráxó: mix uP (things), be mistaken. ndaa wùràxí: I got mixed uP.

## Y

yá: yá: be sick. wu ya yá: he is sick.  
 yààlà: yààlu: yawn. waa yààlà: he yawned.  
 ya?a: yari: leave, reserve, abandon, Permit. wu ya?a waa sé: let him go.  
 yà?àri: yà?àru: shake. wu ya také yà?àrù: he is shaking the tree.  
 yala: yàlàxo: be sufficient. kaàtaà yala: the meat is sufficient.  
 yéré: yéíí: stoP (intr.), stand. yéré wú táún: stoP beside him.  
 yéréṅé: yéréṅú: stoP (tr.). wu ya wú yéréṅú: he stopped him.

yéxé: yéxíí:	question, ask about someone. sa wú yéxé: go and ask him.
yéré: yéíí:	wear out, spoil, damage. nda vanya ya yéíí: my clothes are wearing out.
yeri: yèrèxo:	counsel, advise. ndaà wu yere baaràŋa wòké la: I advised him about the work.
yàrì: yìdì:	get up, fly, come from. waa yàrì: he got up.
yari: yari:	call, invite. ndi ya mo yari ma ba lì: I am inviting you to come and eat.
yàràxè: yàràxo:	raise, wake up (tr.), straighten up. ndaà kampèna yàràxè: I raised the finger.
yi, yí: yìni:	jump. bi ya yìni: they are jumping.
ya: yùu:	split. kàncixe ndi ya yùù: it's wood that I am splitting.
ya: yúú:	water. naŋŋà ndi ya yúú: it's the garden that I am watering.
yù: yúlí:	steal, trick, rip-off. warà ya yúlí: him, he steals.
yùxì: yùxìi:	squeeze (orange), milk (cow), wring. waa vannya yùxì: she is wringing out the clothes.

## WELMER'S QUESTIONNAIRE

Transcription and French translation by Traoré Gnouadjotien.  
Tone Analysis and English translation by Anne Garber.

The following questionnaire was designed by Welmers for the purpose of doing a quick survey of the basic structures of an African language. Specific vocabulary and syntactic structures were selected in order to facilitate a basic analysis and a comparative study between dialects and languages.

This Sucite questionnaire includes a French and English translation for each item and English glosses. At this point, glosses are tentative, pending a more thorough consultation with a Sucite speaker. The transcription, though on the whole accurate, does have some inconsistencies that cannot be corrected until I get it checked out with a Sucite speaker. Underlying tone is marked above the tone-bearing units especially in cases where the surface tone is different than the underlying tone. Below is an explanation of the symbols used:

L	Low tone	
H	High tone	
M	Mid tone	(Lh)
Mw	Weak Mid tone	(Hl)
ML	Mid-Low tone	(Hl)

Abbreviations

Q	Question marker	INC	Incompletive marker
Fut.	Future marker	CLAUSE M	Clause Marker
VP	Verbal Particle	PP	PostPosition
Neg.	Negative Marker	Con.	Connector
REF	Referential Pronoun	EXCLAM	Exclamation marker
?	translation or transcription uncertain		

- |    |         |         |  |                |
|----|---------|---------|--|----------------|
| 1. | M       | L M     |  |                |
|    | son     | nə'kín  |  | une Personne   |
|    | Person  | one     |  | one Person     |
| 2. | LM      | LM      |  |                |
|    | sìn     | suún    |  | deux Personnes |
|    | Persons | two     |  | two People     |
| 3. | LM      | M ML    |  |                |
|    | sìn     | ká'kúró |  | cinq Personnes |
|    | Persons | five    |  | five People    |
| 4. |         | L M     |  |                |
|    | kán?àn  | nə'kín  |  | un village     |
|    | village | one     |  | one village    |





18. Pìì des hommes  
some some men
19. Pìì biì Pàn ba mo wéé des hommes sont venus te voir  
some they come M you visit some men have come to see you
20. m̀nl̀è ndaà sɔ j'ai acheté du riz  
rice I buy I have bought some rice
21. ci nkàna là tun sen?én y a-t-il un autre moyen de faire  
do manner an other again cela?  
nye ndé la laa is there another way of doing that?  
is that on Q
22. senye?ara yaà wu nyaén Peu d'hommes l'ont vu  
People many VP-not him see-Neg. few men have seen him
23. Pìlaà ju na d'autres hommes ont dit qu'ils ne  
some others say that l'avaient Pas vu  
L H  
Perì nà wú nyaén some other men have said that they  
they-REF VP him see-Neg. did not see him
24. nkùu dá kànná nà nye ndùú je n'ai que Peu de Poulets  
chickens little only be mine I have but few chickens
25. m̀l̀è c̀er̀ì kànná laa k̀ò̀r̀ò il ne reste que Peu de riz  
rice little only there remains but little rice
26. yàlàà xó jò dis-le encore  
again? it say say it again
27. wa yàlàà là cè il l'a fait encore  
he again? it do he did it again
28. nda yaà ndé ci nkàna cèn mé je ne sais Pas faire ça  
I not that do manner know Neg. I don't know how to do that

29. nda yaà wu nyaén je ne l'ai Pas vu  
I not him see-Neg. I did not see him
30. wu ya má nánjàà il va venir aujourd'hui  
he come today he will come today
31. biì Pan táñjàà ils sont venus hier  
they come yesterday they came yesterday
32. bi ya má nyàmPanŋa ils vont venir demain  
they come tomorrow they will come tomorrow
33. láʔá Pan nyàmPanŋa reviens demain  
return come tomorrow return tomorrow
34. Mw  
Pan ná loʔii námbèeràmé apporte de l'eau tout de suite  
come water right now bring some water right away
35. wu nye kànʔàn la námbèdè il est au village en ce moment  
he be village in right now he is at the village at this moment
36. ndà ná mPan náʔán táñjàà, je suis venu ici hier, mais tu  
I come here yesterday n'etais Pas là  
H  
mo síì na nci náʔéen I came here yesterday, but you were  
you but VP be here-Neg. not there
37. H L M  
waa tiín náʔán canncàa suunní il est resté là deux jours  
he stay here days two he stayed there two days
38. yaləri ná nci waé il n'y avait Pas de nourriture là  
food be there-Neg. there wasn't any food there
39. wu gbaká nye waa mē [nyeaanmē] sa maison est là-bas  
his house be there his house is over there
40. L M  
wòrè sá ba nkári wáá mē nyàmPanŋa nous irons là demain  
we Fut. go there tomorrow we will go there tomorrow



54. H  
nké kàncikáá nyìñé, ka  
this wood wet it  
yaʔá nta nyí me  
will-Neg. INC burn Neg.  
ce bois est humide, il ne brûlera  
Pas  
this wood is damp, it will not burn
55. L M Mw H  
nàka ndà yáránya Puná sòràxó  
fire my things all burn  
le feu a brûlé tous mes objets  
the fire burned all my things
56.  
ŋgætun wu ya má wéè  
who he come there-Q  
Qui arrive?  
who's coming?
57.  
wì wá na nkúlálú  
she throw and cry  
elle s'est mise à crier  
she started to cry
58.  
wa kùl(à)láà mon  
she cry be-long  
elle a crié longtemps  
she cried a long time
59.  
sàPálábí ya nkòʔi kànʔánka  
People are dancing village  
ML  
fùññíí  
inside-in  
les gens sont en train danser au  
village  
the People are dancing at the  
village
60. H  
bii kòʔàà nyèka mbùxí  
they dance morning open  
ils ont dansé toute la nuit  
they danced the whole night
61. L M ML  
ndà túŋa kù  
my father died  
mon Père est mort  
my father is dead
62.  
waa kù tánjéè  
he die last year  
il est mort l'an dernier  
he died last year
63.  
nkùtunnaràà tu nyàŋgà la  
monkey fall ground on  
le singe est tombé sur le sol  
the monkey has fallen on the ground
64.  
kaà tu loʔokíi  
it fall the water-in  
c'est tombé dans l'eau  
it fell in the water
65.  
waà tuù kèèka kexi  
he fall the arm break  
il est tombé et s'est cassé le bras  
he fell and broke his arm

66. takáà tuù kùna Pari l'arbre est tombé à traverse le  
tree fall the road cross chemin  
the tree has fallen across the road
67. maʔàn nta fyèxà mé n'aie Pas Peur  
you-Neg. INC afraid Neg. don't be afraid
68. waa fyàù il a eu Peur  
he fear he was afraid
69. wu ná nda conlèŋa bì yé gbón lui et mon frère se sont battus  
he and my brother they hit/fight he and my brother fought each other
70. waa xè wá loʔokíi, il a jeté cela dans l'eau, et cela  
he it throw water-in a flotté  
hàn xì wá na nyáni he threw that in the water, and it  
it float floated
71. L M  
lùka ya kànʔànkà Pàd(?)ì la rivière coule à travers le  
river is village crossing village  
the river flows through the village
72. nká nciìnnŋa la lùka la rivière coule dans cette  
this direction on river direction  
lòʔòkà ya fúú na sé the river flows in this direction  
water is and going
73. sánciìnna yèrì l'oiseau s'est envolé  
bird fly the bird is in flight
74. la yaʔá nja ŋjàrè mɛ il ne sait Pas voler  
it Fut-Neg. be able fly Neg. he doesn't know how to fly
75. H  
waa cèʔé il a ri  
he laugh he laughed
76. H  
waa sàné il s'est couché  
he lie down he went to bed

77. H  
waa tɛnɫàà nya xə kànnɔ̀kɛ la il a habité dans le même village  
he sit see its village-same? on he lived in the same village
78.  
wu sɛnʔɛn nye si la laa est-il encore vivant?  
he still be life with Q is he living again?
79. H  
bii mɛnʔɛnkí cɛlàà nyɛkə mbùxí ils ont chanté toute la nuit  
they song sing morning open they sang the whole night
80. H  
waa tɛɛn il s'est assis  
he sit he sat
81. H L M  
waa ɲmɔ̀nɫɫɫ cannɔ̀a taanrí il a dormi trois jours  
he sleep days three he slept three days
82. H  
waa ju ná dɛxàtáxɛɲiɪ il a Parlé au chef  
he sPeak with chief-with he sPoke to the chief
83.  
waa ju fànʔàn la il a Parler fort  
he sPeak force with he sPoke loudly
84.  
waa kàʔàxà can nyàŋgə la il a craché Par terre  
he sPit droP ground on he sPat on the ground
85.  
waa yàrì il s'est levé  
he ɟet up he ɟot up
86. H  
waa yèré il s'est arrêté  
he stop he stopP
87.  
waa juubé yaʔa il a cessé de Parler  
he sPeech leave.stop he stopP talking
88. H  
takáá nyìŋé mí ntáún le bois est devenu humide et il a  
tree be-wet and swell gonflé  
the wood has become damp and is  
swollen
89.  
wu kəkəa tàún son bras s'est gonflé  
his arm swell his arm has swollen

90. nda yaà lo?o cén me je ne sais Pas nager  
I not water know Neg. I don't know how to swim
91. ndaà lo?oká nyan tóró j'ai traversé la rivière à la nage  
I river swim cross I swam across the river
92. nda ya sùun na ndà sá là je pense que je sais faire ça  
I think that I fut. it I think I know how to do that  
cén nceé  
know do
93. ndaà xa sòn?à cà?ga kò j'ai Pensé à ça toute la journée  
I it think day end I thought of that all day
94. nda caa sùun na wu sá mPan j'ai Pensé qu'il allait venir  
I think that he fut. come I thought that he was going to come
95. waa là?á il s'est retourné  
he return he returned
96. waa kora?á kàrà?à il a retourné la Pirogue  
he canoe return he returned the canoe
97. waa kàrà wèé sá ncén ?gá il a tourné la tête Pour voir qui  
he turn look to know who venait  
wu má wá ?ge he turned his head to see who was  
he come there CLAUSE M coming
98. gbaya taanrí tóró mí wá kàrà dePasse trois maisons Puis tourne à  
houses three Pass turn droit  
kàndaxe go Past three houses then turn right  
right
99. wu yaa ntùxì il vomit  
he vomit he throws up
100. wòraa yèra sàkaà mo nous vous avons attendu longtemps  
we you wait be-long we waited for you a long time
101. L M

- wu ya nca na nyèèrà mé  
he Neg. be-able walk Neg. il ne sait pas marcher  
he doesn't know how to walk
102. H  
waa lùxí takíi  
he climb tree-in il a grimpé dans l'arbre  
he climbed the tree
103. H  
waa lùxí f6 nyanḡḡá nyìḡtiníi  
he climb until hill top-PP il a monté jusqu'au sommet de la  
colline  
he climbed to the top of the hill
104.  
lúxí náʔàn mé  
climb here montes ici  
climb up here
105.  
waa tàxì nyanḡḡá la  
he descend hill PP il descendu de la colline  
he came down from the hill
106. H ML  
waa càḡa lùràxó fáláka nyùḡíi  
he child lift stone head-PP il a hissé l'enfant sur la Pierre  
he lifted the child up onto the stone
107. H  
waa kèka ncè  
he arm wash il a lavé le bras  
he washed his arm
108.  
waa càḡa tàràxà takí-i  
he child descend tree-PP il a descendu l'enfant de l'arbre  
he got the child down from the tree
109.  
waa fori gbakí-i  
he go out house-PP il est sorti de la maison  
he went out of the house
110.  
waa yàrì kànʔànkí-i  
he leave village-PP il a quitté le village  
he left the village
111. L  
waa ḡmɔlə wuló gbugbùḡḡí-i  
he knife take out box-the-PP il a pris un couteau hors de la  
boite  
he took a knife out of the box
112.  
wòraà nci gbakí-i  
we enter house-PP sommes entrés dans la maison  
let's go in the house
113.  
fyányeʔénlaà ji saàḡi  
fish many enter net-PP beaucoup de Poissons sont entrés  
dans la nasse



- many fish have entered the net
114. waa mɔ̀lɔ̀ŋa ne (?)bɛ̀tɛ̀kí-i  
he rice put bag-in  
il a mis le riz dans le sac  
he put the rice in the bag
115. loʔo ne tonna còdɔ̀ní-i  
water put metal pot-PP  
mets de l'eau dans la marmite  
put some water in the pot
116. H  
waa wilà kòn mí sɛ̀na sín  
he hole cut and post plant  
il a creusé un trou et il y a planté  
un piquet  
he dug a hole and he planted a post  
in it
117. waa kavi(?)dà ne ñyɔ̀kíi  
he meat-piece put mouth-in  
il a mis un morceau de viande dans  
la bouche  
he put a piece of meat in his mouth
118. wòra yàri kànʔàn la mà  
we leave village to  
H L M Mw  
kàrí wòrà táta la  
go our plantation PP  
nous sommes allés du village à notre  
plantation  
we went from the village to our  
plantation
119. waa yàri kànʔàn la táŋjà  
he leave village PP yesterday  
il a quitté le village hier  
he left the village yesterday
120. H  
waa kàrí nyèka la  
he leave morning PP  
il est parti le matin  
he left in the morning
121. wòraa non náʔán táŋjà  
we arrive here yesterday  
nous sommes arrivés ici hier  
we arrived here yesterday
122. L H  
wòraa non náʔán yàkòŋgá la  
we arrive here evening PP  
nous sommes arrivés ici le soir  
we arrived here in the evening
123. waa yiu kũna la  
he jump road PP  
il a sauté à travers le chemin  
he jumped across the road
124. waa yiu wa takíi  
he jump tree-PP  
il a sauté de l'arbre  
he jumped from the tree

125.  
waa kùnnàà yiu ɲà wu yaà non mé il a sauté mais n'a Pas Pu atteindre  
he road jump but he not arrive Neg. he jumped but could not make it
126.  
biì juù mon ils ont Parlé longtempS  
they talk be-long they talked for a long time
127.  
bi wù káncò ils ont Parlé de lui  
they he talk about(derogatory) they talked about him
128.  
wu ya yu fàn(?)àn la il Parle fort  
he sPeak force PP he sPeaks loudly
129.  
ML  
waà yiu tánvùɲá la il a sauté Par-dessus la buche  
he jump log PP he jumped over the log
130.  
LH  
nda ya sàcàrá yù je Parle du sénoufo  
I senoufo sPeak I'm talking about senoufo
131.  
waa tà<sup>m</sup>pala wá il a Poussé un cri  
he noise-big? throw he gave a cry
132.  
H  
ndaa kùl(à)lò ɲà bi ya j'ai crié mais, ils ne m'ont Pas  
I cry out but they not entendu  
xà lóxée I cried out but they did not hear me  
it hear-Neg.
133.  
Mw  
pðnɲaa wù tsska non le chien lui a mordu la jambe  
dog his leg bite the dog bit him on the leg
134.  
MwML  
waa xà kón kayīna tàkákí il a arraché en mordant un morceau de  
he it cut meat-piece Place-chew-PP viande  
he bit off/tore off a Piece of meat
135.  
waa m̀l̀è sɔʔɔ elle a fait cuire du riz  
she rice cook she cooked some rice
136.  
waa nk̀l̀è sɔʔɔ elle a fait cuire un Poulet  
she chicken cook she cooked a chicken

137.                    H  
waa nkùùbí t̀rí  
she chickens count                    elle a compté les Poulets  
she counted the chickens
138.                    H  
waà t̄t̄t̄ kon n̄gíi  
he liana cut middle-in?                    il a tranché la liane  
he cut the liana
139.  
waa v̄r̄mP̄í kón  
he cloth cut                    il a coupé le tissu  
he cut the cloth
140.  
waà k̄k̄a konli  
he hand cut                    il s'est coupé à la main  
he cut his hand
141.                    L M ML  
waa k̄̀c̄́s̄́r̄óx̄́ȳ́ P̄ánlá  
he firewood cut                    il a coupé du bois à brûler  
he cut some firewood
142.  
wu yaà nká nkón nkáná cén me  
he not that cut manner know Neg.                    il ne sait pas couper ça  
he doesn't know how to cut that
143.                    LH  
wù ya nd̄r̄àyé t̄rí  
he yams dig up                    il est en train de deterrer les  
ignames  
he is digging up yams
144.  
waa l̄̀nȳ?̄enx̄ gba  
he water-much drink                    il a bu beaucoup d'eau  
he drank a lot of water
145.  
w̄draa m̄l̄à l̄̀  
we rice eat                    nous avons mangé du riz  
we ate some rice
146.                    H  
w̄draà kar̄à k̄̀  
we meat chew-eat                    nous avons mangé de la viande  
we ate some meat
147.                    LM-H  
waà w̄r̄á kan nd̄ú  
he money give me-PP                    il m'a donné de l'argent  
he gave me some money
148.  
w̄r̄á kan n̄ú  
money give me-PP                    donne moi de l'argent  
'Give me some money
- 149.

- ndaa xè lóxó  
I it hear  
j'ai entendu cela  
I heard that
150. L M  
moo ndà gbón(ɔ?)  
you me hit  
tu m'as frappé  
you hit me
151.  
waa bì gbón  
he they hit/fight  
il les a battu  
he fought them
152.  
waa pɔ̀nɔ̀ taun  
he dog kick  
il a donné un coup de Pied au chien  
he kicked the dog
153. M L  
waa pɔ̀nɔ̀ nyè?én kón  
he dog face cut  
il a retenu le chien  
he restrained the dog
154. H  
biì sàkàŋe gbò  
they goat kill  
ils ont tué une chèvre  
they killed a goat
155. H  
ndó wu caá ɔ̀e ndaa cèn  
that he want CL I know  
je sais ce qu'il veut  
I know what he wants
156.  
ndaa wù cèn  
I he know  
je le connais  
I know him
157. H  
niinà ntàlé -nt? or d?  
rope pull  
tire la corde  
pull the rope
158.  
təŋgé tala ná?àn mé  
log push there over  
Pousse la bûche par la  
push the log over there
159. ML  
waa wù kéékə tuuxo  
he his arm rub  
il a frotté son bras  
he rubbed his arm
160. H  
waa yacèna tònlàxí ná ka'cìtiì  
he belly scratch with nails-PP  
il s'est gratté le ventre avec les  
ongles  
he scratched his stomach with his  
nails
161.  
bi ci biì má  
they do/tell they come  
dis leur de venir  
tell them to come

162. bi tũŋa ci waa má dis à leur Père de venir  
their father do/tell he come tell their father to come
163. nyàʔan waa joè qu'a-t-il dit?  
what he say-Q what did he say?
164. ndaa saxasaŋcuun nya j'ai vu un léopard  
I bush cat see I saw a leopard
165. ndaa vānləŋa jooli j'ai cousu le tissu  
I cloth sew I sewed the cloth
166. nda yaa ŋɔuraxo ndúxé taa LM je sens la fumée  
I smoke odour smell I smell the smoke
167. waa nkanlaké yɔ il a fendu le bâton  
he stick split he split the stick
168. waa wù séékə fàrì ML il s'est pincé la peau  
he him skin pinch he pinched himself
169. waa ndə kéékə feri L M ML il a pincé mon bras  
he my arm pinch he pinched my arm
170. waa naàkə fyən il a sucé la plaie  
he wound drain he drained the wound
171. pə̀pínnyèkə na ncaa ŋm̀d̀d̀i L M le bébé tétait  
baby was nursing the baby was nursing
172. waa kàŋkanlaxə wá il a jété un bâton  
he stick throw he threw a stick
173. waa mətə kùrì il a noué la corde  
he rope tie he tied the rope

174. waà sakàrɔ po tɔxə la il a attaché la chèvre à un arbre  
he goat tie tree to he tied the goat to a tree
175. waa bètɛká kùrì il noué le sac  
he baɔ tie he tied the baɔ
176. L LH H  
waa vànmpì(ì?)bá ncè il a lavé le tissu  
he cloth wash he washed the cloth
177. waà kènva ncè il s'est lavé les mains  
he hand wash he washed his hands
178. waà loʔo wúlí il a Pris un bain  
he water wash he took a bath
179. waà ɲmuuná tuuxo il a essuyé le couteau  
he knife wipe he wiped the knife
180. biì ɔbaxə faanri ils ont construit une maison  
they house build they built a house
181. L M  
bi yaa ɔbaxə faanrú ils construisent une maison  
they house build they are building a house
182. ndaa sàmə sɔ j'ai acheté de l'huile  
I oil buy I bought some oil
183. H  
àkə fáláke lə ramasse cette Pierre  
this stone Pick up Pick up this stone
184. H  
waà kayàràkí Puná balé il a ramassé tous les morceaux  
he Pieces all gather he gathered all the Pieces
185. ntàsùlà nye yawigbolò un éléphant est un grand animal  
elephant be animal-large an elephant is a large animal
186. L M ML  
ndá nɔxànbàléná nye ndà já ce Petit garçon est mon fils  
this little boy be my son this little boy is my son

187. LM LM-H  
 nàṛkoo suún nye ndùú  
 children two be mine-PP  
 j'ai deux enfants  
 I have two children
188. M L LM-H  
 nkùu gbàrù nye ndùú  
 chickens six be mine  
 j'ai six Poulets  
 I have six chickens
189. ML  
 ṅgukáa wù séeḱa suu fàrì  
 thorn his skin Pierce  
 l'Épine lui a traversé le Pied  
 the thorn went through his foot
190.  
 sáru waà ndə non na keèkə la  
 bee he me bite my hand PP  
 une abeille m'a Piqué à la main  
 a bee stung my hand
191. Mw  
 wò waà ndə non na tɔ̀kə la  
 snake he me bite my foot PP  
 un serpent m'a mordu le Pied  
 a snake bit my foot
192. L M  
 kaa ndə yáú  
 it me hurt  
 il m'a fait mal  
 it hurt me
193. L M  
 tɔ̀kə ya ndə yáú  
 foot me hurt  
 j'ai mal au Pied  
 my foot hurts
194.  
 waà loʔo káún  
 he water boil  
 il a fait bouillir de l'eau  
 he boiled the water
195. H  
 waà karə kálá  
 he meat fry  
 il a fait frire une viande  
 he fried some meat
196. H  
 waa bàrəntān kálá  
 he bananas roast  
 il a fait rôtir des bananes  
 he roasted some bananas
197.  
 waa fùun fí  
 he Peanuts roast  
 il a fait griller des arachides  
 he roasted some Peanuts
198.  
 loʔokə ya nkánní  
 water boil  
 l'eau est en train de bouillir  
 the water is boiling
199.  
 bii m̀̀̀̀n-nyeʔun wérí  
 they rice much Plant  
 ils ont Planté beaucoup de riz  
 they Planted a lot of rice

200. LH  
bii ndòràyí ndùkì  
they yams Plant  
ils ont Planté des ignames  
they Planted some Yams
201.  
bi yaa m̀nlàḡə f̀ùù  
they rice winnow  
ils sont en train de vanner le riz  
the are winnowing the rice
202.  
ndaa m̀ḡḡn-nyε?axə PÉRé  
I rice much sell  
j'ai vendu beaucoup de riz  
I sold a lot of rice
203. L ML  
waa kàḡḡbìná kεεxi  
he stick break  
il a cassé le bâton  
he broke the stick
204. L ML  
kàḡḡbìnáà kεεxi  
stick break  
le bâton est cassé  
the stick is broken
205. H  
waa ḡiná k̀n  
he rope cut  
il a cassé la corde  
he broke the rope
206. H  
ḡiná k̀n  
rope cut  
la corde est cassé  
the rope is broken
207.  
waa Pená nca kon'yak̀n'yš  
he bowl shatter Pieces ?  
il a cassé le Pot en morceaux  
he broke the bowl in Pieces
208. wu yaʔá ḡjā xə kεxə mé  
he Neg.fut. be-able it break Neg.  
il ne Peut Pas le briser  
he cannot break it
209. H  
waa t̀ró náʔàn mé  
he Pass here  
il a Passé Par ici  
he Passed by here
210. H  
waa ndə ḡbaká t̀ró  
he my house Pass  
il a déPassé ma maison  
he Passed by my house
211. H  
ndə k̀nə waa l̀  
this road he take  
il a Pris ce chemin  
he took this road
212. L M ML  
ẁrà ká ya ntàan  
our manner VP-Neg. Please  
ḡPí s̀nbíli mé  
these People-PP Neg.  
ces gens-là nous detestent  
those People hate us



213. L M ML H  
wòrè káá tǎán mPí sǐnbíli ces 9ens-là nous aiment  
our manner Please these PEOPLE-PP those PEOPLE like us
214. H ML H  
wù màá nà'kɔɔrə káá tǎán wù-i chacun aime ses enfants  
our also children Please us-PP everyone loves their children
215. H-L  
wàà ju wàrà sǎ wu cù, il a essayé de l'attraper mais il  
he say he-REF fut. him catch n'a Pas Pu  
H  
wu sǎ ya ncà mé he tried to trap him but he could  
he but Neg-VP be-able Neg. not
216. LM  
ndə ya sùún sǎ ju ná mo-ín je veux te Parler  
I VP desire fut speak with you-PP I want to talk to you
217. ML? M  
loʔo káá nyè ndə là je veux de l'eau  
water manner? is me on I want some water
218. L M ML  
ndə láá nye sǎ nta je veux apprendre le francais  
I desire be fut.Con. Inc. I want to learn french  
tàbaʔabúutá tǎnbì  
french learn
219.  
waa yàrì na ncéʔí il s'est mis à rire  
he get up and laugh he started to laugh
220.  
wàà kòdɔnə yaʔa il a cessé de tousser  
he cough stop he stopPped coughing
221. H  
wàà nké soʔo nkǎnna cèn il sait PréParer cela  
he that cook manner know he knows how to make that
222.  
wu .laà nci wí ncúlúŋɔn, s'il veut guérir, il doit Prendre  
he desire be he be-healed du remède  
wàà yalə mà tǎba 9ba if he wants to be cured, he must  
he should medicine drink take some medicine
223. LH  
ndə yaa ndǎràyí súlí je suis en train de Piler des ignames  
I VP yams Pound I am Pounding some Yams

224. bi wù ntáláà yilaxe gbakí-i il l'ont traîné hors de la maison  
they he pull house-PP they dragged him out of the house
225. ndaà wu tun ntàxàtéxáñũn je l'ai envoyé chez le chef  
I he send chief-PP I sent him to the chief
226. ndaà wérá tóróxó ñúún je lui ai envoyé de l'argent  
I money send him I sent him some money
227. s.c̣ə̀tə Punáá<sup>L</sup> rà yé gbòxò tous les gens se sont rassemblés  
People all themselves assemble au marché  
caankíi everyone gets together at the market  
market-in
228. biì sac̣ə̀tə gbòxò ils ont rassemblé les gens  
they People assemble they assembled the People
229. kaf̣ə̀n̄n̄gílaà non kànn̄yà Puná la les nouvelles se répandent dans tous  
news arrive villages all in les villages  
the news spreads in all the villages
230. f̣əl̄àk̄ə̀ can nyà̀n̄gə̀ la etends la natte par terre  
mat spread ground spread the mat over the ground
231. sac̣īt̄aà c̣er̄ax̄e les gens se sont dispersés  
People disperse the People have dispersed
232. v̄ànn̄yà ȳèr̄à̀n̄é ná?àn mé mets à pendre le linge là  
laundry hang there hang up the laundry there
233. gb̄ès̄è l̄òb̄ k̄ànc̄īn̄é P̄ànl̄á Prends une machette et coupe la  
machete take rod cut baguette ici  
take a machete and cut the rod here
234. nk̄á k̄òn ná ñ̄m̄pli-i coupe ça avec un couteau  
that cut with knife-PP cut that with a knife

235. waà `ḡmuuná ya?a laà tu  
he knife let it fall  
nyàḡḡa la  
ground on  
il a laissé tomber le couteau Par  
terre  
he let the knife fall to the ground
236. `ḡmuunáà tu nyàḡḡa la  
knife fall ground on  
le couteau est tombé Par terre  
the knife has fallen to the ground
237. waà suxə gbéxálé  
he mortar make  
il a fabriqué un mortier  
he made a mortar
238. waà tu`tùnnə ḡmɔlə gbéxálé  
he iron knife make  
il a fabriqué un couteau forgé  
he made a forged knife
239. M  
waà Pánndàlè jòdòlì  
he Pants sew  
il a confectionné un Pantalon  
he made a Pair of Pants
240. nyà?an mo ya nkun yè  
what you VP do Q  
qu'est-ce que tu es en train de  
faire?  
what are you doing?
241. H  
moo waa nké gbèxàlè la  
you this make/do Q  
as-tu fait ceci?  
did you do this?
242. H  
maà ma còḡə gbèxàlè la  
you your net PrePare Q  
as-tu PréParé ton filet?  
have you PrePared your net?
243. waa kàn?anḡḡé gbèxàlè la  
he traP PrePare Q  
a-t-il PréParé le piège?  
has he set the trap?
244. M  
ka ci nkānə tè na là  
it do manner show me on  
montre-moi comment faire ca  
show me how to do that
245. M  
kūnə tè na là  
road show me on  
montre-moi le chemin  
show me the road
246. M  
ma `ḡmuùnnə tè na là  
your knife show me on  
montre-moi ton couteau  
show me your knife



260. wuu sí cenká la allons au marché  
let us go market to let's go to the market
261. ndaà baaró ci nánjà(à) j'ai travaillé aujourd'hui  
I work do today I worked today
262. nká nye gbagbúlú M L  
that be house-large cela est une grande maison  
that is a large house
263. bi gbakáá Pèlù leur maison est grande  
their house large their house is large
264. lùnyìḡa kan nùùn donne moi de l'eau froide  
cold water give me-PP give me some cold water
265. loʔokáá nyìḡé H l'eau est fraîche  
water cool the water is cool
266. Pan ná sànciwayíí wu apporte du bois sec pour le feu  
come with dry wood-PP so-we bring some dry wood for the fire  
ba ne nàkii  
M put fire-in
267. sàncirýá yaà waʔéé le bois n'est pas sec  
wood not dry the wood is not dry
268. \ŋmɔpenxə yaʔá L H un couteau émoussé ne coupera pas  
kn:ie-blunt Neg-fut. be-able de viande  
H  
kaàta kòén a blunt knife will not cut meat  
meat cut
269. ndá \ŋmuunnáá Pen ce couteau est émoussé  
this knife VP blunt this knife is blunt
270. yèra kànʔàan lìlì la H est-ce que votre village est loin?  
your village far Q is your village far away?

271. H  
waa kàrí talìlìxì-i il est allé loin  
he go Place-far-PP he has gone far away
272. Mw ML-H  
waà Pan ná sàmè sàkà-í il a apporté une chèvre grasse  
he come with fat goat-PP he brought a fat goat
273.  
ḡḡá sàkàḡḡa Puná nye sàmè cette chèvre est grasse  
this goat all be fat this goat is fat
274.  
waà Pan ná sèḡètàféédìí il a apporté un joli Panier  
he come with basket-Pretty-PP he brought a Pretty basket
275.  
ḡḡá sèḡènaà nyon ce Panier-la est joli  
that basket be-Pretty that basket is Pretty
276.  
ḡḡá nàḡḡa zòḡḡaà nyon c'est un homme bon  
that man heard be-good that is a good man
277. M  
biì kaPilà ci wòrə là ils nous on fait du mal  
they bad do us on they did us an injury
278. LM-H  
waà kaPəxələ ju wòrú il nous a dit de mauvaise nouvelles  
he bad(news) tell us-PP he told us some bad news
279. ML ML  
ḡḡá nàḡḡa nḡa zòḡḡPìífólí c'est méchant homme  
that man be heart-evil-chief that is a dangerous man
280.  
nda nye `metonlaxù-ù je veux une longue corde  
I be rope-long-PP I want a long rope
281.  
nda mḡbììné-é laà tonlə dé ce bâton là est long  
that stick-there it be-long EXCLAM that stick is long
282. H  
mḡá vāmbìbáá cèré ce morceau de tissu est étroit  
this cloth small this Piece of cloth is narrow
283. LM-H  
tonnàcòfónnás nye ndù-ú j'ai une nouvelle marmite  
iron new Pot be me-PP I have a new Pot

284. navðnŋsi  
new-it c'est neuf  
it is new
285. waà Pan ná sè?èlèxí L ML-H  
he come with old basket-PP il a apporté un vieux Panier  
he brought an old basket
286. ndá sè?ènaà le  
this basket old ce Panier est vieux  
this basket is old
287. L L ML L M  
nàmpèlèèŋá waà Pan ba yèrà wéé  
old man one come M you visit un viel homme est venu vous voir  
an old man has come to see you
288. waà le  
he old il est vieux  
he is old
289. vāmbinyìì nye ŋùù  
cloth-red be his il a du tissu rouge  
he has some red cloth
290. ŋjí fálanýeε yaa nyàlèŋá H  
those rocks-there VP red les cailloux-la sont rouges  
those rocks are red
291. sèe wì  
truth it is c'est vrai  
it's true
292. ntá kaàtaa fòn?ón H  
this meat be-rotten cette viande-ci est pourrie  
this meat is rotten
293. ndá ŋmuunnáá tǎnlá H  
this knife be-sharp ce couteau est coupant  
this knife is sharp
294. ntá mǎctáà gbere  
this rope short cette corde est courte  
this rope is short
295. waa gbèxàláà gbere H  
he make small il est vraiment petit (de taille)  
he is really small
296. waa gbèxàláà tonlɔ H  
he make tall il est vraiment grand (de taille)  
he is really tall

297. L M ML LM-H  
 ta má ná sèʔècìcídíí  
 come with small basket-PP  
 apporte un Petit panier  
 bring a small basket
298. H  
 nké fálákaa gbèxàláà wolaxo  
 this rock make smooth  
 ce caillou-ci est très lisse  
 this rock is really smooth
299. LH H  
 ndá mgbìináà tàlé  
 this stick straight  
 ce bâton-ci est droit  
 this stick is straight
300. LH H  
 ndá mgbìináà cèré  
 this stick small  
 ce bâton-ci est mince  
 this stick is thin
301. H  
 waa cèré  
 it small  
 il est mince  
 it is thin
302. -H  
 sàmè nye wi-ì  
 fat be he-PP  
 il est gras  
 he is fat
303.  
 loʔokáá nàmèneun  
 water hot  
 l'eau est chaude  
 the water is hot
304. H  
 nké kàncikáá nyànyé  
 this wood wet  
 ce bois-ci est mouillé  
 this wood is wet
305. LH  
 ndá mgbìináà mpàlì  
 this stick be-thick  
 ce bâton-ci est épais  
 this stick is thick
306.  
 v à à n v i i n nye n ù ù  
 cloth-white be his  
 il a du tissu blanc  
 he has some white cloth
307. ML  
 v à à n n g d ó nye n ù ù  
 cloth-black be his  
 il a du tissu noir  
 he has some black cloth
308. ML H  
 nké v à à n n k ò n k á á gbèxàláá p è l ì  
 this cloth-cut make large  
 ce morceau de tissu est trop large  
 this Piece of cloth is quite large
309. H  
 ntá tuxùtaa lùxó  
 this load be-heavy  
 ce fardeau-ci est lourd  
 this load is heavy



310.           ηγά baarάηαά wa?a           ce travail-ci est difficile  
this work be-hard           this work is difficult
311.           ndά nye kacεnnε           ceci est important  
this be thing-good           this is important
312.                           H  
bāāràntánηaa nyànìηá           les bananes sont mures  
bananas be-ripe           the bananas are ripe
313.           bāāràntánηaa lε non kón mpɔ           les bananes sont mure à cueillir  
bananas age arrive cut           the bananas are ready to cut
314.                           H  
wu yaa cùlùηεε           il est malade  
he Neg. well-Neg.           he is sick
315.           lo?okáá nàmèneun           l'eau est chaude  
water hot           the water is hot
316.                           H  
ηγά bāāràntánηaa tàànìá           ces bananes-ci sont douces  
these bananas soft           these bananas are soft
317.           wòrèηáà soro           les noix de kola sont amères  
kola bitter           the kola nuts are bitter
318.           L           ML  
nàfùlèfòlís wì           il est riche  
rich Person he is           he is rich
319.                           L           ML  
waa ci nàfùlèfòlís           il est devenu riche  
he do rich Person           he has become rich
320.           LH  
zàn?ànká yaa ntù           il pleut  
rain VP fall           it's raining
321.           ML           ML  
canηanyìinés yaa ntù           le soleil se couche  
sun VP fall           the sun is going down
322.           wò nye (n)kás fálákε nòn?-in           il y a un serpent sous cette Pierre  
snake be this stone under-PP           there is a snake under this stone

323. nàkà ne còna nòn?-in mets le feu sous la marmite  
fire Put Pot under Put the fire under the Pot
324. còna nye nàkà la la marmite est sur le feu  
Pot be fire on the Pot is on the fire
325. H mets ça Par terre  
kà tèxí nyàḡḡa la Put that on the ground  
it Put ground on
326. ndaà wu nya kũna la je l'ai vu sur le chemin  
I him see road on I saw him on the road
327. kũna yaa sí lùkà nkèna la le chemin longe la rivière  
road VP go river side on ?
328. nda tacóráḡa nya wu wuùḡa (VL?) ma Plantation est Pres de son  
my Plantation be his one Plantation  
H  
tààún my Plantation is near his Plantation  
beside-PP
329. ba yéré ná nkèdà la tiens-toi debout à côté de moi  
M stand my side on stand beside me
330. ba yéré wù sòḡoli tiens-toi debout entre nous  
stand our between stand between us
331. L M ML sa Plantation est entre ma Plantation  
wu tacóráḡa nye ndà wúḡa et le village  
his Plantation be my one his Plantation is between my  
ná kàn?ànkà sòḡoli Plantation and the village  
and village between
332. H Mw -M il s'est mis debout au milieu des  
waa yéré sacàta tòḡyí-i gens et s'est mis à Parler  
he stand up People middle  
M  
míi yù he stood up in the middle of the  
and sPeak crowd and began to sPeak
333. ML sa maison est au milieu du village  
wu gbaké nye kàn?ànkà nàḡíi his house is in the middle of the  
his house be village centre village

334. H  
waa yèré wú ntàxàtá:káŋa  
he stand his chief  
ML  
nyà?án là  
before PP  
il s'est tenu debout devant son chief  
he stood before his chief
335. H M  
waa yèré gbaká nyo là  
he stand house mouth PP  
il s'est tenu debout devant la  
maison  
he stood in front of the house
336. ML Mw?  
waà `ŋmuuná cù wù nyúŋgə mPànŋíi  
h. knife grab its head above-PP  
il a tenu le couteau au dessus de sa  
tête  
he grabbed the knife above its head  
(by the handle?)
337.  
ntii mod ŋgá ndiŋa sɔ?ɔɔ joè  
how you this food cook say-Q  
comment as-tu PréParé cette  
nourriture?  
how did you PréPare this food?
338.  
nyà?an waà kan moó yè  
what he give you-PP Q  
qu'est-ce qu'il ta donné?  
what did he give you?
339.  
nyà?anxə nye sè?ən-i yè  
what be basket-PP Q  
qu'y a-t-il dans le Panier?  
what is there in the basket?
340.  
nyà?an tɛdii waà Pan yè  
what moment he come Q  
quand est-il venu?  
when did he arrive?
341.  
sán yi yaa séè  
where you(pl) VP go-Q  
où allez-vous?  
where are you going?
342. ML  
ŋgutun waa kərə ju moó yè  
who-other he itREF say you-PP Q  
qui t'a dit cela?  
who told you that?
343. H  
nyà?an la yèraa kàrí wámPaè  
what for you(pl) go over there  
Pourquoi êtes vous allés là-bas?  
why did you go over there?
344. Mw  
nká lɔ́rá nye jòdri yè  
that Price be how many Q  
combien cela coûte-t-il?  
how much does that cost?

345. L M  
ncàa joorí bi nye ɣùun yè  
sheep how many be his Q  
combien de moutons a-t-il?  
how many sheep does he have?
346.  
sán mo túɣa nyɛ̀ɛ̀n  
where your father be-Q  
où est ton père?  
where is your father?
347. L M Mw? ML  
nyàʔà̀n filáxá káári yè  
what type meat Q  
quelle sorte de viande est-ce?  
what kind of meat is that?
348. H  
waà ndé ci wu yòó  
he that do himself  
il a fait ça lui-même  
he did that himself
349. H  
ndaà ndé ci na yòó  
I that do myself  
j'ai fait ça moi-même  
I did that myself
350. M  
bii bì yé nyà  
they themselves see  
ils se sont vus  
they saw themselves
351. H M  
wòraa wù ye nyà  
we ourselves see  
nous nous sommes vus  
we saw ourselves
352. -H  
ta má ná ndìɣi-ì  
IC come with food-PP  
apporte le repas  
bring the meal
353. H  
yàɣaa cùlùɣs  
sick person be-healed  
le malade est guéri  
the sick person is cured
354.  
cèèbí ya bí yé kódí  
women TA themselves chase-IC  
les femmes se pourchassent  
the women are chasing each other
355. H  
yagbakáá yòʔòrí  
thing-drink  
la fête est intéressante  
the feast is interesting
356. H  
yalatáá kùlùɣs  
thing-eat lack  
la nourriture est insuffisante  
the food is not enough
357. H  
ncekáá kò  
soap finish  
le savon est fini  
the soap has run out

358.           bàlàkaa   cùxì                   le Puits est Profond  
          well       be-deep           the well is deep
359.           sàmbaa       wù   cán                   Le boisson l'a détruit  
          millet beer him destroy       Drink ruined him
360.           wu yaa y676rú                   il bavarde  
          he VP   gossip           he gossips, talks alot
361.           fiŋá       fɔ                   vannes le fonio  
          fonio winnow           winnow the fonio
362.                           H                   balaie la maison  
          gbaké pɔ           sweep the house  
          house sweep

## VITA

Anne Elizabeth Garber was born in Toronto, Canada on February 8, 1955. She attended Oakridge Secondary School in London, Ontario and the College General et Professionel in Joliette, Quebec, graduating from the University of Ottawa with a B.A. in Linguistics in 1978. In June 1978, she began graduate study in Linguistics at the University of Illinois and received a M.A. in 1980. During her years at the University of Illinois, she held research assistantships in Linguistics and Art History, as well as a teaching assistantship in ESL. During the academic year 1981-82 she attended the Associated Mennonite Biblical Seminaries in Elkhart, Indiana, after which she spent the years 1982-1985 in Koutoua, Burkina Faso doing linguistic research with Africa Inter-Mennonite Mission. In June 1987, she intends to return to Burkina to continue working for Africa Inter-Mennonite Mission.