THE INTERFACE BETWEEN PHONOLOGY AND MORPHO(PHONO)LOGY IN THE STANDARDIZATION OF ANYI ORTHOGRAPHY

Ettien N'da Koffi

Submitted to the faculty of the Graduate School
in partial fulfillment of the requirements
of the degree
Doctor of Philosophy
in the Department of Linguistics
Indiana University

October 1990

Accepted by the Graduate Faculty, Indiana University, in partial fulfillment of the requirements of the degree of Doctor of Philosophy.

_____
Dr. Charles Bird, Chairman

_____
Dr. Linda Schwartz, 1st Reader

_____
Dr. Robert Botne, 2nd Reader

_____
Dr. Bonnie Kendall, 3rd Reader

Note: This is a 2009 revised and expanded version of my original 1990 Ph.D. dissertation

Ettien N'da Koffi

TO BIRTH PARENTS

My Father, the Late Koua Koffi Thomas

and

My Birth Mother, Anzin Adjoua
My 2nd Mother, the Late Kasi Amanin

TO MY AMERICAN FAMILY

Mr & Mrs. Stewart

and

My Sister, Mrs. Joy Gregory

TO AMERICAN CHRISTIAN PARENTS

REV. & MRS. Charles Shearer

Acknowledgement

There has been a perfect collaboration and cooperation between the divine agency and the human agency in the completion of this doctoral program. I would like to acknowledge the support of both agencies. My sincere gratitude goes to my Lord Jesus Christ who has led my steps from the beginning to the completion of this Ph.D. program. When the going was tough and my knees weak he provided me with a renewed spiritual energy to complete this work. The discovery of the truth in Colossians 3:17 made a complete difference! He has manifested his love towards me by being faithful to his promise to me. My entire stay and study in the USA was a faith venture. However, not once did he fail to meet my needs! He led many Christians to provide me generously with the finances I needed to study at Indiana University.

It all started as a casual friendship with Joy Stewart (now Mrs. Joy Gregory) in 1983. A pen-pal friendship developed between us. As a result of that her mother (family) took a genuine interest in me and my studies, and made enormous financial sacrifices for my M.A program.

In the summer of 1984 when I was visiting the USA God led me to Rev. Shearer, then the pastor of the Linglestwon United Methodist Church in Harrisburg, Pennsylvania. Rev & Mrs. Shearer and the congregation enthusiastically contributed financially to my schooling. My heart overflows with gratitude for the Stewart family in Norfolk, Virginia and the Shearers for their love, their hospitality, and their financial assistance.

I received additional financial assistance from the following institutions. The United Bible Societies gave me a scholarship for four years to allow me to do a Ph.D. I would like to thank the Society as a whole and Dr. Philip Stine, and Ms. Sue Prosser for their help with scholarship matters. I am also very happy to acknowledge the spiritual, moral, and financial support of the Colonial Park church in Harrisburg. The church has helped me in many ways. I have received clothing, tape recorders, office supplies, and spending money from the congregation. New Love in Christ Church in Harrisburg has also contributed financially to my studies in many different ways. Recently I received a large donation from them which allowed me to purchase a much needed Toshiba HB 1200 portable computer. I would like to thank the pastor, Rev. Reider and the congregation for their warm hospitality and friendship. The Wesley United Methodist church is also acknowledged here for contributing to the "Koffi scholarship fund" which allowed me to buy a desk top IBM 386 computer. My gratitude goes also to the Linglestown United Methodist church for her spiritual and financial support for my M.A program.

Individuals in Harrisburg, Pennsylvania have blessed my life in special ways. Unfortunately, I cannot mention all of them by name because of limitation of space. The Rev & Mrs. Seiler have made considerable financial sacrifices for my studies. I would like to thank them also for all the Christmas vacations I have spent with them and their children. Their kindness and thoughtfulness have meant a lot to me. Rev. & Mrs. Yohe have also

touched my life with the warmth of their fellowship and their thoughtfulness. I would like to thank them for their financial support and for their personal interest in the project of translating the Bible into Anyi. Over the years I have come to admire and appreciate the faithfulness of Mr. & Mrs. Kepler. Since September 1985 until now they have faithfully sent me a monthly "mad money" for snacks. I have also enjoyed the friendship of Mrs. Joyce Carroll and the "tender" ice-cream treats that she gives me whenever I visit Harrisburg. I have had wonderful time of fellowship with the Swanks and many other families. I would also like to thank all who have given me Christmas gifts, and especially the Wevodau for giving me a pair of sneakers every Christmas for the past five years.

Many people have helped make my stay in Bloomington very enjoyable. I am grateful to Mr. & Mrs. Wilson for their unwavering friendship and thoughtfulness. I have also enjoyed the hospitality and the generosity of Mr. and Mr. Wall. I am also grateful to Dr. & Mrs. Omanson and their children for inviting me to their home in northern Indiana. I have enjoyed a cordial and sincere friendship with Miss Karen Smith for the past five years. I would like to thank her for all the special moments we have shared over the years. It is certainly a blessing to have a friend like her. I would also like to thank her parents Mr. & Mrs. Smith for having invited me to their home to spend Thanksgiving holidays with them. I will not forget the International Center where I have lived for almost five years. My stay at the Center has given me the opportunity to rub shoulders with many people from many parts of the world. This, in turn, has enriched my experience at Indiana University. I am grateful to all the delightful people I made friends with on campus. I would also like to thank the Free Methodist church of Bloomington, the First Assembly of God church, and the University Baptist church where I have worshipped for the past five and half years.

Last but not least, I would like to express my gratitude to my committee members. Dr. Charles Bird, the chairman of my committee and also my graduate advisor, has helped me keep my perspective and my goals right. He has helped me stay true to my initial ambition, that is, finding ways to write Anyi, my native language.

Dr. Linda Schwartz has been very generous to me by giving me a considerable amount of time both in class and out of class. She has helped me attain a better level of linguistic analysis by giving me the tools of linguistic analysis. This has led me to gain more insight in the language than I previously realized. Her extensive comments on the various drafts of this dissertation are highly appreciated. I am grateful to her not only for demonstrating her interest in this work but also for the interest she has shown in my academic pursuits as well. She has volunteered comments on papers I have presented at conferences.

The classes I took with Dr. Kendall in Anthropological Linguistics have given me a broader perspective on Linguistics and its treatment of language. Her comments on the dissertation were always geared towards leading me to pay more attention to cultural considerations in orthography matters. I am also privileged to be Dr. Kendall's "son." As I write this I hear in my ears her affectionate phrase "Koffi, my son!"

I am grateful to Dr. Botne's insightful comments on both the content and the form of

the previous versions of this dissertation. He made very detailed and precious comments which are incorporated in the final version. I am grateful to him for spending several hours with me to polish some of my analyses the last weeks preceding the defense.

As can be seen from the previous sections, I have benefited a lot from the expertise of the professors on my committee. Their contribution has enhanced this dissertation qualitatively. However, being the main architect of this work, I assume full responsibility for any shortcoming that can be found.

ABSTRACT

The Interface between Phonology and Morpho(phono)logy in the Standardization of Anyi Orthography

Ettien N'da Koffi

A good orthography, it is argued, reflects closely the phonological, morphophonological, morphological, and some syntactic structure of the language it seeks to represent. The present work examines these areas in an attempt to provide an efficient and easy to learn orthography for Anyi. It investigates the interrelations between orthography and word-level phenomena such as vowel harmony, palatalization, metathesis, nasalization. It also discusses the thorny issue of the orthographic representation of morphophonemic variants as they relate to Grade II and Grade III consonant mutations. Additionally, the challenging concept of "word" is investigated. One of the most serious problems facing the creation of an orthography for an unwritten language is how to determine what an (orthographic) word is. To arrive at what may be conceived as a word in Anyi many word-identification criteria are used. These criteria together with the analysis of the morphological processes of affixation, partial and complete reduplication, semi-affixes, compounding, verbal-noun formation, interfixation, proverbial words, and interlexical words help define what a word is in Anyi and how it can be represented in the orthography. At the syntactic level post-lexical phenomena such as word-initial vowel deletion, contraction, utterance nasalization, and vowel lengthening are discussed. Syntactic considerations are also taken into account in the discussion of punctuation marks.

The attempt to provide a standardized orthography presupposes the discussion of sociolinguistic factors such as dialect variation, linguistic insecurity, political structure, urbanization, religion, the status of Anyi vis-à-vis French (language of upward social mobility), and the influence of the French-Anyi bilinguals on the orthography. Since orthography and pedagogy are closely related, some aspects of the discussion center around the problems that metathesis and long words create in reading (aloud). The orthography is geared towards non-fluent readers so as to minimize the time spent in learning it.

TABLE OF CONTENTS

Foreword

0.0 Overview

As the saying goes, a picture is worth a thousand words. Therefore, the diagram below is intended to summarize in a few words the content of this dissertation.

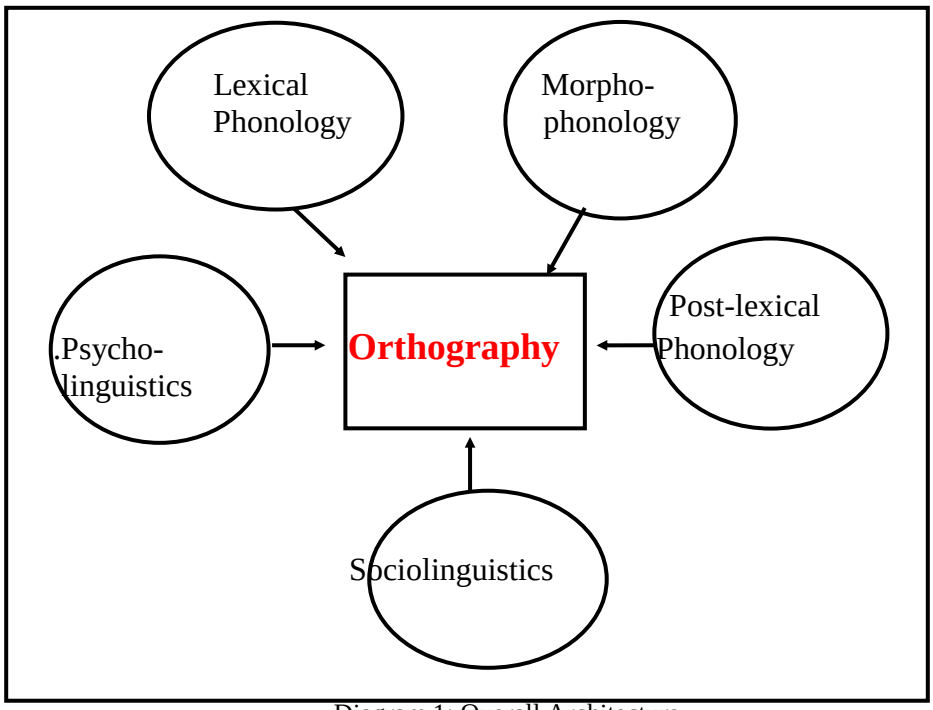


Diagram 1: Overall Architecture

This diagram makes some claims about the academic disciplines that contribute the most in designing an optimal and a supradialectal orthography. A quick glance shows that phonology has the lion's share of contributions because it appears in three of the five components. However, phonology alone is not enough. One must count on the contributions that sociolinguistics, especially variationist sociolinguistics can make in the studies that lead to orthographic choices. Variationist methodology is useful because it helps highlight social and regional variations in phonology, morphology, syntax and the lexicon that should inform orthographic decisions. The contribution of psycholinguistics, especially as it relates to reading processes, is invaluable in deciding whether to represent the underlying form of the surface form of syllables, affixes, and words.

0.1 Limiting the Scope of this Work

Given the multiplicity of disciplines and approaches used in designing a good orthography, it seems advantageous to state clearly here what this work is not, and then proceed with what it purports to be. This study does not discuss in any way the historical development of writing and writing systems. Nor does it try to justify the use of the Roman

Alphabet in writing Anyi. The codification of the alphabetic system of Ivorian languages has already been made by the *Institut de Linguistique Appliquée*. I merely follow their choice. Even though the essence of this work is very descriptive it does not claim to be a full-fledged dissertation on phonology, morphophonology, morphology, or lexical phonology of Anyi. Each one of these areas is discussed only as it applies to orthographic issues. Lastly, it should be emphasized that this study does not in any way attempt to examine how literacy can foster intellectual, social, and economic development.

0.2 Achievable Goals

After having defined this study in terms of what it is not, let us now see what it claims to be. It claims to be an attempt to provide a consistent way of writing Anyi by examining the phonological, morphophonological, morphological, and other word-formation strategies in Anyi. This study does not align itself with any specific linguistic theory. It uses the claims of Structural Linguistics as well as those of Generative Linguistics. The first part of the fifth chapter relies heavily on Post-lexical Phonology.

The orthography choices are strongly influenced by the linguistic analysis. However, other factors such as cultural information, mechanical issues, the aesthetic forms of the word, the influence of other orthographies, and the power of interest groups are taken into account. Throughout this study I have borne in mind the following piece of advice found in Smalley (1964:13):

> writing systems, after all, are cultural phenomena, used by people with feelings and emotions, with prejudices and fears. In fact, it is surprising how much heat a controversy over orthography can produce.

0.3 The Etymology of the Orthography

Etymologically, orthography is a compound word which derives from two Greek words: **ortho** (correct, straight) and **grapheo** (to write, to spell). An orthography study is, therefore, an attempt to provide a correct spelling for a language. Cummings (1988:30) argues that its general end is *to rationalize* spellings as much as possible, in the sense of making more rational, or giving reasons for. It does this on the assumption that what can be made more rational will become better understood and more accessible. Rationalizing Anyi orthography both in the sense of "making it more rational" and "giving reasons for" are the two main underlying assumptions in the present work. To achieve these goals I have divided the dissertation into five chapters. Each chapter contributes in a unique way to making Anyi orthography more rational, efficient, and easy to learn.

0.4 Overview of Chapter One

The first chapter is divided into three major parts. The first part examines the following issues: a brief history of the Anyi people and their settlement in Côte d'Ivoire, an overview of the phonological system. The second part deals with the dialect survey of Anyi and issues related to linguistic insecurity. The goal of this survey is to find out the similarities and differences between the dialects and to propose a standardized orthography. In the third section I survey the major orthographic theories. I weigh their strengths and

weaknesses and focus on their strengths in order to arrive at an eclectic and efficient orthography for Anyi.

0.5 Overview of Chapter Two

The second chapter deals with phonological and orthographic issues with an emphasis on syllable structure. Palatalization, metathesis, and different vowel harmony principles are investigated. CV1V2 and CV1GV2, and CV1LV2 structures which raise important orthography issues are discussed. These purely structural issues lead to the discussion of peripheral but important issues such as eye orthography, readability, the influence of bilinguals on the creation of an orthography. The last issue investigates the pros and cons of writing tone in orthographies. The chapter concludes with some recommendations on how to write tones in Anyi orthography.

0.6 Overview of Chapter Three

The third chapter examines two types of morphophonemic changes that occur in Anyi. The first section deals with the issue of nasal and nasalized vowels and their orthographic representation. There are three types of nasal or nasalized vowels, namely phonemic nasal vowels, phonetic nasal vowels, and "nasal coloration." The second section focuses on Grade II mutations, that is, the morphophonemic changes that occur when the syllabic nasal {N} is prefixed to a stem. This leads to the discussion of prenasalized word-initial consonants and word-medial prenasalized consonants. Grade III mutation deals with a lenition process which consists in weakening the articulatory force involved in the pronunciation of some consonants. It leads to the examination of whether or not consonant alternations should receive separate graphemic representations.

0.7 Overview of Chapter Four

The fourth chapter seeks to determine what words are in Anyi. A number of word-division criteria are discussed and used to determine whether some structures should be written as single words, two separate words, or words which are hyphenated. The issues discussed in this chapter concern the orthographic representation of prefixation and suffixation, semi-affixes, minimum free forms, compounding, partial and complete reduplications, morphologically complex processes, proverbial words, and interlexical words.

0.8 Overview of Chapter Five

The last chapter is divided into three main sections. The first part focuses on the orthographic representation of words which have undergone post-lexical rules. This concerns vowel lengthening which results from the use of definite articles, complementizers, and demonstratives. Vowel lengthening occurs also in relative clauses, in possessive constructions, and in cliticization processes. Word-initial vowel deletion, contraction, and utterance nasalization are also investigated. The second section deals with the phonological processes involved in borrowing and whether or not such words should simply be adopted or adapted to the orthography of Anyi. The third section examines issues related to punctuation and styling conventions.

0.9 Summary

An orthography study of an unwritten language such as Anyi should be based on sound linguistic foundations. This is the reason why each main point discussed is divided into two. The first part focuses only on the structural analysis. The second part deals with how the form is to be represented in the orthography.

In writing this dissertation I have tried to keep two things in mind: scientific rigor and my non-linguist audience. A Ph.D. in Linguistics should conform to the minimal requirements of the discipline, namely, the use of specialized terminology. However, this goal conflicts with my other goal which consists in making this work as readable as possible to an audience with very little sophistication in Linguistics, because I would like this work to be a practical resource in designing the orthography for other Ivorian languages. Unfortunately, the discipline of Linguistics makes it difficult to find a satisfactory compromise between its own requirements and accessibility to a wider audience. If the compromise does not always seem to work, it is not because of lack of trying but is due to the very difficult task of trying to translate Linguistic concepts into the layman's language.

N0	**Symbols/Conventions**	**Interpretations**
1.	< >	indicates words in graphemic notation
2.	[ ]	indicates words in phonetic notation
3.	/ /	indicates words in phonemic notation
4.	[̃] or /VN/	stand for nasal or nasalized vowels
5.	[ɲ]	stands for the palatal nasal
6.	[ŋ]	stands for the voiced velar nasal. It is represented in the orthography by the diagraph <ng>.
7.	[ɾ]	indicates a flap in Bɔna
8.	[ɪ]	substitutes for the vowel in <sɪ> (father).
9.	[ɔ]	substitutes for the open /o/ as in <kɔ> (to go)
10.	[ʊ]	substitutes for the vowel in <kʊ> (stomach).

Table 1: Chart of Symbols and Conventions

Chapter One

The People, their Language, its Structures, its Dialects

1.0 Introduction

This chapter is divided into three major parts. The first part introduces the phonological system of Anyi. It outlines the investigative methods that are used to discover Anyi phonemes. These phonemes are listed and commented upon. The second part surveys the most important Anyi dialects and highlights their distinctive characteristics. It also examines the prospects for a standardized orthography. In the third section I survey the major orthographic theories that have been used in creating the spelling systems of other languages. The strengths and weaknesses of each theory are assessed in order to help me in proposing an eclectic and efficient orthography of Anyi.

1.1 A Brief History of the Anyi

According to both oral and written sources the Anyi left the Ashanti empire in the 18th century as a result of internal conflicts to settle in Côte d'Ivoire. They came in two successive waves. The first group, the Brafé, settled in the south-east in the Aboisso area. A second group, the Abradé, a much larger group came a little later and settled as far north as the Abronland and the Kulangoland (see maps on pages 16 and 17 below). They founded a number of highly centralized and hierarchical but autonomous kingdoms. The Anyi conquered and assimilated a number of neighboring populations. The Anyi, therefore, do not form a homogeneous group. They are a mixture of Ashanti, Fante, Nzema, and of conquered and assimilated populations. As will be discussed in sections 1.3 through 1.3.6 this population "melting pot" has accentuated the dialectal varieties of Anyi spoken in Côte d'Ivoire.

There are two other Anyi-speaking communities in Ghana, namely the Aowin and the Sefwi. Anyi is closely related to Nzema. It forms a dialectal continuum with Baule to the extent that most researchers refer to the two languages as "Anyi-Baule." Despite the similarities between the two, major phonological and syntactic differences remain which warrant separate treatment. However, a political will could easily make of the two a single written language for teaching purposes. I refer to Baule here and there to support some of my claims.

1.2 An Overview of the Anyi Phonological System

An overview of the phonological system of Anyi is important because, as discussed in Coulmas (1990:170) "the unit of analysis underlying the elements of alphabetic orthographies is the phoneme." Therefore, the first step in designing an orthography for an unwritten language is to understand the phonological make-up of that language. Smalley (1964:34) argues that "no writing system can be adequate which does not in some way represent the phonemes." The importance of the phoneme in relation to orthography is also emphasized by Jones (1967:219):

The phoneme theory has a particularly important use in connection with the construction of systems of writing. The analysis of a language into its constituent phonemes furnishes us with the means of writing it in the simplest manner that is consistent with avoiding ambiguity.

Most modern theories of orthography insist on the **one-to-one correspondence** between phoneme and grapheme, that is, one phoneme should have one and only one graphemic correspondence. However, what this principle does not say is that there are theoretical debates surrounding the very concept phoneme.[1] The phoneme as understood in this work relates closely to the structuralists' definition. The traditional semantic criterion of minimal pair and the distributional criterion are used here to identify Anyi phonemes.

1.2.1 Method for Discovering Phonemes

1.2.1.1Functional Semantic Criterion: the Minimal Pair

The meaning differentiation function of sounds is central to Trubetzkoy's (1969:4, 35-45) and Bloomfield's (1933:77-79) theories of phonology. This criterion has been succinctly defined by Anderson (1985:92) as follows:

> A phonological opposition exists between two sound sequences when the substitution of one for the other results in a different meaning.

1.2.1.2 Distributional Criterion

The distributional criterion is represented chiefly by Jones (1967), and Pike (1948). The distributional criterion can be divided into a positive criterion and a negative criterion:

Positive criterion

Two sound sequences represent two **separate phonemes** when they can occur in analogous and/or identical environments. Pike (1946:23-33), Analytic Procedures One and Two

Negative criterion

If two sound sequences are found in mutually exclusive environments, and they are **phonetically similar**, **fluctuate freely** and never contrast in any environment, they **do not** represent separate phonemes. Pike (1946:45-99), Analytic Procedures Three and Four.

When the functional criterion and the distributional criterion are taken together and applied to Anyi they give the phonemic inventory[2] below.

---

[1] In his book *Phonology in the 20th century*, Anderson traces the evolution of the concept of **phoneme** from the Structural Phonology era to the Generative Phonology era.

[2] I do not see the need to try to establish the phonemic status of the consonants listed here. Retord (1973) has already done that in his book *L'Agni: Variété Diactale Sanvi*. I will, however, discuss in sections 1.2.3.2 through 1.2.3.6 some unclear cases.

1.2.2 Phonemic Inventory

Retord (1972:38, 69) finds twenty two consonantal phonemes, nine oral vowels and five nasal vowels. They are represented in the consonantal and vocalic charts below

The Consonantal System

MANNER OF ARTICULTION	PLACE OF ARTICULATION							
		Labial	Labio-dental	Dental-alveolar	Palatal	Velar	Labio-velar	Glottal
	Voiceless Stop	p		t	tʃ*	k	kp	
	Voiced Stops	b		d*	dʒ*	g*	gb	
	Voiceless Fricatives		f	s				h
	Voiced Fricatives		(v)	(z)				
	Nasals	m*		n*	ɲ*	ŋ*		
	Liquids			l*				
	Semi-Vowels				J ɥ	w		

Table 1A: Anyi Consonants

Anyi Consonant Features

N0	Phonetic Features	1 P	2 b	3 t	4 d	5 tʃ	6 dʒ	7 k	8 g	9 kp	10 gb	11 m	12 n	13 ŋ	14 ɲ	15 l	16 f	17 s	18 h	19 w	20 j	21 ɥ
1.	Back	-	-	-	-	-	-	+	+	+	+	-	-	+	-	-	-	-	+	+	-	-
2.	High	-	-	-	-	+	+	+	+	+	+	-	-	+	+	+	-	-	-	+	+	+
3.	Low	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4.	Tense	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5.	Nasal	-	-	-	-	-	-	-		-	-	+	+	+	+	-	-	-	-	-	-	-
6.	Rounded	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	+	-	-
7.	Vocalic	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
8.	Sonorant	-	-	-	-	-	-	-	-	-	-	+	+	+	+	+	-	-	+	+	+	+
9.	Anterior	+	+	+	+	-	-	-	-	+	+	+	+	-	-	+	+	+	-	-	-	-
10.	Coronal	-	-	+	+	+	+	-	-	-	-	-	-	-	-	+	-	+	-	-	+	-
11.	Voiced	-	+	-	+	-	+	-	+	-	+	+	+	+	+	+	-	-	-	+	+	+
12.	Continuant	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	+	+	+	+	+	+
13.	Lateral	-	-	-	-	-	-	-	-	-	-	-	-	-	-	+	-	-	-	-	-	-

Table 1B: Phonetic Features of Anyi Consonants Source[3]

The full phoneme-to-grapheme correspondence will be discussed fully in 1.6.5. Suffice it to say here that the phoneme [tʃ] is represented in the orthography as <c>, and [dʒ] corresponds to <j>. The IPA symbol /j/ is represented orthographically as <y>. The semi-vowel /ɥ/ has a very low frequency. When it occurs, it is represented orthographically as <hy>.

The consonant phonemes followed by asterisks (*) pose some problems regarding the phonemic system of Anyi. These problems, in turn, raise important questions about the type of orthographic theory to be used in designing a spelling system for Anyi. These problem-phonemes will be discussed in sections 1.2.3.2 through 1.2.3.6.

Vocalic Chart

Horizontal Tongue Feature		**Front**	**Central**	**Back**
Height Feature	**High**	i ɪ		u ʊ
	Mid	e ɛ		o ɔ
	Low		a	
ATR Feature	**[+ATR]**	i e		u o
	[-ATR]	ɪ ɛ		ʊ ɔ
Cavity Feature	**[Oral]**	i, ɪ, e, ɛ	a	u, ʊ, o, ɔ
	[+nasal]	ḭ ɪ̰	a̰	ṵ ʊ̰

Table 2A: Anyi Vowels

[3]Retord, Georges L. A. 1980. *Etude Radiocinématographique des Articulations de l'Agni-Sanvi.* Thèse de Doctorat d'Etat, p. 407.

Anyi Vowel Features

N0	**Traits phonétiques**	1 i	2 ḭ	3 ɪ	4 ɪ̰	5 u	6 ʊ	7 ʊ̰	8 e	9 ɛ	10 o	11 ɔ	12 a	13 a̰
1.	Sonorant	+	+	+	+	+	+	+	+	+	+	+	+	+
2.	Syllabic	+	+	+	+	+	+	+	+	+	+	+	+	+
3.	Consonantal	-	-	-	-	-	-	-	-	-	-	-	-	-
4.	Continuous	+	+	+	+	+	+	+	+	+	+	+	+	+
5.	Nasal	-	+	-	+	-	+	+	-	-	-	-	+	+
6.	High	+	+	+	+	+	+	+	-	-	-	-	-	-
7.	Low	-	-	-	-	-	-	-	-	+	-	+	+	+
8.	Back	-	-	-	-	+	+	+	-	-	+	+	±	±
9.	Rounded	-	-	-	-	+	+	+	-	-	+	+	-	-
10.	Front	+	+	+	+	-	-	-	+	+	-	-	-	-
11.	ATR	+	+	-	-	+	-	-	+	-	+	-	±	±
12.	Voiced	+	+	+	+	+	+	+	+	+	+	+	+	+

Table 2B: The Phonetic Features of Anyi Vowels[4]

In the orthography, nasal vowels are represented as < VN>[5]. However, in phonetic and phonemic transcriptions, they appear with a subscripted tilde [̰]. Writing the tilde under vowels makes it easier to write tone above vowels.

The vocalic system is almost perfectly symmetrical with four front oral vowels and four back oral vowels. The central vowel is /a/.[6] There are five nasal vowels [ḭ, ɪ̰, ṵ, ʊ̰, a̰] and four unnasalized vowels [e, ɛ, ɔ, o]. The vowels are also divided into two sets: **[+ATR]** and **[-ATR]** vowels. The vowels [i, e, u, o] are **[+ATR]** while [ɪ, ɛ, ʊ, ɔ] are **[-ATR].** The most important characteristic of the feature [ATR] is that in a given word all the vowels are either [+ATR] or [-ATR]. The central vowel /a/ is generally considered a neutral vowel with regard to [ATR] because it can co-occur with vowels of either set.

[4] Retord, Georges L. A. 1980. *Etude Radiocinématographique des Articulations de l'Agni-Sanvi.* Thèse de Doctorat d'Etat, p. 407.

[5] Some linguists, including Smalley (1964:122-3), have argued that the use of **<n>** to indicate nasal vowels may lead to confusion if the language has a nasal phoneme **/n/**. This does not create any problem in Anyi because the nasal phoneme **/n/** always precedes the vowel. There is no Anyi case in which the phoneme /n/ follows a vowel in a word. Therefore, there is no risk of confusion between the nasal vowel convention and the phoneme /n/.

[6] It has been proposed that maybe in pro-Anyi, the vowel system was perfectly symmetrical with a low front vowel /æ/and a low back vowel /a/. In the contemporary state of the language, there is only a central low vowel /a/.

1.2.3 Tone

Anyi has two level tones: **High** and **Low**. There are two contour tones: **High-Low** and **Low-High**. Tones have lexical differentiation functions in nouns. They have grammatical functions in verbal stems. For reasons that will be obvious in Chapter Two, sections 2.9.6 through 2.9.7, only High tones will be marked in the orthography. Tone is marked only in the following cases: to distinguish between lexical minimal pairs, grammatical constructions, and when two identical vowels co-occur and form a sequence of long vowels such as in <**baá**>**[bàá]** [(child) as opposed to <**ba**> [bá] (to arrive, to come). More will be said about tone in the Anyi orthography in Chapter 2. For now, suffice to summarize the main guidelines as follows:

1. Lexical tone is indicated on minimal pairs.
2. Grammatical tone is represented in the orthography.
3. Tone is indicated when there is a sequence of two identical vowels, i.e., <ii>, <ɪɪ>, <ee>, <ɛɛ>, <aa>, <ɔɔ>, <oo>, <ʊʊ>, and <uu>.
4. Finally, only high tone is represented in the orthography.

Again, the rationale for these tone writing schemes will be fully explained in Chapter 2. From now onward, orthographic tone will be written according to these guidelines. Phonetic and/or phonemic tone will be indicated on all tone bearing units.

1.2.4 Anyi Problem-Phonemes

1.2.4.1 The Phonemic Status of Nasal Consonants

There is a great deal of controversy about the phonemic status of nasal consonants in Akan languages because in many cases they appear to be in complementary distribution with some oral consonants. Fromkin and Schachter (1968:41,71-80) note that the environments in which /m/, /n/, /ŋ/, / ɲ/ occur can be largely predicted. For this reason they do not list them as phonemes in the consonantal system of Akan. Fromkin and Schachter's arguments are also valid for Anyi. However, in Anyi the situation is a little more complex than it is in Akan. In many cases /m/, /n/, /ŋ/, / ɲ/ can be derived from oral consonants. This would lead one to suggest that they are all allophones of /b/, /d/, /g/ and /j/ respectively. However, this is not always the case because the distributional criterion and the functional criterion indicate that these nasal segments are also phonemes as seen in the discussion below.

1.2.4.2 Phonemic Status of Nasal Segments /m/ vs. /b/

In most of its occurrences /m/ can be derived from /b/ as seen in examples such as these where <**baá**> **[bàá]** (child) becomes <**mmaá**> [m̀màá] (children), and <**bié**> [bié] (urinate) becomes <**mmie**> [m̀mìé] (urine). Here we notice that /b/ changes into /m/ when the morpheme {N} precedes it. The morphophonemic environments under which this alternation occurs will be discussed in section (3.3.1).

Apart from this case of morphemic alternation, the distribution of /b/ and /m/ in Anyi shows that, generally, /m/ occurs with nasal vowels whereas /b/ occurs with oral vowels. Even though this claim is true in most cases, there are still a few exceptions such as

<**ebiín**> [èbi̱i̱] (excrement), <**ɛbʊn**> [èbʊ̱] (shell), and <**bunman**> [bu̱mą̱] (big hole) in which /b/ remains unchanged even though it occurs with a nasal segment. There are also a few words such as <**komo**> [kòmò] (foolishness), and <**kɔmɛ**> [kɔ̀mɛ́] (proper name), <**jomolo**> [ʤòmòlò] (xylophone) in which /m/ occurs with oral vowels.

There are also a few minimal pairs such as <**mʊn**> [mʊ̱] (to wear) and **<bʊn> [bʊ̱]** (to stink), and **<mɪn>** [mɪ̱] (to swallow) and **<bɪn>** [bɪ̱] (to cook). The fact that these minimal pairs exist and the fact that /b/ and /m/ occur in similar environments indicate that they can be considered as separate phonemes. Even though /b/ and /m/ alternate, I will not follow Fromkin and Schachter in claiming that /m/ is an allophone of /b/. For orthographic purposes I represent them with two separate graphemes.

1.2.4.2 .1 The Phonemic Status of /n/ vs. /d/

The same arguments in the preceding paragraph apply to /n/ and /d/. In the overall phonological system of Anyi one notices that /n/ and /d/ seem to be in complementary distribution. The segment /n/ tends to occur with nasal vowels whereas /d/ occurs with oral vowels. However, as the examples <**anɛ**> [ànɛ́] (today), <**ane**> [ànɛ́] (proper name) indicate, /n/ occurs sometimes with oral vowels. /d/ also can occur with nasal vowels as in <**dun**> [du̱] (to be dark), <**edunkun**> [édu̱ku̱] (11th child)**, <ɛdanganman>** [ɛ̀dą̱ngą̱mą̱] (Eternal God). In these words /d/ remains unchanged even though it occurs before a nasal vowel. All these examples point to the fact that one cannot state that /n/ is an allophone of /d/.

Retord (1972) lists <**ɛnɔ**> [ɛ̀nɔ̀]and <**ɛdɔ**> [ɛ̀dɔ̀] as minimal pairs for proper names, thus suggesting that /d/ and /n/ are separate phonemes. This claim may also be supported by a near minimal pair that exists between <**dun**> [du̱] (to become dark) and <**nunnun**> [nu̱nu̱] (to erase). The word <**nunnun**> is a reduplicated form of a stem {**nun}** which is no longer in use.

Just as it was discussed for /b/ and /m/ above, /d/ alternates with /n/ under some morphophonemic conditions. The /d/ in the words <**da**> [dá] (to lie down), <**di**> [dí] (to eat) and <**daka**> [dàká] (to mislead) becomes /n/ in <**nnaá**> [ǹnàá] (lying down), <**nni**> [ǹní] (should I eat), and <**nnakáa**> [ǹnakáà](deceit) respectively.

1.2.4.2 .2 The Phonemic Status of /ŋ/ vs. /g/

The situation is slightly different in the case of /ŋ/ and /g/ because there does not seem to be any minimal pair to distinguish them. Retord (1972:59) finds a minimal pair between **<ago>** [àgó] (proper name, feminine) and **<angɔ>** [àŋɔ́] (proper name, masculine). I know of the first name but I have never heard of the second. Distributionally, /ŋ/ and /g/ are found to occur in identical environments as in the words **<gua>** [gùá] (market) and **<ngʊa> [ŋʊ̀á]** (south). The sound /ŋ/ occurs with nasal vowels (except in the words **[ŋ̀ŋʊ̀á]** (game, sport) and **[ŋ̀ŋàá]** (ring, trap)) whereas /g/ usually occurs with oral vowels as in <**ago**> [àgó], <**gada**> [gàdá] (to cover), **guá** [gùá] (to spill), and <**gɔlɔ**> [gɔ̀lɔ́] (to starve to death.)

1.2.4.2 .3 The Phonemic Status of /ɲ/ vs. /j/

Distributionally, /j/ occurs most of the time with oral vowels whereas / ɲ/ occurs generally with nasal vowels. This would indicate that /j/ and /ñ/ are in complementary distribution. However, the existence of a near minimal pair such as **<ya>** [já] (to wear), **<nnyáa>** [ɲ̀ɲáà] (leaf), **<eya>** [éjà] (proper name), and **<enyaán>** [éɲ̀ą̀ą́] (type of tree) suggest that the two segments could be considered separate phonemes, at least for orthographic purposes.

1.2.4.3 Contrast between /m/, /n/, /ŋ/ and / ɲ/

There are minimal pairs that suggest that all the nasal segments are phonemes in their own right and do not derive from some underlying oral consonants. Below is how these segments contrast:

N0	**[m]**	**[n]**	**[ɲ]**	**[ŋ]**
1.	/mḭ/: to swallow	/nḭ/: voice	/ɲḭ/: eyesight	none
2.	/ma̰/: to give	/na̰/: negation	/ɲa̰/: to receive	/ŋa̰/: name of a village
3.	None	/nm̩̰/: mother	/ɲm̩̰/: to grow up	none
4.	/mʊ̰/: to wear	/nʊ̰/: to drink	/ɲʊ̰/: to embarrass	none
5.	None	/nn̩̰ą̰/: mouth	None	/ŋn̩̰ą̰/: health

Table 3: Minimal Pairs Involving Nasal Consonants

1.2.4.4 The Phonemic Status of /l/, /w/ and /h/

Many alternations occur between non-nasal consonants as well. The alternating segments appear sometimes to be separate phonemes. However, in other instances they behave like allophones. The consonants /d/, /k/, /b/ and /c/ change into /l/, /h/, /w/ and /h/ respectively when they are preceded by the nominalizing morpheme {è-/ɛ̀-}, the aspectual morpheme {à-}, in some syntactic constructions, and when the perfected morpheme {-lí} is added to a verb stem in which they occur. These alternations, like the ones discussed in the previous section, will be the object of Chapter Three. For now let us only examine why the phonemic status of /l/, /w/ and /h/ is problematic.

1.2.4.4.1 The Phonemic Status of /d/ vs. /l/

There is a residual minimal pair between <**adu**> [àdú] (proper name) and <**alu**> [àlú] (proper name) that can be used to set /d/ and /l/ apart as separate phonemes. However, the most convincing evidence comes from the distributional criterion. Since /d/ and /l/ occur in the same/similar environments in the words below, it shows that they can be considered as separate phonemes.

(2)

N0	**Words**	**Gloss**
1.	<adu> [àdú]	proper name
2.	<alu> [àlú]	proper name
3.	<edunkun> [èdṵ̀kṵ̀]	proper name
4.	<adɛ́ɛ́> [àdɛ̀ɛ́]	proper name
5.	<ɛlʊʊ́> [ɛ̀lʊ̀ʊ́]	animal fat

6.	<adua> àdùá]	Dog
7.	<aluwáa> [àlùwáà]	green beans

Table 4: Distribution of /d/ and /l/

1.2.4.4.2 The Phonemic Status of /k/ vs. /h/

Both the functional criterion and the distributional criterion confirm that /k/ and /h/ are separate phonemes. The following minimal pairs establish their separate phonemic status.

(3a)

N0	**Word List 1**	**Word List 2**
1.	<kun> [kṷ] : to kill	<hun> [hṷ]: a husband
2.	<kulu> [kùlú]: to bend	<hulu> [hùlú]: to jump
3.	<akaá> [àkàá]: proper name	<ahaá> [àhàá]: a trap

Table 5: Minimal Pair of /k/ and /h/

From the standpoint of distribution, it can be noticed that /k/ and /h/ occur in the same environment as seen in (3b). Therefore, they can be considered to be separate phonemes.

(3b)

N0	**Words**	**Gloss**
1.	<nnáahʊa> [ǹnáàhʊ́à]	sleep-walking
2.	<ehunmaan> [èhṷmàa̱a̱]	wood-cutter
3.	<ehuo> [èhùó]	chest
4.	<ekóo> [ékóò]	type of crab
5.	<ahʊnlʊnbaá> [àhʊ̀lʊ̀bàá]	heart
6.	<akʊabáa> [àkʊ̀ábáà]	welcome
7.	<akʊa> [àkʊ́à]	male slave
8.	<akaá> [àkàá]	chimpanzee
9.	<ahaá> [àhàá]	trap

Table 6: Distribution of /k/ and /h/

1.2.4.4.3 The Phonemic Status of /tʃ/ vs. /h/

There is only one minimal pair known to me, <**cu**> [tʃú] (to last) and <**hu**> [hú] (to boil) which seems to indicate that /tʃ/ and /h/ are separate phonemes. This interpretation receives additional support from the examples in (4).

(4)

N0	**Words**	**Gloss**
1.	<acɛcɛ> [àtʃɛ̀tʃɛ̀]	butterfly
2.	<ahɛlɛ> [àhɛ̀lɛ̀]	misfortune, poverty
3.	<acɪcɪrɪ> [àtʃɪ̀tʃɪrɪ̀]	turtle
4.	<ahi> [àhí]	proper name
5.	<atʃɪnrɪn> [àtʃɪ̀rɪ́]	green venomous snake
6.	<ahɪn> [àhɪ̀]	morning

Table 7: Distribution of /tʃ/ and /h/

Here the fact that both /tʃ/ and /h/ occur in the same/similar environment seems to suggest that /tʃ/ and /h/ are separate phonemes.

1.2.4.4.4 The Phonemic Status of /b/ vs. /w/

I treat /b/ and /w/ as separate phonemes because there is at least one minimal pair between /b/ and /w/. These words are **<abu>** [àbú] (turtle) and **awú** [àwú] (proper name for female). Additionally, the examples in (5) below indicate that /b/ and /w/ can occur in similar environments.

(5)

N0	**Words**	**Gloss**
1.	<abúu> [àbúù]	turtle
2.	<awúu> [àwúù]	female proper name
3.	<abɔ> [àbɔ́]	wasp
4.	<awúo> [àwúò]	theft
5.	<awuó> [àwùó]	rice
6.	<abaábáa> [àbàábàá]	doll
7.	<awaá> [àwàá]	calabash
8.	<awáa> [áwáà]	government

Table 8: Distribution of /b/ and /w/

1.2.4.5 Contrast between /l/, /h/ and /w/

Let us examine the examples in (6) below:

(6)

N0	**[l]**	**[h]**	**[w]**
1.	None	hún [hṵ̀]: a husband	<wun> [wṵ] : to see
2.	Non	hu [hú]: to boil	<wu> [wú] : to die
3.	Alu [àlú] (proper name)	none	<awúu> [àwúù] : Proper name

Table 9: Distribution of /l/, /h/ and /w/

These words suggest that **/h/** and **/w/** are separate phonemes because there are at least two minimal pairs that oppose them. The argument for establishing the phonemic status of **/l/** and **/w/** is questionable because the words **alu** and **awu** are proper names[i]. There is, however, no minimal pair between /l/ and /h/. As in the case of /m, n, ŋ, ɲ/**,** I will consider /l, h, w/ as separate phonemes in spite of the fact that they alternate with /k, c, d, b/.

1.2.4.6 The Problematic Status of [k, tʃ] and [dʒ, g]

Let us turn now to the segments **[k, tʃ]** and **[dʒ, g]** by examining their distribution in the examples below:

(7a)

N0	**Words**	**Gloss**
1.	<ci> [tʃĩ]	to have as a taboo
2.	<cɪ> [tʃĩ]	to catch
3.	<ce> [tʃé]	to last
4.	<cɛ> [tʃɛ́]	to last
5.	<cinman> [tʃi̱má]	to walk around

Table 10: The nature of [tʃ]

(7b)

N0	**Words**		**Gloss**
1.	<kʊn>	[kʊ̱]	to fight
2.	<kofie>	[kòfié]	mound for sowing yam
3.	<komo>	[kòmó]	foolishness
4.	<kɔmɪn>	[kɔ̀mi̱]	neck
5.	<kotoku>	[kòtòkù]	bag
6.	<kómaán>	[kómà̱á̱]	type of a tree

Table 11: The nature of [k]

When one examines the examples in (7a) and (7b) one notices that the segments **[k]** and **[tʃ]** seem to be in complementary distribution. **[k]** seems to appear only with back vowels whereas **[tʃ]** occurs with front vowels. The process involved in this phonetic change is known as **palatalization** and it can be formalized as follows:

Rule of Palatalization, Part 1

/k/ → [tʃ] /— [{i, i̱ ɪ, ɪ̱, u, u̱, ʊ, ʊ̱, ɛ}]

This rule states that /k/ becomes /tʃ/ when it precedes / i, i̱ ɪ, ɪ̱, u, u̱, ʊ, ʊ̱, ɛ/. Bhat (1988) notes that in most languages of the world it is more natural for **/k/** to change into **/c/** than for **/tʃ/** to change into **/k/.** Following this universal tendency I take **[k]** to be the basic phoneme and **[tʃ]** to be its allophone. However, before such a claim can be established we need to consider the words in (7c).

(7c)

N0	**Words**	**Gloss**
1.	<cʊn> [tʃʊ̱]	to draw, to pull
2.	<kʊn> [kʊ̱]	to fight
3.	<cobie> [tʃóbìé]	gun powedr
4.	<kofie> [kófié]	mound for sowing yam
5.	<cɔmaán> [tʃɔ́mà̱á̱]	eagle

6.	<kómaán> [kómə̀ą́]	type of a tress
7.	<kɛ> [kɛ̀]	as, while
8.	<cɛ> [tʃɛ́]	to last

Table 12: The Nature of [k] and [c]

These words show clearly that there is an exception to the rule of palatalization posited above. We see here that **[k]** and **[tʃ]** occur in the same environment. The consonant **/k/** can precede front vowels as in <**kɛ>** (as, when) as well as back vowels as in all the examples in (7b). If palatalization were to apply as suggested in the palatalization rule, we would not have a word such as<kʊ́>. Moreover, we notice that in words such as <**kisa>** [kìsá] (to lean on), <**kısın>** [kìsɪ́] (to become old and wrinkle), <**kɛtɛ>** [kɛ̀tɛ́] (mat), <**kɛlɛ>** [kɛ̀lɛ́] (to write), <**kele>** [kɛ̀lé] (hat), <**kıka>** [kìká] (to bite many times) the rule of palatalization fails to take place. This is not unusual because Bhat (1978:66) notes that in many languages of the world there are environments which block palatalization. In Anyi palatalization is blocked in C1VC2V words where C2 is one of the following consonants:

[{t, s, l, k}]

/tʃ/ usually occurs before front vowels but in words such as <**cobié>** [tʃóbìé], <**cɔmaán>** [tʃɔ́mə̀ą́]**, <cʊn>** [kʊ̀] (to draw), <**cu>** [tʃú] (to rob on) we see that it occurs also with back vowels. Since **/k/** and **/tʃ/** occur in the same environment and since the words in (7c) are minimal pairs, they should normally be considered as separate phonemes. This seems to conflict with the claim made earlier, namely that **/c/** is an allophone of **/k/**. This is puzzling because two segments cannot be separate phonemes and stand in an allophonic relation at the same time. This shows that it is hard to establish the phonemic status of /k/ and /tʃ/.

The phonemic status of **[g]** and **[ʤ]** is as puzzling as that of **/k/** and **/tʃ/**. This can be illustrated by the examples in (8a) and (8b).

(8a)

N0	**Words**	**Gloss**
1.	<jin> [ʤɪ́]	to stand up
2.	<je> [ʤé]	to go to the bathroom
3.	<jɛ> [ʤɛ́]	proper name
4.	<jɔ> [ʤɔ́]	to get cold
5.	<ju> [ʤú]	to arrive
6.	<jʊjɔ> [ʤʊ̀ʤɔ́]	to talk
7.	<ja> [ʤá]	to marry
8.	<jinmin> [ʤɪ̀mɪ́]	to become crazy
9.	<junman> [ʤʊ̀mə́]	to go crazy
10.	<kpaja> [kpàʤá]	to brighten

Table 13: The Nature of [ʤ]

(8b)

N0	**Words**	**Gloss**
1.	<gua> [gùá]	market
2.	<gada> [gàdá]	to cover
3.	<agoó> [àgòó]	type of large blanket
4.	<agóo> [ágóò]	proper female first name
5.	<agualɛ> [àgùálɛ̀]	thorny bush

Table 14: The Nature of [g]

To the best of my knowledge there is no single Anyi word in which /g/ is followed by a front vowel. This would suggest that **[g]** and **[ʤ]** are in complementary distribution since they do not occur in the same environments. Based on universal tendencies in palatalization, one would then posit that /g/ is the underlying phoneme, and /ʤ/ is its allophone. This can be formulated as the second part of the palatalization rule discussed above.

Rule of Palatalization, Part 2

/g/ → [ʤ] /— [{i, i̯, ɪ, ɪ̯, u, u̯, ʊ, ʊ̯, ɛ}]

This rule states that /g/ becomes /ʤ/ when it precedes /i, i̯ ɪ, ɪ̯, u, u̯, ʊ, ʊ̯, ɛ/. However, before drawing such a hasty conclusion let us examine the data in (8c) below which contain some words that are near minimal pairs:

(8c)

N0	**Words**	**Gloss**
1.	<agua> [àgùà]	a kind of trap
2.	<ajʊa> [àʤʊ̀à]	female first name
3.	<agóo> [àgóò]	female first name
4.	<ajóo> [áʤóò]	female first name
5.	<gada> [gàdá]	to cover
6.	<agualɪɛ> [agualɪɛ]	conclusion, the end
7.	<gua> [gùá]	market

Table 15: Minimal and Near Minimal Pairs

The words in (8c) seem to invalidate the claim that **[g]** and **[ʤ]** are in complementary distribution because we have instances here where they occur in similar environments, that is, **[g]** and **[ʤ]** can be followed by back vowels. Moreover, we notice that there are minimal pairs between /g/ and /ʤ/ as in <**agua**> and <**ajʊa**>, <**ago**> and <**ajóo**>.

Based on these examples it can be argued that **/g/** and **/ʤ/** are separate phonemes but they neutralize before [back] vowels. This interpretation underlines the similarity between on the one hand, and /g/ and /ʤ/ on the other. The consonants **/k/** and **/ʧ/** neutralize before [back] vowels (except that the minimal pair between /ʧɛ́/ and **/kɛ́/** poses problems) just like

/g/ and **/ʤ/**.

A considerable amount of time has been spent on these problem-phonemes because they will play an important role in my analysis of orthographic theories in sections 1.5 through 1.5.7.

1.3 Dialectal Variations and Orthographic Issues

Dialectologists claim that every language has its dialects. In fact Bloomfield (1933:325) argues that "every village, or at least cluster of two or three villages, has its local peculiarities of speech." Anyi does not escape this linguistic fact. The issue I want to address here is how to go about designing a standardized writing system for a language that has many dialects.

The literature on language standardization offers two main models of language planning. One consists in elevating one of a number of dialects to be the standard written dialect. This is known as the **amalgamative approach.** It is also referred to as **unidialectal orthography**. The other approach which consists in creating a standard written dialect by taking into account all the dialects is called the **pluralistic approach** or **multidialectal orthography**. Many linguists, including Gudschinsky (1973), Nida (1964), Pike (1948), and Smalley (1964) have suggested that the unidialectal approach be used instead of the multidialectal one. Some of the reasons given to support this claim are found in the following quotation by Wiesemann (1987:17-8).

> In developing a written system, it is important to choose one of the several dialects as `reference dialect,' the norm to be written. The speech variety chosen for this usually has some kind of prestige because many people speak it, because it is used in church, or in administrative functions, because it is spoken in the city or because an important person speaks it. Another reason why a special speech variety is chosen might be its intercomprehension with other dialects.

Gudschinsky (1977:137) claims that when designing an orthography "it is not wise to mix dialects, because the final product will probably please no one." Powlison (1968:77) also argues that a multidialectal orthography should be avoided because "making an orthography to suit two or more dialects usually requires a symbolization which will probably be somewhat inefficient for each of them."

The only work that I know of that advocates the use of the multidialectal approach in orthography standardization is Simons (1977). In his article he argues that the fear of the proponents of the unidialectal orthography is unfounded and that a multidialectal orthography is in many respects better than the unidialectal one. He contends that a multidialectal orthography is not a mixture of dialects as Gudschinsky implies but rather an orthography which is based on the comparative analysis of the phonologies of many dialects of the language. In his article he outlines several principles (see section 1.6.4) on which the multidialectal orthography is based.

The multidialectal approach to orthography will be pursued in this work because, as will be seen in the sections below, most of the reasons used to justify the choice of the unidialectal approach are wanting in Anyi. There are two additional reasons that justify my choice. First, Valter (1974:52) notes that "all languages (dialects) are fatally imperfect and unsystematic, with lacunae and unnecessary elements." Therefore, it is not wise to blindly imposing the idiosyncrasies of one Anyi dialect on all the others. The second reason is that Fishman (1972:467) advises strongly against the use of the unidialectal approach because "it could lead to the denigration of other dialects."

1.3.1 Dialect Geography: A Survey of Anyi Dialects

Trudgill (1983:17, 37) defines dialects as follows:

> The term dialect refers, strictly speaking, to differences between kinds of language which are differences of vocabulary and grammar as well as pronunciation... All language is subject to stylistic and social differentiation, because all communities are functionally differentiated and heterogeneous to varying degrees.

The dialectal variations observed in Anyi touch on the three main areas mentioned by Trudgill, namely vocabulary, grammar, and pronunciation. This section will focus on phonological/phonetic divergences between the dialects. In the subsequent chapters other dialectal differences will be discussed.

Dialectal variations between Anyi speakers are relatively pronounced primarily because the Anyiland does not constitute a continuous geographical entity. In some cases one finds a different language between two dialects of Anyi. There are also peripheral language groups which exercise all kinds of cultural and linguistic pressures on Anyi. It is well known in dialectological studies that the coexistence of various linguistic groups in the same geographical area contributes to the dialect picture, (Hockett 1958: 471-2).

Anyiland can be divided into two major blocks: the north and the south. Northern Anyi includes all Anyi dialects except Sanvi which constitutes all by itself the southern dialect. Because of geographical and/or sociolinguistic factors I have divided the northern dialect into four areas: the **Bɔna** Area comprises the dialects of Bini, Bɔna, Barabɔ, and Anö. The **Indenié** area includes Indenié and Jʊablın. The **Mɔrɔfʊ** area is the largest and includes many subdialects. **The Abidji-Anyi** area represents an area by itself. **The Sanvi** area has half a dozen subdialects whose differences are negligible.

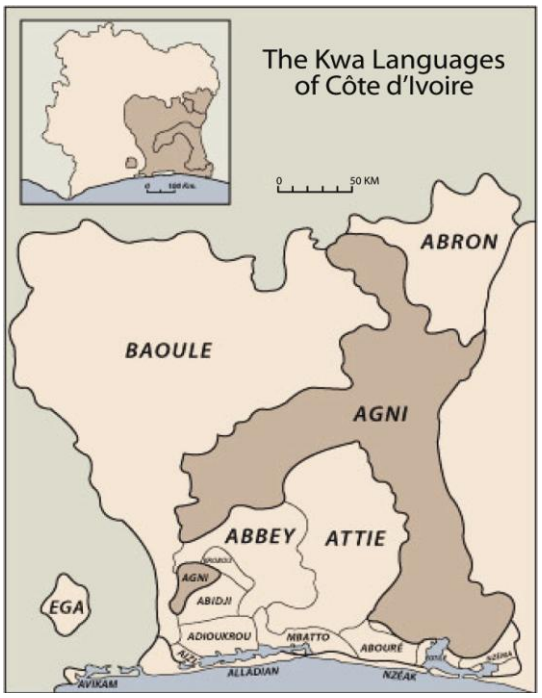
Anyi is spoken by more than 700,000 people use more recent data.[7] Anyiland is borderd on the north-east by the Abron of **Bondoukou** and the Kulango of **Tanda**, on the north-west by the Tagbanan and Djiminin of **Dabakala**; on the west by the Baule, towards the south-east by the Attie and the Abe. The Abidji-Anyi dialect is landlocked among the

[7] This figure goes back to an unpublished census taken in 2000. The Anyi represents 5,02% of the total Ivorian population estimated to be 15 043 950.

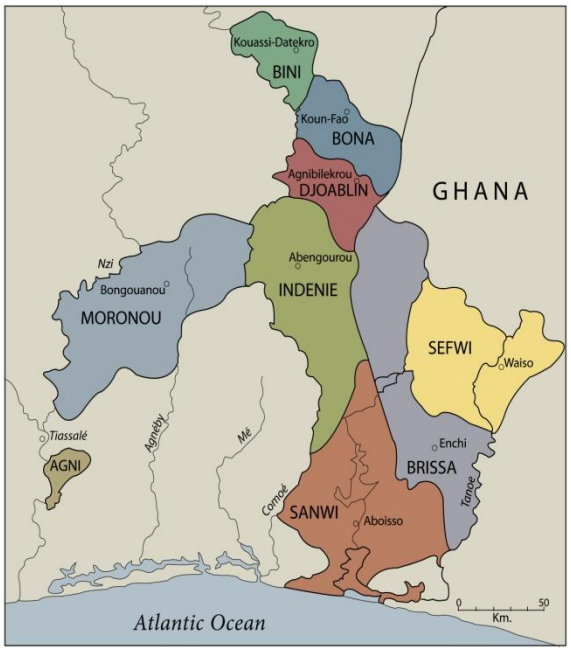
Abidji. Two maps are provided below to show the geographical locations of the dialects. The area by area description below is meant to provide some basic linguistically significant information about each dialect. Sociolinguistic considerations are given later as an explanation for the linguistic diversity among Anyi and a motivation for the choice of the multidialectal approach to orthography.

1.3.2 A Brief Area by Area Description

The following is a brief dialect survey the Anyiland. We will provide a succinct area by area description with an emphasis on the main dialectal variations that can be problematic for the orthography. It must be kept in mind that our primary goal is not a regional dialectology study.



Map 1: The Anyiland within Côte d'Ivoire



Map 2: The Distribution of Anyi Dialects

1.3.2.1 The Dialects of the Extreme North

This area comprises 85 villages with an estimated population of 43, 320. Other characteristics are listed in the table below:

N0	Main Dialects	Main Towns	Number of Villages
1.	Bibi	Kouassi-Datekro	20
2.	Bɔna	Koun-Fao	30
3.	Barabɔ	Sandegue	10
4.	Anɔ	Prikro	25

Table 16: The Dialect of the Extreme North

1.3.2.2 Linguistic Characteristics

Structurally speaking, these dialects are characterized by a widespread use of palatalization and by the occurrence of a flap /ɾ/ in CV1LV2 words where the intervocalic /L/ is a lateral in other dialects. The CL(V1)V2 structures are on the whole very unstable as seen in Elschimann's dictionary. The same word is sometimes transcribed as CV1LV2 and some other times as CL(V1)V2. There is a lack of voicing assimilation after the numeral morpheme {N}.[8] Finally, Grade III consonant mutation (to be discussed in Chapter Three) applies inconsistently in this area. The same text by the same speaker can present both the alternant consonant or the basic form in exactly the same environment. Moreover, many words which occur as VCV(CV) in other dialects is simplified only to CV(CV) in this area,

[8] In the tape-recorded material that I have when speakers count from 1 to 10, there is no voicing assimilation between the morpheme {N} and the following segment. However, from 10 upward there is a voicing assimilation.

especially in Bɔna which is the largest dialect of the area.

1.3.3 Indenié-Jʊablın Area

This dialect area contains only two main dialects with an estimated population of 38,506 people.

N0	Main Dialects	Main Towns	Number of Villages
1.	Ndenie	Abengourou	65
2.	Jʊablın	Agnibilekro	25

Table 17: The Ndenie-Jʊablın Area

1.3.3.1 Linguistic Characteristics

The most outstanding characteristic of this dialect area is the move towards the elimination of the voiceless labio-velar /kp/ in favor of /p/. However, the voiced labio-velar /gb/ still persists. The elimination of /kp/ is by no means complete. In the speech of the same person /kp/ and /p/ occur in free variation, with /p/ being more frequent than /kp/. The Jıablın dialect spoken around Agnibilikro is in transition between Böna and Indenie, and both varieties of Anyi are found in that area. Grade III mutation applies but with a lesser degree of systemacity compared with the Mɔrɔfʊ area.

1.3.4 Mɔrɔfʊ Area

This is by far the largest group of dialects with more than 108 villages and an estimated population of 247 635 people. [9]

N0	Main Dialects	Main Towns	Number of Villages
1.	Ahali	**Bongouanou**:the prefecture, i.e., county seat.	108 villages
2.	Amantıan		
3.	Essandannın		
4.	Ngatiafʊɔ	**Arrah:** the east most town that borders on the Indenie area.	
5.	Ahʊa		
6.	Sahie		
7.	Alangʊa	**Mbatto:**a center-west town that borders the "Agni de rail" area.	
8.	Sahoua		
		Tiémélékro: north-west town that borders the Baoule-speaking area	
		Anoumaba: south-west area that borders the abbey-speaking area.	

Table 18: The Mɔrɔfʊ Dialect

[9] The data come Plan Stratégique de *Développement du Département de Bongouanou*, Tome 1, pp. 7, 14, 22 Août 2007. The figures are from the 1998 census.

1.3.4.1 Linguistic Characteristics

The Mɔrɔfʊ dialects can be divided into two major areas: the western dialects and the eastern dialects. The eastern dialects are close to Indenie in many respects. The western dialects have undergone some Baule influence. This influence can be seen in the area of nasalization. Western Mɔrɔfʊ dialects are witnessing a slow but gradual infiltration of the nasalization of mid vowels /ɛ/ and /ɔ/ which are normally not nasalized in other Anyi dialects. Baule lacks those vowels but nasalizes /e/ and /o/. In Mɔrɔfʊ /ɛ/ and /ɔ/ are now nasalized in some environments so that [ɪɛ̰] and [ɪą̰] on the one hand, and [ʊą̰] and [ʊɔ̰] on the other, are in free-variation.

The most important characteristics of Mɔrɔfʊ is its consistency in the use of metathesis which consists in turning CV1LV2 structures into CL(V1)V2, its regularity in the application of the rule of voicing assimilation in Grade II consonant mutation (see Chapter Three), and the use of spirantalization in Grade III mutation. One phenomenon that is not found in any other Anyi dialect except Mɔrɔfʊ is that it requires that V1 and V2 agree in fronting or rounding harmony in CV1V2 and CL(V1)V2 structures. This will be discussed fully in sections 2.6 through 2.6.2.

1.3.5 Anyi-Abidji Area

The Anyi-Abidji are the smallest dialect of the Anyi people with a population of only 19 632.

N0	Main Dialect	Main Town	Number of Villages
1.	Anyi-Abidji	Tiassalé	10

Table 19: The Anyi-Abidji Area

1.3.5.1 Linguistic Characteristics

Syntactically and semantically this dialect is very close to Baule. It has CLV2 words instead of CL(V1)V2 words as in Mɔrɔfʊ or CV1LV2 as in Sanvi or Indenie. Most VCV(CV) words in other dialects are only CV(CV) in this dialect. This means that initial vowel deletion is very widespread in this dialect.

1.3.6 Sanvi Area

Though small in number, the Sanvi are politically important because they have kings and paramount chiefs. The total population is estimated at 35,267.

N0	Main Dialects	Main Towns	Number of Villages
1.	Sanvi	Aboisso, Mafferé, Ayamé, and Adiaké	80

Table 20: The Sanvi Area

1.3.6.1 Linguistic Characteristics

One of the major characteristics of this dialect is that consonant clusters are not very common. The structures which are CL(V1)V2 in dialects are generally CV1LV2 in this dialect. Moreover, it has more words with an initial vowel than any other dialect. In most

cases the same words are found in all the dialects without an initial vowel but in Sanvi the initial vowel persists.

1.3.7 Intelligibility between Dialects

Timyan and Burmeister did an intelligibility test between Sanvi and various Anyi dialects on the one hand, and with Baule on the other. They found that mutual intelligibility among the northern dialects is relatively high. However, when these dialects were compared with the southern dialect, Sanvi, they discovered that intelligibility was not very high. They obtained the following figures:

N0.	Dialect Pairs	Intelligibility Rate
1.	Sanvi-Mɔrɔfʊ	89%
2.	Sanvi- Indenie	84%
3.	Sanvi- Bɔna	80%
4.	Sanvi-Anyi-Abidji	79%
5.	Sanvi- Anɔ	85%

Table 21: Intelligibility Ration among Anyi Dialects

Let us compare and contrast these results with mutual intelligibility findings between Baule and other Anyi dialects:

N0	Dialects	Mutual Intelligibility Rate
1.	Baule -Bɔna	65%
2.	Baule-Anyi-Abidji	88%
3.	Baule -Mɔrɔfʊ	95%
4.	Baule-Anɔ	85%
5.	Baule-Sanvi	83%
6.	Baule- Indenie	85%

Table 22: Intelligibility Ratio with Baule

In a lexicostatistic study done on Kwa languages by Remy Bole-Richard and Philip Lafage found that 84% of the 541 words of the test are common to Anyi and Baule. However, at discourse level, mutual intelligibility drops to 68%.[10] According to Casad (Dialect Intelligibility Testing) if the average score in a given test is less than 75% it means that the dialects are different languages[ii]. The fact that mutual intelligibility in most cases is 80% or higher shows that it is still possible to design a common orthography for these dialects.

1.4 The Sociolinguistic Rationale for a Multidialectal Orthography

The aim of this section is to provide additional sociolinguistic reasons why a multidialectal orthography is the best orthographic approach for Anyi. The usual reasons given to support unidialectal orthographies: the existence of a prestige dialect or the

[10] Source: *Atlas des Langues Kwa de Côte d'Ivoire*, Tome 2, 1983.

presence of an important urban dialect, or the weight of a politically influential figure are wanting in Anyi. In the absence of these determining factors it seems to me that the wisest decision regarding the standardized Anyi orthography will consist in doing a comparative study of the phonological and morpho(phono)logical structures of the main dialects.

1.4.1 The Absence of a Prestige Dialect

Bloomfield (1933:478), Hockett (1958:471) and many other scholars have argued that the presence of a prestige dialect acts as a harmonizing force and contibutes significantly to the creation of a standard dialect. Logically then, the absence of a prestige dialect reinforces dialectal variations. This observation is true for Anyi. The existence of a host of dialects is attributable to the lack of a centralized political entity. There is no central traditional authority such as a king who rules over all the Anyi people. Consequently, there is no dominant social dialect that the people are attracted to. There are three regional kings: the king of the Sanvi, the king of the Indenie and the king of the Anɔ. However, the political authority of these regional kings does not extend beyond their small kingdoms. Even if Hock's (1986:427, 464) claim that "people tend to hypercorrect their language to adapt it to the dialect of the royal court" were correct, we would still not have dialectal harmony because there would still be three separate "royal dialects" that the people would have to imitate. Moreover, the vast majority of Anyi speakers: the Mɔrɔfʊ, the Bɔna, the Bini, the Barabɔ and the Abidji-Anyi, more than 80% of all the Anyi population, would still keep their dialects because they have no prestigious dialect to pattern their speech after since they have no kings whose dialects they could imitate.

1.4.2 Urbanization

In the literature on language standardization it is not infrequent to see that the dialect of the main city has become the standard dialect. This happens because in almost all of these cases the major city is also the seat of the political establishment, the economic center, and the pole of cultural attraction. The dialect of Moscow was chosen as the standard Russian dialect, that of Beijing as the standard Chinese dialect, that of London as the standard English dialect, that of Paris as the standard French dialect, that of Kano as the standard Hausa dialect, that of Zanzibar as the standard Swahili dialect for similar reasons. Only one city, Abengourou, comes close to fulfilling these three important functions in the Anyiland.

Anyiland is divided into three major political and administrative entities called **"departments,"** i.e., county. Each county has a central city: **Bongouanou** in the Center, **Aboisso** in the South and **Abengourou** in the East. None of these cities has any influence on the others. Even though Bongouanou and Aboisso are major cities, they do not have the political power necessary to impose their dialectal varieties as the standard. The department of Bongouanou does not have a king. Aboisso has a king but he does not reside in the city of Aboisso but rather in a village called Krindjabo. The same is true for the king of the Anɔ who does not reside in the main town of Prikro but rather in a small village called Famienkro. Only Abengourou can claim to combine the three important functions mentioned above. It is a relatively large town. The king of the Indenie resides there. Consequently, it plays important political and cutltural roles. However, it has failed to

impose its dialectal domination on other Anyi groups because of the complete autonomy that each area enjoys vis-à-vis the other. The case of Abengourou shows that a town fulfilling important political, economic, and cultural functions does not necessarily impose its dialectal variety on others. In spite of all these functions there are still noticeable dialectal differences between Indenié and Jʊablın, even though these two dialects are contiguous. My data do not indicate that Jʊablın speakers hypercorrect their speech after the royal family in Abengourou.

1.4.3 Linguistic Insecurity

Linguistic insecurity is defined as a condition which leads communities or speakers to be unsure about their linguistic output. There are many reasons why this condition may exist. The type of linguistic insecurity found among some Anyi dialects is caused by geographical proximity with speakers of other languages whom the Anyi consider to be linguistically and culturally unsophisticated. Additionally, conversion to Islam has led to cultural insecurity among the speakers of Anyi dialects in the northern fringes of the Anyiland.

1.4.3.1 Linguistic Insecurity among the Barabɔ and the Bini

Linguistic insecurity in the Bɔna area stems from both religious factors and geographical proximity. Bɔna is the most northern area of Anyiland. It shares borders with the Tagbanan and the Djimini of Dabakala on the west, the Kulango and the Abron in the east. The population in those areas were strongly influenced by Samory Toure's military and religious conquest. Consequently, all the dialects in this area, except Bɔna which is relatively southward, has witnessed a massive Islamic acculturation. Most of the Bini, the Barabɔ and the Anɔ have lost their Anyi patronyms. The geographical proximity with other language groups has made the Bini and the Barabɔ speakers bilingual in Anyi and Dioula, with Anyi still being the dominant language.

1.4.3.2 Linguistic Insecurity among the Anɔ

The Anɔ, on the other hand, are under a tremendous linguistic and cultural pressure from both the Baule in the south and the peoples of Kong in the north. The king of the Anɔ has family ties with the royal family in Kong. In the south, the Baule language exercises a strong influence on the Anɔ dialect at the semantic and syntactic levels, and even at the phonological level. However, the Anɔ dialect has maintained its 22 consonant phonemes and 14 vowels like other Anyi dialects. The Anɔ dialect has undergone such a strong hybridization between Anyi and Baule that it constitutes a difficult case of classification. Some authors refer to the Anɔ as Baule while others consider them to be Anyi. Burmeister (1989) notes that "ils disent qu'ils ne sont ni Agni ni Baoulé, mais ils parlent agni" (they say they are neither Anyi nor Baule, but they speak Anyi.) Burmeister's claim that they speak Anyi should be taken with a grain of salt.

1.4.4.3 Linguistic Insecurity among the Anyi-Abidji

The same linguisitc insecurity is manifest in the Abidji-Anyi area. The Abidji-Anyi trace their Anyi heritage back to the Mɔrɔfʊ. The Anyi of that area have been influenced by two neigboring peoples: the Baule and the Abidji. The Abidjis' influence on the language is

negligible since they themselves have become virtually bilingual in Anyi and Abidji whereas the Anyi as a whole have remained monolingual. The strongest linguistic influence comes from the Baule. The dialect has such a strong Baule coloration that most of the basic vocabulary and the syntactic structures are Baule. One of the few truly Anyi characteristics about Abidji-Anyi is its phonological system with 14 oral vowels and its consistency in the application of Grade III mutation. The linguistic insecurity of this area is not as dramatic as it is in the Anɔ case. However, it is visible in the younger generations who tend to use French as a "no man's language" when they address other Anyi or Baule speakers. The Baule tease them of speaking "a broken Anyi" and a "broken Baule."

1.4.4 Prospects for a Standardized Supradialectal Orthography for Anyi

Following Chomsky and Halle (1991), a supradialectal orthography is defined simply as an orthography that transcends dialectal variations and serves as the standard orthography. Many factors play a role in both designing a supradialectal orthography and in achieving the goal of a standardized orthography. Some these factors are examined in the next sections.

1.4.4.1 Linguistic Insecurity and the Standardization of Anyi Orthography

The sociolinguistic analysis presented above has focused on the factors that have retarded the emergence of a standard dialect of Anyi. However, some of the same arguments can be perceived as factors which can facilitate the standardization of the Anyi orthography. The linguistic insecurity so openly manifest among the speakers of the Abidji-Anyi, the Anɔ, the Barabɔ and the Bini dialects can help reduce the number of dialects to four in the standardization process: Bɔna, Mɔrɔfʊ, Indenie and Sanvi. Jʊablın being intermediate between Bɔna and Indenie can receive marginal attention. This does not mean that these dialects will be completely overlooked. What I mean is that they will weigh less in the decision-making process.

1.4.4.2 The Mutual Intelligibility Factor

Another factor that can facilitate the creation of a common system of writing for Anyi is the relatively high level of mutual intelligibility enjoyed by all the dialects of Anyi. The northern dialects enjoy a very high level of mutual intelligibility. This intelligibility drops slightly with regards to the southern dialect. However, since mutual intelligibility is higher than 80% in most cases, a carefully designed orthography can easily be used by all the dialects. Naturally, speakers of some dialects will have to make more efforts than others.

1.4.4.3 The Bible Translation Factor

Religious factors, namely the project of translating the Bible in Anyi is likely to contribute vigorously to the creation of a standardized written dialect. Smalley (1964:1) points out that

> the modern Protestant missionary movement with its emphasis on education, and particularly on literacy as an avenue on education, and particularly on literacy as an avenue to the Bible and other Christian literature, and to a better standard of living

> has greatly increased knowledge and sophistication in the development of writing systems for unwritten languages.

Coulmas (1990:32), for instance, refers to Christianity as a "book religion." This label comes from the fact that missionaries insist on teaching the natives "the very word of God" in their own language. The importance of Christianity in language standardization cannot be underestimated. One is reminded that it is Luther's translation of the Bible in German that brought about the standardization of the German language (Bloomfield 1933:483). In most cases in Africa as in many other parts of the world the dialect in which the Bible is translated becomes the standard dialect. Speakers of different dialects use the translated Bible in their every day worship. Consequently, the dialect in which the Bible is translated becomes de facto a "superdialect."

The growth of Christianity in the Anyiland over the past three decades has convinced missionaries and local religious leaders of the need of having the Bible translated into Anyi. There are already pockets of Bible translation projects going on in Bɔna and in Sanvi. One of the goals of this work is to help facilitate the creation of a standardized orthography for the translation of the Bible instead of imposing one dialect on all the others simply because a missionary translated the Bible in that dialect.

1.4.4.4 The Extension of Linguistic Functions

Cooper (1982:7, 37) argues that the extension of the linguistic functions from a purely oral medium to a written medium calls for standardization. Until now Anyi has been only a medium of oral communication. In the next five years or so it will extend its functions to include that of written communication. The government has started a pilot literacy project among the Anyi, precisely in the Mɔrɔfʊ and Sanvi dialects. Most of the variations observed in oral communication must be overcome by standardizing the orthography[11] if the government does not want to waste money for having to produce the same books in two different spelling systems; one for each dialect.

1.4.4.5 A large Bilingual Community

Another favorable factor that can accelerate the process of standardization in Anyi is the high level of literacy among its speakers. Mundt (1987:29) notes that the Anyi were among the first people groups in Côte d'Ivoire to have been in contact with Europeans. Consequently, they have one of the highest literacy rates (in French) in the country. If the orthography of Anyi is made to fulfill the Principle of Social Acceptability (section 1.6.4) the French-Anyi bilinguals will find it easy to read and write in Anyi. This will, in turn, contribute to the standardization of the written code of the language.

---

[11] Simons (1977:325) points out that "differing pronunciations of the same words are unified by writing them identically in the orthography. Each reader assigns his own pronunciation to the written symbol." It is important to emphasize that the standardization of the orthography does not mean a standardization of pronunciation. This is evidenced by how the same English word is pronounced by Americans, British, and other speakers of Commonwealth English.

1.5 An Overview of Orthographic Theories

The preceding sections have dealt with the overview of the phonemic system of Anyi and the sociolinguistic context. Now let us focus on the theories of orthography and see how they can help in designing and standardizing the spelling system of Anyi. In dealing with orthography theories a distinction should be made between an **a priori** orthography and an **a posteriori** orthography. The former is concerned only with the orthography of unwritten languages whereas the latter deals with a language which has a long written tradition. The methodologies adopted in the study of these two types of orthography are different. In general, an a posteriori study of orthography aims at arguing for or against an established orthography. Reformers study the orthography of written languages to highlight its inconsistencies and also to try to introduce innovations. Those who want to maintain the spelling system have an entirely different agenda. They study the orthography in order help the users avoid making spelling mistakes. Vallin's (1956) book *Spelling* falls into the first category and Cummings' (1988) book *American English Spelling* into the other.

An a priori orthography, on the other hand, is a pioneer work. It examines the phonological, morpho(phono)logical, and the syntactic aspects of the language in order to devise an orthography that is efficient and easy to learn. The present study falls into this category. Anyi, like many of the languages of Côte d'Ivoire, is not written. It is only recently, 1979, that the *Institut de Linguistique Appliquée* of the Université d'Abidjan and the Summer Institute of Linguistics got together to agree on the symbols to be used in the orthographies of Ivorian languages. However, how these symbols are to be used in designing the writing systems of individual languages was left undiscussed. This work seeks to remedy this situation for Anyi.

The most well-known theories of orthographies are **phonetic orthography** and **phonemic orthography.** In recent years, with the advent of Generative Phonology another theory, the **optimal orthography,** has been added to the list. The purpose of this section is to propose a brief review of these theories and see how they can help in designing a standardized orthography of Anyi. Before examining these modern theories of orthography, let us examine first what is commonly known as traditional orthographies.

1.5.1 Traditional Orthographies

The spelling systems of French and English are cited in the literature as typical representatives of traditional orthographies. These two writing systems have been attacked by spelling reformers for being inconsistent. They have called the orthographies of French and English chaotic, crazy, erratic. Professor Mueller (1901) entitled a book on English orthography *Our Accursed Spelling*. Vallins (1973) quotes Professor Weekley as saying that the English spelling "is, in so far as its relation to the spoken word is concerned, quite crazy." Many have blamed the inconsistency in these orthographies on the lack of correspondence between spoken and written utterances. The inconsistency has multiple

sources [12] but only the incongruence between phoneme and grapheme and the use of silent letters will be examined here.

1.5.1.1 Many-to-One Correspondences

The use of many letters to represent one sound, that is, **many to-one**, example (8), and of one letter to represent many sounds, **one-to-many**, example (9), is seen by critics as the major source for inconsistency in traditional orthographies. In (8) the sound **[i]** is represented by as many as five graphemes. A more complete definition of the grapheme will be given in section 1.6.5. For now suffice it to say that the grapheme is the smallest unit of writing. Two examples will suffice to illustrate this point:

(9)

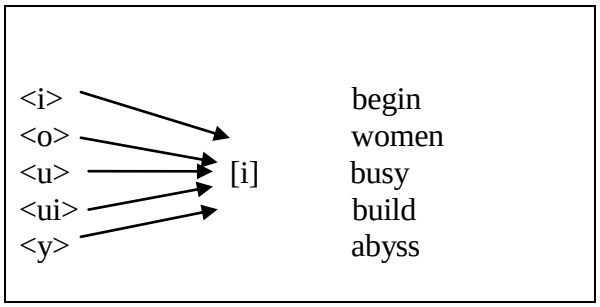


Table 23: Many Graphemes-to-One Phone

(The English examples are taken from Vallins (1973:48). To represent the sound [i], English uses five different letters.

1.5.1.2 One-to-many Correspondences

The converse of **many-to-One** correspondence is **One-to-Many correspondence.** Here the grapheme <c> is used to represent two distinct sounds [s] and [k] as illustrated by the example (10) below:

(10)

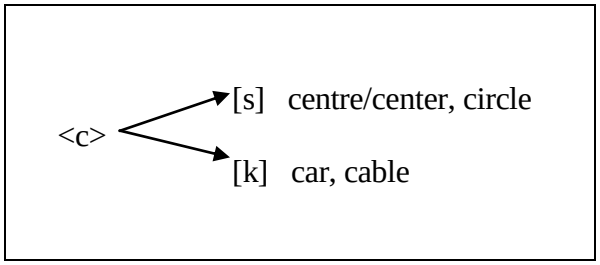


Table 24: One Grapheme-to-Many Phones

Spelling reformers of various centuries have concentrated their criticisms on the fact that in either French or English many letters or combinations of letters are used to represent

[12] Homophony, polysemy, historical, and syntactic reasons can also account for some of the inconsistencies in traditional orthographies.

only one phonetic realization and more than one phonetic realization is represented by a single grapheme.

1.5.2 Mute/Silent Letters

Another cause of inconsistency is the abundance of silent (phonetically unrealized letters) in the spelling systems of traditional orthographies. As many as nine consonants in English and French are written in the orthography but they are not pronounced in one environment or another. This is exemplified by (11) below.

(11)

N0.	Graphemes	English	French
1.	<g>	**g**nat	san**g** (blood)
2.	<l>	ha**l**f, ca**l**f	
3.	<k>	**k**nit	
4.	<p>	**p**salm, **p**sychology	tro**p** (too)
5.	<t>	lis**t**en, has**t**en	len**t** (slow)
6.	<w>	s**w**ord, t**w**o	
7.	<m>	phleg**m**	auto**m**ne
8.	<n>	colum**n**, hym**n**	
9.	<h>	r**h**etoric	
10.	<b>	bom**b**, lam**b**	
11.	<d>		quan**d** (when)
12.	<x>		feu**x**, deu**x** (fire, two)
13.	<z>		ne**z** (nose)
14.	<s>		san**s** (without)

Table 25: Silent Letters

Cummings (1988:47) argues that redundant letters are a major source of spelling errors even among well-educated native speakers.

1.5.3 Phonetic Orthography

The phrase "phonetic orthography" is used twice in Jones (1967:229). The typical position espoused by the proponents of phonetic orthography is found in the following quotation by Sgall (1987:21)

> It is agreed that the orthography should be such that one who knows the pronunciation of a word should be able to spell it correctly.

When people say that we should write as we speak, they are, in a sense, advocating the use of the "narrow" phonetic transcription. According to Vachek (1945:86) it is the only scriptural method which can roughly reflect the way people speak. He notes that "it can do far greater justice to the actual acoustic make-up of speech utterances because it does not shrink from using special symbols, one for each sound..." If we were to write as we speak, the "perfect" orthography will necessarily be a phonetic orthography, that is, a "narrow"

phonetic transcription.

From a functional point of view, this is not feasible because the words "phonetic" and "orthography" are oxymoron, that is, they enter into an antithetical relation. They serve different purposes. Vachek (1945:86) argues that a phonetic transcription should be regarded primarily as a technical device whose sole raison d'être is to aim at "the greatest possible accuracy in recording spoken utterances whereas writing (orthography) does not aspire more than a rough-and-ready reproduction of utterances." Because of this difference in goal and functions, he argues further that "writing and phonetic transcription cannot be efficiently compared unless the diversity of their respective functions is taken into account," (Vachek 1945:90). Smalley (1964:5) also is skeptical about the so-called "phonetic orthography." He argues that "a genuinely phonetic writing can never be the basis for a popular orthography.... No standard writing system in history has ever been fully phonetic." Therefore, in designing the orthography for an unwritten language, the "narrow" phonetic transcription should be avoided.

1.5.4 Phonemic Orthography

Unlike phonetic orthography, phonemic orthography does not claim to reproduce spoken utterances faithfully. It is concerned primarily with representing all the phonemes and **only the phonemes of a given language in the orthography**. The phonemic orthography is based on two important principles: the phonemic principle and the bi-uniqueness principle. Householder (1971:148) enunciates the first principle as follows:

The Phonemic Principle

> For practical orthographies, types [of sounds] never distinguished by the native speaker need not be distinguished in writing.

The IPA manual expands on this principle in the following terms "when two sounds are so near acoustically that there is no likelihood of their being employed for distinguishing words, they should, as a rule, be represented by the same letter." (p. 2.) The bi-uniqueness principle is stated by Sgall (1987:10-11) as follows:

Bi-uniqueness principle

Uniqueness of pronunciation, uniqueness of spelling.

Sgall explains this principle by saying that "in any context the given grapheme is pronounced the same as the phoneme. In any context the given phoneme is written as the same grapheme." Haas (1970) remarks that these two principles have elevated phonemic orthography so high on the pedestal of orthographic theories that it is viewed as the standard of excellence against which "any orthography, established or proposed, is judged."

1.5.5 The Optimal Orthography

The phrase "optimal orthography" was used by Chomsky (1970) in a paper he gave at a conference in Honolulu on the application of the Generative theory to literacy. Even though the paper does not outline clearly how generative phonology can be applied to the

practical task of designing an orthography, some commentators, Nikiema (1976), Booij (1987), Sgall (1987), and Carol Chomsky (1970), have consistently referred to this paper in their discussions of orthography.

Chomsky argues that the optimal orthography is "optimal" because it has a great ability to transcend dialectal variations. This orthography theory is based on the underlying representation, not on surface structure phenomena. In Generative Phonology the phoneme is in the Underlying Representation, and it is unpronounceable. According to Kenstowicz and Kisseberth (1979:7, 21), the phoneme is an abstract entity which can receive a phonetic realization only after some phonological rules have applied. The advantage of the optimal orthography for language standardization according to Chomsky (1970:281) is that it is "a highly effective system for a wide range of dialects because it corresponds to a common underlying phonological representation, relatively invariant among dialects despite phonetic divergence." Furthermore, he argues that "differences in phonological rules are irrelevant, since orthography corresponds to a deeper level of representation than (broad) phonetic," (p.282).

1.6 An Eclectic Orthography for Anyi

In the following sections I present my approach to Anyi orthography. In so doing I examine the strengths and weaknesses of the modern theories of orthographies presented in the preceding paragraphs. The strengths of each theory are retained to help create the orthography of Anyi.

1.6.1The Contribution of Phonemic Orthography[13]

From the **phonemic theory** one can retain **the phonemic principle** and **the bi-uniqueness principle**. However, the former cannot be followed faithfully for two reasons. First, the very notion of phoneme is too elusive in Anyi to base the orthography on. As discussed in sections 1.2.3.1 through 1.2.3.6 the phonemic status of the consonants **/m, n, ŋ, ɲ, k, g, dʒ, j, tʃ/** is problematic. Secondly, Pulgram (1951:19) remarks that "no language with some written tradition has ever matched the one-to-one ration." Furthermore, the fact that the phonemic theory does not allow allophones to be represented in the orthography makes it partly unacceptable for Anyi to be a good theory. I will argue in section 2.7.1 that if a good pronunciation is to be obtained, /r/ as an allophone of /l/, should have a separate graphemic representation. Pike (1947:209) argues that "representing allophones of a phoneme with separate symbols is not a very serious error."

---

[13] Simons (1977:329-30) argues that "the phonemic level is not the only psychologically real level of phonological structure. The phonetic level is also psychologically real. This is evidenced by the fact that native speakers react to the `funny' accent of outsiders.... In some cases, the phonetic level may be the most psychologically real level in the minds of the speakers. This is in evidence when speakers of a language (generally ones that are literate in other languages) insist that allophones of a single phoneme in their language be represented by separate orthographic symbols.... The general principle of psycholinguistic acceptability does not presuppose a `phonemic orthography.' The principle of psycholinguistic acceptability requires that the most psychologically real solution be selected."

1.6.2 Contribution of Phonetic Orthography

If the strong claims made by "narrow" phonetic transcription are sufficiently weakened, phonetic orthography can help in designing an efficient orthography for Anyi. The most obvious advantage of phonetic orthography is that it does not prevent allophones and morphophonemic variants from being represented in the orthography. Thus, even though phonetic orthography is not a narrow phonetic transcription it is very close to what people actually say. The proposal that allophones (2.7.1) and morphophonemic variants (3.4.3) be represented in the orthography makes the Anyi orthography close to being a "broad" phonetic transcription. In fact, Jones (1967:233) argues that "an orthography should come as near to the phonetic transcription as the special arrangement of the orthography allows." Even though allophones should be represented in the orthography to ensure good pronunciation, the orthography should be constrained in such a way that standardization can be achieved. Two such constraints will be discussed presently.

1.6.3 Contribution of the Optimal Orthography towards Standardization

One of the primary goals pursued in this work is to standardize Anyi orthography. Anyi has five major dialects and the optimal theory of orthography can be very helpful in the standardization process. Optimal orthography has two important principles that can help achieve this goal, namely the Supradialectal Principle [14] and the Uniqueness of Lexical Representation Principle.

Supradialectal Principle

> Differences in phonological rules are irrelevant, since orthography corresponds to a deeper level of representation than (broad) phonetic, Chomsky (1970:282)

The second principle is formulated as follows:

Uniqueness of Lexical Representation Principle

> Each lexical item must have a unique spelling, Chomsky (1970:281)

The first principle will be discussed thoroughly in Chapter Two, and the second in Chapter Five.

1.6.4 More Orthographic Principles

Smalley (1964) notes that an authoritative book on orthography has not been written. This work does not in any case claim to fill in the gap. However, it has the advantage of having put together many of the orthography principles that have been formulated by linguists. In addition to the principles that have already been presented other principles are listed below. These principles have been taken from different sources. The formulation of the principles differs greatly from one linguist to another. The sentences have been quoted

[14] Chomsky did not provide this label. However, the phrase "supradialectal" is borrowed from him.

without any modification. In some cases endnotes have been used for additional comments or explanations. The principles listed here will be used in one form or another in many parts of this work to support some of my claims.

1.6.4.1 Maximum Representation of Speech Principle

The fullest, most adequate representation of the actual spoken language is, by and large, the ideal, Smalley (1964:34)

1.6.4.2 Learnability Principle

The easier the writing system is, the closer it is to the sound perception of the native speaker, the more quickly it can be learned and by more people. In fact there is no good reason why anyone should have to spend more than two years of his life trying to master the orthography of his language, Wisemann (1989:19)

1.6.4.3 Maximum Transfer Principle

The investigator will want to have an easy transfer from the vernacular alphabet to the alphabet of the trade language so that once a monolingual speaker of the vernacular has learned to read his language, he can utilize that knowledge in the easiest way for obtaining a knowledge in the trade language, Pike (1946:260) .

1.6.4.4 Lexical Spelling Principle

Subject to rare exceptions, each word should be written in one way only, and its orthography form should in most cases be based on the pronunciation it has when said in isolation, Jones (1967:227).

1.6.4.5 Alternate Pronunciation Principle

When two pronunciations of a word enjoy a wide currency and appear to have equal claims to representation in the orthography, it may be found advisable to admit the two spellings, Jones (1967:230)

1.6.4.6 The Systematicity Principle

In cases of varying phonological and morph(phono)logical rules, the dialect that has the simpler and more systematic rules is to be preferred, Valter (1975:65).

1.6.4.7 The Principle of Social Acceptability

When given a number of solutions to an orthography problem, the solution which is the most socially acceptable is to be preferred, Simons (1977:328).

1.6.4.8 Principle of Psycholinguistic Acceptability

When given a number of alternative solutions to an orthography, the solution which is the most psycholinguistically acceptable is to be preferred, Simons (1977:329).

1.6.4.9 The Principle of Minimal Potential Ambiguity [15]

When given a number of alternative solutions to an orthography problem, the solution which makes the greatest contribution towards the resolution of potential ambiguity is to be preferred, Simons (1977:330).

1.6.4.10 The Principle of Simplicity[16]

When given a number of alternative solutions to an orthography problem, the solution which yields the simplest orthography is to be preferred, Simons (1977:330).

1.6.4.11. The Principle of Convergence of Skewed Systems

When given a number of alternative solutions to an orthography problem, the solution which finds a level of phonological structure at which skewed systems converge is to be preferred, Simons (1977:330).

1.6.4.12. Tone Economy Principle

If we are marking the tones fully in the language, we can reduce the number of diacritics used by agreeing to leave the most common tone of the language unmarked. This is a kind of spelling rule, Williamson (1984:42).

1.6.4.13. Speech Rate Principle

When two forms differ according to whether they are pronounced fast or slow, the choice may be a bit different. Pronunciations which are given in only extremely rapid speech are best avoided in symbolization because people do not tend to speak with the same rapidity - at least not in the early stages... On the other hand, pronunciations which are used for extremely slow speech should also be avoided. Many of these are likely to include extra sounds, or extra stresses, or extra lengths of

---

[15] Many linguists, including Dawson (1989:9), Powlison (1964:76), Smalley (1964:13), Nida (1964:24) emphasize the importance of social pressure on orthography. Nida argues that "when efficiency and cultural prestige is pitted against one another, the latter almost always wins out in the end." He goes on to say that "a program of literacy that is promoted by a mission has relatively little chance of success if it is contradictory to a long range program of the government." Dawson advises that the orthographer should never ignore the pressure of the dominant language in designing the orthography for a language. Another social factor to be taken into account is the influence of bilinguals. Simons (1977:328) notes that sometimes the linguist must determine if it is more important to follow the wishes of the influential minority that is already literate in the dominant language or not. She points out that "many linguists have found this necessary."

[16] Simons (1977:336) enunciates a similar principle called The Principle of Overall least Effort. It is formulated as follows: "When given a number of alternative solutions to an orthography problem, the solution which promises the overall least effort is to be preferred. The overall effort is measured by the amount of time required for an illiterate to become fluently literate. The greater the overall effort required to master an orthography, the greater is the overall cost of conducting a literacy program. This cost is realized in at least two ways: the cost of losing students and thus failing to reproduce readers, and the actual expense in terms of time, teachers, and equipment required for conducting the program. The cost in terms of losing students is the most serious."

vowels, which are totally unnatural to the speaker in any normal linguistic context. The choice should be for the consistent writing of pronunciations which are neither extremely fast nor extremely slow. The most satisfactory choice seems to be a somewhat slow but normal style, Pike (1946:254).

1.6.4.14. Sentence Phonology Principle

Orthographies must make abstraction of the effects of sentence phonology. Spelling represents words as said in isolation, Booij (1987:217).

1.6.4.15. Etymological Demand Principle

To the extent possible, a word's spelling must reflect its source, Cummings (1988:17).

1.6.4.16. Punctuation Principle One

You should not introduce punctuation marks which are not needed in the language Mundhenk (1981:228).

1.6.4.17. Punctuation Principle Two[17]

In order to get people to accept the punctuation system, you may have to make it look like the punctuation used in languages they are already familiar with, Mundhenk (1981:228).

1.6.4.18. The Principles of Economy, Simplicity, and Unequivocality

Economy means that the number of necessary signs is kept small. **Simplicity** means, among other things, that the relation between signs and their value is simple and straightforward. **Unequivocality** means that the meaning of a written expression is determined by its form, Coulmas (1990:45-6).

1.7 The Contribution of Psycholinguistics to Orthography

In designing an optimal orthography, we must take into account contemporary findings about the reading process. The interactive reading model proposed by psycholinguistics offers great insights that can be beneficial to orthographers. Treiman (2003:664-6) describes the model as follows:[18]

---

[17] Mundhenk (1981:228) admits that "these two principles may often disagree with each other. If we look only at what the language needs in theory, one answer may seem right. But if we want the punctuation to be accepted in practice, a different answer may be necessary. When people have strong feelings about something, it is usually wise to do what they want, even if it does not seem theoretically the best thing."

[18] Spalding (2003:x) makes a similar observation:

> "In the early 1970s, we thought of reading as a *linear process*: See a letter (or piece of a letter), put it together with other letters, formulate the word, recall the meaning of the word, hold that in mind, formulate another word, put all the words together, compute a new meaning, and so on. These theories were not very satisfactory, because it was intuitively obvious that reading did not work like that. … By the 1970s, reading theory had evolved from a linear form to *parallel forms*: Many processes are now considered to go on at the same time during reading. You are forming expectations, recalling earlier concepts, picking up print, organizing syntax, checking inferences,

In the case of reading, as with other cognitive processes, psychologists have distinguished between two kinds of processing. *Bottom-up processes* are those that take in stimuli from the outside world –letters and words, for reading –and deal with that information with little recourse to higher-level knowledge. With *top-down processes*, on the other hand, the uptake of information is guided by an individual's prior knowledge and expectations. In most situations, bottom-up and top-down processes work together to ensure the accurate and rapid processing of information. However, theories about cognitive processes involved in reading differ in the emphasis that they place on the two approaches. Theories that stress bottom-up processing focus on how readers extract information from the printed page, claiming that readers deal with letters and words in a relatively complete and systematic fashion. Theories that stress top-down processing hold that readers form hypotheses about which words they will encounter and take in only just enough visual information to test their hypotheses. … Comparisons of good and poor readers further support the claim that bottom-up processes play an important role in reading. … The statement that bottom-up processes play a central role in reading does not necessarily mean that top-down processes are completely unimportant. Studies have shown that words that are predictable from context are fixated for shorter periods of time and are skipped more often than words that are less predictable, although the effects are relatively modest.

---

and so forth, more or less simultaneously. Reading is, in other words, now recognized as *a complex skill* – which means that it requires coordination of a number of subskills, just as piano-playing or basketball does. … **The core reading subskill** is forming connections between speech and print. More technically, this comes down to connections between specific speech units called phonemes and specific letters that represent them… This, then, is the core reading subskill. You have to learn which letters represent which phonemes in English. You do not have to learn every single letter-sound unit, but you need a substantial "working set." In every complex skill, there is a similar working set of basic units that have to be learned-feet positions in ballet, for example – out of which higher-order units can be constructed. We can call the working set of letter-phoneme units the appearance of others; and so on."

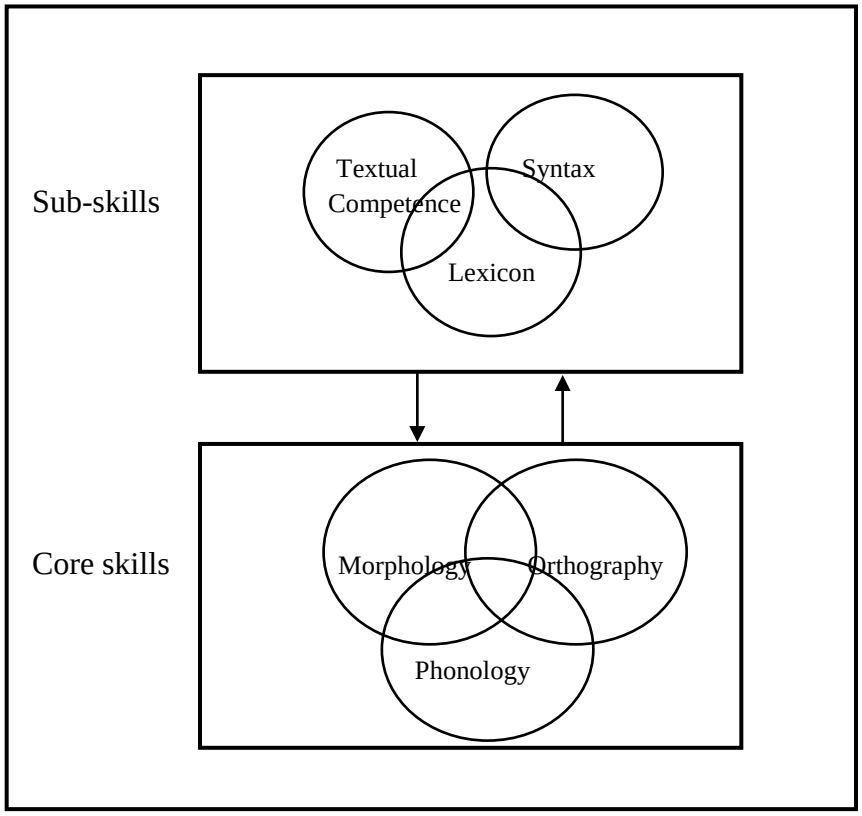


Table 25: Interactive Reading Architecture

1.8 Phoneme-Grapheme Correspondence

Following Gleason (1955:409), I indicate graphemes in angle bracket notation < >. He defines the grapheme as the minimal unit of writing. Each grapheme has one or more allographs. An allograph is a positional, stylistic, syntactic, or conventional variant of the same grapheme. The grapheme <a>, for instance, has three allographs: the capital letter **"A"**, the lower case **"a"** and the calligraphic variants of <a>. Whether or not allographs should be represented in Anyi orthography will be discussed in Chapter Five. For now suffice it for me to list the phoneme-grapheme correspondence of Anyi.

N0	Phonemic Symbol	Graphemic Symbol
1.	/a/	<a>
2.	/ą/	<an>
3.	/b/	<b>
4.	/tʃ/	<c>
5.	/d/	<d>
6.	/e/	<e>
7.	/ɛ/	<ɛ>

8.	/f/	<f>
9.	/g/ and /gb/	<g> and /gb/
10.	/h/	<h>
11.	/i/	<i>
12.	/į/	<in>
13.	/ɪ/	<ɪ>
14.	/ɪ̨/	<ɪn>
15.	/dʒ/	<j>
16.	/k/ and /kp/	<k> and <kp>
17.	/l/	<l>
18.	/m/	<m>
19.	/n/	<n>
20.	/ɲ/	<ny>
21.	/ŋ/	<ng>
22.	/o/	<o>
23.	/ɔ/	<ɔ>
24.	/p/	<p>
25.	[r]*	<r>*
26.	/s/	<s>
27.	/t/	<t>
28.	/u/	<u>
29.	/ų/	<un>
30.	/ʊ/	<ʊ>
31.	/ʊ̨/	<ʊn>
32.	/v/*	<v>*
33.	/w/	<w>
34.	/ụ/	<yu> and <yʊ>
35.	/j/	<y>
36.	/z/*	<z>*

Table 26: Anyi Phoneme-to-Grapheme Correspondence

Note: [r] is an allophone of /l/ but it is represented in the orthography. The graphemes followed by the asterisk are either allophones or morphophonemic variants.

1.9 Summary

Voorhoeve (1964:61) argues that "a linguistically justified spelling or `orthography' is based on the phonemic structure of the language concerned." The sections 1.2.1.1 through 1.2.3.5 discussed the phonemic structure of Anyi. The remaining chapters will focus on the phonological, morpho(phono)logical, and syntactic structures of Anyi. Even though the structural analysis will be the major focus in this study, socio-cultural factors will not be overlooked because, as Smalley (1964:19) observes "writing systems, after all, are cultural phenomena, used by people with feelings and emotions, with prejudices and fears..."

Chapter Two

Phonology and Orthography

2.0 Introduction

The overall objective of this chapter is to see how phonological information can contribute to the creation of a standardized orthography of Anyi. The primary focus in the present analysis will be on syllable structure conditions. There are two fundamental reasons motivating such an analysis of Anyi. The first has to do with the fact that there are phonological processes such as vowel harmony, palatalization, and metathesis which can be efficiently accounted for only in relation to the syllable. For example, Fromkin and Schachter (1968:47) argue that in Akan (closely related to Anyi) there are phonological rules which pertain only to monosyllabic roots and others only to disyllabic roots.

The second motivation is that there are some thorny orthographic issues which can be better dealt with when a syllable analysis is proposed. For instance, in deciding whether or not a word should be written as CV1V2 or CV1GV2 (where G stands for glide) one has to refer to some syllable structure constraints. Even though the main emphasis is on syllable structure, frequent references will be made to morpheme structure conditions as well.

It should be emphasized that this chapter is not limited to syllable structures only. It includes all issues dealing with phonology and orthography. These issues range from the relationship between tone and orthography discussed in sections 2.9 and 2.9.8 to typographic issues such as the representation of [-ATR] vowel harmony. In 2.8.6 for instance I raise the issue of the choice of symbols and their political implications.

This chapter is divided into four parts. The first part deals with general issues. The second focuses on syllable structures. The third is about palatalization and labialization. The last part deals with tone and orthography. Each section is subdivided between the phonological analysis proper and its orthographic implications. This subdivision has the advantage of showing immediately the interrelation between phonology and orthography.

2.1 **General Presentation of Anyi Syllable Structures**

Following Fromkin and Schachter (1968:47) I make a distinction between **primary syllables** and **secondary syllables** in Anyi. Primary syllables have a consonant in initial position whereas secondary syllables begin either with a vowel or a syllabic nasal. Primary syllables are of the following canonic forms:

N0	**Syllable Types**	**Examples**	**Gloss**
8.	V	[à]	resultative morpheme
9.	CV	[ká]	to bite
10.	VCV	[àkɔ̀]	chicken
11.	CV1V1	[bòó]	forest

12.	CV1V2	[tìé]	to listen
13.	NCV	[ǹzán]	three
14.	CV1GV2	[bìjá]	chair
15.	C1V1C2V2	[bìsá]	to ask
16.	C1V1NC2V2	[kàngá]	slave
17.	C1Ṽ1NC2V2	[kị̃ndɛ́]	to search
18.	CL(V1)V1	[blàá]	woman
19.	VCLV1V2	[àtrìé]	head

Table 1: Canonical Syllable Structures

The cover symbol "G" stands for the glides /j/ and /w/. In NCV, the prenasalized consonant /ǹ/ is a syllabic nasal with a low tone. The present analysis does not deal with the canonical syllable structures V, VCV, NCV and VCLV^{1}V^2. They will be dealt with more specifically in Chapter Three where their relevance to the orthography is more visible. In contemporary linguistic theory, especially in CV-Phonology, it is claimed that CV is the most widely attested syllable structure. This canonical syllable consists of a single onset and rhyme. The rhyme consists of a single nucleus. Table 1 gives a visual display of the most basic Anyi syllables. It is worth noting at this point that all Anyi syllables are open. This is a very important phonotactic constraint that has virtually no exception except is rare words such as **[máŋ]** (a type of fish).

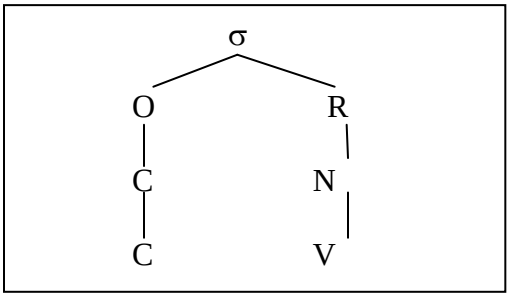


Diagram 1: Prototypical Syllable Structure

2.1.1. **Orthographic Issues Involved in Syllable Structures**

CV syllables do not present any orthographic difficulty; therefore they will not be discussed here. CV1V1 syllables will be presented briefly. The bulk of the discussion will involve how to separate CV1V2 words from CV1GV2 words in the orthography. C1V1C2V2 will be examined not so much because they create any orthographic problems but because they are central to the application of some phonological rules. A considerable amount of time will be devoted to CL(V1)V2 words because they have many dialectal variations which pose very serious problems to the standardization of the orthography.

2.2 **Vowel Harmony in Anyi**

Before going any further let us examine a phenomenon that is crucial to understanding the Anyi phonological system, namely, vowel harmony. Welmers (1973) defines vowel harmony as a process by which "all vowels belong to one or the other of two

groups." The two groups refer to Stewart's (1967) finding that in Akan languages, with the exception of the vowel /a/, all the vowels occurring in a given word stem agree in a feature called **Advance Tongue Root** or **[ATR].** The examples in (1) and (2) reveal a symmetrical patterning of Anyi vowels with regard to the position of the root of the tongue. The words in (1) have the feature [+ATR] and those in (2) have the feature [-ATR].

(1)

N0	**[+ATR] Vowels**	**Gloss**
1.	<nanmuo> [nạ̀mùó]	farmhouse
2.	<sisi> [sìsí]	to blackmail
3.	<bubu> [bùbú]	to paralyze
4.	<Kasi> [kàsí]	first name of males
5.	<akoo> [àkòó]	parrot
6.	<sin> [sí̩]	back, behind
7.	<sun> [sụ̀]	to cry
8.	<tekele> [tékèlé]	prostitute
List of [+ATR] Vowels: [i, e, u,o, i̩, ụ]		

Table 2: List of [+ATR] Vowels

(2)

N0	**[-ATR] Vowels**	**Gloss**
1.	<dabʊɔ> [dàbʊ̀ɔ́]	deer
2.	<tɪtɪ> [tìtí]	to tear apart
3.	<dʊdʊ> [dʊ̀dʊ́]	to press, to pressure
4.	<bʊka> [bʊ̀ká]	to help
5.	<tʊn> [tʊ̩́]	to cook, to err
6.	<kɔ> [kɔ́]	to go
7.	<atɛrɛ> [àtèrɛ́]	magic
8.	<sɪn> [sɪ̩́]	to cross
List of [-ATR] Vowels: [ɪ, ʊ, ɛ, ɔ, ɪ̩, ʊ̩]		

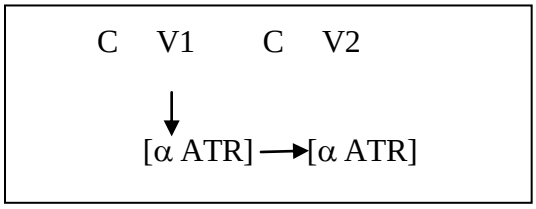
Table 3: List of [-ATR] Vowels

The data in Tables 2 and 3 show that the vowel /a/ straddles both categories. For this reason, it has been claimed that it is **unspecified for [ATR]**. An examination of the Anyi lexicon reveals that there is an important phonotactic constraint. It can be stated positively as follows:

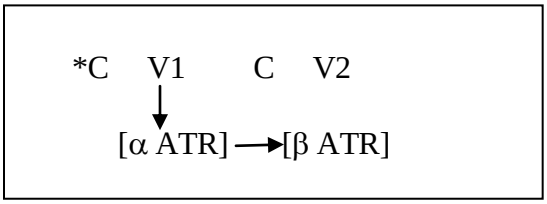
Positive [ATR] Phonotactic Constraint

In words containing more than one vowel, all the vowels must have the same value for ATR, that is, they must all be [+ATR] or [-ATR].

Below is a graphic representation of the vowel harmony principle:



This condition states that if V1 is [+ATR], V2 must also be [+ATR]. If, on the contrary, V1 is [-ATR], V2 must be [-ATR]. The exceptions to this condition are found in compounds and in words of foreign origin. Compounds will be dealt with in detail in Chapter Four and loan words in Chapter Five. There is a negative syllable structure condition which prevents a combination of [+ATR] and [-ATR] in the same root.



Vowels of different harmonic values do not occur in Anyi except for the two exceptions mentions previously. However, it must be born in mind that /a/ aligns itself with vowels of both categories. Therefore, the negative syllable structure condition does not apply to words involving /a/.

2.2.1 **The Source of the Harmony**

In a structure such as C1V1C2V2(C)V3, the harmony is determined by the [α ATR] value of V1, (The á symbol stands for [± ATR].) If V1 is [+ATR] then vowels V2 and V3 are [+ATR]. If V1 is [-ATR], V2 and V3 must be [-ATR]. This claim can be supported by examining the behavior of the aspectual suffix which indicates a completed action or event. The aspectual marker is either [**lí]** or **[lí]** depending on the [ATR] value of the vowels in the stem. Let us illustrate this point with the examples in (3):

(3)

N0	**Sentences**	**Gloss**
1.	<ɔ telɪ> [ɔ̀ télí]	it burst
2.	<ɔ tɛlɪ> [ɔ̀ tɛ́lí]	it blew up
3.	<ɔ tɔlɪ> [ɔ̀ tɔ́lí]	he fell
4.	<ɔ tolɪ> [ɔ̀ tólí]	he bought
5.	<ɔ tulɪ> [ɔ̀ túlí]	she pulled
6.	<ɔ tʊlɪ> [ɔ̀ tʊ́lí]	it lay an egg

Table 4: Harmonic Agreement with [lí]

The claim that vowel harmony is determined by the first vowel (V1) of a word can also be demonstrated by examining the behavior of the verbal-noun prefix. If the first vowel of the verb is [+ATR], the verbal-noun prefix is **[è]**. If on the contrary the first vowel of the verb is [-ATR], the verbal-noun prefix is [ɛ̀]. The first vowel transfers its [ATR] feature to the verbal-noun prefix.

(4)

N0	**Word List**	**Gloss**
1.	<ɛhɔlɛ> [ɛ̀hɔ́lɛ̀]	departure
2.	<ehulo> [èhúló]	love
3.	<ɛhɪlɛ> [ɛ̀hílɛ̀]	capture, captivity
4.	<esunlɛ> [èsú̱lɛ̀]	tears, crying
5.	<emian> [èmi̱á̱]	difficult situation
6.	<ɛlalɛ> [ɛ̀lálɛ̀]	lying down
7.	<ehunlɛ> [èhú̱lɛ̀]	killing,murder

Table 5: Harmonic Agreement with [ɛ]

Other aspects of vowel harmony will be discussed in sections 2.3.1 and 2.4.4.

2. 2. 2 **The Orthographic Representation of Vowel Harmony**

Welmers (1973:36-7) notes that the official orthographies of some African languages do not reflect vowel harmony even if it is present in those languages. Fante is one of the languages that fail to represent vowel harmony in their orthographies. There are others, such as Igbo and Yoruba which use diacritics to represent [-ATR] vowels. A dot is placed under [-ATR] vowels. The problem with this representation of [-ATR] vowels in the orthography is that it is difficult to underline sentences. The horizontal line goes through the dots under [-ATR] vowels. The *Institute of Applied Linguistics* has mandated that [-ATR] vowels be represented in the orthography of Ivorian languages by the IPA symbols **<ɛ>, <ɔ>, <ʊ>,** and **<ɪ>**. When computers were not widely available, it was decided that [-ATR] vowels be represented in the orthography with capital letters <**E>, <O>, <U>,** and <**I**>. *The Maximum Ease of Reproduction Principle* states that "typing and printing facilities are a consideration, although they are not of first importance." The availability of computers has made this principle obsolete. Therefore, one does not really need to resort to strange conventions such as dots and upper case letters to represent [-ATR] vowels in the orthography of African languages. Unicode fonts have been developed that can reproduce and print [-ATR] symbols. Consequently, the choice of symbols should not infringe upon the orthographic representation of [-ATR] vowels.

2.2.3 **Phonotactic Constraints on CV1V1 Syllables**

There are cases when a word is pronounced with a lengthening of the vowel. Such cases are represented here as CV1V1 where the V1V1 sequence is made up with two homophonic vowels. Long vowels, therefore, are considered to be a concatenation of two short vowels. Welmers (1973:24) points out that:

> [In Niger-Congo] Phonemically long vocalic segment can, **in every known case** (emphasis mine), be readily interpreted as double vowels... Long vowels tend to occur with tone glides which do not occur with short vowels.

In general in Anyi two homophonic vowels can occur in sequence. Geminate oral vowels occur in sequence: **/uu/, /oo/, /ɔɔ/, /aa/, /ɪ/**, and geminate nasal vowels occur in sequence: **/i̲i̲/, /ɪ̲ɪ̲/, /a̲a̲/**. There are two constraints, one phonetic and the other morphemic, which operate on CV1V1 structures. The first can be formulated as a geminate structure constraint.

Geminate Structure Constraint

Two identical vowels can occur in sequence, except the front vowels /ii/ and /ee/.[19]

The morpheme structure condition on geminate vowels is stated as follows

Morpheme Structure Condition on Geminate Vowels

There is no verb stem which has a CV1V1 structure.

All instances of CV1V1 occur in nominal stems. [20] This can be illustrated by the examples in (5) below:

(4)

N0	**Word List**	**Gloss**
1.	<tuú> [tùú]	gun
2.	<tuún> [tṵṵ̰]	dark, shady
3.	<boó> [bòó]	forest
4.	<bóo> [bóò]	nose
5.	<bɛ́> [bɛ̀ɛ́]	bed
6.	<bɛ́ɛ> [bɛ́ɛ̀]	left side
7.	<baá> [bàá]	child
8.	<fíí> [fiı̀ ́]	tight
9.	<fĩí> [fĩí]	nothing, nobody
10.	<siin> [sḭḭ]	short
11.	<sɪín> [sḭḭ]	fire
12.	<nnaán> [ǹna̰a̰]	animal

Table 6: Geminate Vowels

2.2.3.1 **Orthographic Representation of Geminate Vowels**

In *Une Orthographe Pratique des Langues Ivoiriennes* (p.17), it has been proposed that long vowels be written as a concatenation of two short vowels. The same convention

[19] Though verbs may have these two vowels, they are the result of cliticization. The deletion of the direct object pronoun causes a lengthening of the last vowel of the verb.

[20] This is an important morpheme structure condition that will be discussed again later. In some verbal constructions, namely cliticization, there is a lengthening of the last vowel of the verb. Such a process has different syntactic functions that will be discussed in Chapter Four.

will be used for Anyi orthography. Moreover, when geminate vowels occur, high tone is indicated on one of the two vowels. This convention has been adopted for Anyi because words in which such geminate vowels occur are prone to lexical ambiguity. To help the reader process such words with ease, I have decided to represent the high tone of geminate vowels in the Anyi orthography, as shown in Table 6 above.

2.3 **Phonotactic Constraints on CV1(G)V2 Words**

The canonic structure CV1(G)V2 illustrates two different types of structures: CV1GV2 (where G is a semi-vowel) and CV1V2 (where V1 and V2 are non-identical vowels.) Both structures will be discussed presently but let us examine CV1V2 structures first. It should be born in mind that the discussion of vowel harmony that will follow presupposes the **[ATR]** harmony discussed previously.

2.3.1 **Syllable Structure Conditions on CV1V2 Sequences**

Consider the following examples in (6):

(6)

N0	**Word List**	**Gloss**
1.	<tie> [tìé]	to listen
2.	<alıɛ> [àlìɛ́]	food
3.	<dua> [dùá]	to sow
4.	<sʊa> [sʊ̀á]	to carry on the head
5.	<tıan> [tı̰á]	to scream
6.	<suan> [sṵ̀á]	to learn
7.	<mıan> [mìá]	Lord
8.	<bʊɔ> [bʊ̀ɔ́]	hole
9.	<buo> [bùó]	half

Table 7: Geminate Vowels

A close examination of the data above reveals that in addition to the [±ATR] harmony (which we take for granted now), there is another type of harmony that stands out. This type of harmony is divided into two: **fronting harmony** and **rounding harmony.** Fronting and rounding harmonies can be captured by the syllable structure conditions posited below:

Fronting Harmony

In a CV1V2 sequence, if V1 is a front vowel, V2 must also be **a front vowel**, that is, /i, ɪ, e, ɛ/.

Rounding Harmony

In a CV1V2 sequence, if V1 is a back vowel, V2 must also be a **back vowel**, that is, /u, ʊ, o, ɔ/.

Because of its polyvalent nature the central low vowel /a/ can occur with both front vowels and back vowels. The importance of fronting and rounding harmonies is that they play an important role in deciding whether or not some words should be represented in the

orthography as CV1V2 or as CV1GV2. Moreover, it helps in the standardization process because of the dialectal variations found in Anyi.

2.3.2 **Dialectal Differences in Fronting and Rounding Harmonies**

Fronting applies systematically in all Anyi dialects as in (7a).

(7a)

N0	**Word List**	**Gloss**
1.	<tie> [tìé]	to listen
2.	<alıɛ> [àlìɛ́]	food
3.	<tıan> [tị̃ã́]	to scream
4.	<ɛfıɛ> [èfìɛ́]	vomiting
5.	<mıan> [mìá]	Lord
6.	<mmie> [m̀mìé]	urine
7.	<atıɛ> [àtìɛ́]	fork

Table 8: Fronting Harmony

Rounding harmony, on the other hand, does not apply with the same regularity in other dialects as it does in Mɔrɔfʊ. There is free-variation in the speech of non-Mɔrɔfʊ speakers with regard to rounding harmony. Both the Mɔrɔfʊ forms and the forms in Indenie, Sanvi, Bɔna occur in the speech of the same individual as in (7b).

(7b)

N0	**Mɔrɔfʊ**	**Other Anyi Dialects**[21]	**Gloss**
1.	[èwʊ̀ɔ́]	[èwʊ̀ɛ̀]	honey
2.	[èsʊ̰̀ʊ̰́]	[èsʊ̰̀ɪ̰́]	elephant
3.	[ǹzùó]	[ǹzùé]	water
4.	[kpàtùó]	[kpàtùé]	owl
5.	[bòwùó]	[bòwùé]	bone, thorn
6.	[fʊ̀fʊ̀ɔ́]	[fʊ̀fʊ̀ɛ́]	garbage dump

Table 9: Rounding Harmony

2.3.3 **The Orthographic Representation of Dialect Variation in Rounding Harmony**

The dialectal differences in rounding harmony raise the problem of their standardization in the orthography. Valter (1975:65) argues that when a form has different dialectal variations, the dialect in which the phonological or morphological rule applies systematically should be used as the standard. This is known as the **Systematicity Principle** (1.6.4.10)**.** In following this principle one can propose that the standard orthography of Anyi be based on the Mɔrɔfʊ dialect because it is more systematic in applying fronting and rounding harmony.

However, it is possible to maintain both forms in the standardized orthography of Anyi. This suggestion is supported by the **Alternate Pronunciation Principle** proposed by

[21] These examples come from Quaireau (1987:84)

Jones (1967:230) and listed in 1.6.4.5. This principle argues that "when two pronunciations of a word enjoy a wide currency, and appear to have equal claims to representation in the orthography, it is advisable to admit the two spellings." However, for the sake of systematicity I propose that the Mɔrɔfʊ forms be kept in the standardized orthography.[22]

2.4 **Phonotactic Constraints CV1GV2 Words**

One thorny issue in the orthography of Anyi is how to distinguish CV1V2 words from CV1GV2 words. When one compares normal speech with fast speech one notices that some CV1GV2 words are realized CV1V2 as in (8) below. The only difference here is between the speech style, that is, fast speed versus normal speed.

Speech Style Variation

(8)

N0	**Orthographic Form**	**Normal Speech**	**Fast Speech**	**Gloss**
1.	<kɔyɛ>	[kɔ̀yɛ́]	[kɔ̀ɛ́]	deep wound
2.	<baye>	[bàyé]	[bàé]	sorcery
3.	<kpanyin>	[kpà̰jḭ́]	[kpà̰ḭ́]	elder
4.	<kpáwun>	[kpá̰wṵ̀]	[kpá̰ṵ̀]	bread
5.	<kpawún>	[kpà̰wṵ́]	[kpà̰ṵ̂]	fetters

Table 10: Speech Tempo

These examples show that in fast speech the semi-vowel is deleted.

2.4.1 **The Orthographic Representation of CV1V2 and CV1GV2 Words**

The deletion of the semi-vowel in fast speech poses the following problems: how can one determine which words should be written in the orthography? Should the orthographic form be <CV1V2> or should it be <CV1GV2>? The orthographic representation of these forms is problematic because there is a considerable number of words in which the semi-vowel is not audible, and some others in which it is clearly audible. In order to distinguish these forms, a number of tests will be used in the paragraphs below.

2.4.2 **The Categorial Criterion Test**

There are several criteria that can help decide when a word is to be written CV1V2 and when it should be written CV1GV2. The one proposed in this paragraph relies on categorial information. In some cases the language has kept the semi-vowel as a means of distinguishing between potential homophones.

(9)

N0	**Orthographic Form**	**Phonetic Form**	**Gloss**

[22] Coulmas (1990) argues that sometimes several principles of goodness compete with each other, as is the case here.

1.	<tuwaá>	[tùwàá]	end of village
2.	<tua>	[tùá]	to pay
3.	<suwáa>	[sùwáa]	dead banana tree
4.	<sua>	[sùá]	to peel
5.	<buwáa>	[bùwáa]	water pot
6.	<bua>	[bùá]	to give one's opinion

Table 10: Speech Tempo

The first criterion can be stated as the following morpheme structure condition

Categorial Criterion

There is no verb in the language in which the intervocalic consonant is a semi-vowel.

This morpheme structure condition is useful for the purpose of orthography only, that is, when the literacy student has acquired enough metalinguistic information to discriminate between syntactic environments proper to verbs and those proper to nouns. However, the usefulness of this criterion is very limited because there are numerous cases as in **<kɔyɛ> [kɔ̀jɛ́]/[kɔ̀ɛ́]** (a deep and incurable sore), <**baye> [bàjé]/[bàé]** (witchcraft), <**kpanyin> [kpà̰jí]**/[**kpà̰í]** (elder, older), <**kpánwun> [kpá̰wú]/[kpá̰ù]** (bread) where the distinction is not between verbs and nouns but between two nouns. For such cases there are two segmental tests and a phonetic test that can give some hints in deciding whether a word should be written as <CV1V2> or as <CV1GV2>.

2.4.3 **The Distributional Criterion Test**

The first segmental test has to do with the environments in which the semi-vowels [y] and [w] occur. The distribution of these segments can be accounted for by the following syllable structure condition:

The distribution of [j]

If V1 is a front vowel, then the semi-vowel is [j].

The distribution of [w]

If V1 is a back vowel, then the semi-vowel is [w].

The distribution criterion is fairly reliable. However, it falls short sometimes when the low central vowel /a/ precedes or follows the semi-vowel. In cases such as these: **<Aya> [ájá]** (proper name), **<awáa> [áwáà]** (government), **<Tɛwa> [tɛwa]** (proper name), <**jewáa> [dʒéwáa]** (tooth decay), **<tuwáa>** [**túwáà]** (end of village), <**sʊwa> [sʊ̀wá]** (flea), **<buwáa> [bùwáà]** (water pot) there is no way to predict which semi-vowel will occur.

2.4.4 **Highness Criterion Test**

There is another type of vowel harmony called the Highness Condition that can help determine whether a word should be written as <CV1V2> or as <CV1GV2>. It is stipulated as follows:

The Height Harmony

In a CV1V2 sequence, if V1 and V2 agree in fronting or in rounding, V1 must be a high vowel and V2 a non-high vowel.

In general, if V1 is higher than V2, we have a **rapid descending glide**, and the word should be written as CV1V2, as shown in (10) below:

(10)

N0	**Orthographic Form**	**Phonetic Form**	**Gloss**
1.	<pɪa>	[pɪ̀á]	sword
2.	<sɪɛ>	[sɪ̀ɛ́]	father
3.	<sie>	[sìé]	to command, to bury
4.	<eluo>	[èlùó]	yam
5.	<dua>	[dùá]	to sow
6.	<fʊ́ɔ>	[fʊ́ɔ̀]	type of monkey, advice
7.	<fɪa>	[fɪ̀á]	to hide
8.	<mian>	[mɪ̰̀ã̰́]	to be in a tight spot
9.	<amɪan>	[àmɪ̰̀ã̰́]	brain

Table 11: Height Harmony

However, if V1 is lower than V2, or if they are of the same height, we tend to have a **slow ascending glide**. I propose that such cases be written as <CV1GV2>, as in (11).

(11)

N0	**Orthographic Form**	**Phonetic Form**	**Gloss**
1.	<tayɪ>	[tájɪ́]	tire
2.	<baye>	[baje]	sorcery
3.	<awuó>	[àwùó]	thievery
4.	<áwuo>	[áwùó]	rice
5.	<awʊlɪɛ>	[àwʊ́lɪ̀ɛ́]	childbirth
6.	<ewoo>	[èwòó]	snake
7.	<ɛwɔsɛ>	[ɛ̀wɔ̀sɛ́]	kola nut

Table 12: Height Harmony-Part 1

Even though the Height Harmony makes correct claims, there are some instances such as

the examples in (12) below when it fails us completely:

(12)

N0	**Orthographic Form**	**Phonetic Form**	**Gloss**
1.	<mmiewáa>	[m̀mìéwáà]	gonorrhea
2.	<ɛwaá>	[ɛ̀wàá]	savannah, desert place
3.	<Tɛwa>	[tɛ̀wà]	Proper name
4.	<jewáa>	[dʒéwáa]	toothache

Table 13: Height Harmony-Part 2

In all these examples the vowel preceding the semi-vowel is higher than the vowel that immediately follows it (semi-vowel) but the glide does occur. It is clearly audible even in fast speech. In cases such as these when the segmental explanation does not work, one must resort to the phonetic test proposed by Welmers.

2.4.5 **Speech Rate Test**

Welmers (1973:61) claims that "where such contrasts appear, they are usually fairly obvious phonetically." The pronunciation of CV1GV2 words shows that there are two syllables: CV1 σ GV2 ("σ" where indicates a syllable boundary) because there is a slight pause between CV1 and GV2, whereas there is no such pause between V1 and V2 in CV1V2 words.

Thus the pronunciation of a word in normal speech style gives us a clue as to whether it should be written in the orthography as <CV1V2> or as <CV1GV2>. For this reason, the **Speech Rate Principle** alluded to in 1.6.4.13 is needed to regulate the orthographic representation of CV1GV2 and CV1V2 words. Pike (1946:254) argues that "when two or more forms are distinguishable only with respect to how fast or slow a given form is pronounced, the orthography should be based on a somewhat slow but normal speech."

The difficulty with this principle is determining what a **slow but normal speech** is. Of course no one can state with accuracy what a slow but normal speech is. However, for our purposes, let us define it as a pronunciation between a carefully self-monitored speech and a fast and careless speech style. Nespor and Vogel (1986:23) define normal rate speech as a speech that is "neither artificially slow nor artificially fast." Orthographers have long recognized that an orthography that is based on extremely slow speech is as bad as the one based on fast speech. Pike (1946:254) argues that a slow speech can lead orthographers into errors. Welmers (1973:84) reports that he was fooled in one of his analyses because the data was recorded in an overly slow and careful speech. Pike advises also against extremely fast speech. He observes that "pronunciations which are given only in extremely rapid speech are best avoided because people do not tend to read with the same rapidity, at least not in the early stages," (1946:254).

When the Categorial Test, the Distributional Test, the Height Test, and the Speech

Rate Test are taken together, CV1GV2 words can easily be distinguished from CV1V2 words. The tests discussed above should therefore be considered as spelling rules for the standardized orthography of Anyi. The few exceptions that may exist in the language should be explicitly learned.

2.5 **Phonotactic Constraints on C1V1C2V2 Words**

C1V1C2V2 differs from CV1GV2 in the sense that in the former the intervocalic segment is a true consonant whereas in the latter it is a semi-vowel. There are two important characteristics of C1V1C2V2 structures that are worth analyzing: **homophony** and **heterophony**. As said earlier, the orthographic interest of C1V1C2V2 is not apparent in this chapter. However, this analysis is important to understand the metathesis process (to be discussed shortly).

2.5.1 **Homophonic Harmony in C1V1C2V2 Structures**

There is a large number of C1V1C2V2 lexical items in Anyi in which the vowels surrounding the intervocalic C2 are homophonous, as seen in (13).

(13)

N0	**Orthographic Form**	**Phonetic Form**	**Gloss**
1.	<bɛtɛ>	[bɛ̀tɛ̀]	easy
2.	<bete>	[bété]	rat
3.	<tete>	[tètétè]	curse
4.	<fiti>	[fìtí]	to pierce
5.	<Kisi>	[kìsí]	proper male name
6.	<bákáa>	[bákáà]	corn pudding
7.	<bakaá>	[bàkàá]	tree
8.	<kɔtɔ>	[kɔ̀tɔ́]	to hurt
9.	<butu>	[bùtú]	to overturn, to spill
10.	<kpʊkpʊ>	[kpʊ̀kpʊ́]	to scratch
11.	<tokpóo>	[tòkpóò]	hoe

Table 14: Homophonic Harmony

The most important characteristic of these structures is that **in a given word all the vowels are either front vowels, or back vowels, or low vowels.** Fromkin and Schachter (1968:46) formulate the following morpheme structure condition for Akan which also works for Anyi. They argue that "in verbal stems if the last vowel of a word is /u/, then the first vowel must also be /u/." In Anyi this condition can be extended to include all back vowels. This morpheme structure constraint can be formulated as follows:

Morpheme Structure Constraint on Verb Roots

In verbal stems, if V2 is a back vowel, V1 must also be a back vowel.

It is important to emphasize that this is a morpheme structure constraint which applies to verb stems only. In nominals there are numerous exceptions: <**kpáako> [kpáàkó]** (glass,

cup), <makʊ> [**màkʊ́]** (pepper), <**Fatʊ> [fàtʊ́]** (proper name), <**Jedu> [ʤèdúù]** (proper name).

2.5.2 **Heterophony in C1V1C2V2 Structures**

There are three types of mixed roots. In the first kind /a/ is either the first or second vowel in the root. In the second case both vowels belong to the same group (either front or back) but the first and second vowels differ in highness. The third instance, an extremely rare case, is one in which a front vowel and a back vowel co-occur in the same root. These three types are discussed below.

2.5.3 **Mixed Roots with /a/**

It was discussed earlier that /a/ is unspecified with regard to [ATR] because it can occur with [+ATR] and [-ATR] vowels. This ambivalence also allows /a/ to occur with both front and back vowels in the same root:

(14a)

N0	**Orthographic Form**	**Phonetic Form**	**Gloss**
1.	<kaci>	[kàtʃĩ]	to change
2.	<dafɪ>	[dàfĩ]	to sleep
3.	<sikaá>	[sìkàá]	money
4.	<nɪnka>	[nḭ̀kà]	place
5.	<bokáa>	[bókáà]	powder
6.	<bʊka>	[bʊ̀ká]	to help
7.	<makʊ>	[màkʊ́]	pepper
8.	<kacɛ>	[kàtʃɛ́]	savannah
9.	<sekáa>	[sèkáà]	comb
10.	<basi>	[bàsí]	large water container
11.	<tika>	[tìká]	short

Table 15: Mixed Roots with /a/-Part 1

2.5.4 **Second Type of Mixed Root**

In C1V1C2V2, V1 tends to be always a high vowel and V2 a non-high vowel as illustrated by the example below:

(14b)

N0	**Orthographic Form**	**Phonetic Form**	**Gloss**
1.	<bice>	[bìtʃé]	to open
2.	<sike>	[sìké]	to lodge a visitor
3.	<fite>	[fìté]	to go out
4.	<mɪnndɛ>	[mḭndɛ́]	to wait for
5.	<kulo>	[kùló]	to love, to like
6.	<kunndo>	[kṵ̰ndó]	to roll

7.	<ayihulo>	[àjíhùló]	skin disease

Table 16: Mixed Roots with /a/-Part 2

There are very few words known to me in which V1 and V2 are both front vowels and V1 is lower than V2. In most cases such words are of foreign origin as in **<Kɛsɪ> [kɛ̀sɪ́]** (proper name, Ghanaian name). This observation, of course, does not include words in which /a/ occurs in V1 position.

As for back vowels, there are a dozen or so words in which V1 is actually lower than V2.

(15)

N0	**Orthographic Form**	**Phonetic Form**	**Gloss**
1.	<botumo>	[bòtùmò]	type of ape
2.	<botuakele>	[bòtùákèlé]	type of fish
3.	<dowu>	[dòwú]	owl
4.	<tomua>	[tòmùá]	calabash container
5.	<boluo>	[bòlùó]	wild yam
6.	<bondua>	[bòndùá]	garbage dump

Table 17: Mixed Roots with /a/-Part 3

2.5.5 **Third Case of Mixed Root**

The striking characteristic about the third type of mixed root is that front vowels and back vowels which do not usually co-occur in the same root, do in fact co-occur in a few words. It should be stressed that such a mixture is very rare. Out of more than 3000 entries in my Anyi-French lexicon (in progress) only the following examples were found:

(16)

N0	**Orthographic Form**	**Phonetic Form**	**Gloss**
1.	<ciko>	[ʧíkó]	to burp
2.	<sikosiko>	[sìkósìkó]	hiccough
3.	<fʊ̀cɛ>	[fʊ̀ʧɛ́]	to be sick
4.	<fude>	[fùdé]	to embarrass

Table 18: Mixed Roots with /a/-Part 4

2.6 **Phonotactic Constraint on CL(V1)V2 Words**

CL(V1)V2[23] structures are, in many respects, unlike any other structures discussed so far. They do share the various harmonizing processes with CV1V2, CV1GV2, and C1V1C2V2 structures; but at the same time they differ significantly from them in the sense that they utilize additional phonological processes not found in the structures discussed

[23] It is premature to explain why I claim that (V1) is optional. The motivation for this claim is found in section 2.6.5.

previously. These phonological processes introduce some complications in how CL(V1)V2 structures should be written in the orthography. In the following paragraphs I will analyze the processes involved and discuss the various orthographic options.

Greenberg (1978:245) argues that liquids have the tendency to follow obstruents in word initial consonant clusters. This observation is also valid for Anyi, as seen in the examples below:

(17)

N0	**Orthographic Form**	**Phonetic Form**	**Gloss**
1.	<kpolo>	[kplòó]	skin
2.	<mʊnlʊn>	[mlʊ̰]	to dive
3.	<kolo>	[kló]	to melt
4.	<ngolo>	[ŋ̀glòó]	mushroom
5.	<mgbɛlɛ>	[m̀gblɛ̀ɛ́]	tricks
6.	<fɛlɛ>	[flɛ́]	to call
7.	<bala>	[blá]	to tie
8.	<hulu>	[hlú]	to jump
9.	<nvɔlɔ>	[ǹnvɔ̀lɔ́]	termites

Table 19: CL(V1)V2 Structures

(18)

N0	**Orthographic Form**	**Phonetic Form**	**Gloss**
1.	<toro>	[tròó]	soup
2.	<dɔrɔ>	[drɔ̀ɔ́]	wimp
3.	<sanran>	[srą́]	person
4.	<nnoró>	[ǹnròó]	festival dance
5.	<nnóro>	[ǹnóró]	announcement
6.	<ɛjɔrɔ>	[ɛ̀dʒɔ̀rɔ́]	matter, business
7.	<nnyɔrɔkɔ>	[ŋ̀jrɔ̀ɔ́kɔ́>	necklace
8.	<acıcırı>	[àtʃ̀ìtʃ̀rìì]	turtle

Table 19: CL(V1)V2 Structures

In addition to Greenberg's finding regarding the universal tendency of CL(V1)V2 clusters, one can observe that in Anyi liquids can follow nasal sonorants as in the words [**mlı̰́], [ǹnròó], [ŋ̀ŋrɔ̀ɔ́kɔ́**].

2.6.1 **General Information on Metathesis**

Consonant clustering is brought about by two phonological processes: **metathesis** and **deletion**. Ultan (1978:376) distinguishes six formal types of metathesis. The one that occurs in Mɔrɔfʊ and Indenie is of the following structure:

$$C + \mathbf{V1} + L + V2 \rightarrow C + L + \mathbf{(V1)} + V2$$

The evidence I have to claim that the initial structure is CV1LV2 come from dialectal comparison. Sanvi has CV1LV2 where Mɔrɔfʊ and Indenie have CL(V1)V2. The change from CV1LV2 to CL(V1)V2 is not as systematic in Indenie as it is in Mɔrɔfʊ. In Indenie both forms are frequently found in free-variation. In Bɔna sometimes we have CV1ɾV2 (where [ɾ] stands for a flap) and some other times CL(V1)V2. However, the CV1ɾV2 form occurs more frequently than the CL(V1)V2 form. In all the cases involving (17) through (19), one notices that V1 moves and positions itself immediately after the liquid. The claim that V1 positions itself immediately after the liquid and not after V2 comes from the tonal structure of CL(V1)V2. In CV1LV2 we notice that V1 has a low tone. When metathesis occurs the vowel with the low tone is on the V1 preceding the one with the high tone. Consequently, it can be stated that it is the vowel with the low tone that moves.

(19)

N0	**Orthographic Form**	**Phonetic Form**	**Gloss**
1.	<toro>	[tròó]	soup
2.	<dɔrɔ>	[drɔ̀ɔ́]	wimp
3.	<sanran>	[srą̃]	person
4.	<nnoró>	[ǹnròó]	festival dance
5.	<nnóro>	[ǹnróó]	announcement
6.	<ɛjɔrɔ>	[ɛ̀ʤrɔ̀ɔ́]	matter, business
7.	<nnyɔrɔkɔ>	[ɲ̀jrɔ̀ɔ́kɔ́>	necklace
8.	<acıcırı>	[àtʃîtʃrìĩ]	turtle

Table 20: Tonal Behavior on CL(V1)V2 Structures

Ultan (1978:383-4) claims that segments metathesize to avoid imminent deletion. He also argues that "metathesis serves as a vaccine or preventive medicine toward complete deletion." Metathesis involves three processes. The first involves actual metathesis (in Mɔrɔfʊ.) The second deals with the reduction in the sonority of the vowel preceding the liquid. The examples in (20b) illustrate cases of actual deletion.

(20a)

N0	**Sanvi**	**Bɔna**	**Mɔrɔfʊ**	**Baule**[24]	**Glosses**
1.	[bàlá]	[bàɾá]	[blàá]	[blá]	woman
2.	[kpòló]	[kpòɾó]	[kplòó]	[kpló]	skin
3.	[búlù]	[búrù]	[blúù]	[blú]	ten
4.	[bìlé]	[bìɾé]	[bìlé]	[blé]	dark
5.	[bùlá]	[bùrá]	[bùlá]	[blá]	well
6.	[kùló]	[kùró]	[kùló]	[kló]	village
7.	[kúlò]	[kúrò]	[kúlò]		heap

[24] The Baule examples are from Carteron 1972.

Table 21: Dialect Variation in CL(V1)V2 Structures

(20b)

N0	**Orthographic Form**	**Phonetic Form**	**Gloss**
1.	<fɛlɛ>	[flɛ́]	to call
2.	<kele>	[klé]	to show
3.	<bala>	[blá]	to tie
4.	<kolo>	[kló]	to melt
5.	<hulu>	[hlú]	to jump
6.	<kpınlın>	[kplı̰]	to groan

Table 22: CLV2 with Deletion

2.6.2 **Homophonic Metathesis**

It was argued in the discussion of C1V1C2V2 section (2.5.1) that in many Anyi words V1 and V2 are homophonous. This plays a very important role in metathesis. Homophonic metathesis requires that the V1 and V2 surrounding the intervocalic liquid be identical. When this requirement is met one simply proceeds with a simple operation which consists in moving V1 and placing it immediately before V2. This is seen in words such as:

(21)

N0	**Orthographic Form**	**Phonetic Form**	**Gloss**
1.	<toro>	[tròó]	soup
2.	<dɔrɔ>	[drɔ̀ɔ́]	wimp
3.	<sanran>	[srą̰]	person
4.	<nnoró>	[ǹnròó]	festival dance
5.	<nnóro>	[ǹnróó]	announcement
6.	<ɛjɔrɔ>	[ɛ̀ʤrɔ̀ɔ́]	matter, business
7.	<nnyɔrɔkɔ>	[ɲ̀jrɔ̀ɔ́kɔ́>	necklace
8.	<acıcırı>	[àtʃ̀ìtʃrìì]	turtle

Table 23: Homophonic Metathesis

Homophonic metathesis is reflected also in French loan words which meet this structural requirement. A word such **television** is pronounced **[treevision].**

2.6.3 **Heterophonic Metathesis**

The same process found in homophonic metathesis occurs in heterophonic metathesis as well. However, here, there are two additional requirements that must be met. First, the initial consonant must have the feature [+coronal], or must be articulated in the alveopalatal region, that is, it must be one of the following consonants /t, d, s, tʃ, ʤ, j, n, ɲ./ Secondly, V1 must be a high front vowel, and V2 either a mid front vowel or the low central vowel /a/. When these conditions are satisfied a rule must be posited which converts /l/ into /r/ (a trill). Let us examine the examples in (22a) and (22b) below:

(22a)

N0	**Sanvi**	**Mɔrɔfʊ**	**Glosses**
1.	[àtìlè]	[àtrìè]	head
2.	[tìlá]	[trìá]	to catch
3.	[èsìlè]	[èsrìè]	ant hill
4.	[ǹdìlè]	[ǹdrìè]	grass

Table 24: Dialect Variation between Sanvi and Mɔrɔfʊ-Part 1

However, when these conditions are not met, /l/ remains unchanged as seen in (22b).

(22b)

N0	**Sanvi**	**Mɔrɔfʊ**	**Glosses**
1.	[kpòló]	[kplòó]	skin
2.	[ǹgòló]	[ǹglòó]	mushroom
3.	[m̀gbèlɛ́]	[m̀gblɛ̀ɛ́]	tricks
4.	[bàlá]	[blàá]	woman
5.	[búlù]	[blúù]	ten
6.	[ǹvɔ̀lɔ́]	[ǹvɔ̀lɔ́]	termites

Table 25: Dialect Variation between Sanvi and Mɔrɔfʊ-Part 2

The phenomena observed in (21a) can be formulated phonologically as:

Rule of Trill
/l/ → [r] / [+coronal]

The process shows that /l/ becomes [r] when the consonant that precedes it (/l/) has the phonetic feature [+coronal]. This process divides Anyi consonants into two major groups: the [+coronal] and the [-coronal]. Heterophonic metathesis occurs **if and only if** the **C** in the CL(V1)V2 structure is [+coronal].

2.6.4 **Reduction of Sonority**

Reduction of sonority is a phenomenon which occurs when the first vowel in a CV1LV2 structure loses most of its sonority to the point that it is hardly audible. If the initial consonant has the feature [-coronal] and V1 and V2 are heterophonic, the CV1LV2 structure remains unchanged but V1 is pronounced very faintly. This can be observed in an interdialectal comparison between Sanvi and Mɔrɔfʊ (23).

(23)

N0	**Sanvi**[25]	**Mɔrɔfʊ**	**Glosses**
1.	[b**i**lé]	[bìlé]	dark
2.	[k**u**ló]	[kùló]	village
3.	[j**i**rá]	[jìrá]	to bless
4.	[s**u**ró]	[sùró]	to fear
5.	[às**u**ró]	[àsùró]	whisper
6.	[ɛ̀s**ʊ**rɔ́]	[ɛ̀sʊ̀rɔ́]	worm

Table 25: Sonority Variation between Sanvi and Mɔrɔfʊ

When reduction occurs V1 is hardly audible. There is a considerable reduction in the sonority level of V1 in the Mɔrɔfʊ dialect. The reduction of sonority appears sometimes like a deletion when the initial consonant has the feature [+strident], that is, /s, tʃ, ʤ/. Because of the increased turbulence involved in the production of these consonants, V1 seems to have undergone a complete deletion. This is evidenced in the production of words such as **<sıra> [srá], <jıra> [ʤrá], <acıcırı> [àtʃitʃrì].**

2.6.5 **Deletion vs. Metathesis: Categorial barrier to metathesis**

Metathesis is sensitive to morpheme structure conditions. In nominal stems a CV1LV2 structure that meets the conditions for metathesis metathesizes as CLV1V2. However, in verbal stems an original CV1LV2 structure in Mɔrɔfʊ becomes CLV2 as seen in (24):

(24)

N0	**Orthographic Form**	**Deliberate Tempo**	**Normal Tempo**	**Gloss**
1.	<fɛlɛ>	[fɛ̀lɛ́]	[flɛ́]	to call
2.	<minlin>	[mi̯lí̯]	[mlí̯]	to get lost
3.	<nyinrin>	[ɲi̯rí̯]	[ɲrí̯]	to become dull
4.	<funlun>	[fʊ̀lʊ́]	[flʊ́]	to be fed up
5.	<tiri>	[tìrí]	[trí]	to become dull
6.	<bili>	[bìlí]	[blí]	to dance
7.	<sɛrɛ>	[sɛ̀rɛ́]	[srɛ́]	to beg
8.	<kala>	[kàlá]	[klá]	to wear
9.	<hulu>	[hùlú]	[hlú]	to jump
10.	<kele>	[kèlé]	[klé]	to show

Table 26: Pronunciation Differences and Tempo Variation

These words meet the requirements for metathesis proper to take place. However, instead of

[25] The vowels that are highlighted red are more sonorous.

metathesis, we have a process which deletes V1.

C **V1** L V2 → C L V2

The reason I have for claiming that it is V1 that is deleted and not V2 is based on the tonal structure of C1V1C2V2 verbs. V1 always has a low tone, and V2 a high tone. When metathesis occurs in CV1LV2 structures, V1 and its tone move forward. However, in cases involving verbs as in (24), there is no longer a low tone but only a high tone. Since the vowel following the liquid has a level tone and not a contour tone, it means that the vowel with the low tone has been deleted. Further supporting evidence for this claim comes from the morpheme structure constraint on CV1V1 discussed in section 2.2.3. It was argued then that this constraint does not allow monosyllabic verb roots to have long vowels (a sequence of two like vowels.) The same restriction imposed on CV verb stems applies here[26] too. In verbal stems instead of metathesis proper, we have a deletion. Metathesis is, therefore, sensitive to grammatical category.

One can interpret the rule of deletion in verbal stems as a strategy used by the language to increase its lexicon and avoid perfect homophony. The meaning of the following words changes depending on whether metathesis proper or deletion takes place:

(25)

N0	**Orthographic Form**	**Nouns**	**Gloss**	**Verbs**	**Gloss**
1.	<bɔlɔ>	[blɔ̀ɔ́]	luggage	[bɔ̀lɔ́]	to claim
2.	<bala>	[blàá]	woman	[bàlá]	to tie
3.	<kele>	[klèé]	hat	[kèlé]	to teach
4.	<kolo>	[klòó]	argument	[kòló]	to melt

Table 27: Pronunciation Differences and Tempo Variation

Anyi uses both processes for semantic differentiation purposes.

2.6.6 **Orthographic Issues Involving CLV1V2 Structures**

Metathesis poses an orthographic dilemma because one is not sure which form to represent in the orthography: the metathesized form or the original form? Eschlimann and Jaboulay (1980:4) echo this dilemma in the foreword to their French-Anyi dictionary:[27]

---

[26] It is also possible to claim that metathesis does occur in verbal stems and that, because of the morpheme structure condition which prevents a sequence of like vowels to occur together in verbal stems, V1 and V2 merge into only one vowel. The deletion argument is, however, more natural because deletion is seen in many languages as the terminal process of metathesis.

[27] Here is an English translation: "As to the orthographic representation of CLV (as in the case of <kpiri> or <kpri>), we hesitated a lot between writing them systematically according to their canonical structure CVLC <kpiri> or according to how they are pronounced in everyday speech, as CLV <kpri>. One should not be surprised to see that in this work, i.e., dictionary, both spellings are found for the same word, either as CVLV <kpiri> or CLV <kpri>.

> Dans le cas des CLV (example <*kpiri*> ou <*kpri*>) la graphie a **beaucoup hésité** (emphasis mine) entre la transcription systématique de la forme canonique CVLV (<*kp+i+r+i*>) et celle de la réalisation courante CVL (<*kp+r+i*>). On pourra donc trouver dans cet ouvrage le même lexème écrit soit en CVLV <*kpiri*> soit en CLV <*kpri*>.

Instead of having **two different representations** for the same word, I propose that only CV1LV2 be maintained in the orthography. I will justify my choice by discussing issues related to dialectal differences, reading, and eye orthography.

2.6.7 **Dialectal differences in metathesis rules**

The dialectal difference between the forms below can be accounted for by the fact that metathesis does not apply systematically in all Anyi dialects. The areas that are closest to the Bauleland, the epicenter of the phenomenon, metathesize with consistency. However, the spread has lost its impetus in other areas such as Indenié and Bɔna. Sanviland is barely touched by the innovation. These different stages of the innovation can be observed in (26).

(26)

N0	**Sanvi**	**Bɔna**	**Mɔrɔfʊ**	**Baule**	**Glosses**
1.	[bàlá]	[bàɾá]	[blàá]	[blá]	woman
2.	[kpòló]	[kpòɾó]	[kplòó]	[kpló]	skin
3.	[búlù]	[búɾù]	[blúù]	[blú]	ten
4.	[bìlé]	[bìɾé]	[bìlé]	[blé]	dark
5.	[bùlá]	[bùɾá]	[bùlá]	[blá]	well
6.	[kùló]	[kùɾó]	[kùló]	[kló]	village
7.	[kúlò]	[kúɾò]	[kúlò]		heap

Table 28: Dialect Variation in CL(V1)V2 Structures

The first problem one is confronted with is how to represent these dialectal differences in the orthography. Should surface CL(V1)V2 be written in the orthography as CV1LV2, thus ignoring the rule of metathesis? How would the Mɔrɔfʊ speakers (more than a third of all the Anyi) feel if their "speech" is not represented in the orthography?

I propose that all surface CL(V1)V2 be represented in the orthography as CV1LV2. This proposal is based on the claims made by Chomsky (1970:281) in his **Optimal Orthography** theory. He argues that an orthography that transcends dialectal variations is "a highly effective system for a wide range of dialects because it corresponds to a common underlying phonological representation, relatively invariant among dialects despite phonetic divergence." Evidence from careful speech, and data from other dialects show that Cl(V1)V2 words are underlyingly CV1LV2 in all the dialects. Therefore, they should be written in the standard orthography as CV1LV2 even though in Mɔrɔfʊ they are realized CL(V1)V2. The **Principle of Convergence of Skewed Systems** (1.6.4.11) supports this solution. This principle states that "when given a number of alternative solutions to an

orthography problem, the solution which finds a level of phonological structure at which skewed systems converge is to be preferred."

Clark (1981:212) made a similar proposal for the Kwara'ae orthography. He proposed that the underlying form, that is, the non-metathesized form be written in the orthography instead of the metathesized form. He argues that writing the unmetathesized form "fits the Kwara'ae speakers's feeling about the basic [underlying] form of a word, but will naturally make it a bit harder to read printed material in a way that sounds like normal speech." Hartman-So and Thomas (1981:30) also advocate the use of basic forms in Daai Chin, a Tibeto-Burman language spoken in Papua New Guinea, because "writing is a slow speech activity," namely, the orthographic form should reflect a deliberate speech tempo.

2.6.7.1 **The CV1LV2 Solution and Cultural Problems**

Representing CL(V1)V2 as CV1LV2 may sound unnatural to Mɔrɔfʊ speakers. They may even reject it because CV1LV2 is identified with child language. Therefore, to ask them to read CL(V1)V2 words as CV1LV2 may be interpreted as "turning them into kids again." This is a very important aspect to consider because in Anyi society old age is respected and even venerated. A satisfactory solution can be found to this problem. Mɔrɔfʊ speakers should be taught not to pronounce V1 in a CV1LV2 sequence. This appears to me like a good compromise in the event that Mɔrɔfʊ speakers may want to stick with their own pronunciation.

2.6.8 **Reading (aloud) and Metathesis**

Haas (1970:30-1) argues that "what we learn as written language has a spoken one to correspond to, the relations between the two being traced out by `writing down' what is spoken, and `reading aloud' what is written. Any study of literacy must be based on an understanding of these two principles." Unfortunately these two principles have still not been understood. Smalley (1968:9) notes that there is a major debate in the United States between educators who emphasize "phonemic reading" and those who emphasize "sight" (word recognition) reading. Dawson (1989:1) raises very important questions with regard to reading and orthography. She wonders if in designing an orthography for an unwritten language one should gear it more towards beginning readers (they read for sound) or towards fluent readers (they recognize words and sometimes phrases.) Unfortunately after raising these important points she does not offer any solution. For our purposes Anyi orthography will follow the learnability principle in 1.6.3. This principle states that the orthography should be simple enough so that it takes less than two years to be mastered[iii]. As discussed in 2.6.8.1 and 2.6.9 below if CL(V1)V2 structures are not spelled as CV1LV2 they will slow down considerably the rate of acquisition of reading and spelling.

2.6.8.1 **Pronounciability**

In order to understand the seriousness of the problem posed by CL(V1)V2 structures in the orthography, let us examine the following examples graded on the scale of pronounciability that I designed to test the problems encountered in reading words containing various types of consonant clusters. The scale goes from fairly easy to pronounce to very difficult to pronounce.

(27a)

N0	**Orthographic Form**	**Normal Tempo**	**Consonant Sequence**	**Gloss**
1.	<taralɛ>	[tràlɛ̀]	/tr/	shirt
2.	<bʊlʊ>	[blʊ́]	/bl/	to ripen
3.	<fuluwa>	[flùwà]	/fl/	book
4.	<pɔlɔ>	[plɔ̀ɔ́]	/pl/	corn dish
5.	<kolo>	[kló]	/kl/	to melt
6.	<Golo>	[Glòó]	/gl/	Guro people
7.	<dɔrɔ>	[drɔ̀ɔ́]	/dr/	wimp

Table 29: Fairly Easy to Pronounce

(27b)

N0	**Orthographic Form**	**Normal Tempo**	**Consonant Sequence**	**Gloss**
1.	<hulu>	[hlú]	/hl/	jump
2.	<wʊlʊ>	[wlʊ́]	/wl/	to enter
3.	<sara>	[sràá]	/sr/	moon
4.	<jɪra>	[ʤìrá]	/ʤr/	lion
5.	<mʊnlʊn>	[mʊ̃lʊ̃]	/ml/	to dive
6.	<acɪnrɪn>	[àtʃɪ̃rɪ̃í]	/tʃr/	turtle

Table 30: Difficult to Pronounce

(27c)

N0	**Orthographic Form**	**Normal Tempo**	**Consonant Sequence**	**Gloss**
1.	<kpili>	[kplí]	/kpl/	jump
2.	<gbɛlɛ>	[gblɛ̀ɛ́]	/gbl/	to enter
3.	<nvɔlɔ>	[nvlɔ̀ɔ́]	/nvl/	moon
4.	<nnyɔrɔkɔ>	[ɲɲyrɔ̀kɔ́]	/ɲɲr/	lion
5.	<mgbɛlɛ>	[mgblɛ̀ɛ́]	/mgbl/	to dive

Table 31: Very Difficult to Pronounce

The examples in (27a) present no trouble in reading aloud. When I tested them with French-Anyi bilinguals, they did not have any problem pronouncing them. This probably has to do with French. Since French has the same consonant sequences, the readers transferred their French reading skills into Anyi when they read the words in (27a).
However, the examples (27b) created some problems. The tendency among readers was to pronounce the first consonant as a completely separate entity. The words **<hlu>, <wlʊ>, <sraá>, <jrá>, <mlin>** were pronounced **[h + lú], [w + lú], [s + raá], [m + lìn]** respectively

as though the onsets **[h], [w], [s],** and **[m]** were individual syllables. The "**+**" sign indicates that the reader marks a pause between the first and the second consonants. The words in (27c) were completely impossible. The [kpl] and [gbl] were pronounced like the sequences in examples (27b). The words **<nvlɔ́>, <nnyrɔkɔ>**, and **<mgblɛ́>** were untractable. Some readers tried, others simply gave up trying, claiming that they are not "real" Anyi words.

A simplistic solution would suggest that since the words in (27a) are easily pronounceable, they should be written as such in the orthography. I disagree with this view because when a word is negated or pluralized, both of which are marked by the prefix {N}, we end up with three or four consonants in a row as in (28) below. The last column represents the metathesized forms when morphological information is affixed to the stem.

(28)

N0	**Canonical Form**	**Normal Tempo**	**Orthographic Sequence**	**Gloss**
1.	[m̀ mg̰lg̰ mą̰]	[m̀mlg̰ mą̰]	<mmʊnlʊn man>	I do not dive
2.	[ǹvɔ̀lɔ́ mɔ́]	[ǹvlɔ̀ɔ́ mɔ́]	<nnvlɔɔ́ mɔ>	termites
3.	[ɲ̀ɲɔ̀rɔ̀kɔ́ mɔ́]	[ɲ̀ɲyrɔ̀kɔ́ mɔ́]	<nnyɔrɔkɔ mɔ>	necklaces
4.	[ŋ̀ŋ̀lɔ́ mɔ́]	[ŋ̀glɔ̀ɔ́ mɔ́]	<nngolo mɔ>	mushrooms

Table 32: Negation plus Metathesis

To make matters worse, the palatal nasal /ɲ/ and the velar nasal /ŋ/ are represented in the orthography by /ny/ and /ng/ respectively. When these diagraphs (a sound represented by two letters) are preceded by the morpheme {N}, we have four consonants in sequence as in <**nnyrɔkɔ>** and in <**nngloó**>. Such words do create major reading (aloud) difficulties.

The proposal to write CL(V1)V2 words as <CV1LV2> is satisfactory because it does not overload the orthography when morphological information is added. If words such as **[ǹvlɔ̀ɔ́]** (termites), **[m̀mlaá]** (women) are written in the orthography as <**nvɔlɔ>,** and **<mmala**>, instead of a sequence of three consonants we have only two, namely, the plural prefix {N} and the initial consonant of the word. Reading (aloud) difficulties are then reduced considerably, and the aesthetic aspect of the orthography is greatly enhanced. Writing CV1LV2 forms in the orthography will not only help beginning readers acquire literacy faster, but it also satisfies the **Principle of Maximum Transfer** listed in 1.6.4.3. If French-Anyi bilinguals do not have difficulty transferring their literacy skills from French into Anyi, chances are that they will be very supportive of the literacy campaign. However, if the orthography is such that their French skills are not transferable, there is a very little hope that the orthography will be accepted.

2.6.9 Eye Orthography

In addition to creating pronunciation problems, the spelling of words such those discussed in (27c) and (28) lacks in aesthetics, at least for the Anyi speakers who are educated in French. Such a spelling will be considered unattractive and may even be boycotted because of the agglutination of consonants. The remark made by French-Anyi

bilingual informants that words which have three or four consonants in sequence are not real Anyi word stems from the fact that these words did not "look right" to them.

Vallins (1973:15) insists on the aesthetic aspect of orthographies because, he argues, "when, for example, we are doubtful of a spelling, we often write down two possible forms of the word concerned and we choose the one which `looks right'." The French-Anyi bilinguals objected to three and four consonant sequence words because they did not "look right" to them. If a solution is not found to correct the aesthetic aspect of the orthography, and if words such **[ǹvlɔ̀ɔ́]** and [**ŋ̀ŋglòó]** are maintained in the orthography as **<nvlɔɔ́>** and **<nnglòó>**, there is no doubt that it will cause an uproar among French educated Anyi speakers who would want their orthography to be as closely related to French as possible in order to facilitate the transfer of their literacy skills in French into Anyi.

2.7 **The CV1LV2 Solution and Semantic issues**

The proposal that surface structure CL(V1)V2 be written in the orthography as <CV1LV2> raises some semantic issues. It should be recalled that it was argued in section 2.6.5 that CLV1V2 and CLV2 are sometimes used in some Anyi dialects for lexical differentiation purposes. Will a unitary orthographic representation of words such as **[blɔ̀ɔ́]** (luggage) and **[blɔ́]** (to praise) written both as **<bɔlɔ>** not destroy the lexical differentiation function that the two phonological processes of deletion and metathesis are supposed to fulfill? The answer to this question is no. There is sufficient redundant grammatical information that gives clues towards the correct interpretation of **[blɔ̀ɔ́]** and **[blɔ́]** even when they are both written as **<bɔlɔ>.** Consider sentences (29a) and (29b) below:

(29a) [bɛ̀ bɔ̀lɔ́ kɛ́ ɔ̀ tí kpáà o]
They praise that he be good euphonic particle
People say he is nice.

(29b) [bɛ́ bɔ̀lɔ́ n̰í à tùrú]
Their luggage def. resultative undone
Their luggage has come undone

Even though there is a priori no way of knowing which meaning to assign to **<bɔlɔ>** in isolation, when this word occurs in contexts such as (29a) and (29b), some grammatical indicators lead to the correct interpretation. In (29a), the complementizer **[kɛ́]** signals that **<bɔlɔ>** is a verb, and must receive the appropriate interpretation. In (29b), the definite article **[n̰í]** indicates that **<bɔlɔ>** is a noun. Therefore, the orthographic representation of CL(V1)V2 as <CV1LV2> does not pose any semantic problem. If **[blɔ̀ɔ́]** and **[blɔ́]** are written as **<bɔlɔ>**, it means that they are treated simply as homographs, that is, words which are semantically and phonetically different but have the same spellings. Similar homographs occur in English as in **pérfect vs. perféct, cónvict vs. convíct, pérvert vs. pervért, súbject vs. subjéct**. These words are spelled exactly the same but they have different meanings and different phonetic realizations. In English, available syntactic

information leads to the correct semantic interpretation. The same will be true for Anyi if CL(V1)V2 and CLV2 words are spelled <CV1LV2>. This is possible because, according to Coulmas (1990:47) "the reader relies on redundancies of the language as an aid for deciphering (reading) written expressions which represent speech only incompletely or vaguely."

2.7.1 **CV1LV2 Solution and Allophonic Variations**

It was shown in 2.6.3 that there is an allophonic rule that changes the lateral into a trill when the preceding consonant is [+coronal]. It was also shown that metathesis has to apply first before the rule of trill can apply. The issue to be addressed is the following: should the allophone of /l/, that is [r], be represented in the orthography if CV1LV2 is maintained as the standard form? Should a word such as **[trìá]** (to catch) be written **<tila>** or **<tria>**?

Most orthographers have claimed that allophonic variations need not be represented in the orthography. If one were to follow the claims made by Pike (1946), Chomsky (1970:282-3), Carol Chomsky (1970) to mention only a few, one would spell **[trìá]** as **<tila>** because they argue that phonetically similar sounds (allophones) must not be represented by separate graphemes. The argument of "phonetic similarity" is questionable. I agree with Jones (1967:10) that it is a matter of degree. It is perfectly understandable to ignore the phonetic distinction between "dark" [l] and "clear [ɬ] in English orthography because it is not phonetically significant in the perception of ordinary speakers of English. But a distinction between a lateral and a trill is very clear, even to untrained ears. Therefore, in spite of the fact that CV1LV2 represents the underlying form, I propose that **[trìá]** be spelled **<tira>**[28] and not **<tila>**. Consequently, there will be two kinds of CV1LV2 words in the orthography, those with a medial /l/ and those with a medial /r/. These spellings should be maintained in the orthography because they approximate the way CV1lV2 and CV1rV2 words are actually pronounced. It should be recalled from the discussion in 1.6.2 that Anyi orthography is based on a broad phonetic transcription. Consequently, some allophones and allomorphs are represented in the spelling.

2.8 **Dialectal Differences in Palatalization**

In section 1.2.3.6 it was posited that a rule of palatalization operates in Anyi to change /k/ and /g/ into [tʃ]/ and /ʤ/ respectively when they precede a front vowel. Palatalization is a common diachronic process which affects some dialects of the same language more strongly than others. The same is true for Anyi. Example (30) shows that the Bɔna dialect palatalizes where other dialects do not. In fact, palatalization is one of the major characteristics of Bɔna.

---

[28] I do not suggest that all allophones be represented in the orthography by separate graphemes. For instance the nasalized lateral in CVN1LCVN2 structures discussed in 3.2.2 is not represented in the orthography. Furthermore, the allomorph of **{-lɪ}**, that is, **{-nɪ̨}** discussed in 4.3.6 is not represented in the orthography. The segments [l] and [r] are different kinds of allophones.

(30a)

N0	**Sanvi**	**Bɔna**	**Mɔrɔfʊ**	**Glosses**
1.	[kèlé]	[tʃèɾé]	[kèlé]	hat
2.	[tékélé]	[tétʃéɾé]	[tékélé]	prostitute
3.	[àkèlɛ́nzìá]	[tʃèɾɛ́nzìá]	[àkèlɛ́nzìá]	liver
4.	[ɛ̀kɛ̀lɛ́]	[ɛ̀tʃɛ̀ɾɛ́]	[ɛ̀kɛ̀lɛ́]	frog
5.	[kɛ̀ndɛ́ɛ̀]	[tʃɛ̀ndɛ́ɛ̀]	[kɛ̀ndɛ́ɛ̀]	basket
6.	[kìkàlà]	[tʃìtʃàɾà]	[kìkàlà]	right away
7.	[kìsá]	[tʃìsá]	[kìsá]	to lean on
8.	[kìnn̰á]	[kìnn̰á]	[kìnn̰á]	drum
9.		[bɛ̀ndʒɛ̀lɛ̀]	[bɛ̀ŋŋɛ̀lɛ̀]	medicine pump

Table 33: Dialectal Variation in Palatalization-Part 1

(30b)

N0	**Sanvi**	**Bɔna**	**Mɔrɔfʊ**	**Glosses**
1.	[kèlé]	[tʃèlé]	[kèlé]	to show
2.	[kèté]	[tʃèté]	[kèté]	to harden
3.	[kn̰dɛ́]	[tʃn̰dɛ́]	[kn̰dɛ́]	to search
4.	[kètɛ́]	[tʃètɛ́]	[kètɛ́]	mat
5.	[kìká]	[tʃìká]	[kìká]	to bite many times
6.	[kìkq̰]	[tʃìkq̰]	[kìkq̰]	to expel

Table 34: Dialectal Variation in Palatalization-Part 2

2.8.1 D**ialectal Differences in Palatalization and Orthographic Representation**

The issue to be addressed here is how to harmonize the dialectal difference on palatalization in the orthography. Other dialects do not palatalize when the intervocalic consonant is /t/, /s/, /l/ or prenasalized consonant. However, as (30b) indicates, Bɔna palatalizes in these environments. Should the Bɔna forms be represented in the orthography or should the forms that occur in other Anyi dialects be used as the standard form? I propose that the forms found in other dialects be maintained as the standard forms. My proposal is based on the **Principle of Social Acceptability** stated in 1.6.4.7. This principle states that "when given a number of solutions to an orthography problem, the solution which is the most socially acceptable is to be preferred." It should be recalled that in section 1.4.3 it was found that speakers of Bɔna dialect suffer from linguistic insecurity due to Islamic influence.

2.8.2 **The Representation of Labialization in the Orthography**

Labialization does not pose any phonological problem worth analyzing. It is mentioned here to illustrate how political factors influence the choice of orthographic symbols. Labialization occurs both in Akan languages in Ghana and in Côte d'Ivoire. In the Akan languages in Ghana, labialization is represented in the official orthography by having the obstruent be followed with the semi-vowel /w/. In Côte d'Ivoire, on the other hand, the obstruent is followed by the back vowel /ʊ/. The following words are found in both languages but they have different spellings:

(31)

N0	**Ghana**	**Côte d'Ivoire**	**Glosses**
1.	<Kwa>	<Kʊa>	Proper name for males
2.	<Kwasi>	<Kʊasi>	Proper name for males
3.	<Kwam>	<Kʊam>	Proper name for males
4.	<Kwaku>	<Kʊaku>	Proper name for males

Table 35: Labialization

The *Institut de Linguistique Appliquée* of the University of Abidjan has opted for closeness with the French orthography. Therefore, the cluster [kw] is represented orthographically in Côte d'Ivoire as <kʊ>. This, supposedly, will facilitate the transfer of literacy skills from Ivorian languages into French and vice-versa.

2.9 The Representation of Tones in the Orthography

There is a major controversy with regard to the orthographic representation of tones. Three different views are commonly expressed in the literature. Some linguists argue that tones should not be written in the orthography. Crofts (1976) and non-linguist missionaries hold such a position. Other linguists, including Thayer (1981) recommend a selective marking of tone. Still others, Gudschinsky (1970), Wiesemann (1989), and Longacre (1964), argue that tones should be written fully in the orthography. Let us first analyze these three positions and then examine how tones should be written in Anyi orthography.

2.9.1 Toneless Orthography

It is a well known fact that many of the African languages that were reduced to writing in the late 19th century and in the first half of the 20th century did not represent tone in the orthography. Cahill's (2001:11) overview of tone marking in the languages of Ghana is telling in this regard. Of a total of 34 languages surveyed in 1993, he notes that 21 had no tone marking at all, 9 indicated grammatical tones while 4 languages indicated tone on lexical minimal pairs. It is quite likely that most, if not all the toneless orthographies in the list were designed before the 1960s, with the exception of Ewe.[29] Tone was not marked in most of the orthographies designed before the 1960s because, according to Welmers (1973:77) there was widespread tonophobia among missionary-linguists. He tells the following story to underscore the fear of tones: "A missionary candidate and his wife admitted that, when they learned that the language that their African field was a tone language, they seriously questioned whether the Lord had actually called them to missionary service." Welmers (p. 77) also lists neglect and the lack of understanding of the importance of tone as additional rationale for toneless orthographies:

> Writers of grammars have commonly neglected to describe and write distinctions in tone, on the theory that `tone can be learned only by observation and practice.' Leonard Bloomfield aptly commented on this (1942), "such a statement is nothing

[29] It may be the case that some of these orthographies were designed after the 1960s. If such is the case, then the lack of tone marking can be blamed on the orthography of Akan which, according to Cahill, exerts a strong influence on other Ghanaian languages.

> less than downright swindle, for of course observation and practice are the only way anything can be learned." Others dismiss the entire topic of tone with only a brief statement of this sort: "Tone is important, as will be seen from the following examples [two or three examples follow]; however, tone will not be marked in this grammar. One grammar does discuss tone fairly fully but relegates it to an appendix explicitly added for the benefit of those who are particularly interested and who consider themselves especially gifted. Many more grammars – more than half of over a hundred grammars of African languages examined – omit all mention of tone; some go so far as to assert that the language being treated is definitely not a tone language, though a little investigation readily proves that it is. A shocking number of people concerned with African languages still seem to think of tone as a species of esoteric, inscrutable, and utterly unfortunate accretion characteristic of underprivileged languages – a sort of cancerous malignancy afflicting an otherwise normal linguistic organism. Since there is thought to be no cure – or even reliable diagnosis – for this regrettable malady, the usual treatment is to ignore it, in hope that it will go away of itself. With a more optimistic determination, one group of language learners in Africa asked a trained linguist to come and try to "get rid of tone" in the local language.

Pike (1946:252) notes that those who hold the position of toneless orthography claim that "the natives do not need the extra symbols [tone marking], since they can guess what the words mean without them because the context makes it clear." Crofts (1970:127), one of the supporters of a toneless orthography, found in her study that readers have no trouble when tone is not written in the orthography. Moreover, she contends that "marking tone on every syllable would greatly increase the difficulty in teaching people to read, perhaps discourage older folks from ever learning. And it would increase publishing costs considerably," (p.129). However, other studies, including Gudschinsky (1970), Wieseman (1989), Longacre (1964), and Pike (1946), have shown that the context does not help very much in toneless orthographies. The following quotation found in Gudschinsky (1970:23) attests to the fact that the context does not help.

> An intelligent, educated native speaker of a tone language of West Africa was asked to read a page from a primer in his own language. He remained staring at the page without speaking for so long that the people around him became embarrassed. Finally they said, `Never mind. It's quite all right if you don't want to read it.' The African replied, `Oh, no, no. I'll be ready in a minute. It's just that I haven't figured out yet what it is supposed to say, so I don't know what tone to read it with.'

Pike (1946:252) rejects toneless orthography because he contends that "it encourages bad reading habits by forcing the beginner to read ahead, for contextual clues, and then turn back to guess the meaning of earlier words." Gudschinsky (1970:24) provides another example which emphasizes how a toneless orthography can create bad reading habits.

> A native speaker of a Bantu language of Rhodesia was asked: Does the fact that tone

> in your language is not written make any problems when people read it? He replied immediately, `No. Not at all. Everybody learns to read and has no problem. He was then asked, `But don't people sometimes have to read things twice? Once to know what it says and once to read it correctly?' With a look of shocked surprise, he said, `Oh! Is that why we read our own language back and forth? We always say that we read our own language back and forth and back and forth, but we read English straight along. We can read English in about half the time that it takes to read our own language, but never knew why.

The problems encountered by readers when tones are not marked in the orthography seem be very widespread. Lucht (1978:26) provides the following example from Siane, a language spoken in Papua New Guinea. What makes this example unique is that the reader is also the writer of the text.

> It is because of tone that I've had to go back and reread several times what I wrote the day before in order to know what I meant on this translation work I've been doing. We all have to do something about it. What shall we do?

Wa Thiong'o (1986:74) expresses the same kind of frustration with the orthography of Gikuyu as follows:

> Words and tenses were even more slippery because of the unsatisfactory Gikuyu orthography. Gikuyu language had been reduced to writing by non-native speakers such as European missionaries and they could not always identify the various lengths of vowels. The distinction between the short and long vowel is very important in Gikuyu prose and poetry. But the prevailing orthography often left the reader to guess whether to prolong or shorten the vowel sound. This would be very tiring for an extended piece of prose. This lack of the means of making distinction between long and short vowel sound assumed a previous knowledge of all the words on the part of the reader. I tried to solve the problem by using double vowels where I wanted to indicate the long vowel. But it took several pages before I could get used to it. And even then it was never finally satisfactory for what it called for was a new letter or a new marker for the long vowel.

He goes on to show that the difficulties associated long and short vowels pale in comparison with the even harder task of reading a toneless orthography:

> Gikuyu is also a tonal language but the prevailing orthography did not indicate tonal variations. So for all these reasons, I would write a paragraph in the evening sure of how it read, only later to find that it could read in a different way which completely altered the meaning. I could only solve the problem by severely controlling the context of words in a sentence, and that of sentences in a paragraph, and that of the paragraph within the entire situation of the occurrence of the action in time and space. Yes, words did slip and slide under my own eyes. They would not stay in

> place. They would not stay still. And this was often a matter of great frustration, p. 75

Wa Thiong'o's example should make orthographers think twice before deciding not to represent tone in the orthography of African languages. First, he is not an ordinary user of Gikuyu. He was schooled in Gikuyu for most of his primary. His training in Gikuyu continued well into his secondary years. Yet, in spite of receiving formal training in his native language for more than ten years, he still experienced difficulties writing it. Secondly, Wa Thiong'o holds a Ph.D. in literature and has attained fame as an award winning author before switching to writing exclusively in Gikuyu. This means that formal education in a European language does not translate automatically into being able to read and write one's own language without some amount of training in it. Thirdly, in spike of the fact that Gikuyu has been written continuously since 1924, there are still problems with its orthography as far as tone is concerned. Given all this, it is presumptuous for any linguist or missionary to conclude on the basis of limited exposure with an African language to decree that tone should not be indicated in the orthography.

These published accounts of reading difficulties associated with toneless orthographies parallel what Rev. Koussougon René, the main translator of the Ditammari New Testament, told me a few years ago. Even though he and his team spent about two decades translating the Scriptures, he told me that if anyone of them were to be asked to read a passage spontaneously, that is, without advance warning, it would be a "disaster." To avoid public humiliation during Sunday services, readers were assigned their portions well ahead of time, preferably the Friday before the service. This way, readers had a lot of time to practice. This and countless other testimonies underscore the reading difficulties created by toneless orthographies.

2.9.2 **Selective Tone Marking**

The linguists who encourage the use of selective tone marking recommend that tones be marked in the orthography only when it is necessary to disambiguate lexical or syntactic structures. This approach seems like an improvement over toneless orthography. However, Wiesemann (1989:16), Longacre (1964:132-3), and Smalley (1964:41) claim that selective tone marking should be avoided. Wiesemann gives the following reason for rejecting selective tone marking:

> It should be mentioned here that a system which marks tone where it is minimally different in individual words is not a good system. In such a system, for each individual word one must learn whether it carries a tone mark or not. To mark low tones only on words where there is a minimal tone pair makes the teaching of tone a matter of memory, rather than a matter of rules linked to pronunciation.

Longacre (1964:133) argues that selective tone marking "presupposes that one has already made a list of all the words in the language to see which ones are minimal pairs. Such a claim is pretentious since most newly written languages do not have good dictionaries."

Smalley (1964:41) also rejects selective tone marking because "it represents the speech system of the language in such an inconsistent way, it compounds the learning problem seriously and, in many cases, means that the reader never learns to use the tone symbols at all because he meets them in such an inconsistent fashion."

2.9.3 **Tone Orthography**

Since toneless orthography and selective tone marking have been rejected as viable solutions the only option that one is left with is an orthography that represents tones. A number of guidelines have been proposed to avoid overloading the orthography with tonal diacritics. Wiesemann (1989:16) argues that it is not good to write all tone nuances because "the more tones that are marked, the harder it becomes to teach the system." Therefore, for the discussion of the orthographic representation of Anyi tones, I will resort to Williamson's (1984:42) **Tone Economy Principle** (section 1.6.4.12). She proposes that the most common tone be left unmarked.

2.9.4 **Lexical Functions of Anyi Tones**

Anyi has two level tones **High** and **Low,** and two contour tones **High-low** and **Low-high**. The most important function of tones at the lexical level is to differentiate **nouns**. This means that words such as **<tɛ́ɛ> [tɛ́ɛ̀]** (sin, ugly) and **<tɛ̀ɛ́> [tɛ̀ɛ́]**(sacrifice) differ only because they have different tonal configurations. The first has a Low-high pattern, and the second a High-low pattern.

Monosyllabic nouns can have either High tones or Low tones. However, Low tones are more frequent than High tones. Low tones are said to be unmarked. In CV1V2 and polysyllabic words the Low-high contour tone is more frequent than the High-Low contour tone. High-high and Low-low patterns are extremely rare. They tend to occur only in ideophonic words.

Nearly two decades of intense research on the language has allowed me to uncover the following tone-induced minimal and near minimal pairs.

N0.	Word 1	vs. Word 2	English Glosses
1.	[àfḭá] <afián>	[àfḭà] <afían>	middle vs. love
2.	[ádʒáà] <ajáa>	[àdʒàá] <ajaá>	inheritance vs. wedding
3.	[àlìɛ́] <alıɛ́>	[álìɛ́] <alíɛ>	food vs. day
4.	[àn̰má̰] <anʊnmán>	[àn̰mà̰á̰] <anʊnmaán>	yesterday vs. bird
5.	[ásáà] <asaá>	[àsáà] <asáa>	fertile land vs. moreover
6.	[àwáà] <awáa>	[àwàá] <awaá>	calabash vs. government
7.	[àjàá] <ayaá>	[ájá] <Aya>	intestine vs. female name
8.	[bàkàá] <bakáa>	[bákáà] <bakaá>	tree vs. porridge
9.	[bɛ̀ɛ́] <bɛɛ́>	[bɛ́ɛ̀] <bɛ́ɛ>	mat vs. left
10.	[bóò] <bóo>	[bòó] <boó>	nose vs. countryside
11.	[bɔ̀lɔ́] <bɔlɔ́>	[bɔ́lɔ̀] <bɔ́lɔ>	fog vs. venom
12.	[dàá] <daá>	[dáá] <dáá>	in the past vs. all the time

13.	[dádáá] <dádáá>	[dàdáà] <dadáa>	always vs. fishing net
14.	[èlɔ̀] <ɛlɔ>	[élɔ́ɔ̀] <ɛlɔ́ɔ>	there vs. war
15.	[èsɛ̀ɛ́] <ɛsɛɛ́>	[ésɛ́ɛ̀] <ɛsɛ́ɛ>	funerals vs. cooking pot
16.	[ɛ́wáà] <ɛwáa>	[ɛ̀wàá] <ɛwaá>	fence vs. desert
17.	[ɛ̀jàá] <ɛyaá>	[ɛ́já̰à] <ɛyáa>	anger vs. sneeze
18.	[fíí] <-fíí>	[fìì] <fɪ>	nothing vs. tight
19.	[fɔ́w̰ʊ̰́] <fɔwúún>	[fɔ̀w̰ʊ̰̀] <fɔwʊʊn>	straight ahead vs. shade
20.	[kə̰á̰] <káán>	[kə̰à̰] <kaán>	tiny vs. locative pronoun
21.	[kàŋgá] <kangá>	[káŋgà] <kánga>	crab vs. slave
22.	[kpáà] <kpáa>	[kpàá] <kpaá>	good vs. contract
23.	[kpə̰wʊ̰́] <kpánwun>	[kpə̰̀wʊ̰] <kpanwún>	bread vs. prisoner's chain
24.	[kʊ̀lá] <kʊla>	[kʊ́là] <kúla>	to be able to vs. rival
25.	[kùló] <kuló>	[kúlò] <kúlo>	village vs. heap
26.	[kʊ̰mə̰á̰] <kúnmáan>	[kʊ̰mə̰̀á̰] <kunmaán>	anthill vs. hole
27.	[kʊ̰̀] <kʊn>	[kʊ̰́] <kún>	once vs. never again
28.	[mə̰á̰] <máan>	[mə̰̀á̰] <maán>	world vs. so that
29.	[mgbáà] <mgbáa>	[mgbàá] <mbgaá>	clay vs. bed
30.	[mḭ́] <mín>	[mḭ̀] <mɪn>	Lord vs. 1st person singular pr.
31.	[mḭ̀] <mɪn>	[mḭ́] <mɪn>	1st person singular pr. vs. respect
32.	[m̀mòó] <mmoó>	[m̀móò] <mmóo>	thank you vs. madam
33.	[m̀mʊ́à] <mmúa>	[m̀mʊ̀á] <mmʊá>	sheep vs. far away
34.	[ǹdáà] <ndáa>	[ǹdàá] <ndaá>	oath vs. twins
35.	[ǹdɛ́ɛ̀] <ndɛ́ɛ>	[ǹdɛ̀ɛ́] <ndɛɛ́>	clapping vs. matter
36.	[ndɔ́mə̰̀] <ndɔ́man>	[ndɔ̀mə̰́] <ndɔmán>	testicles vs. namesick
37.	[ŋgáà] <ngáa>	[ŋgàá] <ngaá>	remainder vs. ring
38.	[ŋgʊ́à] <ngúa>	[ŋgʊ̀á] <ngʊá>	play, joke vs. south
39.	[nḭ́] <nín>	[nḭ] <nin>	mother vs. locative pronoun
40.	[nḭḭ] <nɪ́n>	[nḭḭ́] <nɪín>	voice vs. while
41.	[ǹnórò] <nnóro>	[ǹnòró] <nnoró>	public announcement vs. love dance
42.	[ɲɲáà] <nnyáa>	[ɲɲàá] <nnyaá>	leaf vs. skin disease
43.	[ǹzə̰̀] <nzan>	[ǹzə̰́à] <nzáan>	three vs. drink
44.	[ǹzʊ̰́ə̰̀] <nzúan>	[nzʊ̰̀ə̰́] <nzʊán>	attitude vs. ashes
45.	[sáà] <sáa>	[sàá] <saá>	conflict vs. as, like this
46.	[sí] <sí>	[sí] <sɪ>	father vs. to know
47.	[sḭḭ]<sɪ́n>	[sḭ́] <sɪn>	fire vs. to pass by
48.	[súa] <súa>	[sùá] <suá>	dead banana trunk vs. house
49.	[tɛ́ɛ̀] <tɛ́ɛ>	[tɛ̀ɛ́] <tɛɛ́>	hammock vs. sacrifice
50.	[tí] <tí>	[tí] <ti>	because of that vs. head
51.	[tóò] <tóo>	[tòó] <toó>	scale vs. corn meal
52.	[wə̰́] <wán>	[wə̰̀] <wan>	who vs. speak
53.	[jáà] <Yáa>	[jàá] <Yaá>	Woman's name vs. Friday

54.	[jí] <yí>	[jí] <yɪ>	wife vs. my
55.	[jì] <yɪ>	[jí] <yɪ>	my vs. save

Table 36: Anyi Lexical Minimal Pairs

Since tone has a lexical differentiation function in Anyi, it is not a question of whether tone should be represented in the orthography. The question for me is how to go about representing it. The best approach so far has been to represent lexically contrastive tone systematically in the orthography wherever such words occur. The orthographic merits of such the list of words in Table 36 are undeniable. For instance, Bird (1998b:7-8) found that representing tone on lexical minimal pairs alone increased reading proficiency by (60%) with only 4% of tone density. Unfortunately, he does not provide any score for the writing test. In class exercises, however, he reports that those who marked tone minimally scored 56% compared with 42% of spelling accuracy for those who wrote surface tone and 52% for those who marked basic tone. The overall picture is that marking tone minimally yields a better score for reading and writing.

2.9.5 Phonotactic Constraints on the Tone of Verbs

Unlike nouns, verbs **do not have a lexical differentiation function**, that is, there are no minimal pairs opposing one verb to another verb. The tone of Anyi verbs is predictable based on their syllabic structure. Therefore, the following morpheme structure constraints apply:

Tone Constraint on Monosyllabic Verbs

All monosyllabic verbs have a High tone on the vowel.

Tone Constraint on CV1V2 and C1V1C2V2 verbs[30]

All CV1V2 verbs and C1V1C2V2 verbs have a Low tone on the first vowel and a High tone on the second vowel.

These constraints apply to the tone of verbs in their citation forms. Qauireau (1987:49, 276) provides evidence to show that when monosyllabic and disyllabic verbs are followed by an NP, their High tone either reduces to a Mid tone or to a Low tone, as is demonstrated by the diagram below:

[30] There is no CV1V2 verb stem in which V1 has a High tone and V2 a Low tone. There are no words of the structure C1V1C2V2 or CV1GV2 where V1 has a contour tone. Some CV1V2 verbs behave strangely. They can reduplicate either as disyllabic words or as monosyllabic words. Reduplication will be examined Chapter Four.

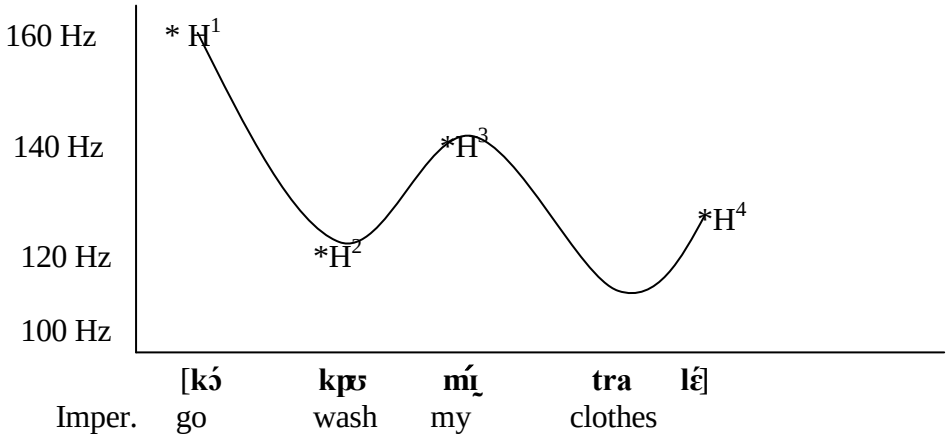


Diagram 2: Anyi Downdrift

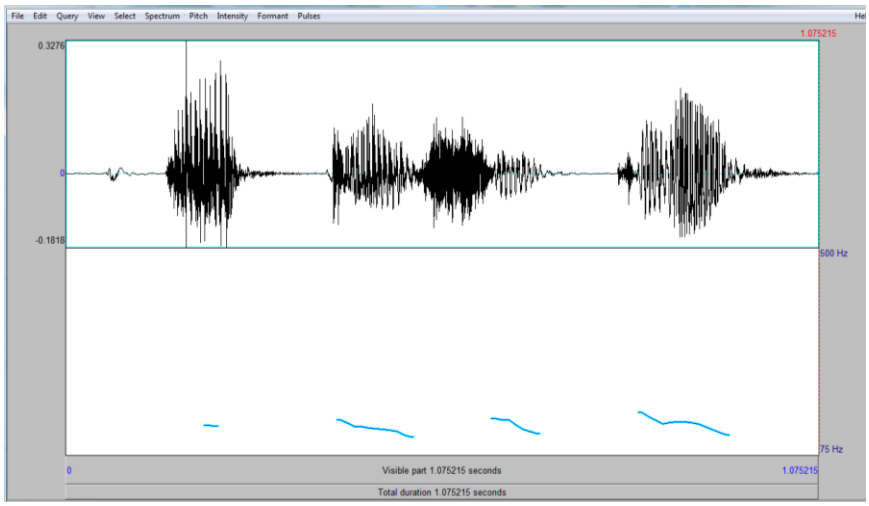
Phonemically, H^1 and H^2 have the same high tone because monosyllabic verbs have an underlying high tone. However, because the verb <kpʊ> [kpʊ́] is followed by the NP **[mí tràlɛ́]**, its tone is almost as low as the phonemic low tone of the syllable [**trà**]. This is referred to in the literature as downdrift.[31]

2.9.6 Some Grammatical Functions of Anyi Tones

Abena (1985:1) argues that in Akan "the functional load carried by tone is more frequent at the level of grammar than at the lexical level." In Anyi, grammatical information is carried by both the subject pronoun and the verb. Sentences (32a) through (32c) below illustrate cases where a change in the tonal configuration of the verb and its adjacent subject pronoun introduces new semantic changes.

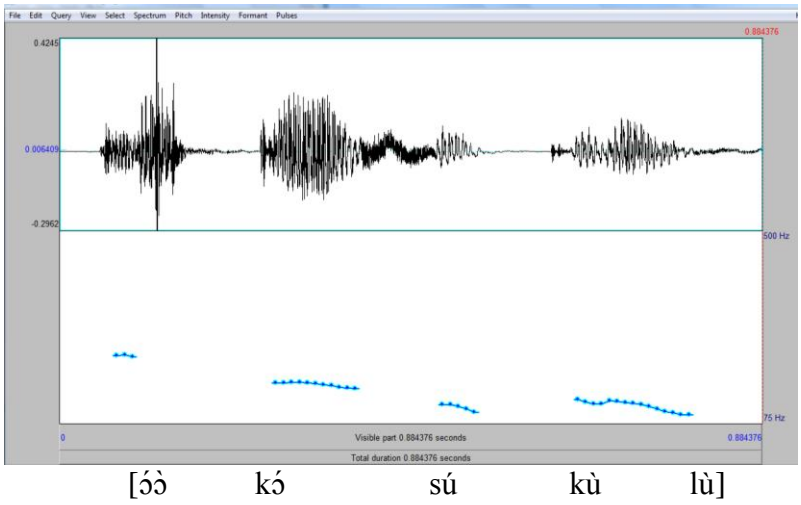
(32a) **/ ɔ̀ kɔ́ súkùlù/**
He/she go school

[31] This phenomenon is not to be confused with the term downstep which is defined simply by Welmers (1973:87), as the lowering of a high tone when a segmentless low tone morpheme is present. This "invisible" morphotoneme is referred to in the literature as a "floating tone."



To express a future action, all subject pronouns except for the second person plural, undergo two important phonological processes. Let's examine these changes by considering (32b):

(32b) [**ɔ́ɔ̀ kɔ́ súkùlʊ̀**
He/she Fut. go school
He/she will go to school



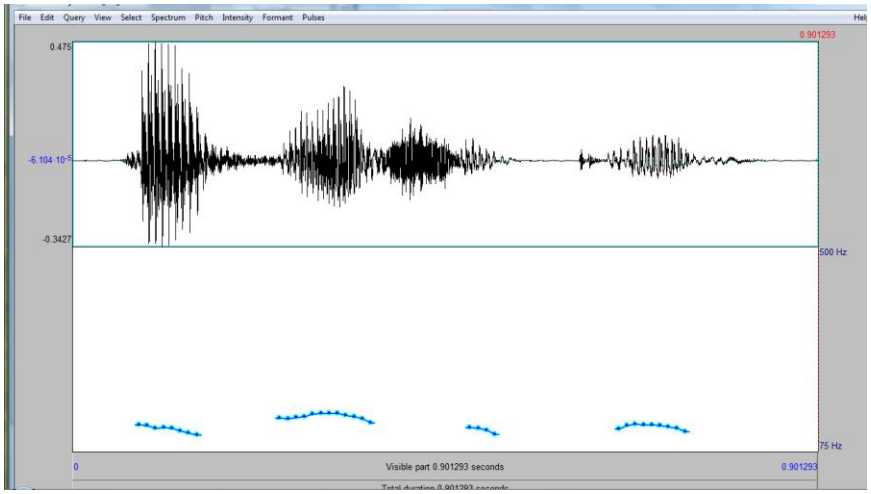
The first phonological process is that of vowel lengthening. The unmarked pronoun [ɔ̀] in (32a) is 94 ms long, Koffi (2008). However, the duration of (33b) is 116 ms long, that is, an increase of 22 ms. The second phonological process is the appearance of a High -Low contour tone on the pronoun. The unmarked pronoun [ɔ̀] in (32a) has a pitch value of 113 Hz whereas the aggregate pitch value of [ɔ́ɔ̀] in (32b) is 174 Hz. Given these important

acoustic differences, the orthography distinguishes between the simple present and the future by doubling the vowel of the subject pronoun in the future tense and by marking a high tone on the first vowel, as shown below:

(32b) <**ɔ́ɔ kɔ sukulu**>= Future

Finally, tone helps distinguish the subjunctive mood from the simple present and the future tense. In the subjunctive mood, the phonemic low tone of the subject pronoun remains unchanged. However, under certain circumstances, the initial consonant of the verb undergoes the morphophonological process of spirantalization (also known as second consonant mutation). Thus, the /k/ of [**kɔ́**] becomes [h] in the subjunctive mood, as in (32c):

(32c) [**ɔ̀ hɔ́ súkùlṵ**
He/she subj. go school
Let him/her go to school



[ɔ̀ hɔ́ sú kù lù]

To distinguish the subjunctive from the simple present, one has to pay attention to the tone of the verb. The unmarked pitch on the verb in (32a), that is, in the simple present is 129 Hz. In the future tense (32b), the pitch of [**kɔ́**] is 143 Hz but in the subjunctive, the pitch of [hɔ́] is 148 Hz. This means that Anyi speakers definitely rely on the pitch of the verb to discriminate between the simple present and the subjunctive because in both cases the tone of the subject pronoun is low. However, pitch does not play a significant role in distinguishing between the future and the subjunctive because the difference of 3 Hz is acoustically negligible. Anyi speakers seem to use contour tone on the subject pronoun to distinguish between the future and the subjunctive mood. When all these insights are taken into consideration, the three grammatical constructions can be distinguished from each other in the orthography as follows:

(32a) <**ɔ kɔ sukulu**> Simple present
(32b) <**ɔ́ɔ kɔ sukulu**> Future/Intentional[32]
(32c) <**ɔ hɔ́ sukulu**> Subjunctive

The preceding information can be summarized as a feature matrix:

	Tone Marking Conventions In the Orthography		
	Present	Future	Subjunctive
Pronoun	-	+	-
Verb	-	-	+

Table 37: Anyi Grammatical Tones

2.9.7 **The Representation of Tones in the Orthography**

The grammatical functions of tones discussed above make it a necessity to represent them in the Anyi orthography. Longacre (1964:136-7), Nida (1964:27-7), and Wiesemann (1989:16) agree that when tone changes affect verb tenses and pronominal subjects, tones should necessarily be marked in the orthography. Consequently, Anyi tones need to be represented in the orthography.

The issue that is raised now is how to write tones and at the same time avoid overloading the orthography. Overloading the orthography is the argument the advocates of toneless orthography have frequently used. They argue that writing tones on every tone-bearing element would overload the orthography and cause a slow-down in reading. This is a legitimate concern for which a solution must be found. A solution can be proposed which relies on the universal tendencies of tones discussed by Maddieson (1978:342). He enunciates the following universal tendency in tone languages:

Tone Universal Tendency

Systems in which high tones are marked [fewer] are more frequent than systems in which low tones are marked.

What this means is that for a language with two level tones such as Anyi, Low tones have a higher frequency than High tones. This observation in conjunction with the **Tone Economy Principle** discussed in section (1.6.4.12) can minimize the overload effect in Anyi orthography. The two principles indicate that **only high tones are to be marked in the orthography**. This solution is economical because it saves the writer time since he (she) marks only the least frequent tone, that is **high tone**. The Tone Economy Principle also offers a solution to the technological alibi that the standard typewriter cannot represent contour tones. By suggesting that only High tones be written, it neutralizes the need to

[32] Semantically, it is generally argued that a sentence is in the intentional mood when the subject is in the first person singular, and the action expressed by the verb focuses on the intention of the speaker. It is, however, very hard to distinguish it from the simple future. The habitual aspect, on the other hand, expresses actions that are performed over and over as a matter of habit.

represent both High-Low and Low-High tones by the circumflex diacritics "^" and " " that linguists use to represent raising and falling tones. Therefore, in the following CV1V1 words (where the two vowels are identical) only the high tone will be marked.

(33)

N0	**Orthographic Form**	**Phonetic Form**	**Gloss**
1.	<boó>	[bòó]	forest
2.	<bóo>	[bóò]	nose
3.	<táa>	[táà]	motherhood
4.	<taá>	[tàá]	tabacco
5.	<tuú>	[tùú]	gun
6.	<túu>	[túù]	all
7.	<toó>	[tòó]	corn-based meal
8.	<tóo>	[tóò]	scale
9.	<bɛɛ́>	[bɛ̀ɛ́]	bed
10.	<bɛ́ɛ>	[bɛ́ɛ̀]	left
11.	<ndɛɛ́>	[ndɛ̀ɛ́]	word
12.	<ndɛ́ɛ>	[ndɛ́ɛ̀]	quick!

Table 38: Words with Homophonic Long Vowels

Words with homophonic long vowels are fairly frequent in Anyi. According to Quaireau (1987:111), they constitute about 18% of the lexicon, as shown by Table 39 below:

N0	Syllable Type	Frequency
1.	CV̀	3.5%
2.	CVCV̀	7.5%
3.	CVCVCV̀	4.5%
4.	CVCVCVCV̀	.5%
5.	CV́V̀ or CV̀V́	3.5%
6.	CVCV́V̀ or CVCV̀V́	9.5%
7.	CVCVCV́V̀ or CVCVCV̀V́	4.5%
8.	CVCVCVCV́V̀ or CVCVCVCV̀V́	.5%

Table 39: Structure of Homophonic Vowels

It is clear from the information in this table that homophonic vowels have both rising and falling contour. If no tone diacritic is marked, reading miscues and repairs are to be expected. For this reason, a decision has been made on to indicate the high tone on all homophonic vowels in Anyi. Moreover, as noted earlier in Table 38, a number of lexical minimal pairs such as <**bɛɛ́**> (bed) and <**bɛ́ɛ**> (left) occurs rather frequently in the language. The Anyi orthography does not, however, represent tone in cases of heterophonic vowels. These are instances where in a CV^1V^2, V^1 and V^2 are two different vowels. Tone is not indicated in the orthography because it is overwhelmingly

predictable. However, if minimal pairs such as <**suá**> (house) and <**súa**> (trunk of a banana tree) exist, tone is clearly indicated.

2.9.8 **The Representation of Phonetic Tones in the Orthography**

The final issue to be addressed has to do with whether or not phonetic tones should be represented in the orthography. It is not irrelevant to ask at this point if phonetic tones too should be marked in the orthography since it has been argued that lexical tones and grammatical tones are to be represented.

Anyi, like many West African languages, is a terrace-level language. This means that as the sentence goes downward, High tones and Low tones are progressively lowered to the extent that sentence final elements are hardly audible. In some instances, a Low tone in sentence initial position is realized higher or as high as the next High tone. Conversely, a high tone in sentence final position is realized lower or as low as a sentence initial or medial Low tone. Terrace-level is caused by two phenonema known as **downstep** and **downdrift**.

Downstep happens when the low tone responsible for lowering the following High tone has a surface manifestation (Welmers 1973:87). Downdrift, on the other hand, occurs when the Low tone responsible for lowering the following high tone has no surface mainfestation. These two can be represented schematically as follows:

Downstep (automatic downstep)
(H) + L + H → (H) + L + |H
("|" preceding H indicates a downstepped high)

Downdrift (non-automatic downstep)
(H) + + H → (H)+ + |H

(The blank between the two "+" shows that the low tone responsible for the downstepped high has no surface manifestation.)

My position is that phonetic tones need not be represented in the orthography of Anyi first, because they do not fulfill any lexical or grammatical functions in the language. Secondly, representing phonetic tones will necessitate the creation of additional diacritics such as rising slopes, falling slopes and hosts of other conventions to inform the reader about the overall contour of the sentence. Since an orthography is not a spectrogram, it will be quite futile to provide such information in the text.

Another argument that militates against representing phonetic tones is that, in many languages and as well as in Anyi, the factors responsible for phonetic tones are not well understood yet. Anderson (1978:138) points out that emotional and expressive factors influence tones. Bolinger (1978:474) claims that pause and intonation affect tones.

Hombert (1974:171) argues that there are tone differences between long and short utterances. My decision not to write phonetic tones in the orthography finds additional support from Voorhoeve (1964:130-1). He found in his study of Saramacca, a language spoken in Surinam, that the students had not the slightest difficulty in reading aloud from the text in which the perturbations [phonetic tones] were not noted... I would advocate that tonal pertubations which follow fixed rules should not be written in the orthography.

2.10 Summary

The first part of the foregoing analysis has focused on the syllable structure of Anyi. The reason for such an analysis is that most phonological rules in Anyi make crucial reference to syllable structure. As a result of this analysis the following orthographic decisions were reached:

1. [-ATR] vowels should be represented by different symbols instead of using capital letters to symbolize them.
2. CV1V2 words and CV1GV2 words are difficult to distinguish in fast speech. Three tests (the categorial test, the Highness condition, and the phonetic test) can distinguish them.
3. I also proposed that CV1LV2 words be represented in the standard orthography in their unmetathesized forms because it is that form that is common to all the Anyi dialects. Additionally, it was proposed that **/r/**, the allophone of **/l/**, be represented in the orthography. Thus, **/r/** will be written every time the initial consonant in a word has the feature [+coronal].

The second part of this chapter was devoted to the issue of the representation of tones in the orthography. After having examined the lexical functions and some of the grammatical functions of tones in Anyi I have come to the conclusion that high tones should be marked in the orthography.

4. I proposed that nominal stems should have their phonemic lexical tones represented in the orthography. Tone marking on verbal stems, on the other hand, should reflect the grammatical function of the construction they occur in.
5. I proposed that tone marking follow the Tone Economy Principle in order to avoid the "overload effect."
6. Finally, I argued against marking phonetic tones in the orthography, first because they are contentless, and secondly, because they will be difficult to represent.

Chapter Three

Morphophonology and Orthography

3.0 **Introduction**

This chapter seeks to examine the morphophonemic changes mentioned in Chapter One, sections 1.2.3.4 and 1.2.3.5 in order to see how these changes can be reflected in the orthography. These morphophonemic changes are known in the literature as **Grade II** and **Grade III mutations**. Grade II and Grade III mutations are the names linguists use to describe consonant alternations that occur in some Akan languages. Grade I usually refers to the original form of the consonant before it undergoes morphophonemic changes. The first part of this chapter deals with consonant alternations in prenasalized consonants. The second part examines a lenition process which consists in weakening the articulatory force involved in the pronunciation of some phonemes. Dawson (1989:1) argues that morphophonemic changes are among "the orthographic decisions which are often most difficult to make." As this chapter unfolds we will see that Dawson is correct in her assessement of the difficulties created in the orthography by morphophonological changes.

Consonant mutation is a diachronic process which is central to the understanding of the phonological system of Akan languages in general, and of Anyi in particular. According to Stewart (1975:17) the process is very strong in Nzema (closely related to Anyi), relatively less strong in Anyi, and almost residual in Baule. Before tackling Grade II consonant mutation, we will need to examine nasalization and related issues first.

3.1 **Controversy about Nasalized Vowels in Kwa Languages**

In Anyi as well as other Kwa languages, the phonological and phonemic status of nasal segments is very controversial. The controversy ranges from the diachronic process which gave birth to nasal(ized) vowels to the questioning of the phonemic status of those vowels. Hyman (1972), Williamson (1973), Capo (1981) and Ansre (1961) claim that nasal vowels are phonemic in Kwa languages whereas Stahlke (1971) and Quaireau (1978) treat such vowels as phonetically nasalized. Quaireau (1978:89) states without any justification that Anyi has only phonetically nasalized vowels but no phonemic nasal vowels:

> Nous pensons que les règles énoncées par H. Stahlke pour l'Ewe et le Yoruba sont valables pour l'Agni et que le métasystème de ce dernier ne comporte pas de voyelles nasales.

In his analysis of Kwa languages in general, and more specifically of Adangbe, Stewart (1990:242) takes an intermediary position. He argues that "it is arbitrary to decide one way or the other, and that Adangbe, like all the other dialects, is better analyzed as having both nasal consonant phonemes and nasal vowel phonemes". In what follows I want to go along with Stewart's position and claim that Anyi has phonemic nasal vowels in addition to having (phonetic) nasalized vowels. I will presently give the reasons for claiming that Anyi has

phonemic nasal vowels.

3.1.1 **Evidence for Phonemically Nasal Vowels**

Nasal consonants, prenasalized consonants, nasal vowels, and nasalized vowels all occur in Anyi. Both the distributional criterion and the lexical differentiation criterion discussed in 1.2.1.1 and 1.2.1.2 point to the fact that Anyi has inherently phonemic nasal vowels. This can be exemplified by (1a) and (1b) below:

(1a)

N0	**Column A**	**Column B**
9.	<si> [sí] : to build	<sin> [sĩ́] : to blind
10.	<sɪ> [sí] : to know	<sɪn> [sĩ́] : to pass
11.	<bʊ> [bʊ́] : to beat	<bʊn> [bʊ̃́] : to stink
12.	<su> [sú] : to fructify	<sun> [sṹ] : to cry
13.	<ka> [ká]: to bite	<kan> [kã́] : to touch

Table 1: Minimal Pairs of Oral and Nasal Vowels

(1b)

N0	**Attested Forms**	**Unattested Forms**
1.	<te> [té] : to blast	*<ten> [tẽ́]
2.	<do> [dó] : to boil, to be hot	*<don> [dṍ]
3.	<fɛ> [fɛ́] : to suffer	*<fɛn> [fɛ̃́]
4.	<kɔ> [kɔ́]: to go	*<kɔn] [kɔ̃́]

Table 2: Unnasalized Mid Vowels

(The asterisk indicates that the forms are unattested)

The examples in (1a) show that minimal pairs do exist between oral vowels and nasal vowels. Distributionally, both oral and nasal vowels occur in the same environment. These two observations lead me to conclude that there exist both **oral and nasal phonemic vowels** in Anyi.

The unattested forms in data (1b) show that in Anyi the oral vowels /**e, ɛ, ɔ, o**/ do not have nasal counterparts. As a matter of fact, these same vowels are not nasalized in a great number of languages in the world. Crothers (1978:124) enunciates the following universal tendency.

> If a nasal system is smaller than the corresponding basic vowel system, it is most often a mid vowel (front, back, or both) that is missing from the nasal system.

Anyi is one of those languages which have both unnasalized mid front and mid back vowels. Hyman (1972:167) also notes that unnasalized mid front and mid back vowels are a common phenomenon in the Kwa family. This, naturally, introduces a distinction between nasalizable vowels and unnasalizable vowels. Column A represents nasalizable vowels and B unnasalizable vowels.

N0	**Column A**	**Column B**
1.	[i̯]	<e> [e]
2.	[ɪ̯]	<ɛ> [ɛ]
3.	[u̯]	<o> [o]
4.	[ʊ̯]	<ɔ> [ɔ]
5.	[a̯]	

Table 3: Nasal and Unnasalized Vowels

3.1.2 **Graphemic Representation of /m/, /n/, /ɲ/ and /ŋ/**

As discussed in 1.2.3.2 through 1.2.3.3 the phonemic status /m/, /n/, /ɲ/, and /ŋ/ is problematic. They appear sometimes to be separate phonemes, and at other times they behave like allophones of[iv] /b/, /d/, /j/, and /g/ respectively under morphophonemic conditions that will be discussed in 3.3.1. Following Stewart (1990:242) I consider these nasal consonants to be separate phonemes. Therefore, both nasal consonants and nasal vowels will be given separate graphemic representations.

The orthographic conventions used in *Une Orthographe Pratique des Langues Ivoiriennes* (p. 16) to represent nasal vowels and nasalized vowels is to have these vowels be followed by <n>. This convention does not present any risk of confusion with the phoneme /n/ because there is no word in Anyi in which an oral vowel is followed by the phoneme /n/. Therefore, the same convention is used for Anyi too. Phonemic nasal consonants and their graphemic counterparts are represented orthographically as in Table 4 below:

N0	**Phoneme**	**Grapheme**
1.	/m/	<m>
2.	/n/	<n>
3.	/ɲ/	<ny>
4.	/ŋ/	<ng>

Table 4: Phoneme-Grapheme Correspondence

The manual also proposes that when two contiguous vowels are both nasal(ized) they should be written <V1V2N> in the orthography. Thus, we have **<suan>[sʊ̯ã́] (to learn),** and **<tɪan> [tɪ̯ã́] (to scream**) but not ***<sunan>** and ***<tɪnan>**. These conventions are maintained throughout this work.

3.1.3 **Nasalized Vowels**

It was argued in section 3.1.1 that Anyi has phonemic nasal vowels. Now let us demonstrate that Anyi has also phonetic nasal vowels, that is, oral vowels which acquire their nasality by virtue of being in the proximity of nasal consonants. Consider the examples below:

(2)

N0	**Anyi Words**	**Glosses**
1.	<mʊn> [mʊ̃]	to wear

2.	<mɪn> [mḭ́]	to swallow
3.	<nyan> [ɲá̰]	to receive
4.	<munnzuo> [mṵ̀nzùó]	bad luck
5.	<man> [má̰]	to give
6.	<minlin> [mḭ̀lḭ́]	to be lost
7.	<munlan> [mṵ̀lá̰]	to be sad
8.	<kunmaán> [kṵ́mà̰á̰]	a hole

Table 5: Nasalization in Anyi

In general when a nasalizable vowel occurs in the vicinity of a nasal consonant, it is automatically nasalized (for exceptions see section 3.4.3). It can be argued that the vowels in (2) are oral in the underlying representation of these words and that they became nasalized because of their proximity to nasal consonants. Phonetically nasalized vowels are obtained by the following **Nasal Assimilation Rule**.

Nasal Assmililation Rule

/V/ → [V̰] / N —

N stands for any of the following nasal consonant /m/, /n/, /ɲ/, and /ŋ/. This formulation states that any nasalizable vowel which occurs in the environment of a nasal segment is automatically nasalized. Because Anyi also has phonemic nasal vowels, these vowels can occur without the presence of a nasal consonant as shown in the data in (1a). Before moving on to discuss other issues related to nasalized vowels, let us point out that because Anyi has both phonemic nasal vowels and nasalized vowels, it is impossible to determine with accuracy the underlying phonemic form of a word such as <man> in #3. Is it /má̰/ or is it /má/? Both are theoretically possible. However, additional data have led me to posit that the underlying phonemic representation of <man> is most likely /má̰/ because of the existence of words such as <Ama>[33] [àmà] in which the vowel [a] following /m/ is not nasalized.

3.1.4 **Unnasalized Vowels**

The Nasal Assimilation Rule posited above has exceptions only with mid-vowels because they cannot be nasalized, that is, even when they occur in the environment of nasal consonants they are not nasalized as seen in (3a):

(3a)

N0	**Anyi Words**	**Glosses**
1.	<jenneé> [ʤénèé]	onion
2.	<tɛmɛɛ́> [tɛ̀mɛ̀ɛ́]	cooking utensil
3.	<jomolo> [ʤomolo]	xylophones
4.	<domóo> [dómóò]	type of mushroom
5.	<mmóo> [m̀móò]	gratitude

[33] <Ama> is a very common female first name in Anyi.

6.	<mmɛ́> [m̀mɛ̀ɛ́]	horns

Table 6: Unnsazalized Mid Vowels

Thus, /e/, /ɛ/, /o/, /ɔ/ block the spread of the nasal feature. If nasality could spread to mid-vowels we would have had the forms in (3b):

(3b)

N0	**Unattested Anyi Words**	**Glosses**
1.	*[ʤénɛ̀ɛ́]	onion
2.	*[tɛ̀mɛ̀ɛ́]	cooking utensil
3.	*[ʤomo̰lo̰]	xylophones
4.	*[dómó̰ò̰]	type of mushroom
5.	*[m̀mó̰ò̰]	gratitude
6.	*[m̀mɛ̀ɛ́]	horns

Table 7: Unattested Nasalization with Mid Vowels

However, it should be noted that there is a dialectal innovation that constitutes a partial exception to this claim. The Mɔrɔfʊ dialect is developing a tolerance against this constraint. In Mɔrɔfʊ when a nasal(ized) vowel occurs in a V1V2 sequence with an unnasalizable vowel, the latter is forced to nasalize. This is an influence from Baule where these vowels are always nasalized, (Stewart 1956:358). The following words are in free-variation in Mɔrɔfʊ whereas only the forms in the leftmost column are attested in other dialects.

(3c)

N0	**Sanvi, Bɔna, Ndenie**	**Mɔrɔfʊ**	**Glosses**
1.	<sian> [sḭ̀á̰]	[sḭ̀á̰] / [sḭ̀ɛ̰́]	Now
2.	<Nyanmıan> [ɲà̰mḭ̀á̰]	[ɲà̰mḭ̀á̰] / [ɲà̰mḭ̀ɛ̰́]	God
3.	<amıan> [àmḭ̀á̰]	[àmḭ̀á̰] / [àmḭ̀ɛ̰́]	Brain
4.	<amʊan> [àmʊ̰á̰]	[àmʊ̰á̰] / [àmʊ̰ɔ̰́]	Fetish
5.	<sʊan> [sʊ̀á̰]	[sʊ̀á̰] / [sʊ̰ɔ̰́]	false report

Table 8: Dialect Variation

3.1.5 **Word-initial Nasal Constraint and the Spread of Nasality**

Williamson (1973:124) notes that in many West African languages there is a word-initial nasal constraint on the vowel, namely that phonemic nasal vowels are never found in word-initial position. This constraint operates also in Anyi. It can be enunciated as follows:

Word-initial vowel constraint

There is no VCV(CV) word in which the initial V is a phonemically nasal vowel.

Let us examine the examples in (4a) and (4b) in relation to this constraint.

(4a)

N0	**Anyi Words**	**Glosses**
1.	<awʊnmaán> [àwʊ̰màá̰]	wind
2.	<awʊnfʊan> [àwʊ̰fʊ̰á̰]	field that has been cultivated once but left to overgrow

3.	<anyıntıɛ> [àɲi̱tìɛ́]	civilization
4.	<ahın> [àhi̱]	morning

Table 9: Unnasalized Initial Vowels

(4b)

N0	**Anyi Words**	**Glosses**
1.	<wan> [w̰á]	who
2.	<wanti> [w̰à̰tí]	to run
3.	<wʊnnzɛ> [w̰ʊ̰nzɛ́]	to be pregnant
4.	<wannzannın> [w̰à̰nzà̰nı̰]	type of deer
5.	<wʊnnjɛ> [w̰ʊ̰ndʒɛ́]	to take the husk off

Table 10: Word Initial Glides

The phonetic transcription of the words in (4b) shows that the initial bilabial glide has nasal coloration. In contrast, the initial vowels of words in (4a) have a very slight **nasal coloration**. The intervocalic semi-vowels /w/ and the glottal /h/ are transparent to the spread of nasality. Even in the case of the word <anyıntıɛ> [àɲi̱tìɛ́] in #3, it is unclear whether the initial vowel /a/ is nasalized or not. The nasalized and the unnasalized forms are in free variation in my speech. Even if this initial vowel turns out to be nasalized, this does not contradict the word-initial nasal constraint because the nasality on the initial vowels in (4a) is not phonemic but rather phonetic.

The term **"nasal coloration"** is used here to stress the fact that the nasality of the initial vowels in words such as those in (4a) is very weak in sonority; here I rely purely on auditory perception because no acoustic sonority test was performed. When compared with the nasal sonority value of true phonemic nasal vowels or of vowels that are nasalized by virtue of their proximity with nasal consonants, as discussed in 3.1.3, we come to the conclusion that the sonority value of the initial vowels in (4a) are too faint to be given any consideration in the orthography. In words such as <**Ama**> (proper name)**, <Amʊn>** (proper name)**, <Amınlınkın>** (American), the nasality on the initial vowel is hardly audible. The lack of nasalization of such initial vowels may be attributed to the well-attested fact that nasalization is tautosyllabic in many languages. This means that the nasalization rule does not apply regressively across syllable boundaries in Anyi. In contrast with the words in (4b), we see that the bilabial glide and the nasal vowel occur within the same syllable. It is therefore not surprising for the semi-vowel /w/ to undergo a slight nasalization. Moreover, it is a well-known linguistic fact that glides are transparent to the spread of nasality.

3.1.5 **Nasality Hierarchy in Anyi**

This discussion leads us to recognize three scales of nasal sonority in Anyi: the nasal sonority of phonemic nasals, that of phonetic nasals, and what I have called nasal coloration. Quaireau (1987:90) establishes a sonority hierarchy for nasality in Anyi. He argues that phonemic nasal vowels are more sonorous than phonetic nasal vowels. The same idea is expressed in Ruhlen (1978:209) who argues that "in general, phonological and phonemic

NV's would show greater nasality than phonetic **NV**'s." A simple empirical test can confirm the existence of these three levels of nasality in Anyi. Just by listening to the words <**kan**> **[kã́]** (to tell), <**man**> **[mã́]** (to give), and **Ama [àmà]**, one can notice that the **[a]** in the first word has a heavier nasal sonority than the **[a]** in the second word. The nasality on **[a]** in both words is heavier than that of **Ama**.[34] The hierarchy of nasal sonority can be presented as follows:

Sonority Hierarchy

Phonemic nasal >[35] Phonetic nasal > Nasal coloration

These varying degrees of sonority in nasal and nasalized vowels have created a great deal of confusion in how nasality should be represented in Anyi orthography.

3.1.7 Orthographic Representation of Nasal and Nasalized Vowels

The orthographic representation of nasalization processes poses problems because Quaireau (1987) makes an orthographic distinction between phonemically nasal vowels and phonetically nasal vowels in his spelling of Anyi. However, Burmeister (1986) makes no such a distinction. He represents phonemic vocalic nasals and nasalized vowels the same way.

Even though Quaireau (1987:123-5) uses disclaimers emphasizing that he is not providing an orthography for Anyi, he argues that phonemic nasal vowels and phonetic (nasalized) vowels should be distinguished in the orthography. First, he uses a tilde **"~"** to mark cases of phonemic nasal vowels while he argues that phonetic nasals vowels should not be written with a tilde because they always occur in the proximity of a nasal consonant.

> En général pour les voyelles nasales du premier degré d'aperture: /ḭ/ <in>, /ɪ̰/ <ɪn>, /ṵ/ <un>, /ʊ̰/ <ʊn>, le tilde ne sera pas transcrit dans un environnement consonantique nasal (nasal non phonologique),…

Note that according to this claim phonemic nasal vowels should be represented in the orthography with a "~" whereas phonetic nasal vowels should not. Thus, a word such as **[kã́]** (to say) should be written in the orthography as **<kan>** whereas **[mã́]** (to give) should be written as **<ma>** not **<man>**.

3.1.8.1 Problems Raised by Quaireau's Proposals

There are three problems which make Quaireau's spelling unsatisfactory. First, due to the mechanical difficulty of placing the diacritic **"~"** exactly on top of all nasal vowels the *Institut de Linguistique Appliquée* has decided that the tilde be replaced by an <n> following the nasal vowel. Secondly, the orthographic distinction between phonemic nasal

---

[34] From the standpoint of auditory perception, there is no nasalization in my pronunciation of the word <Ama>.

[35] The symbol ">" means "louder than."

and phonetic nasal is redundant. The distinction in loudness between the two may be instrumentally significant but not so for a practical orthography. It should also be recalled from our discussion in 3.1.3 that it is sometimes impossible to determine with any degree of accuracy if an Anyi vowel is phonemically nasal or has been nasalized as a result of its vicinity with a nasal consonant. Therefore, I propose that both phonemic nasal vowels and phonetic nasal vowels be written **<VN>** in the orthography. This is the reason why /mą̀/ or /má/ is represented orthographically as **<man>**

The third problem with Quaireau's proposal is that if adopted it will make wrong predictions. It will wrongly tell the reader to nasalize all vowels following nasal consonants when reading (aloud). However, as will be discussed in section3.4.2 there are cases such as as <Ama> [àmà] and many others when a nasalizable oral vowel following a nasal consonant is pronounced unnasalized.

3.1.8.2 **Burmeister's Representation of Nasal Coloration**

Burmeister (1986:1-9) represents nasal coloration in his spelling of Anyi by having the semi-vowel be preceded with an **/n/**. Thus, words such as <**wɔn**> [wɔ̰̀] (self)**,** <**wan**> [wą́] (say)**,** are spelled **<nwɔn>** and **<nwan>** respectively. None of the linguists who have worked on Anyi, that is, Quaireau (1978, 1987) or Retord (1974, 1980), have used this spelling. Baule which can be considered a sister language to Anyi does not have an initial **/n/** preceding semi-vowels in its orthography even though the same phenomenon occurs there.

This spelling should, therefore, be rejected because it brings minute details of phonetic transcription into the orthography. An orthography, as was noted in section 1.5.3, is not an exact phonetic transcription. Consequently, nasal coloration need not be represented in the orthography.

The second reason why I propose that the sequence **<nw>** be rejected is that it gets us in trouble if the stem is a verb. In the event of a negative construction (to be discussed shortly) we have another **{N}** that will precede the **<n>** of the nasal coloration. In all, we end up with a sequence of two [n's] followed by a semi-vowel as in:

(5) Kasi **nn**wun man asɪ
Kasi neg. see not floor
Kasi is blind.

In Chapter Two, sections 2.6.8 through 2.6.9 it was argued that sequences of consonants create reading (aloud) problems and that they should be avoided. When nasal coloration is represented in the orthography we have a sequence of two nasals and a semi-vowel **[nnw**] which creates reading (aloud) difficulties.

The third reason for not representing cases of nasal coloration in the orthography comes from the word-initial nasal vowel constraint. Since there is a morpheme structure constraint which prevents word-initial vowels from being nasal vowels, if the words in (6a)

were to be spelled according to Jonathan's proposal, we would have the orthographic forms in (6b)

(6a)

N0	**Anyi Words**	**Glosses**
1.	[àwɰ̃màá̰]	Wind
2.	[àwɰ̃fɰ̃á̰]	field that has been cultivated once but left to overgrow
3.	[àɲ̀ɲ̃tìɛ́]	Civilization
4.	[àhɲ̀]	Morning

Table 11: Nasal Coloration

(6b)

N0	**Anyi Words**	**Glosses**
1.	<a**n**wʊnmaán>	Wind
2.	<a**n**wʊnfʊan>	field that has been cultivated once but left to overgrow
3.	<a**n**nyɪntɪɛ>	Civilization
4.	<a**n**hɪn>	Morning

Table 12: Illicit Orthographic Representation of Nasal Coloration

If we were to follow Burmeister's proposal, we will find ourselves in a situation where the orthographic solution does not reflect the phonotactic and morphotactic constraints of the language. If the words in (6a) are written as in (6b), they could be confusing because the orthographic **<VN>** in **VCV(CV)** words could be interpreted as a phonemic **/Ṽ/** while in reality no word-initial vowel has this form. A spelling such as (6b) should be avoided because, according to Booij (1987:215-23), orthographies must reflect the phonotactic and morphotactic constraints of languages. Therefore the words in (6b) should be spelled as (6c), that is, without any **[n]** between the vowel and the semi-vowel or the glottal consonant:

(6c)

N0	**Anyi Words**	**Glosses**
1.	<awʊnmaán>	wind
2.	<awʊnfʊan>	field that has been cultivated once but left to overgrow
3.	<anyɪntɪɛ>	civilization
4.	<ahɪn>	morning

Table 13: Accepted Orthographic Representation of Nasal Coloration

3.2 **Nasal harmony in CVN1CVN2 words**

Most linguists argue that obstruents block the spread of nasality. Consequently, when a structure such as CVN1CVN2 occurs, if the intervocalic C is an obstruent, nasality does not spread past it. However, in Anyi we have cases such the examples in (7) where both the vowels to the left and the one to the right of the intervocalic obstruent are nasal

vowels. Whenever such cases occur, one can argue that the nasality on the vowels does not derive from nasal assimilation, but rather from a phenomenon called **nasal harmony**. It should be recalled that in Chapter Two, section 2.5.1, it was argued that in CV1CV2 structures Anyi prefers that V1 and V2 be homophonous. The same requirement applies here as well. One can say that V1 and V2 are nasal(ized) vowels not because the nasality of V1 has spread to V2 or that of V2 has spread to V1 (which is impossible because obstruents block the spread of nasality) but because of the tendency Anyi has to have homophonic vowels on either side of the intervocalic consonant. This can be seen in (7):

(7)

N0	**Anyi Words**	**Glosses**
1.	<mintan> [mḭtą̰]	to hug
2.	<mantan> [mą̰tą̰]	to draw close to somebody
3.	<sansan> [są̰są̰]	a pledge, a swear
4.	<nunkun> [nṵkṵ]	to trash
5.	<nınkın> [nḭkḭ]	to tickle

Table 14: Nasal Harmony

In the majority of cases both V1 and V2 are nasal vowels but there are a few words such as <**kisan> [kìsą́]** (to wring), <**kısın> [kìsḭ]** (to be old and wrinkled up) in which V1 is not a nasal vowel. However, there is no case known to me where V1 is a nasal vowel and V2 is not. This observation from Anyi agrees with Piggott's claim that there is a universal tendency that specifies that "when V1 and V2 are disharmonious with regard to nasality the oral vowel must precede the nasal vowel, the reverse is impossible." [36]

3.2.1 **Nasal Harmony in CVN1LCVN2 Words**

Nasal harmony is absolute in CVN1LVN2 structures, that is, both V1 and V2 are nasal(ized) vowels. There is no instance where there is a nasal disharmony between V1 and V2 in CVN1LVN2 words. In all the cases the liquid is nasalized as seen in (8) below.

(8)

N0	**Anyi Words**	**Glosses**
1.	[fṵlṵ]	to be fed up with
2.	[mṵlṵ]	to dive
3.	[ką́mą̀lą̰]	proper first name for males
4.	[mṵlą́]	to be sad
5.	[àmḭlì]	bad luck for hunters

Table 15: Nasal Harmony with an Intervocalic Lateral Liquid

The liquid consonant /l/ behaves like semi-vowels in that it is transparent to nasalization. The nasal harmony in CVN1LCVN2 words can receive two plausible interpretations. First,

[36] G. L. Piggott gave this presentation during the 1989 American Linguistic Society Summer Institute at the University of Arizona, Tuscan. The paper is entitled **Variability in Feature Dependency.**

it can be argued that V1 and V2 are nasal(ized) because liquids are in general transparent to nasality. Therefore, the nasality of one of the vowels affects the other. The second interpretation comes from the fact that nasal harmony is a general tendency in CVN1CVN2 words in Anyi.

3.2.2 **The Orthographic Representation of CVN1LVN2**

Stewart (1955:355) has shown that liquids are also nasalized in Baule. However, for practical orthography, I propose that the lateral **/l/** be always written unnasalized in **CVN1LVN2** words. Thus, the words in Table 15 will be represented in Anyi orthography as follows:

N0	**Anyi Words**	**Glosses**
1.	<fʊ̃nlʊn>	to be fed up with
2.	<mʊ̃nlʊn>	to dive
3.	<Kanmanlan>	proper first name for males
4.	<munlan>	to be sad
5.	<aminlin>	bad luck for hunters

Table 16: Orthographic Representation of the Intervocalic Lateral Liquid

3.3 **The Morphophonology of Grade II Mutation: Prenasalized Consonants**

Grade II mutation fulfills four important functions in Anyi namely negation, permission-seeking constructions, pluralization, and nominalization. Each one of these functions will be investigated presently. After the functional analysis, a structural analysis will be proposed. The first two steps are necessary for the understanding of the discussion of the orthographic representation of Grade II muation.

3.3.1 **Grade II Mutation in Negative Constructions**

Let us begin the analysis of Grade II mutation with verb roots by examining the following negative constructions. Verb stems are chosen here because they display a regularity not found in other grammatical categories.

Anyi has two a discontinuous negation morpheme which is made up of two separate elements. The first element occurs preverbally and the second occurs postverbally. The preverbal negation morpheme is **{Ǹ}** and the postverbal negation morpheme is **{-mán}**.[37] Both are used to negate verbs. The postverbal negator <-man> occurs optionally. If it does not occur, the last vowel of the verb has a **High-Low** contour tone. However, for this discussion I have chosen sentences such as (9) where both the preverbal negator and the

[37] Anyi has another negative construction similar to the <n… man> construction. This construction is <n…a>. However, in the case of this other construction ,{-à} is a suffix that attaches itself to the verb. So, instead of <ɔ'a ndɛ man mɪn sʊ> (He did not respond), we may have <ɔ'a ndɛa mɪn sʊ>. The focus is not on this construction because it does not pose any orthographic problem . It should be noted that the suffix {-à} changes to {-an} if the last vowel of the verb is nasal as in <ɔ'a wuan> (He saw nothing) from the verb <wun> to see. There is yet a third negative construction in which we have only the prefix <n->. However, when this construction is used , the tone of the subject pronoun become becomes high , and even extra high. <mɪn nzɪ man> [mi̱ nzɪ mą́] (I do not know) becomes only [mí nzí].

postverbal negator occur.

(9)

N0	**Lexical Root**	**Negation**	**Gloss**
1.	/sɟ̰/	[nzɟ̰ mɡ̰]	not to cross
2.	/kpá/	[mgbá mɡ̰]	not to sow
3.	/fá/	[mvá mɡ̰]	not to take
4.	/tó/	[ndó mɡ̰]	not to buy
5.	/dí/	[nní mɡ̰]	not to eat
6.	/ká/	[ŋgá mɡ̰]	not to bite
7.	/bìé/	[mmìé mɡ̰]	not to urinate
8.	/tʃé/	[ɲtʃé mɡ̰]	not to share
9.	/dʒá/	[ɲdʒá mɡ̰]	not to marry
10.	/mɟ̰/	[mmɟ̰ mɡ̰]	not to swallow
11.	/nu̱nu̱̰/	[nnu̱nu̱̰ mɡ̰]	not to erase
12.	/ɲɟ̰/	[ɲɲɟ̰ mɡ̰]	not to grow
13.	/wa̱ndí/	[mwa̱ndí mɡ̰]	not to run

Table 17: Grade II Consonant Mutation

We notice that the segments **/s, kp, f, t, d, k, b, tʃ, ɲ/** become **[nz, mgb, mv, nd, nn, ŋŋ, mm, ɲdʒ, ɲɲ]** respectively when they are preceded by the preverbal negation morpheme **{N-}**.

3.3.2 **Grade II Consonant Mutation in Permission-seeking**

Welmers (1973:67) notes that the use of syllabic nasals in the first person singular is exceedingly common in Niger-Congo. In Anyi when the first person singular seeks permission to perform an action, the pronoun **<mɪn> [mɨ̰]** becomes **[ǹ], [m̀], [ŋ̀]** or **[ɲ̀]** depending on the articulatory characteristics of the segment it precedes. Moreover, the consonant mutations that occur in the segments above do occur here too as evidenced by (10a).

(10a)

N0	**Lexical Root**	**Interrogation**	**Gloss**
1.	/sɟ̰/	[nzɟ̰]	should I cross?
2.	/kpá/	[mgbá]	should I sow?
3.	/fá/	[mvá]	should I take?
4.	/tó/	[ndó]	should I buy?
5.	/dí/	[nní]	should I eat?
6.	/ká/	[ŋgá]	should I bite?
7.	/bìé/	[mmìé]	should I urinate?
8.	/tʃé/	[ɲtʃé]	should I share?
9.	/dʒá/	[ɲdʒá]	should I marry?
10.	/mɟ̰/	[mmɟ̰]	should I swallow?
11.	/nu̱nu̱̰/	[nu̱nu̱̰]	should I erase?
12.	/ɲɟ̰/	[ɲɲɟ̰]	should I grow?

13.	/wa̰ndí/	[mwa̰ndí]	should I run?

Table 18: Grade II Consonant Mutation in Permission-seeking Constructions

I propose that when the first person singular pronoun **<mɪn>** is contracted in permission-seeking or in any other constructions, if its contracted form is to be written in the orthography, it be written with a capital letter, that is, as **<N>** or **<M>**. This will avoid a confusion between such constructions and cases where the same form has a plural/mass noun meaning as in (10b):

(10b)

N0	**Interrogation**	**Plurality**
1.	<Mmie> [m̀míe̋]: should I urinate?	<mmie> [m̀mìé]: urine
2.	<Nna> [ǹná]: should I lie down?	<nnaá> [ǹnàá]: lying down
3.	<Nnun> <ǹnṵ́]: should I tan?	<nnun> [ǹnṵ́]: five

Table 19: Capitalization

By capitalizing the <n> in <Nnun> and not capitalizing it in <nnun>, the reader comes to learn that though the two constructions are the same in writing, they belong to different syntactic constructions. Moreover, in the orthography, a space is left between the capital <N> and the root of the verb. Thus, we have <M mie>, <N na> and <N nun>. This solution has been found to be very helpful, especially in the reading aloud process.

3.3.3 **Grade II Consonant Mutation in Pluralization**

Chinebuah (1951: 245) shows that Grade II mutation acts like a plural morpheme in Akan. Mass nouns and collective nouns are characterized by consonant mutation in Anyi as evidenced by (11) through (13) below:

(11)

N0	**Singular Nouns**	**Plural Nouns**
1.	<baá> [bàá]: child	<mmaá> [m̀màá]: children
2.	<bala> [bàlá][38]: woman	<mmala> [m̀màlá]: women
3.	<bataran> [bátà̰rá̰]: child	<mmataran> [m̀mátà̰rá̰]: children
4.	<talua> [tálùá]: pretty girl	<ndalua> [ǹdálùá]: pretty girls
5.	<kpafunlan> [kpáfṵ̀lá̰]: young man	<mgbafunlan> [mgbáfṵ̀lá̰]: young man

Table 20: Count Nouns

(12)

N0	**Mass Nouns**	**Glosses**
1.	<mmoja> [m̀módʒá]	blood
2.	<nzuo> [ǹzùó]	water
3.	<ngoó> [ŋ̀ŋ̀òó]	palm oil
4.	<mmie> [m̀mìé]	urine

[38] In normal pronunciation, we have [blàá] instead of [bàlá]. This is true of many of the examples below where there is an intervocalic [l] or [r].

5.	<nzaán> [nzàǎ]	drink (except water)
6.	<mme> [m̀mé]	palm wine
7.	<nnjɪn> [ǹdʒɻ́]	salt
8.	<nzʊ̀an> [ǹzʊ̀ǎ]	behavior, attitude

Table 21: Mass Nouns

(13)

N0	**Collective Nouns**	**Glosses**
1.	<nzʊa> [ǹzʊ̀á]	insults
2.	<nzarammáa> [ǹzàràmáà]	stars
3.	<nvʊmmaá> [nvʊmmàá]	cheeks
4.	<ndire> [ǹdìré]	grass
5.	<ndɛrɛ> [ndɛ̀rɛ́]	hair
6.	<nzʊrʊwáa> [nzʊ̀rʊ̀wáà]	cowries
7.	<nnire> [ǹnìré]	mushroom

Table 22: Collective Nouns

It should be pointed out that Grade II mutation as a process for pluralization is no longer very active in the language. Nowadays, very few lexical items undergo Grade II consonant mutation to indicate plurality. In many words a morpheme {mɔ́} occurs after the nominal stem to indicate plurality without any kind of consonant alternation Those which undergo Grade II mutation are still optionally affixed by the plural morpheme{mɔ́}. This shows that Grade II mutation as an index of pluralization is becoming very weak. Welmers (1973:186) argues that Grade II mutation as a plural formation device is a vestigial form of noun class morphemes.

3.3.4 **Grade II Consonant Mutation in Nominalization**

Grade II mutation is marginally used to change a verbal stem into a nominal stem. This process is also used less and less.

(14)

N0	**Verbal Root**	**Nominal Form**	**Gloss**
1.	<da> [dá]	[ǹnàá]	to sleep = slumber
2.	<daka> [dàká]	[ǹnàkáà]	to betray = betrayal
3.	<bie> [bìé]	[m̀mìé]	to urinate = urine
4.	<sie> [sìé]	[ǹzìé]	to bury = burial money
5.	<sasa> [sàsá]	[ǹzàsáà]	to piece together = cloth made of many pieces

Table 23: Nominal Derivation

3.3.5 **Structural Analysis of Grade II Mutation**

The consonant system of Anyi displays two types of consonant alternations which play a tremendous role in its phonological system. The alternation presented in the previous paragraphs and which will be formally stated in this section takes place when an **initial**

consonant is preceded by the syllabic nasal {N}.

There are three important observations that can be made from the examples (9) through (13) above. These observations are grouped under the headings A, B, and C.

Morphophonemic Grade II Consonant Mutation

Part **A** /s, kp, f, t, k, tʃ/ → [z, gb, v, d, g, dʒ] / {N} ─

Part **B** /b, gb, m, n, ɲ, w/ → [m, mgb, mm, nn, ɲɲ, nw] / {N} ─

Part **C** **{**/b, d/} → {[m, n]} / {N} ─[39]

The grouping of the consonants in A, B, C is arbitrary because there is a great deal of overlapping among them. However, this grouping should be maintained because it reflects three different phonological processes: 1) voicing assimilation, 2) homorganic assimilation, and 3) nasal gemination that I wish to discuss separately. The last two pose important orthographic problems that will be investigated in sections 3.4.1 and 3.4.3.

3.3.6 **Voicing Assimilation**

The first observation that can be made is that the segments in A are all voiceless. When they are preceded by {N} they become voiced segments. From this observation one can posit the following Grade II mutation process:

[-son, -voice]→ [+voice] / {N} ─

The rule states that any voiceless obstruent which is preceded by {N} becomes automatically a voiced segment. The process is an instance of **progressive voicing assimilation**.

3.3.7 **Homorganic Assimilation**

When one looks at the mutation in B, one notices that {N} becomes [m], [n], [ŋ], and [ɲ] when it occurs before bilabial, alveolar, velar, and palatal consonants respectively. {N} is pronounced exactly at the same point of articulation as those consonants. This observation can be extended to A, and C where one notices that when {N} precedes a segment, the segment and the syllabic {N} are pronounced in exactly the same point of articulation. This is referred to as **homorganic articulation**. This observation can be generalized as:

{N} → [& place] / ─ [& place]

---

[39] These two rules have been proposed for the sake of simplicity. Both rules can be collapsed into a single one using phonetic features. Such a rule would take the following form: **[+cons, +ant, -cont]** → [+nasal, +ant] / {N} ─

It means that if the syllabic nasal morpheme {N} precedes a bilabial, it becomes a bilabial, if it precedes an alveolar, it becomes an alveolar, if it precedes a palatal it becomes a palatal, if it precedes a velar it becomes a velar, and so on and so forth. One notices that in this case it is the segment that follows {N} which "forces" {N} to agree with it in point of articulation. Therefore, for the process of homorganic assimilation we have a regressive assimilation phenomenon. Voicing assimilation is progressive whereas homorganic assimilation is regressive.

3.3.8 **Nasal Gemination**

There is still a third process that operates on /b/ and /d/ when they are the initial consonants in a stem. These segments do not undergo voicing assimilation because they are already voiced. The process called **nasal gemination** applies to change these segments into nasals as in <**bie> [bìé]** (urinate) and <**mmie> [m̀mìé]** (urine), <**da> [dá]** (to lie down) and **<nnaá> [ǹnàá]** (lying down). Remark that if the process of homorganic nasal assimilation were to apply it would result in **[mbié]** and **[ndáà]** respectively. However, the first never occurs in Anyi. The latter occurs but, in such cases, the sequence **[nd]** derives from a form whose initial segment is **/t/** instead of **/d/** as in <**tá baá>** (to raise a child) which becomes <**Mın nda man baá>** (I do not raise a child). The initial /d/ in <**da>** (to lie down), on the contrary, becomes /n/ as in <**Mın nna man>** (I do not lie down). The gemination rule can be formulated as follows:

$$\{/b, d/\} \rightarrow \{[m, n]\} / \{N\} \_$$

This rule is to be interpreted as follows: /b/ will be pronounced [m] and [d] will be pronounced [n] if either of them is preceded by {N}.

3.3.9 **The Labio-velar /kp/ and the Assimilation Processes**

Let us examine now the behavior of the labio-velar /kp/. It becomes /mgb/ when preceded by the syllabic nasal {N}. It is important to notice that in terms of voicing assimilation, {N} voices both the labial and velar segments which make up the labio-velar unit.[40] Thus, /k/ and /p/ become /g/ and /b/ respectively. However, in terms of homorganic assimilation, it is only the labial /b/ that causes the assimilation, not the velar /g/. Consequently, we have /mgb/ and not */ŋgb/. This point is essential because of the discrepancy noted in the spelling of /gb/ words when they are preceded by {N}. Some spell the same word as <**n**gb> while others spell it as <**m**gb>. The correct spelling should be <**m**gb>.[41]

---

[40] In his book *Phonology: Theory and Analysis*, Hyman argues on p. 54 that the treatment of labiovelars within Generative Phonology is not satisfactory because of the tendency some have of treating them as two separate segments. He claims that "there is no way to view /kp/ as equally labial and velar."

[41] Retord (1972: 200) spells {N} + /gb/ words as <ngb> whereas Burmeister and Quaireau spell them as <mgb>.

3.4 Word-initial Prenasalized Consonants

Since the morpheme **{N}** in negation, pluralization, nominalization, and permission-seeking constructions occurs word-initially, it is important to examine in some detail the problems posed by the orthographic representation of word-initial prenasalized consonants. The first issue to be dealt with is to see if the syllabic nasal transmits its nasal feature to the following vowel? If it does, how should it be represented in the orthography? The second problem has to do with nasal gemination, and the third focuses on the orthographic representation of homorganic nasals.

3.4.1 **Does the Syllabic Nasal Spread its Nasality to the Following Vowels?**

In order to determine whether or not prenasalized consonants are transparent or opaque, let us examine the examples below:

(15a)

N0	**Prenasalized Consonants**	**Glosses**
1.	<mgbáà> [m̀gbáà]	bed
2.	<mgbaán> [m̀gbą̀ą́]	nothing, futile
3.	<Ngan> [ŋ̀gą́à]	the name of my village
4.	<ngaá> [ŋ̀gàá]	ring
5.	<ngoó> [ŋ̀góò]	palm oil
6.	<ndúun> [ǹdṵṳ]	poison ivy
7.	<ndaá> [ǹdàá]	twins

Table 24: Prenasalized Consonants

In words such as <**mgbáa>** [m̀gbáà], <**ndaá>** [ǹdàá], <**ngaá>** [ŋ̀gàá]**,** <wan**ndi>** [wą̀ndi] (to run), <sa**ndı>** [są̀ndí] (to disperse), we notice that even though /a/, /i/, /ı/ are nasalizable vowels, they are not nasalized when they are preceded by a prenasalized segment. We can deduce from this that the spread of nasality is blocked when there is an intervening obstruent between the syllabic nasal {N} or the prenasalized consonant and the following vowel. If this claim is correct, then how do we account for the fact that we have words such as <**mgbaán>** [m̀gbą̀ą́]**, <Ngan>** [ŋ̀gą́à]**, <ndin> [ǹdį́], <ndúun>** [ǹdṵṳ]? I will argue that the vowels in these words are underlyingly nasal, and, therefore their nasality does not come from the syllabic nasal or the prenasalized consonant. This argument is also supported by the existence of minimal and near minimal pairs such as [**m̀gbáà]** vs. [**m̀gbą́à]** and [**ŋ̀gą́à]** vs. **[ŋgàá]**.

3.4.2 **The Case of Derived Nasals**

The nasalization rule posited in section 3.1.3 stipulates that when a vowel occurs in the proximity of a nasal consonant it is automatically nasalized. Even though this statement is absolutely true, it needs to be qualified in the light of the examples in (15b).

(15b)

N0	**Derived Nasals**	**Glosses**
1.	<mmie> [m̀mìé]	urine
2.	<mmaá> [m̀màá]	children
3.	<nnakáa> [ǹnàkáà]	betrayal
4.	<nnaá> [ǹnàá]	sleeping
5.	<nzarammáa> [ǹzàràmmáa]	stars

Table 25: Derived Nasals

We notice that although the vowels occur immediately after "nasal" consonants, the vowels are not nasalized. This seems to contradict the vowel nasalization rule proposed in 3.1.3. However, there is no contradiction. This is so because the surface nasal consonants are not really nasal consonants. They are oral consonants in the underlying phonemic representation which have undergone nasal gemination as discussed in 3.3.5. The syllabic nasal preceding the words in (15b) is a morpheme indicating mass nouns or plurality. When this morpheme precedes words such as <**bie> [bié]** (to urinate)**, < baá> [bàá]** (child)**, <daka> [dàká]** (to betray) and <**sarabaá> [sàràbàá]** (small star) they become [**m̀mié], [m̀màá], [ǹnàkáà],** and [**ǹzàràmmáà]**. The vowels that follow the derived nasals are not nasalized for the following reasons. When the syllabic nasal **{N}** is prefixed to a noun such as /**bàá/**, it tries to spread its nasal feature to the vowels **/àá/**. However, since **/b/** is an obstruent the spread of the nasal feature is blocked and cannot spread to the vowels **/àá/**. Then, nasal gemination takes place. Here is how one can appeal to Generative Phonology to account for this phenomenon. The various rules apply cyclically to arrive at the correct phonetic realization in the following manner. Three processes take place: nasal assimilation applies first, then voicing assimilation, and finally nasal gemination, as illustrated by the steps below.

Underlying phonemic representation	/ # bàá # /
Affixation of Plural Morpheme	# Ǹ+ bàá #
Voicing Assimilation	NA[42]
Nasal Assimilation	NA[43]
Homorganic Assimilation	# m̀bàá #
Nasal Gemination	# m̀màá #
Surface phonetic representation	[m̀màá]

[42] This rule is NA (non applicable) because /b/ is already a voiced consonant.

[43] This rule is not applicable because obstruents block the spread of the feature [+nasals]. We notice that the sequence /àá/ is not nasalized because of the fact that /b/ being an obstruent blocks the nasal feature of the syllabic nasal from spreading to /àá/. So the feature [+nasal] is neutralized even before nasal gemination has the chance to take place. This is the reason why derived nasals fail to nasalize following vowels.

It can be deduced that prenasalized consonants do not nasalize the following oral vowels when the surface nasal consonant is a non-nasal consonant in the underlying phonemic representation. This observation can be subsumed under the following criterion.

Derived Nasal Criterion

A derived nasal consonant does not cause nasal assimilation.

If a surface nasal consonant derives from a segment that is underlyingly a non-nasal, that is, /b/, /d/, /j/ and /g/, the vowels that follow it are not nasalized. It should be noted that there are words such as <**nnaán**> **[ǹnə̀ə́]** (animal, meat), and <**nnyaán**> **[ɲɲə̀ə́]** (fish-like smell) where the vowels following the geminate nasals are nasal vowels. Such words do not contradict the Derived Nasal Criterion because the nasal vowels in these words are phonemically nasal.

3.4.3 **Homorganic Assimilation and Orthographic Issues**

In the discussion on homorganic assimilation I made the claim that if the syllabic nasal {N} precedes a bilabial, it becomes a bilabial, if it precedes an alveolar, it becomes an alveolar, if it precedes a palatal it becomes a palatal, and if it precedes a velar it becomes a velar. The issue to be addressed here is the following: do all the homorganic nasal assimilations need to be represented in the orthography? In other words should the morphophonemic alternations be represented in the orthography or should they be represented by the invariable form of the basic morpheme {N}?

Some orthographers, including Dawson (1989:1-2), Powlson (1964:78), Smalley (1964:4), have argued that morphophonemic alternations should not be represented in the orthography. They advocate the writing of the basic form of the morpheme rather than its allomorphs. Powlson writes that

> when a language has frequent morphophonemic changes, i.e, when certain words or part of words change significantly but predictably in pronunciation from one phonological or syntactic environment to another, it may be desirable to spell those words or parts of words the same in all environments. This will be especially true where the change merely involves assimilation to point or manner of assimilation.

Nida (1964:150) argues that there is a "psychological value of always seeing the same functional unit in the same form."

There are other linguists, namely, Gudschinsky (1970:25), Shand (1972:17), and Williamson (1984:38) who argue that morphophonemic variants should be written in the orthography. Williamson remarks that in the orthography of Nigerian languages the following spelling rule has been adopted:

> In languages that have them, the syllabic nasals are usually written **<m>** before labial sounds and (usually) labial-velar sounds; before other sounds they are usually written **<n>**.

Even though Nida (1964:152) seems to favor the non-representation of morphophonemic alternations in the orthography, he admits that in some instances it is important to "transcribe words as they are actually pronounced." Coulmas (1990:172) notes that there is no standard solution with regard to the representation or non-representation of morphophonemic changes in the orthography. He argues that "it (solution) operates selectively within particular orthographies, and that its salience varies greatly across languages."

Many people use English as an example by claiming that morphophonemic alternations such as the plural morpheme {-s}, the third person singular form of the present tense, and the morpheme of the past tense {-ed} of regular verbs, are systematically represented in the orthography by the graphemes <s> and <ed> respectively. They argue that any native speaker of English has internalized the morphophonemic rules of English which allow him to arrive at the correct pronunciation. Even though the argument seems plausible it is not always followed by English and other traditional orthographies. In both French and English the morpheme meaning "not" is represented orthographically by its morphophonemic variants {il-}, {im-}, {ir-},and {in-} as in the words **illegal, impossible, irregular, and invisible** respectively.

Consistency must be introduced into the orthography by following a single pattern as much as possible. I propose that the morphophonemic rule of Grade II be represented in the orthography. This guarantees that grammatical information couched in these forms are readily available to the reader instead of calling on his internalized morphophonological rules. Therefore, for Anyi orthography I introduce the **morphophonemic criterion.** It guarantees a good pronunciation. The morphophonemic criterion is stated as follows:

Morphophonemic Criterion

All morphophonemic alternations should have separate graphemic representation in the orthography.

A number of languages have implicitly applied the morphophonemic criterion without giving it this label. The palatalization rules in **Hausa** which change /d/ into /j/ before the front vowel /e/; and /t/ into /tʃ/, and /z/ into /dʒ/ both before the high front vowel /i/ in the formation of the plural are clearly reflected in the orthography. As indicated above, English, French, and Spanish apply this criterion, even though inconsistently. In all these three languages the morpheme meaning **{not}** is written **{im-}** before bilabials as in <**impossible>, <imbalance>, <immoral**>, **{il-/ir-}** before liquids as in <**illegal>, <irresponsible**>, and **{in-}** elsewhere as in <**intolerable>, <indirect>, <insecure**>.

It is important to note that English and French adopt two different strategies in the orthographic representation of allomorphs. In the examples cited above, we see that suffixes are left unchanged whereas homorganic assimilation within prefixes is clearly represented in the orthography. Greek is relatively easy to read because morphophonemic alternations are clearly represented in the orthography, as shown in the examples below:

Generally speaking, the more an orthography represents morphophonemic alternations, the more transparent it is. The more transparent an orthography is, the easier t it is to read. The converse is also true. If morphophonemic alternations are not represented in the orthography, the orthography becomes opaque. The more opaque an orthography, the harder it is to read because the users have to apply several rules before arriving at the correct pronunciation. This fact is emphasized by Fromkin, Rodman, and Hyams (2007:526) in their assessment of English orthography:

> These considerations have led some scholars to suggest that in addition to being phonemic, English has a morphophonemic orthography. To read English correctly, morphophonemic knowledge is required. This contrasts with a language such as Spanish, whose orthography is lamost phonemic.

3.5 **Word-medial Prenasalized Consonants**

A number of linguists, Capo (1980:34), Feinstein (1979:249), Welmers (1973:68-73), and Kouadio and Creissels (1977:28-30) for example make a distinction between word-initial prenasalized consonants and word-medial prenasalized consonants. The same distinction must be kept in Anyi because it plays an important role in the orthography.

The differences between the two lie in the fact that the initial [N] in prenasalized consonants in word-initial positions is syllabic, that is, it can bear tone whereas the prenasalized consonant in word-medial position does not. Feinstein (1977:252) argues that in most of the languages where they occur, word-medial prenasalized consonants do not bear tones. Furthermore, word-initial prenasalized consonants have a meaning whereas word-medial ones do not. Both the word-initial and word-medial prenasalized consonants are represented schematically as:

NCVCV
CV**N**CV[44]

CV**N**CV words have always baffled linguists. Greenberg (1978:245) observes that "medial clusters raise theoretical questions" and refuses to discuss them in his article about the

---

[44] There is a major theoretical debate regarding the syllable structure of CVNCV words. Theoretically, they could derive from at least three possible structures:

1. CV # NCV
2. CVN # CV
3. CV # N # CV

The first two could be used to illustrate Stuart's (1983:101-2) claim that Akan CVNCV words derive from compounds. However, synchronically, there is absolutely no reason to suppose that this is true. A major work in comparative morphology must be done in many Akan languages before any such statement can be made. Stuart himself admits that he does not have enough arguments to support his claim. The last possibility would treat the /N/ in CVNCV words as an ambisyllable. This proposal raises theoretical problems that will not be investigated here.

universals of initial clusters. One of the theoretical questions they raise has to do with their possible origin. Stewart (1983:101-2) claims that they may originate from compounds but he admits that he does not have enough evidence to support this position. There are three kinds of CV**N**CV structures in Anyi:

1. CṼ1**N**CV2 : <wan**n**di> [wą̃ndí] (to run), <kın**n**dɛ> [kį̃ndɛ́] (to look for)
2. CV1**N**CV2 [45]: <kanga> [káŋgà] (crab), <ka**n**za> [kánzà] (beard)
3. CṼ1**N**CṼ2: <fin**n**dín> [fį̃ndí] (to throw), <kan**n**jin> [ką̃ndʒḭ́](to change)

In (1) V1 is a nasal vowel but V2 is an oral vowel. In (2) neither V1 nor V2 are nasal vowels. In (3) both V1 and V2 are nasal vowels. The fourth possibility CV1**N**CṼ2, that is, where V1 is an oral vowel and V2 a nasal vowel is unattested in the language. In structures such as CṼ1**N**CV2 and CṼ1**N**CṼ2 where the prenasalized consonant is preceded by a nasal vowel, it can be demonstrated that these vowels do not derive their nasal feature from the prenasalized segment. When one examines minimal pairs such as <**kánga**> [káŋgà] (crab) vs. <**kangá**> [ką̃ŋgá] (slave), **danga** [dàŋgá] (to walk leaning backward) vs. <**dannga**> **[dą́ŋgà]** (easy woman), one notices that the nasality of /ą̃/ in <**kanga**> and <**dannga**> does not come from the prenasalized segment. If it did, we would have difficulty in proving why in one case /a/ is nasalized and in others it is not.

Quaireau (1987:89, 105) proposes that underlyingly, there are two phoneme /a/s, a front phoneme [a] and a back phoneme [a]: one that can be nasalized and another that cannot. He does not, however, specify which one of the two cannot nasalize. This solution is suspect because the data on universal tendencies in nasalization indicate that low vowels are very frequently nasalized. Moreover, if these phonemes exist, they are not contrastive in any Anyi dialects. I propose that whenever we have cases such as CṼ1**N**CV2 as opposed to CV1**N**CV2, the nasality of Ṽ1 does not come from the prenasalized consonant even though it is closely adjacent to it. The nasal vowel preceding the prenasalized consonant should be considered as a phonemic nasal vowel in its own right.

Another plausible explanation for the existence of CV1NCV2 is that the sequence NCV2 belongs to the same syllable. Thus, such structures can be syllabified as CV1sNCV2, where "s" stands for a syllable break. Similarly, CṼ1**N**CV2 are syllabified as CṼ1s**N**CV2. As was stated earlier, nasalization in Anyi and a large number of languages is tautosyllabic. This means that nasalization does not often cross syllable boundaries. This

---

[45] CV1**N**CV2 should be distinguished from CṼCV , that is, in the former **NC** is a prenasalized consonant whereas in the latter **Ṽ** is a nasal vowel. As indicated in 3.2, CVN1CV is unattested in Anyi. Grade III mutation is blocked (to be discussed shortly) in disyllabic words in which the intervocalic consonant is not a liquid. Words such as **<kisa>** [kìsá] (to lean on), <**kası**> **[kàsí]** (to cut from the side), <**kundo**> **[kų̀ndó]** (to roll) do not undergo Grade III mutation. This restriction does not apply when the disyllabic word is itself a reduplication of a monosyllabic word. Grade III mutation is also blocked when a word which has the same form already exists in the language. The verb <**kuku**> [kùkú] (to lift up) should undergo Grade III mutation as <**huhu**> **[hùhú]** (to winnow). However, <**kuku**> remains unchanged because if it underwent Grade III mutation it would create an ambiguity between itself and <**huhu**>.

claim has important consequences for the orthographic representation of word-medial prenasalized consonants.

3.5.1 **Orthographic Representation of CV̰1NCV2 and CV1NCV2 Words**

If the claim made at the end of the preceding paragraph is accepted , then the orthography of Anyi should reflect the distinction between CV̰ 1**N**CV2 and CV1**N**CV2 words because these distinctions are made by native speakers . Notice, however, that Quaireau (1987) has suggested that all CV̰ 1**N**CV2 be written as <CV**N**CV> in the orthography. This solution must be rejected because it fails to distinguish between words such as <**kongo**> [koŋgo] (corner) and <Konngo> [kɔ́ŋgó] (the Congo). I propose that a distinction be maintained between CV̰ 1**N**CV2 and CV1**N**CV2 words in the orthography. The two nasal sequences in words such <ko**nn**go> should be clearly distinguished from words such as <kongo> which have only one nasal.

3.6 **Grade III Mutation**

Grade III mutation is a lenition process which changes the phonemes /d/, /k/, /b/ and /ʧ/ into /l/, /h/, /w/ and /h/ respectively. These alternations, like the ones discussed in Grade II mutation, have important implications for the orthography of Anyi.

3.6.1 **Structural and Functional Analyses of Grade III Mutation**

Stewart (1956:364) points out that "there remains in Baule a few traces of a system of consonant mutation which is still vigorous in closely related languages or dialects such Nzema." Anyi is one of the closely related languages in which consonant mutation "is still vigorous." Even in the Mɔrɔfʊ dialect which is geographically very close to Baule, Grade III mutation has gone on unabated. Let us examine the different functions fulfilled by Grade III mutation in Anyi Grammar by discussing the examples below. Since there are many factors responsible for Grade III mutation, the structural mechanisms involved in the alternations will not be formulated until all the conditioning factors (aspectual, morphophonological, modal, and discursive) have been made explicit.

3.6.2 **Aspectual Markers**

3.6.2.1 **The perfected Aspect**

Grade III mutation is reflected in the **perfected**[46] and **resultative aspects**. The perfected aspect indicates that an action is completed. It is equivalent to the English past tense. The perfected aspect is characterized by a suffix **{-lí}** and accompanied by Grade III mutation as seen in the examples below. Consonant mutation has an aspectual function in that it helps distinguish the perfected and the resultative aspects from the **progressive aspects.**[47]

---

[46] The term “simple past” is used interchangeably with the term “perfective aspect.”

[47] Some prefer the terms “constatative” or “factitive” aspects. However, we prefer the simpler terminology.

(16a)

N0	Progressive Aspect	Perfected Aspect/Simple Past
1.	/ɔ̀ kɔ́/ <ɔ́ɔ kɔ>: he is going	/ɔ̀ hɔ́lí/ <ɔ holı>: he went
2.	/ɔ̀ bá/ <ɔ́ɔ ba>: she is coming	/ɔ̀ walí/ <ɔ walı>: she came
3.	/ɔ̀ dí/ <ɔ́ɔ di>: he is eating	/ɔ̀ lílí/ <ɔ lilı>: he ate
4.	/ɔ̀ tʃɛ́/ <ɔ́ɔ cɛ>: it is lasting a long time	/ɔ̀ hɛlı/ <ɔ hɛlı>: it lasted a long time

Table 26: The Perfected Aspect

3.6.2.2 **The Resultative Aspect and Grade III Mutation**

The **resultative aspect** is characterized by **a** + Grade III mutation. It indicates an action that has been completed but the results of which may still be felt at the moment of speaking. It is equivalent to the English present perfect.

(16b)

N0	Progressive Aspect	Resultative Aspect/Preterit
1.	/ɔ̀ kɔ́/ <ɔ́ɔ kɔ>: he is going	/ɔ̀ à hɔ́/ <ɔ'a hɔ>: he has left
2.	/ɔ̀ bá/ <ɔ́ɔ ba>: she is coming	/ɔ̀ à wa / <ɔ'a wa>: she has arrived
3.	/ɔ̀ dí/ <ɔ́ɔ di>: he is eating	/ɔ̀ à lí / <ɔ'a li>: he finished eating
4.	/ɔ̀ tʃɛ́/ <ɔ́ɔ cɛ>: it is lasting a long time	/ɔ̀ à hɛ / <ɔ'a hɛ>: it has lasted a long time

Table 26: The Resultative Aspect

3.6.3 **Nominalization and Grade III Mutation**

Nominalization is a process by which a verbal stem is turned into a nominal stem by prefixing **{è-/ɛ̀}** and by adding the suffix **{-lɛ́}** to the verbal stem. The prefix **{è-/ɛ̀-}** agrees in [ATR] harmony with the first vowel of the verb stem. Grade III mutation fulfills a derivational function in that it changes one grammatical category (verb) into another (noun). The nominalization process is accompanied by Grade III mutation.

(17)

N0	Verbal Stem	Nominal Form
1.	<da> [dá]: to sleep	<ɛlalɛ> [ɛ̀lalɛ́]: lying down
2.	<ce> [tʃɛ́]: to distribute	<ehelɛ> [ɛ̀hélɛ́]: sharing
3.	<kun> [kṵ́]: to kill	<ehunlɛ> [ɛ̀hṵ́lɛ́]: killing
4.	<ba> [bá]: to arrive	<ɛwalɛ> [ɛ̀wálɛ́]: arrival

Table 27: Nominal Form

3.6.4 **Modality and Grade III Mutation**

Grade III mutation is used in Anyi to distinguish between imperfected declarative sentences and the **jussive** and **the cohortative** modes.[48] Kautzsch (1953:319-21) defines

[48] Some prefer the term "subjunctive" for the sake of simplicity.

the jussive and the cohortative as commands. The jussive is always in the 2nd and 3rd person singular and plural, and expresses a command directed to a person other than the speaker. As for the cohortative, he argues that it lays stress on a command to a group of people in which the speaker himself is included. When these two modes are used, Grade III mutation occurs obligatorily in Anyi. This can be seen by comparing the three sentences below:

(18)

N0	Moods	Glosses
5.	Progressive Aspect	/ɔ́ɔ̀ kɔ́/ <ɔ́ɔ kɔ>: he is going
6.	Jussive Aspect	/ɔ̀ hɔ́/ <ɔ hɔ>: let him go
7.	Cohortative Aspect	/yɛ̀ hɔ́/ <yɛ hɔ>: let us go

Table 28: Jussive and Cohortative

3.6.5 **Grade III Consonant Mutation in Desiderative Constructions**

Desiderative constructions are illocutionary speech acts which express the speaker's desire to have the addressee perform an action. They are also characterized by Grade III mutation. These constructions are different from their affirmative counterparts in which no consonantal mutation occurs with the verb, as illustrated by (19a) and (19b) below:

(19a)

N0	Forms	Sentences
1.	Phonetic Form	[ɔ̀ kn̰dɛ́ kɛ̀ ɔ̀ kɔ́]
2.	Orthographic Form	<ɔ kınndɛ kɛ ɔ kɔ>
3.	Gloss	He looks that he goes
4.	Translation	He is trying to go

Table 29: Affirmative Mood

(19b)

N0	Forms	Sentences
1.	Phonetic Form	[ɔ̀ kn̰dɛ́ kɛ̀ ɔ̀ hɔ́]
2.	Orthographic Form	<ɔ kınndɛ kɛ ɔ hɔ>
3.	Gloss	He looks that he goes
4.	Translation	He wants him to go

Table 30: Desiderative Mood

The consonant mutation from /k/ and /h/ in these sentences indicates differences in the subject of the subordinate clauses. In sentence (19a) the subject of the verb **<kınndɛ>** is the same as the subject of the verb <**kɔ>**. However, in sentence (19b), the subject of <**kınndɛ>** is different from the subject of the verb <**kɔ>.** This phonological change alone is sufficient to express a wish directed towards the subject of the verb <**hɔ>** in (19b). In English, to indicate that the subject of the main clause is different from the subject of the subordinate clause we have a pronominal mismatch between **him** and **he** in the translation of (19b). In Anyi, this is indicated by consonant alternation of the kind discussed here. It should be noted here that consonant alternation in the subordinate clause is confined to desiderative constructions in which the subject of the main clause is not identical with the subject of the

subordinate clause.

3.6.6 **Grade III Consonant Mutation in Permission-seeking Constructions**

It was shown earlier in the discussion of Grade II mutation that when the first person subject is seeking permission to perform an action, there is a consonant alternation. The same is true when non-first person subject pronouns are used in permission-seeking constructions. The only difference this time is that Grade III mutation occurs instead of Grade II mutation.

(20a)

N0	**Forms**	**Sentences**
1.	Phonetic Form	[ɔ̀ɔ̀ kɔ́]
2.	Orthographic Form	<ɔ̀ɔ̀ kɔ>
3.	Gloss	He Progressive go
4.	Translation	He is going

Table 31: Affirmative Mood

(20b)

N0	**Forms**	**Sentences**
1.	Phonetic Form	[ɔ̀ hɔ́]
2.	Orthographic Form	<ɔ hɔ>
3.	Gloss	He go?
4.	Translation	Should he go?

Table 32: Interrogative Mood

Again, the main semantic difference between sentences (20a) and (20b) lies in the consonant mutation from /k/ to /h/.

3.6.7 **Structural Analysis of Grade III Mutation**

From the examples (16) through (20) one can observe that the segments [k, d, tʃ, b] alternate with [h, l, h, w] respectively. It is difficult to formulate the alternations in terms of a single morphophonological rule because there are modal and discursive factors which are also responsible for these alternations. However, the alternations caused by purely morphophonological processes can be formulated as follows:

Morphophonemic Alternations in Nominalization

{/ k, d, tʃ, b /} → {[h, l, h, w]} / {e-/ɛ-} ─ {-lɛ}

Morphophonemic Alternations in the Perfected Aspect

{/ k, d, tʃ, b /} → {[h, l, h, w]} / ─ {-lɪ}[49]

[49] A vowel harmony rule based on the [ATR] value of the first vowel of the verb makes a difference between a [li] pronunciation or a [lɪ] pronunciation. In general, if the vowel [+ATR], the vowel of the suffix is [li]. If the vowel is [-ATR], then the vowel of the suffix is [lɪ].

Morphophonemic Alternations in the Resultative Aspect

{/ k, d, tʃ, b /} → {[h, l, h, w]} / {a} ─

These different formulations could be collapsed into one general rule by using brackets. However, for the sake of clarity, I have maintained these formulations separately.

3.6.8 **Grade III mutation and Orthographic Issues**

Grade III mutation does not pose any major orthographic issue because the original segments and the consonants in alternation have been claimed to be separate phonemes; even though the phonemic status of some of them is problematic. My proposal is that Grade III consonant alternation be represented in the orthography because they have grammatical, modal, and discourse differentiation functions. If the alternations are not written in the orthography, one would have hard time interpreting sentences such as those in (21):

(21)

N0	Sentences	Mood	Glosses
1.	<ɔ kɔ>	Affirmative	He goes
2.	<ɔ kɔ>	Permission-seeking	Should he go?

Table 33: Orthographic Dilemma

One can argue that the context will help in arriving at the correct interpretation. My response to this argument is that text comprehension is already a difficult undertaking. Therefore, if orthographic means can be used to alleviate this difficulty it should be done instead of letting the reader decipher the context first before arriving at the pronunciation of the sentence. However, if the sentences are written the orthography as (22) the reader will not have to appeal to the context to understand the sentence and arrive at the correct pronunciation because the information is readily available to him/her.

(21)

N0	Sentences	Mood	Glosses
1.	<ɔ kɔ>	Affirmative	He goes
2.	<ɔ hɔ>	Permission-seeking	Should he go?

Table 34: Orthographic Solution

3.7 **Summary**

This chapter was divided into three main sections. The first part dealt with nasalization and prenasalized consonants. Four important guidelines were proposed regarding issues related to nasalization.

1. It has been proposed that no distinction should be made between phonetically nasal vowels, phonemically nasal vowels, and nasal coloration in the orthography.

2. It has also been argued that there is no need to represent orthographically cases of nasal coloration because of the word-initial vowel constraint and also because of the fact that this type of nasalization is very weak on the nasal sonority scale.

3. As far as the orthographic representation of word-initial prenasalized consonants is concerned a morphophonemic criterion has been proposed to guarantee that homorganic nasal assimilation will be written in the orthography.

4. As for word-medial prenasalized consonants I proposed that CV̰1**N**CV2 and CV1**N**CV2 be distinguished in the orthography because native speakers do make this distinction.

In the second part of this chapter numerous structural and discursive evidence were presented to emphasize the necessity of representing Grade II and Grade III mutations in the orthography. The most important observation as far as the orthography of Anyi is concerned is that morphophological information such as the ones discussed in this chapter should clearly indicated. Failure to do so will result in poor reading fluency which is characterized by reading repairs, false starts, and the like. Moreover, if the morphophonological alternations discussed here are not noted in the orthography, this would force the reader to engage in at least two different tasks during the reading process. For the first task, he/she must read the full context and understand it. Then and only then can he/she assign the correct pronunciation to words in the sentence. In such a scenario, the reader must engage in various cognitive computations in order to determine the morphophonological rules that apply. This situation would be similar to writing the following English words **"impossible," "irregular,"** and **"illegal"** as *<inpossible>, *<inregular>, and *<inlegal>. If such were the case, readers of English would pronounce the words accurately only at a considerable cognitive processing cost.

Chapter Four

Morphology and Orthography

4.0 Introduction

The primary goal of this chapter is to determine what orthographic words are in Anyi. This investigation leads me to examine the formal and semantic composition of words. The concept of word is one of the most elusive units of linguistic description. The difficulties one faces in attempting to define the "word" is stated eloquently by Falk[50] (1978:25):

> Linguists and dictionary makers have tried to describe the concept "word" but all their attempts have failed in some way. And yet, speakers of every language know what a word is; they demonstrate this knowledge through their ability to list words, segment utterances into words, or identify words, as opposed to phrases, when they encounter them in a list. If the linguist, whose goal is the description of the knowledge speakers have of their language, and the dictionary compiler, who would like at least to provide clear, complete definitions of common terms, have not succeeded in identifying this basic concept, the problem must be extremely complex. We all know what a word is, yet no one can explain it.

Hockett (1975:166) proposes a simpler and more practical way of identifying a "word." He argues that "in general, the layman looks to writing and classes as a word whatever he finds written between two successive spaces." Hockett's practical way of identifying the word is only valid for written languages. But how can we identify a "word" in a language which does not have an orthography?

In section 4.1 I will attempt to answer this question by using a number of clues that linguists have proposed to identify a word. According to Nida (1946:149) the orthographic analysis of word "must be based upon certain objective criteria, not on the subjective `feeling' of the informant or the investigator." It is very important that a set of guidelines be used in identifying words in the orthography of unwritten languages because the absence of such guidelines can lead to an orthographic anarchy. The native speaker's intuition fails when complex issues such as compounds and related structures arise.

The first part of the chapter deals with simple morphological processes, the second with semi-affixes, the third with minimum free forms, the fourth with compounding, the fifth with reduplication, the sixth with morphologically complex processes. The final section is about "proverbial words" and "interlexical words." As in the previous chapters, each section is subdivided into two parts. The first part deals with the structural analysis,

---

[50] Lyons (1968:199) quotes Sapir as saying that the ability to segment utterances into words is not only characteristic of educated or literate speakers, illiterate people can do it too.

and the second with orthographic choices.

4.1 **Principles of Word Division**

Lyons (1969:200) defines the "word" as follows: "a word may be defined as the union of a particular meaning with a particular complex of sounds capable of particular grammatical employment." This means quite simply that phonological, morphological and semantic criteria coincide in defining the word. Even though this is generally the case, Anderson (1987:153) notes that "this happy congruence does not obtain, and different definitions result in different word divisions for the same sentence." The goal pursued in this chapter is to use widely accepted criteria to establish a sure foundation for the identification of words in Anyi.

4.1.1 **The Potential Pause Criterion**

Falk (1978:26) argues that if careful attention is paid to actual speech, brief pauses could be detected between forms we identify as words. Anderson (1987:151) goes one step further and claims that "the possibility of pausing thus supplies a certain kind of support for the division of a sentence into words." The potential pause criterion is language universal in that in every natural language, it is believed that speakers mark a pause between words. Orthographers have used this universal characteristic of speech as an important clue in identifying orthographic words. The pausing criterion can be formulated as follows:

Pausing Criterion

> Any segment of a sentence bound by two successive points at which pausing is possible is a word.

Therefore, in Anyi any form that is enclosed between an opening pause and a terminal pause can be considered a potential candidate for word. Even though pausing is a very practical clue, its efficiency is nevertheless limited. Falk (1978:26) notes that "it is only in slow, deliberate speech that they [pauses] are detectable between words, and even then, pauses are not present between all words."

4.1.2 **The Criterion of Vowel Harmony**

A number of linguists, including Nida (1946:151), Lyons (1968:205) Nespor and Vogel (1986:121-4), and Anderson (1987:151) note that in some languages the phonological process of vowel harmony frequently coincides with what may be regarded as a word. In the discussion in section 2.2 it was claimed that [±ATR] vowel harmony has a delimitative function in Anyi, that is, in any given "word" the vowels must all be [+ATR] or [-ATR]. Vowel harmony can, therefore, serve as a clue in identifying words. However, one must be careful not to rely too much on [ATR] vowel harmony because, as will be discussed in sections 4.2.2.1 to 4.3.6, the domain of application of [ATR] harmony is severely limited when it comes to suffixation.

4.1.3 **The Minimum Free Form Criterion**

Martinet (1969:130-1) makes a distinction between grammatical monemes and lexical monemes. The former belong to a closed class whereas the latter belong to "unlimited inventories." Both the grammatical monemes and the lexical monemes are known in Wolff (1984:8) as "non-compositional lexical items that can occur in isolation or without modification as constituents of sentences." Because of their ability to occur in isolation, these lexical items have been called "minimum free forms."[51] Many have relied on this controversial concept of minimum free form in defining the word. This criterion can be formulated as follows:

Minimum Free Form Criterion

Grammatical monemes and lexical monemes should be written in the orthography as separate words.

4.1.4 **The Interruptibility Criterion**

The interruptibility criterion is used to determine whether an utterance should be written as a single word or not. The standard test consists in inserting an element within the utterance. If inserting a morpheme within an utterance results in an ill-formed structure, it means that such an utterance should be written as a single word. Nida (1946:154) cautions that "the indivisibility of a lexical unit may be interpreted as significant, though not definitive." One should be particularly careful in using this criterion with long formulaic expressions. Generally speaking, no element can be inserted in these frozen phrases but this does not mean that they constitute a single word.

Another criterion, the **Bound Morpheme Criterion**, complements the interruptibility criterion. Anderson (1987:152) argues that

> in general, the composition of words in terms of formatives is much more rigid and restricted than is the combination of words into sentences.... Similarly we can generally insert other words between two words, but not between two formatives that are parts of the same words.

This means that stems and affixes should be written as a single word. This criterion can be formulated as follows:

Bound Morpheme Criterion

Affixes form a word with the stem to which they are attached.

---

[51] Wolff (1984:8) discusses the inadequacy of the term "free form". She argues that monemes such as "the," "a," "to," "under," "what," "or," "and," and "when" rarely occur alone. Then, there are compositional free forms that satisfy the definition of free form. Words such as "understand", "business", "lingonberry" occur as free forms even though they can be broken up structurally as consisting of two free forms even though semantically, they are not compositional. The main question here is the following: do we rely on morphology to define free forms or do we rely on semantics? Nobody has ever been able to propose a definitive solution, and I will not attempt ever.

4.2 **Simple Morphological Processes**

The order of morphological constituents is fixed in Anyi. A stem is preceded by a prefix and/or followed by a suffix. There are three major morphological processes in Anyi: **prefixation, suffixation,** and **reduplication.** There is a marginal and almost non-productive case of **linkage** that will be discussed in 4.8.3. This section focuses only on prefixation and suffixation.

4.2.1 **Prefixation**

Anyi has three prefixes **{Ǹ-}, {è-/ɛ̀-},** and **{à-}**. The first has two functions. It is used in nominalization as in (1a) and in plural noun formation as in (1b). These functions and the morphophonological rules that ensue from prefixing **{Ǹ-}** have been fully investigated in the preceding chapter (3.3.1) and do not need to concern us here.

(1a)

N0	**Verb Root**	**Gloss**	**Nominal Form**	**Gloss**
11.	[dá] <da>	to sleep	[ǹnàá] <nnaá>	sleeping
12.	[bìé] <bie>	to urinate	[m̀mìé] <mmie>	urine
13.	[sìé] <sie>	to burry	[ǹnzìé] <nzie>	funeral money

Table 1: Nominalization-Part 1

(1b)

N0	**Orthographic Form**	**Phonetic Form**	**Gloss**
1.	<kun>	[kʊ̰]	one
2.	<nnyʊn>	[n̰ɲʊ̰]	two
3.	<nzan>	[ǹzą̰]	three
4.	<nnan>	[ǹną̰]	four
5.	<nnun>	[ǹnʊ̰]	five
6.	<nzian>	[ǹnzḭą̰]	six
7.	<nzʊ>	[ǹnzʊ̀]	seven
8.	<mɔcʊɛ>	[mɔ̀tʃʊ̀ɛ́]	eight
9.	<ngʊnlan>	[ŋ̀gʊ̰lą̰]	nine
10.	<bulu>	[búlú]	ten

Table 2: Plural Noun Formation

The functional and morphophonological behavior of the prefix **{è-/ɛ̀-}** was also discussed in the preceding chapter. Suffice it to say here that the alternation between **{è-}** and **{ɛ̀-}** is due to the status of the vowels of the stem. If the first vowel of the root is [+ATR] the prefix is **{è-}**. If, on the contrary, it is [-ATR] or the vowel /a/, the prefix is **{ɛ̀-}**. There is, therefore, an [ATR] harmony between the root and the prefix. The prefix **{è-/ɛ̀-}** is used in nominalization transformations as exemplified by (2a). There are, however, numerous words with an initial **{è-/ɛ̀-}** in which the formative **{è-/ɛ̀-}** does not have any independent meaning as is the case of the examples in (2b).

(2a)

N0	**Verb Root**	**Gloss**	**Nominal Form**	**Gloss**
1.	[ká] <ka>	to bite	[èhálɛ̀] <ehalɛ>	biting
2.	[kùló] <kulo>	to love	[èhùló] <ehulo>	love
3.	[tʃi̱á̱] <cian>	to be in a bind	[èhi̱á̱] <ehian>	money difficulty
4.	[fí] <fɪ>	to vomit	[èfiɛ́] <ɛfiɛ>	vomiting
5.	[dá] <da>	to lie down	[èlálɛ̀] <ɛlalɛ>	lying down
6.	[mi̱á̱] <mian>	to tighten	[èmí̱à̱] <emian>	difficulty
7.	[wú] <wu>	to die	[èwùó] <ewuo>	Death

Table 3: Nominalization-Part 2

(2b)

N0	**Nominal Form**	**Gloss**
1.	[èlùó] <eluo>	yam
2.	[ɛ̀lʊ̀ʊ́] <ɛlʊʊ>	animal fat
3.	[ɛ̀lɔ́ɔ̀] <ɛlɔɔ>	war
4.	[èhó] <eho>	hunger
5.	[èfi̱á̱] <efian>	dirt
6.	[èfòó] <efoó>	spinach
7.	[èfùó] <efuo>	powder

Table 4: Nominalization-Part 3

The morpheme {à-} is prefixed to some Anyi words to indicate inalieanable body-part possession[52] as exemplified in (3a).

(3a)

N0	**Verb Root**	**Gloss**	**Nominal Form**	**Gloss**
1.	<ti> [tí]	head	<atrie> [àtrìé]	head
2.	<kʊ> [kʊ́]	stomach	<akʊɔ> [àkʊ̀ɔ́]	insides
3.	<sʊ> [sʊ́]	ear	<asʊɔ> [àsʊ̀ɔ́]	hearing
4.	<ja> [ʤá]	foot	<ajalɛ> [àʤàlɛ́]	step
5.	<nyɪn> [ɲí̱]	eye	<anyaán>[àɲà̱á̱]	sight

Table 5: Nominalization-Part 4

However, the examples in (3b) do not have such meanings. In these words it is difficult to determine what the prefix **{à-}** means.

[52] A detailed analysis of the phonological processes involved in the formation of inalienable possession will sidetrack us. Suffice it to note here that a number of phonological and morphological processes take place. The prefixation of <a-> is very common, as seen in <atrie> derived from the root <ti>,<asʊɔ> derived from <sʊ>, <ajalɛ> derived from the root <ja>, <anyɪan> from the root <yɪ>, and the word <akonvian> from the root <konvin>. In addition to prefixation, we note the presence of some affixes whose status is not well understood.

(3b)

N0	**Nominal Form**	**Gloss**
1.	<afián> [àfi̱á]	love
2.	<afían> [àfi̱a]	middle
3.	<adua> [àdùá]	dog
4.	<adʊa> [àdʊ̀á]	type of small deer
5.	<alıɛ> [àlìé]	food
6.	<aluwaa> [àlùwáà]	beans
7.	<aduku> [àdúkú]	head cloth
8.	<aloko> [àlòkó]	fried ripe plantain

Table 6: Nominalization-Part 5

4.2.2 **Verbal Suffixes and Nominal Suffixes**

In the discussion of suffixation a distinction needs to be introduced between verbal suffixes and nominal suffixes. The former involves three kinds of suffixes. The latter includes four suffixes. Verbal suffixes will be discussed first.

4.2.2.1 **The Verbal Noun Suffix**

One manner of verbal-noun formation is done by suffixation alone. This is the type that will be investigated here. The other involving a more complex process will be investigated in 4.7.1. Let us examine the examples below:

(4a)

N0	**Verb Root**	**Gloss**	**Nominal Form**	**Gloss**
1.	<to> [tó]	to buy	<tolɛ> [tólɛ̀]	buying
2.	<bu> [bú]	to break	<bulɛ> [búlɛ̀]	breaking
3.	<sa> [sá]	to hide	<salɛ> [sálɛ̀]	hiding
4.	<kpɛ> [kpɛ́]	to cut	<kpɛlɛ> [kpɛ́lɛ̀]	cutting
5.	<ce> [tʃé]	to share	<helɛ> [hélɛ̀]	sharing

Table 7: Nominalization-Part 6

(4b)

N0	**Verb Root**	**Gloss**	**Nominal Form**	**Gloss**
1.	<kele> [kèlé]	to show	<helelɛ> [hèlélɛ̀][53]	showing
2.	<kulo> [kùló]	to love	<hulolɛ> [hùlólɛ̀]	loving
3.	<kulu> [kùlú]	to bend	<hululɛ> [hùlúlɛ̀]	bending
4.	<sısa> [sìsá]	to pick up	<sısalɛ> [sìsálɛ̀]	picking up
5.	<fita> [fitá]	to blow	<fitalɛ> [fitálɛ̀]	blowing
6.	<kundo> [kṳ̀dó]	to roll	<kundolɛ> [kṳ̀dólɛ̀]	rolling
7.	<wandi> [wa̱dí]	to run	<wandilɛ> [wa̱dí]	running

Table 8: Nominalization-Part 7

[53] The initial consonant **/k/** in <**kele**>, <**kulo**>, <**kulu**> become <**helelɛ**>, <**hulolɛ**>, <**hululɛ**> as a result of the morphophonemic process of Grade III mutation discussed in Chapter Three.

The most important observation in these examples is that to form a verbal-noun from a verb stem, one adds the suffix {**-lɛ̀**} to the verb stem. It should be noted that, irrespective of the [ATR] value of the vowels of the verbal stem, the vowel of the suffix is always [-ATR], that is, it is always **{-lɛ̀}** never **{-lè}**.

4.2.2.2 **The Perfected Aspect Suffix**

The perfected aspect is indicated by attaching the suffix {**lì-**}[54] to the verb stem as shown in (5) below:

(5)

N0	**Verb Root**	**Gloss**	**Nominal Form**	**Gloss**
1.	<ka> [ká]	to bite	<ɔ hınlı> [ɔ̀ hálì]	she has bitten
2.	<cın> [tʃĩ]	to put on weight	<ɔ halı> [ɔ̀ hl̃ì]	she has put on weight
3.	<di> [dí]	to eat	<ɔ lilı> [ɔ̀ lílì]	she has eaten
4.	<ba> [bá]	to come	<ɔ walı> [ɔ̀ wálì]	she has come
5.	<to> [tó]	to buy	<ɔ tolı> [ɔ̀ tólì]	she has bought
6.	<fite> [fité]	to exit	<ɔ fitelı> [ɔ̀ fìtélì]	she has exited
7.	<to> [té]	to blow up	<ɔ walı> [ɔ̀ wálì]	she has come
8.	<butu> [bùtú]	to spill	<ɔ butulı> [ɔ̀ bùtúlì]	she has spilled
9.	<kpan> [kpa̰]	to shout	<ɔ kpanlı> [ɔ̀ kpa̰lì]	she has shouted
10.	<kpınlın> [kpl̃ĩ]	to groan	<ɔ kpınlın> [ɔ̀ kpl̃ĩ]	she has groaned
11.	<kınndɛ] [kn̰dé]	to search	<ɔ kınndɛlı> [ɔ kn̰délì]	she has searched

Table 9: The Perfected/Resultative

When the suffix {**lì-**} is added to a verb stem, Grade III mutation occurs, that is, if the initial consonant of the word is /k/, /tʃ/, /b/, or /d/ it changes into /h/, /w/, and /l/ respectively as seen in the first four words in (5).

4.2.2.3 **The Stative Suffix {-lìwá}**[55]

The suffix **{-lìwá}** is added to transitive verb stems to produce semantic passives, that is, constructions in which only the undergoer is expressed, (Foley and Van Valin 1986:322). When **{-lìwá}** is suffixed to a verb stem, the agent is not mentioned, only the undergoer is. Moreover, **{-lìwá}** indicates a terminal stage at which any likelihood of change is impossible. This morphological process is less and less productive in Anyi.

(6a)

N0	**Verb Root**	**Gloss**	**Nominal Form**	**Gloss**
1.	<sɛcı> [sɛ̀tʃĩ]	to spoil	<sɛcılıwa> [sɛ̀tʃílìwá]	spoiled

[54] In some dialects , if the suffix {-lì} is added to a verb which ends with nasal vowel, /l/ becomes /n/. However, this does not apply in the Mɔrɔfʊ dialect. The process described here is most common in the Bɔna dialect.

[55] In some dialects, this suffix is pronounced as [lìwáà]. However, in the orthography, it is spelled as <-lıwa>.

2.	<kpɔlɔ> [kpɔ̀lɔ́]	to be rotten	<kpɔlɔlɪwa> [kpɔ̀lɔ́lìwá]	rotten
3.	<kpʊtʊ> [kpʊ̀tʊ́]	to muddy	<kpʊtʊlɪwa> [kpʊ̀tʊ́lìwá]	muddied

Table 10: The Stative Suffix{-lìwá]

It is also important to note that **{-lìwá}** does not agree in [ATR] harmony with the vowel of the root. However, if the vowel that immediately precedes the stative suffix is a nasal vowel, [l] and [ɪ] are slightly nasalized but the nasal feature does not spread to [a] as shown in (6b) below:

(6b)

N0	**Verb Root**	**Gloss**	**Nominal Form**	**Gloss**
1.	<fʊnlʊn> [fʊ̰̀lʊ̰́]	to be fed up	<fʊnlʊnlɪwa> [fʊ̰̀lʊ̰́nɪ̰̀wa]	the state of being fed up
2.	<mian> [mɪ̰̀ą̰́]	to be in a bind	<mianlɪwa> [mɪ̰̀ą̰́nɪ̰̀wa]	the state of being in a bind
3.	<kpɪnlɪn> [kpɪ̰̀lɪ́]	to groan	<kpɪnlɪnlɪwa> [kpɪ̰̀lɪ́nɪ̰̀wa]	the state of groaning

Table 11: Nasalization of the Stative Suffix{-lìwá]

In spite of the nasalization of /l/ and /ɪ/, the stative suffix will be written <-lɪwa> the same everywhere.

4.3 **Nominalization Suffixes**

4.3.1 **The suffix {-fʊ̀ɔ́}**[56]

When the suffix **{-fʊ̀ɔ́}** is attached to noun stems it carries three possible meanings. It indicates possession, agentivity, and place of origin or habitation.

4.3.1.1 **Possession**

The suffix **{-fʊ̀ɔ́}** is affixed to some nouns to indicate possession. However, there is a restriction as to which noun this suffix can be attached to. Generally speaking **{-fʊ̀ɔ́}**is affixed to a noun that is not animate as in (7a) below.

(7a)

N0	**Orthographic Form**	**Phonetic Form**	**Gloss**
1.	<sikaáfʊɔ́>	[sìkàáfʊ̀ɔ́]	a fool person
2.	<yalɛfʊɔ́>	[jàlɛ́fʊ̀ɔ́]	a poor person
3.	<komofʊɔ́>	[kòmófʊ̀ɔ́]	a madman
4.	<wʊnnzɛfʊɔ́>	[wʊ̰̀nzɛ́fʊ̀ɔ́]	a pregnant woman
5.	<sɛsɛfʊɔ́>	[sɛ̀sɛ́fʊ̀ɔ́]	a righteous person
6.	<jayuofʊɔ́>	[ʤàjùófʊ̀ɔ́]	a clean person
7.	<nwɛlɛfʊɔ́>	[ǹwɛ̀lɛ́fʊ̀ɔ́]	a smart person

[56] Even though <-fʊɔ́> is a suffix here, according to Quaireau (1987:137), it was originally a free morpheme which means "person ." If this is the case , it is therefore not surprising that there is a minimal pair between [fʊ̀ɔ́] (human) and [fʊ̰̀ɔ̀] a type of monkey.

8.	<atukpacɪfʊɔ́>	[àtùkpátʃîfʊ̀ɔ́]	a sick person

Table 12: Possessive Suffix {-fʊ̀ɔ́}

4.3.1.2. **Agent**

When **{-fʊ̀ɔ́}** is attached to a verb stem it denotes the activity described by that verb. The structure, Verb + **{-fʊ̀ɔ́},** can be translated as "doer of." This can be seen in the words below.

(7b)

N0	**Orthographic Form**	**Phonetic Form**	**Gloss**
1.	<tɪnngɛfʊɔ>	[tɪ̰ŋgɛ́fʊ̀ɔ́]	counselor
2.	<sikefʊɔ>	[sìkéfʊ̀ɔ́]	host
3.	<defʊɔ>	[défʊ̀ɔ́]	savior
4.	<jʊjɔfʊɔ>	[ʤʊ̀ʤɔ́fʊ̀ɔ́]	talkative

Table 12: Possessive Suffix {-fʊ̀ɔ́}

The nouns are derived from the verbal roots <tɪnngɛ> (to make straight), <sike> (to host), <de> (to receive), and <jʊjɔ> (to speak).

4.3.1.3. **Place of Origin**

When **{-fʊ̀ɔ́}** is added to the name of a place it indicates the place of origin or the place where one lives, or one's nationality:

(7c)

N0	**Orthographic Form**	**Phonetic Form**	**Gloss**
1.	<abolocifʊɔ́>	[ábólócífʊ̀ɔ́]	European
2.	<abijanfʊɔ́>	[ábíjɑ̰́fʊ̀ɔ́]	from Abidjan
3.	<fɔlɔnɔbʊfʊɔ́>	[fɔ̀lɔ̀nɔ̀bʊ̀fʊ̀ɔ́]	from Fronobʊ
4.	<fanlanzɪfʊɔ́>	[fɑ̰̀lɑ̰̀zìfʊ̀ɔ́]	From France

Table 13: Nationality or Place or Origin

It is also important to note here too that the vowels of the suffix do not agree in [ATR] harmony with the [ATR] value of the vowels of the stem. The vowels of the suffix are always [-ATR].

4.3.2 **The Suffix {-lɪɛ́}**

The suffix **{-lɪɛ́}** is attached to handling verbs to indicate instrumentality. [57] Handling verbs are verbs whose semantic features include an intervention of the hands or hand-like organs.

[57] There are some uses of {-lɪɛ́} where the verb is not a handling verb. One such case is <ci> [tʃɪ́] (not to eat, to dislike). The word <cilɪɛ́> means "taboo."

(8)

N0	**Verb Root**	**Gloss**	**Nominal Form**	**Gloss**
1.	<kpɛ> [kpɛ́]	to cut	<kpɛlıɛ> [kpɛ́lìɛ́]	a chooper
2.	<si> [sí]	to pound	<silıɛ> [sílìɛ́]	a pounder
3.	<fita> [fìtá]	to blow	<fitalıɛ> [fìtálìɛ́]	a fan
4.	<fa> [fá]	to take	<falıɛ> [fálìɛ́]	elephant trunk
5.	<kɛlɛ> [kɛ̀lɛ́]	to write	<ngɛlɛlıɛ> [ǹgɛ̀lɛ́lìɛ́]	mark on the neck

Table 14: Instrumental Suffix

Other uses of **{-lıɛ́}** will be investigated in section 4.7.

4.3.3 **The Suffix {-bɛ́lɛ}**[58]

The suffix **{-bɛ́lɛ}** is attached to verbs to indicate location or the manner with which something is done. To denote location **{-bɛ́lɛ}** must be attached to a verb that has the potential of indicating a location as in (9a).

(9a)

N0	**Verb Root**	**Gloss**	**Nominal Form**	**Gloss**
1.	<da> [dá]	to lie down	<dabɛ́lɛ> [dábɛ́lɛ̀]	a place to lie down
2.	<sike> [sìké]	to host	<sikebɛ́lɛ> [sìkébɛ́lɛ̀]	the act of hosting
3.	<di> [dì]	to eat	<dibɛ́lɛ> [dìbɛ́lɛ̀]	eating place
4.	<fıa> [fìá]	to hide	<fıabɛ́lɛ> [fìábɛ́lɛ̀]	hiding place
5.	<tanran> [tą̀rą́]	to sit	<tanranbɛ́lɛ> [tą̀rą́bɛ́lɛ̀]	hospitality

Table 15: Locative Suffix

When **{-bɛ́lɛ}** is attached to a verb that occurs in a verbal phrase it describes the manner in which something is done. The verb and the suffix then behave like an adjectival which modifies a noun. This use of **{-bɛ́lɛ}** is seen in (9b)

(9b)

N0	**Orthographic Form**	**Phonetic Form**	**Gloss**
1.	<ndɛɛ́ kanbɛ́lɛ>	[ǹdɛ̀ɛ́ ką́bɛ́lɛ̀]	the way of speaking
2.	<suá sibɛ́lɛ>	[sùá sibɛ́lɛ̀]	the way of building the house
3.	<sikaá cebɛ́lɛ>	[sìkàá ʧébɛ́lɛ̀]	the way of sharing the money
4.	<awuó duabɛ́lɛ>	[àwùó duabɛ́lɛ̀]	the way of sowing rice

Table 16: Compound Nouns with the Suffix **{-bɛ́lɛ}**

One should also note that the suffix **{-bɛ́lɛ}** does not agree in [ATR] harmony with the vowels of the stem.

---

[58] The suffix <-bɛ́lɛ> is distinguished from the locative adverb <ɛbɛlɛ́> [ɛ̀bɛ̀lɛ́] and its reduced form <bɛlɛ́> [bɛ̀lɛ́] in the orthography. This orthographic distinction particularly is useful with the temporal adverb <bɛlɛ́>. It helps avoid reading difficulties.

4.3.4 **Orthographic Representation of Prefixation and Suffixation**

Stems to which prefixes and suffixes have been attached do not pose any orthographic problem. The Bound Morpheme Principle ensures that they be written as a single word. However, the orthographic representation of suffixation and [ATR] vowel harmony should be given some careful consideration.

The orthographic representation of suffixation is a clear example of instances where the phonological word and the morphological word conflict. If the phonological criterion of vowel harmony were used as the sole determining factor in choosing the word, one would write the suffix and the stem as two separate orthographic words because, as has been shown in this discussion, [ATR] harmony fails to spread to the suffix. Such a decision will, however, be wrong because in a great many languages bound affixes and the stem to which they are attached are written as a single word.

The last issue to be resolved has to do with the orthographic representation of **{-lì}.** This perfected aspectual marker has three realizations: **{-lì}**, **{-lí}** and **{-nɨ̰}**. In the Mɔrɔfʊ dialect the aspectual marker is always **{-lì}** irrespective of the [ATR] value of the preceding vowels. However, Burmeister, in private correspondence, has informed me that in Sanvi if the vowels of the stem are **/i/** or **/u/**, **{-lì}** is realized **{-lì}**. However, if the vowels of the stem are the mid-vowel **/e/** or **/o/**, **{-lì}** remains unchanged.

Quaireau (1987:291) also points out that in the Bɔna dialect, the aspectual marker **{-lì}** becomes **{-nɨ̰}** when the verb ends in a nasal vowel. However, he suggests that for orthographic purposes, **{-lì}** should be the only form that is maintained. I agree with Quaireau and propose that **{-lɪ}** be used in the standardized orthography.

4.4 **Semi-affixes**

Wolff (1984:89) quotes Marchand as defining semi-affixes as follows:

> ...those elements that stand midway between words and suffixes. Some of them are only used as suffixes though their word character is still recognizable. (Marchand 1969:356)

Several Anyi morphemes fit Marchand's definition of semi-affixes. The most frequent ones are discussed below. The conclusions arrived at here can be extended to most cases without any major problem.

4.4.1 **The Semi-affix /bɔ́bɔ́/<bɔbɔ>**

Anyi has an emphatic formative which is **<bɔbɔ>.** It follows nominal stems. From the standpoint of its distributiony, **<bɔbɔ>** can follow both the subject and the object. When **<bɔbɔ>** occurs in subject position, it is usually followed by the focus marker /jìɛ́/ <yıɛ>. The sentence usually concludes with the euphonic particle /ɔ̀/. There is no specific syntactic marker in object position.

(10a). [kàsí **bɔ́bɔ́** jìé ɔ̀ sílì sùá éká ɔ̀].
<Kasi **bɔbɔ** yıɛ ɔ silı suá ɛka ɔ>
Kasi himself focus he built house this euphonic
It is Kasi himself who built this house.

(10b). [kàsí wú̱lì áyá **bɔbɔ**]
<Kasi wunlı Aya bɔbɔ>
kasi saw Aya herself
It was Aya herself that Kasi saw.

4.4.2 **The semi-affix /wʊ̱́/ <wʊn>**

Schachter (1986:28) argues that "in a good many languages, reflexive forms are analyzable as a head nominal modified by a pronominal possessive agreeing with the subject. Often the head nominal also occurs as a common noun meaning `head' or `body'." This observation is also valid for Anyi. Reflexivity is expressed by placing **affix /wʊ̱́/** (body) after the possessive pronoun as seen in (11a).

(11a). [kàsí kpɛ́lı jĭ **wʊ̱́**]
<Kasi kpɛlı yı wʊn.>
Kasi rotated his body
Kasi excused himself for a few minutes.

When **<wʊn>** occurs with symmetrical predicates, it has the reading of a reciprocal pronoun as in (11b).

(11b). [bɛ̀ kpıkpɛlı bɛ̀ wʊ̱́ ǹzʊ̀á]
<Bɛ kpıkpɛlı bɛ wʊn nzʊa.>
They cut cut their bodies insults
They insulted each other.

4.4.3 **The Semi-affixes /bàlá/ <bala>** and **/bìésùá/ <biesua>**

Anyi does not have grammatical gender, it relies on biological gender to distinguish the sex of animals or human beings when such a distinction is deemed necessary. In such cases the semi-affix <**bala**> occurs after the head noun to indicate feminine gender. When **{balá}** occurs alone as a minimum free form it means "woman." It can also be used metaphorically to describe a man who has woman-like character or behavior.

(12a)

N0	**Orthographic Form**	**Phonetic Form**	**Gloss**
1.	<boli bala>	[bólí blàá][59]	she-goat
2.	<adua bala>	[àdùá blàá]	female dog
3.	<bʊa bala>	[bʊ̀á blàá]	sheep
4.	<bɔlɔfʊɔ́ bala>	[bɔ̀lɔ̀fʊɔ́ blàá]	a white woman

Table 17: The Semi-affix <bala>

Similarly, when **{biésuá}** occurs alone it means "man." It can also be used to denote manliness, courage and all kinds of character and behavior that is associated with manhood. But when it follows the head noun it indicates only masculine gender as in (12b) below:

(12b)

N0	**Orthographic Form**	**Phonetic Form**	**Gloss**
1.	<boli biesua>	[ból̀i bìésùá]	male goat
2.	<kɔmıan biesua>	[kɔ̀mı̀ą̀ bìésùá]	male diviner
3.	<nannın biesua>	[nà̰nı̀́ bìésùá]	bull
4.	<baá biesua>	[bàá bìésùá]	boy

Table 18: The Semi-affix <biesua>

4.4.4 **The Semi-affixes /ɲı̰́mą̰́/ <nyinman> and {ǹdóndó} <ndóndó>**

The words <**nyinman**> and <**ndóndó**> are semi-affixes that have a very restricted distribution. They indicate masculine gender for some very specific animals. The word <**nyinman**} is used only for birds, and preferably for birds that have a comb on their heads. As for <**ndóndó**> [60] its use seems to be limited only to male animals that have horns.

(13)

N0	**Orthographic Form**	**Phonetic Form**	**Gloss**
1.	<akɔ nyinman>	[àkɔ́ ɲı̰́mą̰́]	rooster
2.	<bʊa ndóndó>	[bʊ̀á ǹdóndó]	ram
3.	<dabʊdabʊ nyinman>	[dàbʊ̀dàbʊ̀ ɲı̰́mą̰́]	male duck
4.	<nannın ndóndó>	[nà̰nı̀́ ǹdóndó]	big horned cow

Table 19: More [+male] Semi-affixes

4.4.5 **The semi-affixes /bàá/ <baá>, /ką̰́/ <kán>, and /kpą̰́ɲı̰́/ <kpannyin>**

The semi-affixes <**baá**> and <**kán**> act as diminutive morphemes when they follow a head noun. When they follow proper human names, they have an affective meaning and

---

[59] In normal to fast tempo, a metathesis rule applies that moves the low tone vowel /à/ forward. However, in the orthography the form <bala> is kept because some dialects still maintain the <CV1CV2> pronunciation even in normal tempo.

[60] There is another semi-affix, /**sàlɛ́**/ **<salɛ>**, which occurs after nouns to indicate that the animal or person referred to has been castrated.

can be translated in English as "junior."

(14a). [kàsí kạ́ạ̀]
<Kasi káan>
Kasi small
Kasi, Jr.

(14b) [kàsí bàá]
<Kasi baá>
Kasi Jr.

(14c)

N0	**Orthographic Form**	**Phonetic Form**	**Gloss**
1.	<akɔ baá>	[àkɔ́ bàá]	chick
2.	<adua baá>	[àdùá bàá]	small dog
3.	<bʊa baá>	[bʊ̀á bàá]	small lamb
4.	<dadiɛ baá>	[dádìɛ́ bàá]	small knife

Table 20: Diminutive Semi-affixes

There are many words in which **<baá>** is sometimes interpreted as a child and sometimes as a diminutive. When it does not follow a noun, <**baá>** means child. However, when it follows a noun it has a diminutive meaning. There are words in which the diminutive meaning of <**baá>** is no longer apparent. Several of these words are listed in (14d), (14e) and (14f) below:

(14d)

N0	**Orthographic Form**	**Phonetic Form**	**Gloss**
1.	<kunlunbaá>	[kụ̀lụ́bàá>	inside child/child (not adopted)
2.	<sinbaá>	[sị́bàá]	Behind, back child/ baby brother/sister
3.	<ndɔmanbaá>	[ǹdɔ̀mạ́bàá]	testicles child/ adopted child
4.	<tʊanunbaá>	[tʊ́anụ́bàá]	penis in child/child (not adopted)
5.	<sukulubaá>	[súklúbàá>	school child/ pupil
6.	<nyɪnbaá>	[ɲɪ́bàá]	sight child/ eye
7.	<ahʊnlʊnbaá>	[àhʊ̀lʊ́bàá]	stomach child/ heart

Table 21: <Baá> with Idiomatic Meaning

In the words in (14e) <**baá>** has its plural form **<mama>**. This plural form is an instance of Grade II consonant mutation.

(14e)

N0	**Orthographic Form**	**Phonetic Form**	**Gloss**
1.	<sámmaá>	[sámmàá]	fingers
2.	<nzarámmáa>	[ǹzàrámmáà>[61]	stars
3.	<jámmaá>	[jámmàá]	toes
4.	<ɛwʊnmmaá>	[ɛ̀wʊ̀mmàá]	bees
5.	<bulálɛmmaá>	[bùlálɛ̀mmàá>	nails
6.	<suámmaá>	[sùámmàá]	rooms
7.	<nvɪnmmaá>	[ǹvɪ̀mmàá]	sides

Table 22: Affixation with the Plural Form of <Baá>

The examples in (14f) are instances where <**baá>** has undergone Grade III consonant mutation, that is, /b/ becomes /w/.

(14f)

N0	**Orthographic Form**	**Phonetic Form**	**Gloss**
1.	<ndʊrʊwáa>	[ǹdʊ̀rʊ́wáà]	eggplant
2.	<jéwaá>	[dʒéwáà]	tooth decay
3.	<sɪ waá>	[sí wáà]	cousin from father's side
4.	<nín waá>	[nɪ́ wáà]	cousin from mother's side

Table 23: <Baá> with Consonant Mutation

The semi-affix <**kpannyin>** is the opposite of both <**baá>** and <**kán> [ká]** in that, when it occurs alone it means "old" or "mature." However, when it follows a proper name it means "senior."

(14g)

N0	**Orthographic Form**	**Phonetic Form**	**Gloss**
1.	<Kasi kpannyin>	[kàsɪ́ kpa̰ɲɪ́]	Kasi senior
2.	<kuló kpannyin>	[kùló kpa̰ɲɪ́]	village elder/chief
3.	<awulo kpannyin>	<àwùló kpa̰ɲɪ́]	house elder/head of a household

Table 23: The Semi-affix <kpannyin>

4.4.6 **Orthographic Representation of Semi-affixes**

The issue to be addressed as far as the orthographic representation of semi-affixes is concerned is the following: Should semi-affixes be attached to the nouns they follow as a single word or should the noun and the semi-affix be written as two words? The orthographic representation of semi-affixes poses problems because of the very nature of

[61] It is unclear for the moment why there is tonal metathesis in words such as<nzrarammáa>, <ndʊrʊwáa>, <sɪ wáa>, and <nín wáa>.

these semi-affixes. They were defined earlier as forms that can occur as minimum free forms as well as affixes. The criteria that will be used to decide how semi-affixes could be written are the criteria of potential pause, and that of minimum free form. When a semi-affix follows a noun, there is a slight pause between the head noun and the semi-affix. Moreover, the fact that semi-affixes can occur as minimum free forms is a further indication that semi-affixes and the nouns they follow should be written as separate words.

The semi-affix **{baá}** causes some problems that need to be addressed separately. I propose that if the meaning of the Noun + **{baá}** word is not compositional, they should be written as a single word. If this proposal is accepted, words such as those in (14d), (14fe) and (14f) will be written as single orthographic words. If, however, the meaning of Noun + **{baá}** and its derived forms **{mmaá}** and **{wáa}** is compositional, they should be written as two separate words as in , (14a), (14b) and (14c).

There is an additional problem with this proposal. Quaireau (1987:252) writes the words in (14e) with only one **[m]** instead of two. No justification is given for this spelling. However, on the same page he states clearly that the plural of **{baá}** is **{mmaá}** and writes <**kafé mama**> (coffee beans) with two **[m]**s instead of one **[m]**. I propose that the double **[m]** be kept in all the cases because it reflects the morphophonological changes discussed in 3.3.8.

4.5 **Minimum Free Forms**

Hockett (1958:168) defines minimum free forms as words that cannot be further subdivided into immediate constituents. It was discussed in section 4.1.5 that minimum free forms fall into two categories, i.e., grammatical free forms and lexical free forms. The first part of this section focuses on the orthographic representation of grammatical free forms. The second section will deal with compounding.

4.5.1 **Orthographic Representation of Grammatical Free Forms**

Since grammatical free forms can occur alone lexicographers enter them in dictionaries as separate entries. As such, they do not present any major orthographic problems. However, in Anyi there are some problems related to the orthographic representation of some grammatical free forms that need to be clarified. The following discussion will cover determiners, postpositions, and aspectual markers. The results of this discussion can be extended to other close-ended minimum free forms not discussed here.

4.5.2 **Determiners**

The class of determiners that will be examined here is what is traditionally known as articles. Anyi has two definite articles which follow the noun. The morpheme **<nɪn> [nɪ̨]** and its reduced form **<'n>** is the singular definite article while <**mɔ**> **[mɔ́]** and its reduced form **<'m>** is the plural definite article**.** The major point of this paragraph is that I want to argue that it is unnecessary to hyphenate the noun and the article as Burmeister (1986:1-8) suggests. I deem it unnecessary because the reference deictics **<sɔ> [sɔ́], <ɛhɪ> [ɛ́hí]** (this), and **<ɛka>** [**ɛ́ká]** (that) can be inserted between the noun and the determiner as in (15b). The interruptibility criterion suggests that they are two separate words.

(15a) <mmantaran mɔ a hɔ>
[m̀mą̀tą̀rą́ mɔ́ à hɔ̀]
children pl have gone
The children have left

(15b) <mmantaran **sɔ** mɔ a hɔ>
[m̀mą̀tą̀rą́ **sɔ́** mɔ́ à hɔ́]
children these pl have gone
These children have left

The fact that <sɔ> **[sɔ́]** can be inserted between the definite article <**mɔ>** and the noun <**mmantanran>** in (15b) indicates that they should be written as two separate words. There is, therefore, no need to hyphenate nouns and determiners in the orthography.

The definite articles can occur in their full forms as **<nɪn>** and **<mɔ>** or in their elided forms **<'n>** and **<'m>** respectively. I suggest that in the latter case an apostrophe **(')** be written between the noun and the definite article to indicate the elision.

4.5.3 **Postpositions**

Anyi postpositions are generally locative markers. They occur immediately after the noun. Below is a list of all the postpositions:

(16)

N0	**Orthographic Form**	**Phonetic Form**	**Gloss**
1.	<sʊ>	[sʊ́]	on, above
2.	<sin>	[sḭ̀]	back, behind
3.	<nyunrun>/<wunlun>	[ɲṵrṵ>/<wṵlṵ]	ahead, face
4.	<famaá sʊ>	[fàmàá sʊ́]	on the right hand
5.	<bɛɛ sʊ>	[bɛ́ɛ̀ sʊ́]	on the left hand
6.	<afián>	[àfḭą̰́]	in the midst
7.	<awunlo>	[à̰wṵ̀ló]	on top, above
8.	<asɪ>	[àsì]	on the ground, beneath

Table 24: Postpositions

The morphemes **{mɔ}, {nɪn}** and **{sɔ}** can be inserted between the noun and the postposition, thus meeting the interruptability criterion which suggests that if two forms can be separated by an element without yielding an ill-formed structure, the two forms should be written as two separate words. An exception to this proposal will be discussed in section 4.5.8.

4.5.4 **Aspectual Markers**

Aspectual morphemes have already been discussed in various parts, therefore, I will offer only illustrative examples to make my point without having to go into the details of

their uses.

4.5.4.1 **The Progressive Aspect**

The progressive aspect morpheme is **{sì}**. It indicates an ongoing event as in the sentence in (17):

(17) <Kasi **sʊ** kɔ>
[kàsí **sʊ́** kɔ́]
Kasi Progressive go
Kasi is leaving.

4.5.4.2 **The Continuative Aspect**

The continuative aspect indicates an unfolding event without reference to its beginning or its end.

(18) <Kasi **tɛ** kɔ>
[kàsí **tɛ́** kɔ́]
Kasi Progressive go
Kasi is still going.

4.5.4.3 **The Constatative Aspect**

It describes an an ongoing action not from the viewpoint of the speaker but from the viewpoint of the onlooker.

(19) <Kasi **lɛ** kɔ>
[kàsí **lɛ́** kɔ́]
Kasi Constatative go
Kasi is leaving.

4.5.4.4 **The Resultative Aspect**

The resultative aspect, <**a> + verb**, is equivalent to the English present perfect. It indicates a completed action whose consequences are still felt at the moment of speaking.

(20) <Kasi **à** hɔ>
[kàsí **à** hɔ́]
Kasi Resultative go
Kasi has left

4.5.4.5 **Orthographic Representation of Aspectual Markers**

The dominant clue for determining how aspectual markers should be represented in the orthography is the minimum free form criterion. Since these aspectual markers are grammatical free forms, I suggest that they be written separately. Other Akan languages namely Ashanti, Nzema and Akuapem write aspectual markers as separate orthographic words.

4.5.5 **Compounding**

Anderson (1987:42-3, 46) argues that compounds are defined either by their formal relations or by their semantic relations. Formally, Nida (1946:85) defines compounds quite simply as words consisting of two or more minimum free forms. There are four possible ways in which bound morphemes (grammatical forms) and free morphemes (lexical items forms) can combine to create compounds in languages, as shown by the equation below:

1. Lexical item	+	lexical item
2. Lexical item	+	grammatical item
3. Grammatical item	+	grammatical item
4. Grammatical item	+	lexical item form

Table 25: Compounding Equation

My investigations so far have not shown that the last two logical possibilities are used in forming compounds in Anyi. Therefore, the following discussion will illustrate how Anyi uses the first two possibilities in creating compounds. To avoid tedious repetition of the same argument the discussion of the orthographic representation of compounds will be delayed until all the types of compounds have been examined.

4.5.6 **Noun 1 + Noun 2 Compounds**

The major parts of speech (nouns, verbs, adjectives and adverbs) often combine to create compounds. Let's see how this word-formation strategy words when the compound involves two nouns. Noun1 + Noun2 compounds are very productive devices for creating new lexical items. In general, only the last member of the compound can take a definite article. When the first member of the compound takes a definite article, the whole compound is ill-formed as seen in (21a) below:

(21a) <Kasi a sʊn **kafé fié** nɪn>
[kàsí à sʊ̀ **kàfé fìé** nɪ́]
Kasi has cut (grass) coffee farm the
Kasi has cut the grass in the coffee farm

(21b) <Kasi a sʊn **kafé** nɪn **fié**>

In Noun1 + Noun2 compounds the first noun modifies the second noun. Therefore, we have a **modifier - modified** construction. In many cases the meaning of modifier-modified compounds is compositional, that is, the sum total of the meaning can be deduced from the meaning of the individual member of the compound.

(21c)

N0	**Orthographic Form**	**Phonetic Form**	**Gloss**
1.	<bolo nnaán>	[bòló ǹnə̀ə́]	bush animal: wild animal
2.	<kuló nnaán>	[kùló nnə̀ə́]	Village animal: domesticated animal
3.	<bóo bʊɔ>	[bóò bʊ̀ɔ́]	nose hole: nostril
4.	<bete bʊɔ>	[bèté bʊ̀ɔ́]	rat hole
5.	<sikaá suá>	[sìkàá sùá]	money house: bank
6.	<fuluwa suá>	[fùlùwáà sùá>	book house : library
7.	<kafe fie>	<káfé fìé>	coffee farm
8.	<abele fie>	<àbèĺe fìé>	corn field

Table 26: Compositional Compounds

4.5.7 **Noun + Postposition Compounds**

Formally, a noun and a postposition can co-occur. In many cases Noun + Postposition compounds have a locative meaning. Of the postpositions listed in 4.5.3, Table 24, the ones that often form compounds with nouns are **<sin>** (back, behind), **<wunlun>** (in front, in face), **<awunlo>** (overhead, on top), **<bʊ>** (beneath, underneath), and **<sʊ>** (over, on top of), as seen in the examples below:

(22)

N0	**Orthographic Form**	**Phonetic Form**	**Gloss**
1.	<suá sin>	[sùá sı̰]	house behind: behind the house
2.	<suá wunlun>	[sùá wṵlṵ]	house front: in front of the house
3.	<suá bʊ>	[sùá bʊ̰]	house under: under the house
4.	<suá sʊ>	[sùá sʊ́]	house top: on top of the house

Table 27: Noun + Postposition Compounds-Part 1

Even though these words have been labeled postpositions because of their function, they may as well be considered as nouns because they name parts of the body. The word <**sin**> means "back", <**wunlun**> "face", <**sʊ**> "ear", <bʊ> "bottom." They may be seen as cases of polysemy, that is, a word which has more than one meaning or a metaphorical extension of body-part terminology.

There are words in which the postposition and the stem have merged to form a single lexical item to such an extent that if a morpheme were inserted between the two the resulting structure would be ill-formed or the word would have a completely different meaning. Such words indicate names of localities as exemplified by (22b).

(22b)

N0	**Orthographic Form**	**Phonetic Form**	**Gloss**
1.	<bakaásin>	[bàkàásɨ̰]	tree on: restroom[62]
2.	<tɛkɛtɛkɛsʊ>	[tɛ̀kɛ̀tɛ̀kɛ̀sʊ̋]	name of a campground
3.	<fɔlɔnɔbʊ>	[fɔ̀lɔ́nɔ̀bʊ̋]	name of a campground
4.	<kpéɛbulusʊ>	[kpéɛbùlúsʊ̋]	name of a village
5.	<abusunun>	[àbúsúnṵ]	name of a village
6.	<anyalɪɛsʊ>	[àɲálìɪ́sʊ̋]	meeting place: border
7.	<ahʊnlɪɛnun>	[àhʊ́nlìɪ́nṵ]	war place: name of a farm

Table 28: Noun + Postposition Compounds-Part 2

I suggest that cases such as (22b) be written as single words. The reason for this proposal is that these words are generally locative proper names such as camp grounds, villages, or farms. Moreover, phonologically, the words in (22b) are said without any pause between the noun stem and the postposition whereas in environments such as those in (22a) there is a clear pause between the noun and the postposition.

4.5.8 **Verb + Noun Compounds**

Verb + Noun compounds are one of the most productive word-formation processes in Anyi. There are only a few hundred verb stems in the language. However, a single verb stem can combine with a variety of nouns to cover a wide range of meanings. In many cases the meaning of the phrase is not compositional as seen from the example below. The single verb **di** which originally meant "to eat" has acquired completely different meanings depending on the nature of the following noun.

(23a)

N0	**Orthographic Form**	**Phonetic Form**	**Gloss**
1.	<di alɪɛ>	[dí àlìɪ́]	to eat food: to eat
2.	<di junman>	[dí jṵ̀mā̰]	to eat work: to work
3.	<di buturo>	[dí bùtùró]	to eat fight: to fight
4.	<di nzʊa>	[dí ǹzʊ̀á]	to eat insults: to insult
5.	<di bian>	[dí bìā̰]	to eat husband: to commit adultery by a wife
6.	<di Kasi>	[dí Kàsí]	to eat Kasi: to be named Kasi
7.	<di baye>	[dí bàyé]	to eat witchcraft: to practice witchcraft
8.	<di fʊɔ>	[dí fʊ̋ɔ̀]	to eat advice: to be wrong
9.	<di amanɪan>	[dí àmànìā̰]	to eat news: to give the news
10.	<di awusian>	[dí àwúsìā̰]	to eat orphan: to be an orphan

[62] Not long ago fallen trees were used as restrooms. People climbed on those fallen trees to satisfy their needs. Therefore, <bakaásʊ> is used as a euphemism for human excrement. Literally, <bakaá> means "tree", and <sʊ> means "on."

11.	<di nanhɔlɔ>	[dí nə̰̀hɔ̀lɔ́]	to eat truth: to tell the truth
12.	<di nzuo>	[dí ǹzùó]	to eat water: to fish by emptying a pond
13.	<di amʊan>	[dí àmʊ̰̀ə̰́]	to eat fetish: to take an oath
14.	<di munnzuo>	[dí mṵ̀nzùó]	to eat ill-luck: to be unlucky

Table 29: Verb + Noun Compounds-Part 1

The examples in (23a) can be represented schematically as [V + N] V, that is, the compound behaves like a verb. Much has been said in the literature of African languages about such constructions. It is unclear whether they should be treated grammatically as compounds or as verbs which are subcategorized as requiring an NP object. They have been labeled "*inherently transitive verbs*," that is, the verb cannot occur by itself. It must be strictly subcategorized as requiring a direct object. Such structures can be opposed to Verb + Noun compounds which behave like nouns even though a verb is followed by a noun. Such compounds can be represented schematically as [V + N] N. They can be inflected for definiteness, that is, the definite articles <**nɪn>** (for the singular) and <**mɔ>** (for the plural) can follow [V + N] N compounds. This can be exemplified by (23b):

(23b)

N0	**Orthographic Form**	**Phonetic Form**	**Gloss**
1.	<kun-mosi>	[kṵ́ mósí]	Kill Mosi[63]: poisonous plant
2.	<gada-eyua>	[gàdá èṵùá]	cover-sun: umbrella
3.	<kunndo-ebiin>	[kṵ̀ndó èbìṵ̀]	roll-excrement: an insect that rolls dirt
4.	<sacɪ-ayire>	[sàtʃǐ àjìré]	spoil medicine: supernatural power to void witchcraft
5.	<tɪan-bɛ́ɛ>	[tḭ̀ə́ bɛ́ɛ̀]	yell them: supernatural power to make somebody fall onto the group just by yelling
6.	<sa-toro>	[sá tòró]	fetch soup: large wooden spoon
7.	<tafɪ-toro>	[tàfĩ̌ tòró]	lick soup: index

Table 30: Verb + Noun Compounds-Part 2

The list in (23b) is the list of some of the most frequent [V + N]. In all these examples, the compound is a noun because it can be followed by a definite article as in (23c) below:

(23c)	<Kasi	yɪ	sacɪ-ayire	**nɪn**	ɔ'a	le	yi	ti>
	[kàsí	jí	sàtʃǐ àjìré	**nṵ́**	ɔ̀ à	lé	jí	tí]
	Kasi	his	anti-poison	the	it has	saved	his	head

[63] The Mosi are from Burkina-Faso. They used to work in coffee and cocoa plantations owned by the Anyis. Poisonous plans of all types bear this name because, a Mosi was allegedly killed for having unknowingly mistaken a poisonous plant for an eggplant bush. The authenticity of this story cannot be verified.

Kasi's supernatural power saved his life

4.5.9 **Verb1 + Verb2 Compounds**

Anyi uses Verb1 + Verb2 compounds frequently to create new words. This is a very productive word-formation strategy. In some cases, the meaning of the compound is compositional but in others it is not. Let us focus on the non-compositional meanings reflected in the words in (24a).

(24a)

N0	**Orthographic Form**	**Phonetic Form**	**Gloss**
1.	<kan nian>	[kã́ nĩã́]	to touch see: to test
2.	<kan kele>	[kã́ kèlé]	to touch show: to tell
3.	<kan tʊ>	[kã́ tʊ́]	to touch fall: to overrun
4.	<kan sie>	[kã́ sìé]	to touch keep: to memorize
5.	<di sie>	[dí sìé]	to eat keep: to promise
6.	<tʊ fʊn>	[tʊ́ fʊ̃]	to throw miss: to make a slip of the tongue
7.	<de di>	[dé dí]	to take eat: to have faith
8.	<hulu kpɪn>	[hùlú kpĩ́]	to jump land: to jump of joy
9.	<bu fia>	[bú fiá]	To break hide: play hide and go seek

Table 31: Verb + Verb Compounds-Part 1

Verb1 + Verb2 compounds are schematically [V + V] V, that is, they behave like a single verb. There is morphological evidence to support this claim. When the perfected aspect is used the suffix **{-lí}/<lɪ>** is attached only to the second member of the compound instead of being attached to both stems individually.

There are a few cases where [V + V] compounds behave like nouns instead of verbs, that is, [V + V] N. One of the tests to find out whether a part-of-speech is a nominal in Anyi is to see if it can be followed by the definite articles **{nɪn/n'}** or **{mɔ/m'}.** Another test for nominals is if they can occur in a structure such as "Kasi le X" (Kasi possesses X). Whatever occurs in X position is a nominal. As a matter of fact [V + V] N compounds can occur in X position as shown in (24b).

(24b) <Kasi le ka-kpɛ>
[kàsí lé ká kpɛ́
Kasi possesses bite cut
Kasi has a pair of scissors

The compound [V + V] N in this case can be followed by definite articles, as in (24c):

(24c) <Kasi yɪ dé-dí **nɪn ɔ** tɪ man dɔwʊn>

[Kàsí yí dé-dí **nín ɔ̀** tí mą́ dɔ̀wʊ̰̀]
Kasi his take eat the it is not big
Kasi's faith is not strong

Since the words in (24c) have the same syntactic behavior as those in (24d), it can be stated that these words are all nominals even though the compound is made up with two verbs.

(24d)

N0	**Orthographic Form**	**Phonetic Form**	**Gloss**
1.	<fa-sie>	[fá síè]	take hide: remembrance
2.	<de-di>	[dé dí]	take eat: faith
3.	<ka-kpɛ>	[ká kpɛ́]	bite cut: scissors

Table 32: Verb + Verb Compounds-Part 2

4.6 **Verb + Postposition**

Verb + postposition compounds also occur frequently. If the verb is a transitive verb, the noun that follows it can occur between the verb and the postposition. In most cases the total meaning of Verb + Postposition is not compositional.

(25a)

N0	**Orthographic Form**	**Phonetic Form**	**Gloss**
1.	<dafɪ sʊ>	[dàfí sʊ́]	to sleep on : to trust, to have faith in
2.	<di sʊ>	[dí sʊ́]	to eat on : to agree
3.	<tɪ sʊ>	[tí sʊ̀]	cut on : to lower the price
4.	<da sin>	[dá sį̃]	Sleep behind: fulfilling one's marital duties with one of the two spouses of a husband
5.	<kpɪnlɪɪn sʊ>	[kpį̀lḭ́ sʊ́]	to groan on : to agree
6.	<fa sʊ>	[fá sʊ́]	to take on : to follow, to do as told

Table 33: Verb + Verb Compounds-Part 2

Syntactically almost all Verb + Postposition compounds behave like verbs. In tensed constructions the order Verb + Postposition is fixed. This means that a structure such as Postposition + Verb is ill-formed.

(25b) *<Kasi **sʊ** dafɪ>
*<Kasi **sin** da>
*<Kasi **sʊ tɪ>**

However, in verbal-noun constructions, the original Verb + Postposition is inverted and the verbal-noun morpheme **{-lɛ̀}/[lɛ̀]** is affixed to the compound as in (25c):

Verb + Postposition Postposition+ Verb + {lɛ̀}

(25c)

dafı sʊ	→	sʊ lafılɛ[64]
di sʊ	→	sʊ lilɛ
tı sʊ	→	sʊ tılɛ
da sin	→	sin lalɛ

Table 34: Verb + Postposition

There are a few cases such as (25d) below where Verb + Postposition does not behave like a verb, but rather like nominal. In those constructions the Verb + Postposition compound occur in a possessive construction as in (25d) or can take a definite article as in (25e):

(25d) <Kasi, yı keje-nun>
[kàsí, yí kèjé-nṵ̀]
Kasi, his shake in
Kasi's soup (the name of a dish)

(25e) <Kasi, yı ka-sian>
[kàsí, yí ká siạ̀]
Kasi, his stay behind
Kasi's baby sister/brother

4.6.1 **Orthographic Representation of Compounds**

Let us examine how the compounds discussed in the previous sections should be represented in the orthography in light of the criteria of word division stated in sections 4.1.1 through 4.1.5.

4.6.1.1 **Minimum Free Form Criterion**

This criterion states in essence that all lexical items that cannot be further subdivided into separate morphemes should be written in the orthography as single words. Since both members of **Noun1 + Noun2**, **Verb + Noun**, and **Verb1 + Verb2** compounds are minimum free forms, they should be written as two separate words. Additional motivation must be sought to make this orthographic decision airtight.

4.6.1.2 **The Potential Pause Criterion**

When **Noun1 + Noun2, Verb + Noun, Verb1 + Verb2, Verb + Postposition**, and some instances of **Noun + Postposition** compounds are pronounced, there is a clear pause between the first member of the compound and the second. Because the possibility of pausing exists between the first member and the second member of the compound, they should be written as two separate words. However, words such as those in (22b) should be

[64] The consonant /d/ becomes /l/ because of the Grade III Consonant Mutation rule.

written as single words because there is no pause between the first and the second members of the compound.

4.6.1.3 **The Interruptibility Criterion**

The interruptibility criterion also indicates that **Noun1 + Noun2, Verb + Noun, Verb1 + Verb2, Verb + Postposition**, and some instances of **Noun + Postposition** compounds should be written as separate words. As shown in (26) an element can be inserted between the two members of the compound without yielding an ungrammatical form. Here, an NP can be inserted between <dafɪ> and <sʊ>:

(26) <Kasi dafɪ **Nyanmian** sʊ>
[kàsí dàfĩ **ɲa̰mi̱á̰** sʊ́]
Kasi sleep God on
Kasi trusts in God

4.6.1.4 **The Orthographic Representation of other Compounds**

In some instances the *Interruptibility Criterion* and the *Minimum Free Form Criterion* suggest that [V + V] N, [V + N] N and [V + PostP] N compounds should be written as two separate words. However, the potential pause criterion suggests otherwise. When words such as those in (27a), (27b) and (27c) below are pronounced there is no pause between the first member of the compound and the second.

(27a)

N0	**Orthographic Form**	**Phonetic Form**	**Gloss**
1.	<fa-sie>	[fá síè]	take hide: remembrance
2.	<de-di>	[dé dí]	take eat: faith
3.	<kɔ-tie-ba-se>	[kɔ́ tìé bá sé]	go listen come say: eavesdropper
4.	<ka-kpɛ>	[ká kpɛ́]	bite cut: scissors

Table 35: Nominal Verb + Verb Compounds

(27b)

N0	**Orthographic Form**	**Phonetic Form**	**Gloss**
1.	<kun-mosi>	[kṵ mósí]	kill Mosi: poisonous plant
2.	<gada-eyua>	[gàdá èu̱ùá]	cover-sun: umbrella
3.	<kunndo-ebiin>	[kṵ̱ndó èbi̱ĩ]	roll-excrement: an insect that rolls dirt
4.	<sacɪ-ayire>	[sàtʃĩ àjìré]	spoil medicine: supernatural power to void witchcraft
5.	<tɪan-bɛ́ɛ>	[ti̱á̰ bɛ́è]	yell them: supernatural power to make somebody fall onto the group just by yelling
6.	<sa-toro>	[sá tòró]	fetch soup: large wooden spoon
7.	<tafɪ-toro>	[tàfĩ tòró]	lick soup: index

Table 36: Nominal Verb + Noun Compounds

(27c)

N0	**Orthographic Form**	**Phonetic Form**	**Gloss**
1.	<keje-nun>	[kèdʒé-nù̱]	shake in: name of a dish
2.	<ka-sian>	[ká-si̱á̱]	stay behind: the last
3.	<kisa-nun>	[kìśa-nú̱]	lean in: recliner
4.	<je-nun>	[dʒé-nú̱]	to go to restroom in: type big pants

Table 37: Nominal Verb + Postposition Compounds

The potential pause criterion would suggest that the first and the second members of the compound be written as a single word. Notice, however, that basing the orthographic representation only on this criterion at the expense of other criteria would be unacceptable, especially since the potential pause criterion is controversial. I, therefore, introduce another criterion referred to here as the **Categorial Criterion** to help decide in conflicting cases. This criterion is not so much for word division as it is for distinguishing between the orthographic representation of compounds that are pronounced with a pause and those that are pronounced without a pause.

One interesting characteristic of the compounds that do not have a pause between the first and the second members is that the sum total of the compound belongs to a grammatical category that is different from the head (first member) of the compound. In the cases reported here the compound behaves like a noun instead of behaving like a verb. I, therefore, propose the following criterion to deal with the orthographic representation of such compounds.

Categorial Criterion

If the syntactic category of a compound is different from the syntactic category of the head compound, both members of the compound should be hyphenated.[65]

This principle is a handy way of distinguishing [V + V] V, [V + N] V, and [V + PostP] V from [V + V] N, [V + N] N and [V + PostP] N in the orthography. Thus, the hyphen in (27d) not only tells the reader that **[tàfı tòró]** should be pronounced without a pause but also that it is a nominal compound. In (27e) the lack of hyphen informs the reader that **[tàfí tòró]** has a pause and that it is a verbal compound.

[65] I understand that the categorial criterion on syntactic categories is a shaky argument. However, there are many examples in French where the hyphenation seems to be based on the same principle. French [V + N] NP compounds are generally hyphenated. A few examples will suffice to illustrate this point: **cache-sexe, chasse-mouche, porte-manteau, souffre-douleur, attrape-nigaud, garde-corps, savoir-faire, tourne- vice, couvre-feu**, etc. I do not intend to suggest that those who conceived of the French orthography were aware of this principle. As Coulmas (1990:45) notes "writing systems are only rarely the result of conscious linguistic analysis, yet they are the expression and materialization of linguistic consciousness."

(27d) <Mın **tafı-toro>**
[mį́ tàfí tòró]
My lick soup
My index

(27e) <Mın **tafı toro>**
[mį̀ tàfí tòró]
I lick soup
I lick soup (habitually)

4.7 **Reduplication**

Researchers such as Newman (1986), Marantz (1982), Faraclas and Williamson (1984), and Stuart (1988) consider reduplication to be a morphological device which affixes an element to the stem. Marantz (1982) sums up the various definitions and characterization of reduplication as follows:

> [it is] a morphological process relating a base form of a morpheme or stem to a derived form that may be analyzed as being constructed from the base form via the affixation (or infixation) of phonemic material which is necessarily identical in whole or in part to the phonemic content of the base form.

This definition, though hard to process, is representative of Anyi reduplication.

Two kinds of reduplication occur in Anyi: **complete reduplication** and **partial reduplication.** The former occurs in disyllabic words whereas the latter occurs only in monosyllabic words. Reduplication occurs with high frequency because it fulfills many syntactic and semantic functions in Anyi. Except for compounding, it is the most productive word-formation process in Anyi. The analysis below will consist of three parts. Monosyllabic words will be examined first, disyllabic words secondly, and CV1V2 words and CLV2 words last. The last section focuses on the orthographic representation of reduplication. Although reduplication occurs in adjectives, adverbs, and occasionally in nominal stems, verbal stems will be used as examples because they are the most systematic and abundant cases of reduplication in the language. Moreover, reduplication of verbal stems is more productive than reduplication in other grammatical categories.

4.7.1 **Monosyllabic reduplication**

Let us consider the examples below:

(28)

N0	**Monosyllabic Form**	**Gloss**	**Reduplicated Form**	**Gloss**
1.	<di> [dí]	to eat	<didi> [dìdí]	eat repeatedly
2.	<te> [té]	to burst out	<tite> [tìté]	to blow up
3.	<fɛ> [fɛ́]	to suffer	<fıfɛ> [fifɛ́]	to groan

4.	<ka> [ká]	to bite	<kɪka> [kìká]	
5.	<fɪ> [fí]	to throw up	<fɪfɪ> [fìfí]	to throw up many times
6.	<bu> [bú]	to break	<bubu> [bùbú]	to become paralyzed
7.	<to> [tó]	to buy	<tuto> [tùtó]	to buy many things
8.	<fɔ> [fɔ́]	to lose weight	<fʊfɔ> [fʊ̀fɔ́]	to lose too much weight
9.	<dʊ> [dʊ́]	to press	<dʊdʊ> [dʊ̀dʊ́]	to press hard

Table 38: Monosyllabis Reduplication

In his discussion of reduplication Newman (1986) refers to the reduplicating affix as a "**copy.**" It is prefixed to the root. Following Newman, I represent the process of reduplication schematically as follows:

Original root		**Reduplicated root**
Root	→	**copy**[66] + root

Table 39: The Reduplication Process

4.7.1.1 **Reduplication and [±ATR] harmony**

There are three important observations that one can make from the examples in (28): First, there is [±ATR] agreement between the copy and the root. If the vowel of the root is [+ATR], the vowel of the copy is [+ATR]; if the vowel of the root is [-ATR], the vowel of the copy is [-ATR]. This can be seen as the automatic consequence of the copying process. Since [±ATR] harmony has been extensively discussed in Chapter Two, there is no need to belabor it again here.

4.7.1.2 The Phonological Characteristics of the Copy

The second observation that can be made about the examples in (28) is that the vowels of the copy are all **high vowels.** The vowel of the copy is a high front vowel **[i]** or **[ɪ]** if the vowel of the root is a front vowel. If the vowel of the root is a back vowel, the copy has a high back vowel **[u]** or **[ʊ].** This phenomenon is fairly common in Kwa languages. Hyman (1972), Faraclas and Williamson (1984:1,3) even consider it to be a characteristic of Kwa languages.

4.7.1.3 **The Phonological Behavior of /a/**

It was argued in various parts of Chapter One that /a/ is a neutral vowel because it

[66] From now on, the copy is printed in boldface.

occurs with both [+ATR] and [-ATR] vowels. It was also pointed out that this neutrality allowed /a/ to occur with both front vowels and back vowels. However, it seems that when it comes to monosyllabic reduplication, /a/ occurs only with front vowels, never with back vowels. Thus we have words such as **[kìká]** but not ***[kɔ̀ká]**, [**sìsá]** but not *[**sɔ̀sá]**. Another important observation is that in reduplications /a/ prefers to occur with [-ATR] vowels instead of [+ATR] vowels. Thus, we have **[kìká]** but not ***[kìká]**, [**sìsá]** but not ***[sìsá]**. A single phonotactic constraint can be postulated to cover the behavior of /a/ under reduplication:

Phonotactic Constraint on Monosyllabic Reduplication

In monosyllabic reduplication, if the vowel of the root is /a/, the vowel of the copy must necessarily be a [-ATR, +high, + front] vowel.

4.7.1.4 **Monosyllabic Reduplication of Nasal Vowels**

There is a distinction between nasal vowels and nasalized vowels with regard to reduplication as seen in (29a) and (29b). Let us now compare (29a) and (29b) below:

(29a)

N0	**Monosyllabic Form**	**Gloss**	**Reduplicated Form**	**Gloss**
1.	<tin> [tḭ́]	to crush	<titin> [tḭ̀tḭ́]	to pinch
2.	<san> [sìsą́]	to sting	<sısan> [sìsą́]	to sting many times
3.	<fun> [fṵ́]	to dig a hole	<fufun> [fùfṵ́]	to dig many holes
4.	<kpan> [kpą́]	to shout	<kpıkpan> [kpìkpą́]	to yell
5.	<tʊn> [tʊ̰́]	to cook	<tʊtʊn> [tʊ̀tʊ̰́]	to broil

Table 40: Monosyllabic Reduplication of Nasals-Part 1

(29b)

N0	**Monosyllabic Form**	**Gloss**	**Reduplicated Form**	**Gloss**
1.	<mın> [mḭ́]	to swallow	<mımın> [mḭ̀mḭ́]	to swallow many times
2.	<man> [mą́]	to give	<mınman> [mḭ̀mą́]	to distribute
3.	<mian> [mḭ̀ą̀]	to put in difficulty	<minmian> [mḭ̀mḭ̀ą̀]	to bully
4.	<muan> [mṵ̀ą́]	to close the mouth	<munmuan> [mṵ̀mṵ̀ą́]	to gag

Table 41: Monosyllabic Reduplication of Nasals-Part 2

The most important observation that can be made from (29a) and (29b) is that when the root has a phonemically nasal vowel, as in all the examples in (29a), **the copy is always an oral vowel**. In such cases, the vowel of the copy is never nasalized. Notice, however, that this is not an idiosyncratic property of Anyi alone. Hyman (1972:178, 181) and Capo (1980:17) note that in other Kwa languages the vowel of the copy is never nasalized. However, what these linguists do not discuss is whether or not the vowel of the copy is

nasalized if the vowel of the root is itself a nasalized vowel. Recall that it was discussed earlier that whenever a nasalizable oral vowel occurs after a nasal consonant, that vowel is automatically nasalized. The vowels in data (29b) are all nasalized vowels. When the vowel of the root occurs with nasal consonants, the vowel of the copy is also nasalized in my pronunciation.

4.7.2 **Reduplication in Disyllabic Words**

Reduplication in disyllabic words is an instance of complete reduplication, that is, the copy and the original root are perfectly identical, including the tonal structure. Complete reduplication does not lead to any morphophonological change. This can be seen in (30) where the boldfaced CVCV is the copy.

(30)

N0	**Monosyllabic Form**	**Gloss**	**Reduplicated Form**	**Gloss**
1.	<fiti> [fĩtí]	to pierce	<fitifiti> [fĩtífĩtí][67]	to pierce many times
2.	<bice> [bìtʃé]	to open	<bicebice> [bìtʃébìtʃé]	to open and close many times
3.	<bias> [bìsá]	ask	<bisabisa> [bìsábìsá]	to interrogate
4.	<wandi> [w̰ándí]	to run	<wandiwandi> [w̰ándíw̰ándí]	to run here and there

Table 42: Reduplication of Nasals-Part 2

4.7.3 **Reduplication in CV1V2 and CLV2** word [68]

CV1V2 and CLV2 structures are chameleon-like structures in the sense that they can be reduplicated either as monosyllabic words (partial reduplication) or as disyllabic words (complete reduplication) as shown in the examples below:

(31a)

N0	**Monosyllabic Form**	**Gloss**	**Reduplicated Form**	**Gloss**
1.	<tie> [tìé]	to listen	<titie> [tìtìé]/ <tietie> [tìétìé]	to listen many times
2.	<fia> [fĩá]	to hide	<fifia> [fifia]/ <fiafia>/[[fiáfiá]	to hide many times
3.	<gua> [gùá]	to spill	<gugua> [gùgùá]/ <guagua> [gùágùá]	to become paralyzed

[67] It should be emphasized here that no attempt is made as to how reduplicated disyllabic words are to be written in the language. The orthographic aspect of reduplicated disyllabic words is discussed in section 4.6.4.2.

[68] Even though it was proposed that CL(V1)V2 words be written in the orthography as CV1LV2, I have used the CLV2 form here to prove a point. Their orthographic representation does not pose any major problem. They can either be written as CVCV1LV2 or simply as CV1LV2 CV1LV2.

4.	<mian> [mḭá]	to press	<minmian> [mḭmḭá]/ <mianmian> [mḭámḭá]	to bully

Table 43: Reduplication of CV1V2 Words

(31b)

N0	**Monosyllabic Form**	**Gloss**	**Reduplicated Form**	**Gloss**
1.	<fɛlɛ> [flɛ́]	to call	<fɪfɛlɛ> [fɪflɛ́]/ <fɛlɛfɛlɛ> [flɛ̀flɛ́]	to call many people
2.	<bala> [blá]	to wrap around	<bɪbala> [bìblá]/ <balabala> [blàblá]	to wrap around
3.	<sua> [sùá]	to tear	<susua> [sùsùá]/ <suasua> [sùásùá]	to tear into pieces
4.	<turu> [trú]	to untidy	<tuturu> [tùtrú]/ <turuturu> [trùtrú]	

Table 44: Reduplication of CLV2 Words

Both forms are in free-variation in the speech of many Anyi speakers. In my own speech, however, partial reduplication takes over. Because of the **Alternate Pronunciation Principle**, I propose that both forms be written in the orthography.

4.7.4 **Orthographic Representation of Reduplication**

The orthographic representation of reduplicated stems is very unsystematic in many African languages. Usually, monosyllabic reduplication is written as a single word. But the spelling of reduplicated disyllabic words is very inconsistent. In *Twende! A Practical Swahili Course* the same reduplicated word is written one way on page 124, and another way on page 257. In either case there does not seem to be any reason that motivates one spelling over the other. It is this kind of unmotivated inconsistency that I seek to remedy by proposing the following alternatives.

4.7.4.1 **Orthographic Representation of Monosyllabic Words**

I propose that monosyllabic reduplication be represented in the orthography as a single word. Phonological and morphological evidence supports this proposal. The discussion in sections 4.7.1.1 to 4.7.1.4 shows that the copy and the root form a phonological word because there is an [±ATR] vowel harmony between the copy and the root. The bound morpheme criterion also supports the claim that the copy and the root should be written as a single word. Morphologically, no element can be inserted between the copy and the root. Consequently, monosyllabic reduplication should be written as a single word.

4.7.4.2 **The Orthographic Representation of Disyllabic Words**

The orthographic representation of disyllabic words is very controversial. There are three possible ways of representing disyllabic reduplication in the orthography: first, as two separate orthographic words, secondly, as one word, and thirdly, as a hyphenated word. What kind of evidence do we have to choose one alternative over the other? The word division criteria used in the previous paragraphs suggests that reduplicated disyllabic words

should be written as single words. The potential pause criterion, for instance, suggests that since there is no pause between the copy and the stem, they should be written as one word. Similarly, since no element can be inserted between the copy and the stem, the interruptibility criterion would suggest that they be spelled as one word. Moreover, if the copy is treated as an affix, then the bound morpheme criterion would require that disyllabic reduplication be represented in the orthography as a word. However, the morphological and phonological evidence discussed in 4.7.4.2.1 through 4.7.4.2.3 seem to suggest otherwise.

4.7.4.2.1**The Perfected Aspect{-lí} and Disyllabic Reduplication**

The perfected aspect **{-lí}** is attached to verb roots to indicate a completed action or event. When a disyllabic verb is reduplicated, the suffix **{-lí}** is always attached to the root never to the copy. This can be seen in (32).

(32) <ɔ hinmanhinman**lɪ>** = he loitered
[ɔ̀ hɪ̰mą́hɪ̰mą́lí]
*ɔ cinman**lɪ** ciman
*ɔ cinman**lɪ**cinman**lɪ**

The fact that the copy cannot be affixed with **{-lí}** indicates that it is not a word by itself because all verbal lexical stems can be affixed with **{-lí}**. This morphological test would seem to suggest that the copy and the root should be written as a single word since the copy is treated as a mere affix. The bound morpheme criterion would then suggest that disyllabic reduplication be written as a single word. However, another morphological test seems to contradict the former test.

4.7.4.2.2 **The Resultative Aspect and Disyllabic Reduplication**

It was argued in Chapter Three, section 3.7.2 that when the resultative aspect **a + verb** is used if the initial consonant of that verb is /k/, /ʧ/ or /d/ it undergoes Grade III mutation, that is, it changes into /k/ and /h/ respectively. Consonant mutation is a word initial phenomenon, that is, if /k/, /ʧ/ and /d/ occur word-medially, they do not undergo consonant mutation. However, when a disyllabic verb is reduplicated both the initial consonants of the copy and the verb stem undergo consonant mutation as in (33a).

(33a) <**cinmn**cinmn> [ʧɪ̰mą́ʧɪ̰mą́]: to loiter.
<ɔ a **h**inman**h**inman>
[ɔ̀ à hɪ̰mą́hɪ̰mą́
He has wandered everywhere

(33b) *<ɔ a cinman**h**inman>
*<**ɔ** a **h**inmancinman>

If reduplicated disyllabic verb stems were really one word as the previous morphological test suggests, consonant mutation would affect **only the consonant of the copy** but not that of the root because, as it has been said, consonant mutation does not affect word-medial consonants. The fact that both the copy and the root undergo consonant mutation together

would suggest that they are two separate words instead of one.

4.7.4.2.3 **Phonological Evidence and Disyllabic Reduplication**

Here we have contradictory morphological evidence regarding reduplicated disyllabic words. The suffixation evidence suggests that disyllabic reduplicated words should be seen as one word whereas consonant mutation evidence points to the fact that they should be treated as two orthographic words instead of one. The third piece of evidence stemming from phonology is also not very illuminating. Tone structure on reduplicated disyllabic words is the same as the tone pattern on disyllabic words, that is, **L + H** + L + H as in (33d) below:

(33d) <**cinman**cinman>

[tʃ ì m á tʃ ì má]

L H L H

<**tie**tie>

[t ì é t ì é]

L H L H

The evidence from tone structure would suggest that the reduplicated forms of disyllabic verbs should be represented as two separate verbs because they conform to the tone structure of two separate disyllabic words. It should, however, be noted that in other instances reduplicated verb stems have two low tones on the copy and a low and a high on the root, that is, **L + L** + L + H as indicated by Quaireau (1987:130-1). Thus **cinmán**cinmán and **bìká**bìká (to help many times) will have the tonal structure in (33e):

(33e) <**cinman**cinman>

[tʃ ì m à tʃ ì má]

L L L H

<**bɔ́ka**bɔ́ka> : to help many times

[**b ɔ́ kà** b ɔ́ k á]

L L L H

Upon closer examination, it seems that the choice of one tone pattern over the other has a lot to do with pragmatic factors such as disgust and vividness. It is therefore risky to use tone as a deciding factor in the orthographic representation of reduplicated disyllabic verb stems.

The morphological evidence presented in 4.7.4.2.2 shows that reduplicated disyllabic verbs should not be written as single words. The evidence presented in 4.7.4.2.1 also prevents us from writing them as two separate words. The evidence from tone structure is even less illuminating. How, then, should disyllabic reduplication be represented in the orthography? This question should be answered in relation to how repetition should be represented in the orthography. Disyllabic reduplication is closely related to the syntactic structure known as repetition. The latter consists in repeating verbatim a lexical element at least twice. If disyllabic reduplication is written as two words, chances are that disyllabic reduplication and repetition will be "orthographically ambiguous," that is, readers will think of the two as the same structures. However, if disyllabic reduplication is written with a hyphen it informs the reader that the structure he/she is reading is not a repetition but rather a reduplication. The two structures are different in some ways as seen in (33f) and (33g).

Repetition

(33f) <Kasi hinman**lı**, hinman**lı** dédéé ɔ'a sa yi sin>
[kàsí hɩ̀mą́**lí**, hɩ̀mą́**lí** dédéé ɔ̀ à sá jísɩ̀]
Kasi loitered, loitered until he has come back
Kasi walked and walked in vain so he came back

Reduplication[69]

(33g) <Kasi hinmanhinman**lı** dédéé ɔ'a sa yi sin>
[kasi hɩ̀mą́hɩ̀mą́**lı** dédéé ɔ̀ à sá jísɩ̀]
Kasi walked around in vain so he came back

Morphologically, the copy cannot be suffixed with the perfect suffix **{-lí}** on both the copy and the stem whereas in repetition this is possible. Phonologically, there is a longer pause in repetition between the first and second lexical items (indicated by a comma in (33f)) than there is between the copy and the suffix. The use of a hyphen in the orthographic representation of reduplication would convey to the reader that the two structures are different. A similar proposal is found in Price (1987:74). She argues in her analysis of

---

[69] It is necessary to say something about the orthographic representation of ideophonic words. Ideophones are mostly used as adverbs to modify verbs as in the examples below:

<nantı sʊsʊrasʊsʊra>: to walk lazily
<nantı cowuncowun>: to walk as a drunk
<nantı wakawaka>: to walk valiantly
<nantı zʊanzʊan>: to walk as if sick
<nantı nyannyan>: to walk slowly as to surprise
<nantı fʊafʊa>: to walk without paying attention to people on one's way

Ideophones are obtained by a process of mere repetition. Most of the tests used in this chapter will suggest that ideophones be written as single words: no element can be inserted into ideophones, there is no significant pause between the first and the second member, there is an [±ATR] vowel harmony between the vowels. However, since ideophones are just mere repetition, I propose that they be written as separate words.

Karkar-Yuri, a language of Papua New Guinea, that a hyphen is needed in the orthographic representation of long reduplicated stems. *However, various tests done with Anyi readers have convinced me that disyllabic reduplication needs not be hyphenated. Consequently, they are represented as single orthographic words.*

4.8 **Morphologically Complex Processes**

Morphologically complex processes are processes which include both prefixation and suffixation, and occasionally linkage (to be defined shortly). They also involve various aspects of stem modification. Three such processes will be discussed in this section. The first deals with verbal-noun formation, the second with the formation of abstract nouns, and the last with linkage.

4.8.1 **Verbal-noun Formation**

Verbal-noun formation is a transformational process which turns the verbal root or the verb phrase into a nominal stem as seen in (34a). The verbal-noun which is created as a result of this process behaves in every respect like a noun, that is, it can be a subject or an object, it can be followed by the definite article <**nɪn>** as in (34b).

(34a)

N0	**Verb Root**	**Gloss**	**Verbal-nooun**	**Gloss**
1.	<kɔ> [kɔ́]	to go	<ɛhɔlɛ> [ɛ̀hɔ́lɛ̀]	departure
2.	<sun> [sṵ]	to cry	<esunlɛ> [ɛ̀sṵlɛ̀]	crying
3.	<da> [dá]	to lie down	<ɛlalɛ> [ɛ̀lálɛ̀]	lying down
4.	<ba> [bá]	to come	<ɛwalɛ> [ɛ̀wálɛ̀]	arrival
5.	<di> [dí]	to eat	<elilɛ> [ɛ̀lílɛ̀]	eating
6.	<cɪn> [tʃɪ̰]	to put on weight	<ɛhɪnlɛ> [ɛ̀hɪ́lɛ̀]	putting on weight
7.	<ka> [ká]	to bite	<ɛhalɛ> [ɛ̀hálɛ̀]	biting
8.	<to> [tó]	to buy	<etolɛ> [ɛ̀tólɛ̀]	purchase

Table 45: Verbal-noun of Formation of Monosyllabic Words

(34b) <Kasi hɔlɛ **nɪn** a ju>
[kàśi hɔlɛ **nɪ́** à dʒú]
Kasi departure the has come
The time has come for Kasi to leave

Verbal-noun formation involves two processes as exemplified in (34a) and (34c) respectively. The examples in (34a) include both prefixation (**{è-/ɛ̀-}**) and suffixation **{-lɛ̀},** whereas those in (34c) have only the suffix {-**lɛ́**}.

(34c)

N0	**Verb Root**	**Gloss**	**Verbal-nooun**	**Gloss**
1.	<kulo> [kùló]	to love, to like	<hulo> [hùlólɛ̀]	love
2.	<kele> [kèlé]	to show, to teach	<helelɛ> [hlélɛ̀]	showing, teaching
3.	<sɪsa> [sìsá]	to watch over	<sɪsalɛ> [sìsálɛ̀]	surveillance
4.	<tike> [tìké]	to open	<tikelɛ> [tìkélɛ̀]	opening

5.	<kpa> [kpá]	to break off	<kpalɛ] [kpálɛ̀]	breaking off
6.	<kunndo> [kn̰do]	to roll	<kunndolɛ> [kn̰dólɛ̀]	rolling
7.	<kpısa> [kpìsá]	to chew	<kpısalɛ> [kpìsálɛ̀]	chewing
8.	<mian> [mi̱a̱]	to be under pressure	<mianlɛ> [mi̱a̱lɛ̀]	being under pressure

Table 45: Verbal-noun Formation of Disyllabic Words

The morphological process in verbal-noun formation can be represented schematically as follows:

({**è-/ɛ̀-**}) + Verb root + {**-lɛ̀**}

Table 46: Verbal-noun Formation Formula

Generally speaking, monosyllabic words whose initial consonants undergo Grade III consonant mutation are prefixed with {**è-/ɛ̀-**} whereas those whose initial segments do not undergo Grade III mutation do not have a prefix. Disyllabic verbs in general do not have the prefix **{è-/ɛ̀-}** except for CV1LV2 where the initial segment is /k/.

When Verb + Noun compounds are changed into verbal-nouns a permutation takes place. This operation results in the change in the order of the elements as seen in (35):

(35)

Verb + Noun → Noun + Verb + {-lɛ̀} **1 2 2 1**

Table 47: Transformational Operation

Verbal-noun formation can be illustrated by the examples in (36).

(36)

N0	**Verb Phrase**	**Gloss**	**Verbal-noun Prase**	**Gloss**
1.	<boa to> [bó àtó]	to tell lies	<ato bolɛ> [àtó bólɛ̀]	lies telling: telling lies
2.	<di junman> [dí jn̰ma̱]	To eat work: to work	<junman lilɛ > [jn̰ma̱ lílɛ̀	Work eating: labor
3.	<to tobi> [tó tòbí]	to buy a car	<tobi tolɛ> [tòbí tólɛ̀]	car buying
4.	<bu angʊndan >	to break	[àngʊ̀da̱ búlɛ̀]	Breaking of

	[bú àngʊ̀dą̰]	thoughts: to think		thought: to think

Table 48: Verbal-noun of Formation of Monosyllabic Words

4.8.2 **Abstract Noun Formation**

A great many abstract nouns involve very complex morphological and phonological processes. Most of the details will be overlooked so that I can concentrate on what is most relevant to orthography. Generally speaking, an abstract noun is formed by prefixing **{à-}** to a noun or a verb. Suffixes may or may not intervene in the formation of abstract nouns. Each of the examples from (37a) through (38b) are parsed into parts-of-speech to show how they enter into the formation of abstract nouns.

(37a) <anyanbɛwʊn> [àɲábɛ̀wʊ̰̀] (wealth)
a + nyán + bɛ + wʊn
Nom. Prefix to get they self
Prefix Verb Pronoun semi-affix

(37b) <awʊncʊcʊnlɛ> [àwʊ̰̀tʃʊ̀tʃʊ̰̀lɛ̀] (happiness, joy)
a + wʊn + cʊcʊn + lɛ : happiness
Nom. Prefix self to pull Suffix
Prefix semi-affix Verb suffix

(37c) <akunlunfufuo> [àklṵfùfùó] (generosity)
a + kunlun + fufuo:
Nom. Prefix stomach white
Prefix + Noun + Adj

(37d) < awunlunnyáan> [àwlúnnyą́ą̀] (respect)
a + wunlún + nyán : glory
Nom. Prefix face receive
Prefix Noun Verb

The suffix {**-lìié}** is also used to in complex word formations. It attaches itself to verb roots to create abstract nouns as in (38a-c), or to designate places where a given activity is regularly performed as in (38d).

(38a) <awʊlıɛ> [àwʊ́lìié] : childbirth
a +wʊ +lıɛ
Nom. Prefix to bear a child suffix
Prefix + Verb + Suffix

(38b) <ayuolıɛ> [àjùólìié] : miserable end/ end
a +yuo +lıɛ

Nom. Prefix to finish suffix
Prefix + Verb + Suffix

(38c) <ayɔlıɛ> : [àjɔ́lìɛ́]: behavior, manner

a + yɔ +lıɛ
Nom. Prefix to do suffix
Prefix + Verb + Suffix

(38d) <akpɛlıɛ> : [àkpɛ́lìɛ́] : port

a +kpɛ +lıɛ
Nom. Prefix to cross suffix
Prefix + Verb + Suffix

It is too early to arrive at any firm conclusion but my preliminary analysis shows that the suffix {-lìɛ́} attaches itself only to verbal roots.

4.8.3 **Interfixation**

The term *"interfix"* is borrowed from Stuart (1987:317). He uses this term in conjunction with his analysis of reduplication in Hausa. He defines this term as "[an] empty morpheme placed between a stem and a suffix." He quotes Dressler who has identified the following characteristics of interfixes: 1) they do not add any meaning to the word; 2) they usually begin with a vowel followed by one or two consonants; 3) they are often added to shorter stems; 4) and their occurrences can be optional.[70] Additionally, one important characteristic that is missing from Dressler's list is that interfixes are usually inserted between roots or between roots and affixes to make pronunciation easier. This is the most important function of the Anyi morpheme **{-à-}**. It serves as a link between a body-part and the locative postpositions **<bʊ>/bʊ̀/** (under, beneath) or <**sin**>/**sı̰̀**/ (behind) to create new lexical items.

(39)

N0	**Word**	**Interfixation**	**Gloss**
1.	<kovianbʊ> [kóvı̰̀ı̰̀bʊ̀]	<kovin + a + bʊ>	chin under: throat
2.	<kʊabʊ> [kʊ̀àbʊ̀]	<kʊ + a + bʊ>	stomach under: stomach
3.	<nyanbʊ> [ɲàb̰ʊ̀]	<nyın + a + bʊ>	eye under: face
4.	<jabʊ> [dʒáàbʊ̀]	<ja + a + bʊ>	foot under: step
5.	<sʊabʊ> [sʊ́àb̰ʊ̀]	<sʊ a + bʊ>	ear under: sideburn

[70] Interfixes are not optional in Anyi.

6.	<nyansin> [ɲàs̰ì]	<nyɪn a + sin>	eye behind: eyelid
7.	<jasin> [dʒáàsì]	<ja + a + sin>	leg behind: news

Table 49: Interfixation

4.8.4 **Orthographic Representation of Morphologically Complex Processes**

The major characteristic of morphologically complex processes, as we have seen, is that prefixes and suffixes are attached to major parts-of-speech. They, therefore, include both compounding and affixation. How should these forms be represented in the orthography? I propose that they be written as single orthographic words. This proposal is based on the fact that these forms are said without any internal pause, that is, they are included between two pauses: the pre-speech pause and the terminal pause. The bound morpheme principle can also be used to motivate the spelling of morphologically complex forms. This principle stipulates that the stem to which prefixes and suffixes are attached should be written as one word. [71]

4.8.5 **Miscellaneous Word-formation Processes**

The last two sections of this chapter are devoted to "*proverbial words*" and "*interlexical words*". I have coined the phrase "proverbial words" to describe one type of Anyi words that are generally complete sentences but which behave like single words. The phrase "interlexical word" has also been coined to account for cases where two or more words have been combined to form a single word usually at the expense of various phonological rules. The first part will deal with proverbial words and the second with interlexical words.

4.8.5.1 **The Proverbial Word**

Proverbial words, as their name indicates, are words which constitute a proverbial statement. Such words are quite common and need to be dealt with in the orthography. They involve complex phonological and morphological processes which need not occupy us here. Let us examine how the examples in (40) are formed. The "+" indicates the morphological breaks. The word in boldface represents the suggested orthographic representation.

(40a)

N0	Orthographic Form	<**Nyanmian-wu-ngɔ-wu**>
1.	Phonetic Transcription	[ɲàmɪ̀ą̀wúǹgɔ́wú]
2.	Morphological Parsing	nyanmian + wu + n + gɔ + wu
3.	Gloss	God die I go die
4.	Translation	as long as God is alive I will be alive

[71] The issue of word length is also evident here. However, there is absolutely no way a hyphen can be used in these cases. The use of hyphens here will be so artificial that it will slow down reading as noted in Pike (1946:256). He argues that "an arbitrary writing of spaces just to make words shorter slows up reading and understanding of the material since it is likely to leave many items between spaces which the native never pronounces in isolation in speech."

5.	Reference	name of a plant that hardly dies

Table 50-Proverbial Word-1

(40b)

N0	Orthographic Form	<**kɔtibse**>
1.	Phonetic Transcription	[kɔ́tìébásé]
2.	Morphological Parsing	kɔ + tìé + bá + sé
3.	Gloss	go listen come tell
4.	Translation	a spy or an eavesdropper
5.	Reference	

Table 51-Proverbial Word-2

(40c)

N0	Orthographic Form	<**kɛngɔyɔsanranyie**>
1.	Phonetic Transcription	[kɛ́ŋ̀gɔ́jɔ́sa̰r̰à̰jìé]
2.	Morphological Parsing	kɛ+ n+ gɔ + yɔ + sanran + yie
3.	Gloss	Instead of I go do human goodness
4.	Translation	I will treat an animal better than a human being
5.	Reference	nickname given to pet animals

Table 52-Proverbial Word-3

(40d)

N0	Orthographic Form	<**bémódúnmán**>
1.	Phonetic Transcription	[bɛ́mmódúnmán]
2.	Morphological Parsing	bɛ + mmó+ dúnmán
3.	Gloss	They do not say its name
4.	Translation	taboo word
5.	Reference	dangerous animals, female genitals

Table 53-Proverbial Word-4

(40e)

N0	Orthographic Form	<**benzé**>
1.	Phonetic Transcription	[bɛ́nzé]
2.	Morphological Parsing	bɛ + nzé
3.	Gloss	they do not say
4.	Translation	an animal that looks like a giant lizard.
5.	Reference	

Table 54-Proverbial Word-5

(40f)

N0	Orthographic Form	<**kɔdíawú**>
1.	Phonetic Transcription	[kɔdíawú]
2.	Morphological Parsing	kɔ + dí+ awú
3.	Gloss	go have sex with + Awu
4.	Translation	highway rapist

5.	Reference	

Table 55-Proverbial Word-6

(40g)

N0	Orthographic Form	<**bayíboló**>
1.	Phonetic Transcription	[bàjíjíbòló]
2.	Morphological Parsing	bɛ + a + yɪ + yí + bolo
3.	Gloss	they resultative throw him bush
4.	Translation	cast away.[72]
5.	Reference	female name

Table 56-Proverbial Word-7

(40h)

N0	Orthographic Form	**<báangɔlɔkʊn>**
1.	Phonetic Transcription	[báàŋgɔ̀lɔ́kʊ̃]
2.	Morphological Parsing	bàá + ngɔlɔ + kʊn
3.	Gloss	child only one
4.	Translation	an only child
5.	Reference	name given to children who do not have brothers or sisters

Table 57-Proverbial Word-8

(40i)

N0	Orthographic Form	**<asɪayuo>**
1.	Phonetic Transcription	[àsìájùó]
2.	Morphological Parsing	asɪɛ+ a+ yuo
3.	Gloss	ground resultative finished
4.	Translation	no more burial plot left[73]
5.	Reference	First names

Table 58-Proverbial Word-9

(40j)

N0	Orthographic Form	**<aliɛbahɪan>**
1.	Phonetic Transcription	[àlɪɛ́báhìɪ́ą̃]
2.	Morphological Parsing	alɪɛ+ ba+ cɪn
3.	Gloss	day come become big

[72] Such a name is given to the child hoping that by hearing that his/her parent will throw him away in the bush the child will make up his mind to be well.

[73] This name is given to a child who, supposedly, dies and is constantly reincarnated. When the parents give this name they hope to tell the child that there is no more land to bury him. It is believed that when the child hears this name he will choose life instead of death, instead of dying and being reborn again and again.

4.	Translation	daybreak
5.	Reference	

Table 59-Proverbial Word-10

One can notice that the word in (40a) is spelled with hyphens whereas all the remaining words are spelled without hyphens. The criterion of potential pause has been used in deciding whether or not a hyphen should be written between proverbial words. This criterion is stated as follows for proverbial words:

Proverbial Words Spelling Criterion

If there is no pause between the constituents, proverbial words should be spelled as a single word, no matter their length.

In cases such as (40a) there is a clear pause between <**Nyanmian**> and <**wu**> and <**ngo**> and <**wu**>. **For this reason, a** hyphen is used to separate the major constituents in the proverbial word. Not using a hyphen leads to some confusion between proverbial words and normal sentences. The reading (aloud) difficulties created by the spelling of proverbial words are discussed in 4.9.

4.8.5.2 **Interlexical Words**

The label "interlexical" is used for want of a better term. These words here behave in many respects like proverbial words except that they do not have any proverbial content. They are characterized by the fact that when two words are compounded, a vowel of one of the members of the compound is deleted as seen in the examples in (41).

(41a)

N0	Orthographic Form	**<jabʊn>**
1.	Phonemic form	/jà/ + /ɛ̀bʊ̃ʊ̀/
2.	Gloss	leg shell
3.	Phonetic transcription	[jàbʊ̃ʊ̀]
4.	Phonological Processes	deletion of /ɛ̀/
5.	Translation	toe nail

Table 60-Interlexical Word-1

(41b)

N0	Orthographic Form	**<nzuohóo> or <nzuhóo>**
1.	Phonemic form	/ǹzùó/ + /èhóò/
2.	Gloss	water hunger
3.	Phonetic transcription	[ǹzùòhóò/ or [ǹzùhóò/
4.	Phonological Processes	deletion of /è/ or deletion of /ò/ and /è/
5.	Translation	thirst

Table 61-Interlexical Word-2

(41c)

N0	Orthographic Form	**<ajongóo>**
1.	Phonemic form	/àdʒé/ + /ŋ̀gòó/

2.	Gloss	palm nut oil
3.	Phonetic transcription	[àdʒógóò]
4.	Phonological Processes	deletion of /e/, epenthetic /ó/, deletion of /ŋ/, tone metathesis
5.	Translation	palm-oil

Table 62-Interlexical Word-3

(41d)

N0	Orthographic Form	**<eluokpáa>**
1.	Phonemic form	/èlùó/ + /kpáà/
2.	Gloss	yam good
3.	Phonetic transcription	[lùókpáà]
4.	Phonological Processes	deletion of initial/è/
5.	Translation	the name of one type of yams

Table 63-Interlexical Word-4

These four examples are characteristic of the different phonological processes that occur in interlexical words. In (41a) the vowel initial of the second compound is deleted. In (41b) the two forms are possible. If we have <**nzuohóo**>, then /e/ is deleted from the second member of the compound. If, on the contrary we have <**nzuhóo**>, both the last vowel of the first compound and the last vowel of the second compound are deleted. In (41c) not only do we have /e/ deletion from the last vowel of the first compound but also /o/ is inserted. Finally, in (41d) the initial vowel of the first member of the compound is deleted.

4.8.5.3 **Orthographic Representation of Interlexical Words**

I propose that interlexical words be written in the orthography as single orthographic words for the following reasons. First, no other element can be inserted between the first and the second member which make up the word. Thus, the interruptibility criterion is satisfied. The criterion for potential pause can also be used to support my proposal. There is no pause between the first and the second constituents of the word. Finally, the [±ATR] vowel harmony criterion can be used. All the vowels of the words in (41a) through (41d) agree in [±ATR] harmony.

4.8.5.4 Word Formation Processes, the Lexicon, and Spell-Out Rules

Scalise (1986:31,63) has proposed a model which seems to capture the essence of how words finally end up in conventional dictionaries in their orthographic forms.

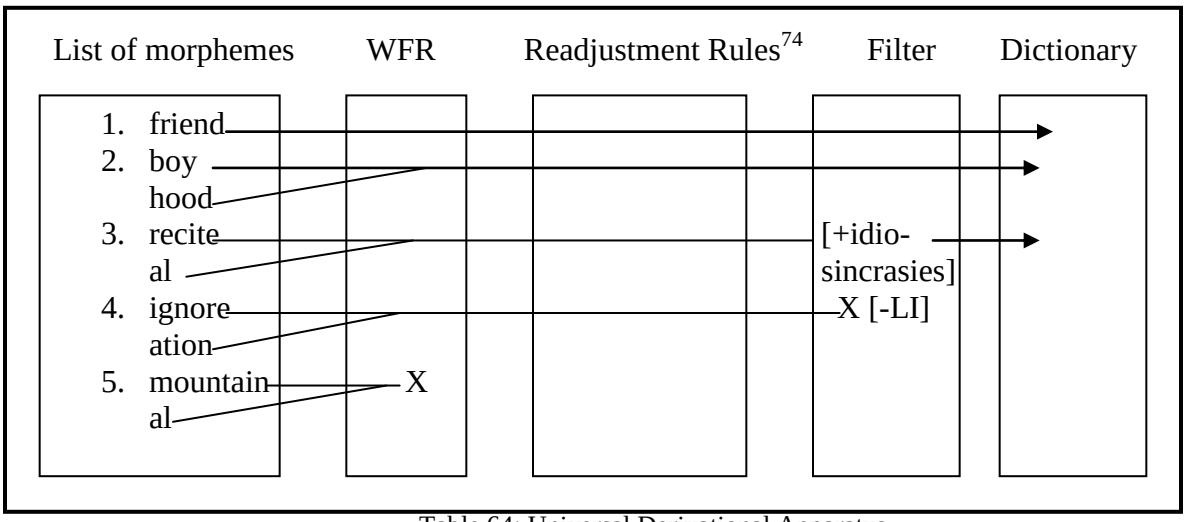


Table 64: Universal Derivational Apparatus

The diagram can be interpreted as follows. The word <friend> is a free morpheme, that is, a word that is indivisible into parts. Such words have straightforward orthographic forms. The word <boyhood>, on the other hand, is a morphologically derived word. It is composed of the free morpheme <boy> and the suffix <-hood>. Some words of this type also have a straightforward spelling. However, this is not the case for the word <recital> which is formed by adding the suffix <-al> to the root <recite>. The combination <*reciteal>, however, does not exist. The spelling of this form must transit through the orthographic filter. In the filter are spelling rules to insure that the word enters into the lexicon only if it conforms to the spelling conventions of the language. The word <*ignoration>, on the other hand, is blocked from entering the lexicon because <ignore> cannot accept the suffix {-ation}. As for <*mountainal> it is blocked right away because the noun does not to take the suffix <-al>. Presumably Scaliese' derivational apparatus is universal. All languages have a similar mechanism that allows well-formed words into the lexicon or blocks ill-formed words from entering the lexicon. In written languages, these rules are stated explicitly in the form of orthographic (spelling) rules. This model is very useful in understanding all the phonological, morphological and morphophonological adjustments that are necessary for an optimal orthogragraphy.

4.9 **Word-length and Orthographic Issues**

The discussion of disyllabic reduplication and that of morphologically complex

[74] There are two types of Readjustment rules: Allomorphy Rules and Truncation Rules, Scalise (1986:58, 63-4). We will not go into the details of this component because it is very technical.

words pose some orthographic problems. These problems stem from the fact that most Anyi words are disyllabic (six letters at most.) However, when the different morphological processes discussed in this chapter are used to create words we end up with plurisyllabic words (up to twelve letters sometimes.) The issue here is the following: will the length of words create reading difficulties?

There seems to be a consensus among orthographers that word length affects ease of reading. Clifton (1987:14) indicates that in Kope (a language spoken in Papua New Guinea) readers found it difficult to decode long words. Price (1987:73) also notes that "long combination of verbal suffixes caused panic to readers, who quickly resorted to guesswork." Dawson (1989) makes the same observation but contends that the difficulties created by long words do not last; they impede reading only in the beginning stages. Quite surprisingly, Nida (1964:154) found that Ayamará readers did not have problems with long words. The Ayamará case is the only exception known to me. In general, the literature indicates that shorter words are easier to read than longer words. However, Pike (1946:256) warns that "an arbitrary writing of space just to make words shorter slows up reading and understanding of the material since it is likely to leave many items between spaces which the native never pronounces in isolation in speech." Proverbial words, verbal-nouns, interlexical words, interfixation, and the orthographic representation of abstract nouns are likely to create reading and spelling difficulties for Anyi readers. However, I propose that these forms be written as single words, except for long proverbial words, because breaking them up to facilitate reading may end up being more troublesome than writing them as single words. Price (1987:73) noticed that in Karkar-Yuri "chopped-up words produced chopped-up reading, and people frequently reread bits before they could make sense of it."

4.10 **Summary**

Some very important orthography decisions have been proposed in this chapter. Let us recapitulate the major ones now:

1. All bound morphemes are to be written as single orthographic words. This includes prefixation, suffixation, and all morphologically complex processes.

2. Grammatical free forms and lexical free forms should be written as single orthographic words. This also includes the orthographic representation of semi-affixes which follow the noun. The semi-affix **{-baá}** is to be treated separately. When the total meaning of the **noun + {-baá}** is not compositional I suggest that they be written as single words.

3. Compounds should be written as separate words if the syntactic category of the compound is the same as that of the head compound. If the syntactic category of the compound and the head compound are of different syntactic category, a hyphen should be used to separate the constituent members of the compound.

4. Partial reduplication should be written as a single word. Disyllabic reduplication should also be written as a single orthographic word because words created by this

process are derived from the same morphological process of affixation.

5. Proverbial words and interlexical words should be written as a single word. However, if there is a clear pause between the constituent parts of proverbial words, this should be indicated by a hyphen placed between the constituent parts.

Chapter Five

Lexical Phonology, Loan Phonology, Punctuation and Orthography

5.0 Introduction

This chapter is divided into three main sections. The first part focuses on the orthographic representation of words which have undergone post-lexical rules. The second section deals with the phonological processes involved in borrowing and the orthographic representation of loanwords. The third section discusses issues related to punctuation and styling conventions.

5.1 **The Theoretical Framework**

The following discussion is a brief summary of Post-lexical Phonology as found in Pullyblank (1986), Booij and Rubach (1987), and Nespor and Vogel (1987). The branch of phonology known as **Lexical Phonology** makes a distinction between the component of Grammar that contains lexical rules and that which contains post-lexical rules. The lexical component contains phonological and morphological rules which are used in the creation of lexical items. When the words created by lexical rules are put in sentences or phrases, they sometimes undergo some phonetic/phonological changes. The aspect of phonology which deals with post-lexical rules is known as **Post-lexical Phonology**[75] Post-lexical rules, on the other hand, do not apply in single words but rather in phrases, in phonological utterances, and even in sentences.[76] Chapter Four examined some lexical formation rules in Anyi. The present chapter concentrates on the orthographic representation of words that have undergone post-lexical rules.

Despite some theoretical differences among the proponents of Lexical Phonology, all agree that when some lexical items are entered into the syntactic component of Grammar, they undergo phonological/phonetic changes. Vowel lengthening, vowel elision, contraction, and utterance nasalization illustrate the application of post-lexical rules in Anyi. In this section I examine the factors that contribute to these phonological/phonetic changes and the orthographic issues raised by the application of post-lexical rules.

The principal goal of all orthographies is to write the words of the language as accurately as possible. No other theory of phonology helps orthography meet this challenge better than lexical phonology. The presentation of this theory will be succinct; most of the technical details will be overlooked in order to highlight its relevance to orthography. Let's start our discussion with Goldsmith's (1990:217-218) description of lexical phonology it:

---

[75] Post-lexical Phonology is also known as Sentence Phonology or Prosodic Phonology. Usually there are some minor theoretical differences but they express basically the same ideas.

[76] Pullyblank (1986:6) makes it clear that a given rule can apply both lexically and post-lexically.

> In the late 1970s and early 1980s, a number of theoretical proposals concerning the relationship between what in pre-generative years would have been called morphophonemic rules and purely phonological rules were synthesized into a framework called lexical phonology. … Lexical phonology can be divided into two distinct, but related theories, a theory of phonology and a theory of morphology. … Lexical phonology begins with a division of phonology into a lexical component and a post-lexical component.

The following architecture is generally proposed to give a visual representation of how morphology and phonology interact in lexical phonology:

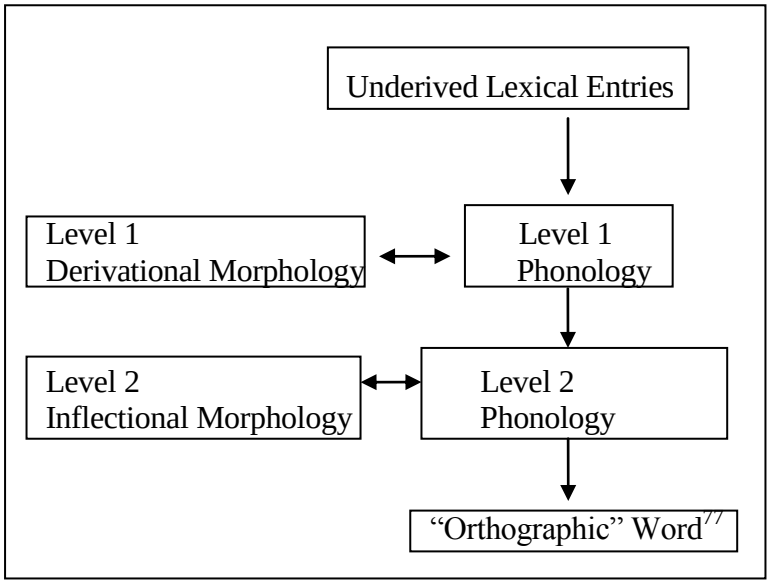


Table 1: Lexical Phonology Architecture

According to Iverson and Wheeler (1988:334) the root of the word is directly accessible to the phonological component. The phonological Level 1 and the morphological Level 1 interact. So, at Level 1 (also known as stratum 1), phonology has access to all the derivational morphemes of the language. Word and morpheme boundaries are indicated by the symbol "+." Any rule that needs to apply at this level applies. The form of the word that results from the application of these rules serves as the input to Level 2. The same process is repeated until finally we arrive at the form of the word that appears in the spelling or in the dictionary of the language as an "orthographic" word. Twenty years earlier, Jones (1967:227) proposed a principle to account for orthographic words that reflects the main findings of lexical phonology.

[77] In the original formulation, the word in its citation form occurs here. The "orthographic" word is used here instead "phonetic representation" because the model has been adapted to orthography.

5.1.2 **Vowel Lengthening**

Long vowels resulting from the application of post-lexical rules should be distinguished from phonemically long vowels. The former is obtained as a result of post-lexical rules whereas the latter is not rule-generated. The examples in (1a) illustrate the phonemic nature of long vowels and those in (2) [further below] vowel lengthening.

(1a)

N0	**Long Vowels**	**Gloss**	**Short Vowels**	**Gloss**
14.	<tɛɛ́> [tɛ̀ɛ́]	lamp	<tɛ> [tɛ́]	ugly
15.	<kpaá> [kpàá]	contract	<kpa>	to break
16.	<kpáa> [kpáà]	good, nice	<kpa>	to sew
17.	<tuu> [tùú]	gun	<tu>	to uproot

Table 2: Long vs. Short Vowels

It was argued earlier in Chapter Two that phonemically long vowels such as those in (1a) should be represented in the orthography as a sequence of two identical vowels.

Vowel lengthening occurs with definite articles and demonstratives, and in the following syntactic constructions: possessive constructions, relative clauses, complementizers, and in the process of cliticization. When the lexical item in these constructions is in focus, the last vowel of that word is lengthened. Furthermore, if we recognize long vowels as a concatenation of two identical vowels, we notice that the second vowel takes a tone that is the opposite of the tone of the first vowel. Thus, in all the cases to be discussed below we have contour tones. This results into two tone mirror rules formulated below as:

C V́	→	C V́ V̀
High		High Low
C V̀	→	C V̀ V́
Low		Low High

Table 3: Tone Mirror Effect

5.1.3 **Definite Article**

The definite article always follows the noun in Anyi. This can be represented structurally as:

Noun + Determiner

Table 4: Noun Phrase Formula

Anyi has two ways of marking definiteness. In most the dialects the determiner **<nɪn>** [**nɪ́**]

and its reduced form ['**n]** occur immediately after the noun. Additionally, in the Mɔrɔfʊ dialect the last vowel of the noun is lengthened to indicate definiteness, as seen in (2b). Thus, in Mɔrɔfʊfi vowel lengthening is in free-variation with the occurrence of the determiner <**nɪn>**. The reduced form <'n> is hardly ever used.

(2a) <Kasi hunlɪ **akɔ** nɪn.>
[kàsí hu̱lí ákɔ́ nɪ̀n
Kasi kill past chicken the
Kasi killed the chicken.

(2b) [kàsí hu̱lí **ákɔ́ɔ̀**]
Kasi killed the chicken

In (2a) /**ákɔ́/** has only one **/ɔ́/** and it is followed by **[nɪ́]** whereas in (2b) definiteness is indicated simply by the lengthening of the /ɔ́/ in [**ákɔ́]**. However, when the determiner <**nɪn>** follows a noun in Mɔrɔfʊ, vowel lengthening fails to occur. Sentence (2c) below is ill-formed because it superposes two definite articles for the same noun. (2c) is ill-formed because **n¡n/'n** occurs obligatorily when the definite noun is the subject of a verb that is in the resultative aspect, that is, **a + verb**.

(2c) *[kàsí hù̱lí ákɔ́ **nɪ́** à lí]
Kasi Past killed chicken the the has eaten.
Kasi has killed chicken and eaten it

Therefore, we cannot have vowel lengthening and the definite article <**nɪn>** at the same time because there is a constraint in many languages which prevents the co-occurrence of two definite articles with the same noun. That would be the same as saying "Kasi killed **the the** chicken and ate it" in English.

5.1.4 **Possessive Constructions**

Possessive constructions have the following syntactic structure:

Dependent Noun + Head Noun
Possessor Possessed

Table 5: Possession Formula

The last vowel of a word is also lengthened in possessive constructions when the head noun is preceded by the dependent noun as in (3a).

(3a) <Ama a fa Kasí **tobi]**
[ámà**à** fà kàsí tòb**íí**]
Ama has taken Kasi car

Ama has taken Kasi's car.

(3b) <Kasi a to **tobi** fɪfɛlɛ]
[kàsí à tò tòbí fɪfɛ̀lɛ́]
Kasi has bought car new
Kasi has bought a new car

In example (3a) the last vowel of <**tobi**> is lengthened whereas there is no vowel lengthening when the same word occurs in (3b). Vowel lengthening in possessive constructions occurs in all Anyi dialects and also in Baule. However, it has not always been noticed. Creissels and Kouadio (1977:103) failed to notice it in Baule. Consequently, they spelled the word <**ja**> (leg) in two different ways. They place a contour tone on <**ja**> in the phrase <bia ja> [**bìá dʒá]** (the foot of the sheep) even though on the previous page they list the same word as having a single vowel.[78]

5.1.5 **Demonstratives**

The commonest Anyi demonstratives are: <**ɛka**> **[ɛ̀ká]** (that), <ɛhɪ> **[ɛ̀hí]** (this)**,** <**ɛhika**> **[ɛ̀híká]** (this one), <**bɔlɔ**> **[bɔ́lɔ́]** (that one), <**ɛhɪ bɔlɔ**> (the one over there), and <**sɔ**> **[sɔ̀]** (the one I am referring to). Demonstratives always follow the noun they present as in the structure below:

Noun + Demonstrative

Table 6: Demonstrative Formula

When these demonstratives are used to place emphasis on the preceding noun, the last vowel of the demonstrative is lengthened. This is shown in the examples below.

(4a) <Kasi **ɛka,** ɔ tɪ man kpáa>
[kàsí **káá**, ɔ tɪ mą́ kpáà]
Kasi this, he is not good
This Kasi, he is not nice

(4b) <Kasi **ɛká** yɪɛ ɔ kpɛ mbganmgban mɔ nzʊa.>
[kàsí ká yɪ yɪ́ɛ́ ɔ̀ kpɛ̀ m̀bgą̀mgbą mɔ́ ǹzʊ̀á]
It is this little boy who is insolent to older people.

[78]They place a contour tone on [**dʒà**á**]** in <**bìá jaá**> but on the previous page <**já**> has only a level tone. It should be recalled that in Anyi and Baule, and as in many other Kwa languages contour tones occur only on phonetically long vowels.

In (4a) <ɛ**ka>** places an emphasis on **Kasí**. Therefore, it undergoes vowel lengthening. However, in (4b) <ɛka> [**ɛ̀ká]** no longer has this function. The focus marker <**yıɛ>** takes this role. Consequently, <ɛ**ka>** does not undergo vowel lengthening.

5.1.6 **Relative Clause and NP Movement**

When the NP object is relativized, it appears in sentence initial position. The fronted NP is immediately followed by the relative pronoun **bö**. Both the relativized NP object and the relative pronoun <**bɔ> [bɔ́]** undergo vowel lengthening as seen in (5b).

(5a) <Kasi a to ɛtannın.>
[kàsí à tò ɛ̀tə̀nɪ̀]
Kasi has bought cloth

(5b) <ɛtannın **bɔ** Kasi a to.>
[ɛ̀tə̀nɪ́ **bɔ́ɔ́** kàsí à **tóó**]
cloth that Kasi has bought
The cloth that Kasi bought

However, when the subject of the verb is relativized as in (5c) the vowel of the relative pronoun is not lengthened.

(5c) <Kasi **bɔ** yı tɛɛ́>
[kàsí **bɔ́** yì tɛ̀ɛ́]
Kasi who draws misfortune
Kasi who is a fortune teller

5.1.7 **The Adverbial Clauses with <sɛ> [sɛ́] and <kɛ> [kɛ́]**

When <**sɛ>** (if) and <**kɛ>** (as, while) occur in sentences, the last vowel of the verb that follows them is lengthened as shown in (6b).

(6a) <ɛ́ɛ kɔ fie sʊ>
[ɛ́ɛ̀ kɔ́ fié sʊ́]
you Prog. go farm on
You are going to the farm

(6b) <**K'ɛ kɔ,** kán mın ngalıɛ kéle bɛ>
[kɛ́ **ɛ̀ kɔ́,** ká mɪ́ ngàlìɛ́ kɛ́lɛ̀ bɛ̀]
As you go, tell my news show them
Let them know how I am doing as you go.

Instead of vowel lengthening in the Bɔna dialect, <a> [**à]** occurs immediately after the verb of the dependent clause to separate it from the main clause as in (6c) below:

(6c) <**Sɛ** ɛ **kɔ a,** kan mın ngɛlıɛ cere bɛ.>

[sɛ́ **ɛ̀** **kɔ́,** ka̱ mi̱ ngàlìɛ́ kélè bɛ̀
If you go tell my news show them
If you go let them know how I am doing.

Sentence (6d) is provided here to show that the vowel of the verb following <kɛ> does not need to be lengthened if <kɛ> is used as a complementizer instead of as an adverb.

(6d) <ɔ kındɛ kɛ ɔ **kɔ** kan kele yi.>
[ɔ̀ kı̱ndɛ́ kɛ́ ɔ́**kɔ́** ka̱ kélè jɪ̀
He seeks that he go touch show him
He wants to go and tell him

5.1.8 **Cliticization**

Nespor and Vogel (1987:145, 149) define clitics as elements of speech which cannot stand by themselves. One of the major characteristics of clitics is that they cannot be the only element in an utterance, they have to *"lean on"* another lexical item. There are three object pronoun clitics in Anyi. The first person object pronoun is <**mın> [mı̀]**, its cliticized form is **[m]**, the second person object is <**wɔ> [wɔ̀]**, its cliticized form is **[ɔ̀],** as seen in (7a) and (7b).

N0	**Uncliticized Form**	**Cliticized Form**
(7a)	<ɔ fa manlı mın> [ɔ̀ fá ma̱lì mɪ̀] He took gave me He gave it to me	<ɔ fa manlı mın> [ɔ̀ fá ma̱lì m̀] He took gave me He gave it to me
(7b)	<ɔ fa manlı wɔ> [ɔ̀ fá ma̱lì wɔ̀] He took gave you He gave it to you	<ɔ fa manlı wɔ> [ɔ̀ fá ma̱lì ɔ̀] He took gave you He gave it to you

Table 7: Cliticization-Part 1

The third person object pronoun is <**yi> [jì̩]** in all Anyi dialects. However, in all the northern dialects <**yi>** is in free-variation with its cliticized form. The cliticized form does not have a segmental presence but only a suprasegmental representation, as seen in sentences (8a) through (8c) below:

N0	**Uncliticized Form**	**Cliticized Form**
(8a)	<Kasi a ja bala> [kàsí à jà blàa̱] Kasi has married woman Kasi got married	<Kasi a ja **yi**> [kàsí à jà **jì̩**] or [kàsí à já**a̱**] Kasi has married her Kasi got married
(8b)	<Kasi a tu eluo> [kàsí à tù èlùo̱] Kasi has uprooted yam	<Kasi a tu eluo> [kàsí à tù jì̩] or [kàsí à tú**ù**]

	Kasi harvested yam	Kasi has uprooted it Kasi harvested yam
(8c)	<Kasi a te balʊn> [kàsí à tè bàlʊ̀] Kasi has busted ball Kasi has deflated the ball	<Kasi a te balʊn> [kàsí à tè jì] or [kàsí à tɛ̀] Kasi has busted ball Kasi has deflated the ball

Table 8: Cliticization-Part 2

In all these sentences we notice that the form of the third person clitic pronoun is obtained by *vowel lengthening*. The clitic pronoun changes according to the last vowel of the verb. If the last vowel of a verb is **/a/** the clitic is **/a/**, if it is **/o/** the clitic is **/o/** and so on. The clitic also agrees in [ATR] harmony with the last vowel of the verb. Since the clitic and the preceding vowel are identical, this results in vowel lengthening.[79]

5.1.9 **Orthographic Representation of Vowel Lengthening**

One of the guiding principles that will be used in this section and in the next is what is called the **Sentence Phonology Principle**. It is formulated by Booij (1987:217) as follows:

Sentence Phonology Principle

Orthographies must make abstraction of the effects of sentence phonology.

What is meant by this principle is that phonological/phonetic changes which stem from the application of post-lexical rules must not be represented in the orthography.

Booij (1987:217) notes that the rule of vowel deletion which optionally reduces unstressed vowels to schwa is not represented in Dutch orthography. The rule of sentence medial palatalization in English in phrases such as <**did you**> is not represented in the orthography either. French liaison is a typical example of how the effects of sentence phonology are not represented in the orthography. Phrases such as <**vous avez**> (you have), <**les enfants**> (children), <**prêt-à-porter**> (ready to wear) are pronounced **[vuzave]**, **[lɛzɑ̃fɑ̃],** and **[prɛtapɔrte]** but they are not spelled as they are pronounced. The French post-

[79] In an experiment with a computerized Speech Analyzer, I examined the timing of the vowel /a/ in two environments. The first when /a/ does not have an object clitic, and secondly when it does. Below are results I obtained. The timing on the verb <**ta**> and the verb + clitic <**táà**> in the sentences (1) and (2)

(1) [mì wá tá bìékʊ́
I say put some more mud on the wall

(2) [mì wá táá bìékʊ̀
I say hit him again

was analysed on a computerized speech analyzer. The timing on the **/a/** of < **ta**> is 71 milliseconds whereas that of **/áà/** of <**taa**> is 116 milliseconds. The sequence <**ta**> is 161 milliseconds long whereas <**taa**> is 228 milliseconds long. This computerized timing confirms the auditory perception that a verb to which the clitic is added is longer to that on which there is no clitic.

lexical rule of liaison is not represented in the orthography because of the **Sentence Phonology Principle**. Therefore, since this principle has been applied to the orthography of many languages (in most cases unconsciously) I suggest that vowel lengthening not be represented in the orthography of Anyi.

A distinction should, however, be made between vowel lengthening which results from cliticization and all other cases discussed previously. In the cases discussed previously vowel lengthening does not have any meaning differentiating function whereas in cliticization it does. The interpretation of sentences (9a) and (9b) is based on whether or not the vowel has been lengthened.

(9a) <Kasi a tin>
[kàsí à t̰í]
Kasi has offended the gods

(9b) <Kasí a tin>
[kàsí à **t̰íí**]
Kasi has cooked it.

If vowel length is not indicated in these examples, the sentence becomes ambiguous. However, the ambiguity can be resolved by indicating vowel length.

Because vowel lengthening in clitics has a syntactic as well as a semantic function in Anyi I suggest that it be represented in the orthography; but how? Three solutions are available. The first consists in writing the clitic and the verb as a single word. This proposal is plausible because since the clitic agrees in [±ATR] harmony with the last vowel of the word, it means that they constitute a phonological word. However, if we choose to represent the clitic and the verb as a single orthographic word, we notice that the orthography goes against an important morphological constraint discussed in Chapter Two, 2.2.3, namely that, no verbs in Anyi have the canonic structure **(CV)CVV.** If we do write the third person clitic pronoun and the verb as a single word, we notice that the verb has two identical vowels in sequence. Thus, the orthographic representation violates the morphological constraint. Booij (1987) argues that orthographies should not violate the phonotactic and morphological constraints of languages.

The second proposal consists in writing the clitic as a separate word. In his introduction to the Baule dictionary, Kouadio (1990:18-20) chooses this alternative. If this proposal were accepted (9b) would be written as:

(9c) [kàsí à t̰í **í]**
Kasi has cooked it

This spelling is misleading because it implies that the clitic and the verb are pronounced differently from **[t̰íi]**. Since the clitic and the verb constitute a phonological word, I suggest

that they not be written separately.

The first two proposals regarding the orthographic representation of third person object clitic have been rejected for morphological and phonological reasons. Now let us consider the third alternative. It was noted in 5.1.8 that not all Anyi dialects indicate the third person pronoun by vowel lengthening. Sanvi, for example uses the full form <**yi**>. We notice, on the contrary, that all the dialects have the basic form <**yi**>. Examples (8a) through (8c) above showed that <**yi**> is in free-variation with its lengthened form. I, therefore, suggest that the third person clitic pronoun be represented in the orthography in its uncliticized form, that is, as <**yi**>. This proposal has the advantage of not violating any morphological or phonological constraint. Moreover, it helps in the standardization of the orthography because <**yi**> occurs in all Anyi dialects.

Furthermore, I suggest that all the other clitics be represented in the orthography in their uncliticized forms, that is, the first person object clitic be written as <**mɪn**> instead of <**m**>, the second person clitic will be spelled <wɔ> and not <ɔ>**.** This proposal is particularly important to help disambiguate the euphonic sentence terminal particle <**ɔ**> from the second person singular clitic <ɔ>. Thus, the sentences in column A should occur in the orthography but not those in B.

N0	**Column A**	**Column B**
(10a)	<Kasi a bʊ mɪn> [kàsí à bʊ̀ mɪ̰̀] Kasi past beat me Kasi has beaten me	<Kasi a bʊ mɪn> [kàsí à bʊ̀ **m̀**] Kasi past beat me Kasi has beaten me
(10b)	<Kasi a bʊ wɔ> [kàsí à bʊ̀ wɔ̀] Kasi past beat you Kasi has beaten you	<Kasi a bʊ wɔ> [kàsí à bʊ́ **ʊ̀**] Kasi past beat you Kasi has beaten you
(10c)	<Kasi a bʊ yi> [kàsí à bʊ̀ ji] Kasi past beat him/her Kasi has beaten him/her	<Kasi a bʊ yi> [kàsí à bʊ́ **ʊ̀**] Kasi past beat him/her Kasi has beaten him/her

Table 9: Vowel Lengthening

5.2 **Word-initial Vowel Elision**

The orthographic representation of vowel elision poses two problems for Anyi orthography. The first has to do with lexical problems, and the second with dialectal issues. There are some lexical items which have the canonic structure VCV(CV). In some cases the word-initial vowel is deleted whereas in others it is not. Let us deal, first, with how most VCV(CV) words are formed.

5.2.1 **The Formation of VCV(CV) Words**

It was argued earlier in Chapter Two, section 2.1 that the basic syllable structure of Anyi words is CV(CV). However, there are many lexical items in the language which begin with a vowel. In Chapter Four, 4.2.1 it was shown that the prefix **{è-/ɛ̀-}** is attached to verb stems to create verbal-nouns. If the vowels of the stem are [+ATR] the prefix is **/e/**, if the vowels of the stem are [-ATR] the prefix is **/ɛ̀/**. The suffix **{-lɛ̀}** is optionally added to some verb stems.

N0	**Verbal Stem**	**Gloss**	**Nominal stem**	**Gloss**
1	<kɔ> [kɔ́]	to go	<ɛkɔlɛ> [ɛ̀kɔ́lɛ̀]	departure
2	<fɪ> [fĩ]	to vomit	<ɛfɪɛ> [ɛ̀fĩɛ́]	vomiting
3	<mɪan> [mi̱ą́]	to be pressed	<emɪan> [èmi̱ą́]	difficulty
4	<kulo> [kùló]	to like	<ehulo> [èhùló]	liking
5	<wu> [wú]	to die	<ewuo> [èwùó]	death
6	<da> [dá]	to sleep	<ɛlalɪɛ> [ɛ̀lálìɛ́]	dream
7	<hian> [hi̱ą́]	to desire	<ehian> [èhi̱ą́]	desire

Table 10: VCV(CV) Word Formation-Part 1

According to the theory of Lexical Phonology, phonological and morphological rules interact in the lexical component to create well-formed lexical items. In (11a) we notice that when the prefix **{è-/ɛ̀-}** is attached to the verb stem consonant mutation occurs where the structural description for its application is met; /k/ becomes /h/, /d/ becomes /l/ as in <**kɔ> : <ɛhɔlɛ>; <da> : <ɛlalɪɛ>**. In the words **<fɪ>** and <**wu>,** we find that /ɛ́/ and /ó/ have been suffixed to <**fɪ>** and <**wu>** respectively. The suffixation of **/ɛ́/** to <**fɪ>** and **/ó/** to <**wu>** reflects the rule of fronting harmony and backing harmony discussed in Chapter Two, section 2.3.1 and also the Highness condition in section, 2.4.4. After the appropriate morphological and phonological rules have applied to words such as **<ɛfɪɛ>** and <**ewuo>**, they are then entered into the lexicon.

In the examples in (11a) the verb stems to which **{è-/ɛ̀-}** are prefixed still occur in the language. However, this is not the case for the words in (11b) below. The roots to which the prefix **{è-/ɛ̀}** is attached no longer occur in the language as independent lexical items.

(11b)

N0	**Orthographic Form**	**Phonetic Form**	**Gloss**
1	<ehuo>	[èhùó]	chest
2	<ehóo>	[èhóò]	hunger
3	<enyaán>	[èɲą̀ą́]	baobab tree
4	<eluo>	[èlùo]	yam
	<efuo>	[èfùó]	powder
5	<ɛlalɪɛ>	[ɛ̀lálìɛ́]	dream
6	<efian>	[èfi̱ą́]	filth, dirt

Table 11: VCV(CV) Word Formation-Part 2

5.2.2 **Deletable Initial Vowels**

What the words in (11a) and (11b) have in common is that they undergo initial vowel deletion when they enter into possessive constructions as in (12). Let's see how this deletion rule operates in the examples below:

(12)

N0	**Orthographic Form**	**Phonetic Form**	**Gloss**
1	<Kasi ehuo>	[kàsí Øhùó]	Kasi's chest
2	<Kasi ehóo>	[kàsí Øhóò]	Kasi's hunger
3	<Kasi enyaán>	[kàsí Øn̰à̰á̰]	Kasi's baobab tree
4	<Kasi eluo>	[kàsí Ølùo]	Kasi's yam
	<Kasi efuo>	[kàsí Øfùó]	Kasi's powder
5	<Kasi ɛlalıɛ>	[kàsí Ølálìé]	Kasi's dream
6	<Kasi efian>	[kàsí Øfḭá̰]	Kasi's filth, dirt

Table 12: Deletable Initial Vowels

The symbol Ø signifies that that the initial vowel has been deleted.

The changes are accounted for by post-lexical rules.[80] According to the theory of Lexical Phonology when words such as <**eluo>, <ɛjɔrɔ>, <efuo>, <ewuo>, <ehuo>, <ɛhɔlɛ>,** and <**ehulo**> are entered into the syntactic component of Grammar some phonological/phonetic changes are to be expected. The change here is that the word-initial vowel **/è/** or **/ɛ̀/** is deleted.

5.2.3 **Undeletable Initial Vowels**

There are, however, some words in which the initial vowel **{è/ɛ̀}** is not deleted even though they occur in possessive constructions, as seen in (13).

(13)

N0	**Orthographic Form**	**Phonetic Form**	**Gloss**
1	<Kasi ɛsaá>	[kàsí èsàá]	Kasi's chest
2	<Kasi ehunman>	[kàsí èhṵ̀mą̰á̰]	Kasi's hunger
3	<Kasi elie>	[kàsí èlié]	Kasi's baobab tree

Table 12: Undeletable Initial Vowels

The difference in the application of word-initial vowels comes from the fact that the words in (11a) and (11b) and (13) are created by different morphological rules. Those in (11a) and (11b) are created by the derivational rule of **{è-/ɛ̀}** prefixation. The words in (13) are

[80]There are divergent views on the mechanism of Lexical Phonology. My interpretation follows the most classical one. For a distiction between the traditional concept of Lexical Phonology and a new version, see Booij and Rubach (1987).

minimal free forms, that is, they are not morphologically derived. The examples in (11a) and (11b) undergo initial vowel deletion whereas those in (13) do not. Oyelaran (1990:4) notes that the same phenomenon occurs in Yoruba. He argues that morphologically derived word-initial vowels undergo initial vowel deletion whereas minimum free forms with initial vowels do not.

5.2.4 **Identical Initial Vowel Deletion**

If a word whose initial vowel is **/a/** is preceded by another whose final vowel is **/a/**, one of the vowels is deleted. The environments which are conducive to identical vowel deletion are possessive and resultative constructions. When words such those in (14a) occur in possessive constructions as in (14b) one of the identical vowels is deleted.

(14a)

N0	**Orthographic Form**	**Phonetic Form**	**Gloss**
1.	<alıɛ>	[àlìɛ́]	food
2.	<atıɛ>	[àtìɛ́]	spoon
3.	<ahaá>	[àhàá]	trap
4.	<akɔ>	[ákɔ́>	hen
5.	<aloko>	[àlòkó]	fried banana snack
6.	<abele>	[àbèlé]	dance
7.	<amıan>	[àmi̯ą́]	brain
8.	<ánʊ́nman>	[ánǹ̯mą̀]	yesterday
9.	<anʊnmaán>	<ànǹ̯mą̀ą́]	bird

Table 13: Undeletable Initial Vowels

5.2.4.1 **Possessive Constructions**

In some possessive constructions, the vowel of the second NP is deleted, as see in the examples below:

(14b)

N0	**Orthographic Form**	**Phonetic Form**	**Gloss**
1.	<Ama alıɛ>	[àmá Ølìɛ́]	Ama's food
2.	< Ama atıɛ>	[àmá Øtìɛ́]	Ama's spoon
3.	< Ama ahaá>	[àmá Øhàá]	Ama's trap
4.	< Ama akɔ>	[àmá Økɔ́>	Ama's hen
5.	< Ama aloko>	[àmá Ølòkó]	Ama's fried banana snack
6.	< Ama abele>	[àmá Øbèlé]	Ama's dance
7.	< Ama amıan>	[àmá Ømi̯ą́]	Ama's brain
8.	< Ama ánʊ́nman>	[àmá Ønǹ̯mą̀]	Ama's yesterday

9.	< Ama anɔnmaán>	[àmá Ønɔ̰̀mà̰á̰]	Ama's bird

Table 14: Deletable Initial Vowel /a/

Since the final vowel of **Ama** and the initial vowel of the head noun are identical, it is difficult to determine which one of the two is deleted. The spelling in (14b) would suggest that it is the vowel of the head noun that is deleted but there is no hard evidence for this claim.

5.2.4.2 **Resultative Constructions**

The resultative aspect is formed with <**a> + verb stem.** When the subject of the verb ends with **/a/,** and the sentence is in the resultative aspect, the vowel indicating the Resultative aspect is is deleted as in (14c).

(14c)

N0	**Orthographic Form**	**Phonetic Form**	**Gloss**
1.	<Ama a hɔ>	[àmá Ø hɔ́]	Ama left
2.	<Ama a li>	[àmá Ø lí]	Ama has eaten
3.	<Ama a wa>	[àmá Ø wa]	Ama has returned

Table 14: Deletable Initial Vowel /a/

5.2.5 **Dialectal Variations in Word with Initial Vowels**

There is a phonological difference in the way Sanvi, on the one hand, and the other dialects apply the post-lexical rule of initial vowel deletion. In the Sanvi dialect initial vowels do not undergo deletion whereas in other Anyi dialects they undergo vowel-initial deletion when they occur in non-initial position in the sentence[v]. This was mentioned in the area by area description of the dialects in 1.3.2 through 1.3.6.

(15a)

N0	**Sanvi**	**Mɔrɔfʊ, Indenie, Bɔna**	**Gloss**
1.	[ɛ̀wá]	[ɛ̀wá] or [wá]	here
2.	[ɛ̀bɛ̀lɛ́]	[ɛ̀bɛ̀lɛ́] or [bɛ̀lɛ́]	here
3.	[ɛ̀lɔ́]	[ɛ̀lɔ́] or [lɔ́]	over there
4.	[àn̰ṵ̰]	[n̰ṵ̰]	in, inside
5.	[àśʊ́]	[śʊ́]	on, upon
6.	[ɛ̀bòlóˊ]	[bòlóˊ]	bush
7.	[àn̰ḭ̆]	[n̰ḭ̆]	and

Table 15: Dialectal Variation with Initial Vowels

The words <**bolo>, <nun>, <sʊ>**, and <**nɪn>** do not occur with an initial vowel in northern dialects. The words **<ɛwa>, <ɛlɔ>, and <ɛbɛlɛ>** keep their initial vowels when they are not preceded by another word. However, when they are preceded by other lexical items in a sentence they undergo initial vowel deletion as exemplified by (15b) and (15c).

(15b) <ɛwa tı kpáą>
[èwá tí kpáą]
Here is good
There is no bad news here.
(15c) <Mın wɔ Ø wa>
[mı̨ wɔ́ Ø wá]
I be here
I am here.

In sentence (15c), the initial vowel <ɛ> of <**ɛwa>** is deleted because it is preceded by the lexical item <**wɔ>**.

5.2.6 **Orthographic Representation of Word-initial Vowel Deletion**

The issue here is whether or not to represent vowel initial deletion in the orthography. To answer this question, let us go back to the sentence phonology principle. It was argued in section 5.1.9 that structures obtained as a result of the application of post-lexical rules should not be represented in the orthography. Therefore, since all the cases of word-initial vowel deletion discussed here are obtained by the application of post-lexical rules, it means that word-initial vowel deletion should not be represented in the orthography.

Another principle, **the Uniqueness of Lexical Representation Principle** discussed by Chomsky (1970:280), can be used to reinforce this position. Chomsky (1970:280) argues that English orthography is "optimal" because it follows the Principle of the Uniqueness Lexical Representation, that is, *a given word has a unique spelling*. When this principle is translated into Anyi, it means that words whose initial vowels are deleted in some syntactic environments and undeleted in others should have a unique orthographic representation. Such words should be spelled with the initial vowel.

This proposal has a positive consequence for Anyi lexicography. It indicates that instead of listing a word such as <**efuo>** (powder) under two separate entries, one under **/f/** when it undergoes initial vowel elision, and another under **/e/** when it does not, the lexicographer lists only one form, the one with the initial vowel.

5.2.6 **Contraction**

Contraction is a type of deletion. However, it goes beyond word-initial vowel deletion in that the vowel that is deleted need not be in word initial position. There are two types of contractions: the first deals with identical vowels, the second with non-identical vowels. The first one is dealt with in examples (16a) through (16c) and the second in (17a) and (17b).

(16a) <Kasi b'ɔ di junman Abijan ɛlɔ>
/kàsí bó ɔ̀ dí dʒu̱mą́ ábidʒą́ ɛ̀lɔ́/
[kàsí b'ɔ́ dí dʒu̱mą́ ábidʒą́ lɔ́]
Kasi who he eats work Abidjan there

Kasi who works in Abidjan.

(16b) <**Sɛ ɛ** kɔ, se yi kɛ ɔ bala>
/**sɛ́ ɛ̀** kɔ́, sé yì kɛ́ **ɔ̀** bálà/
[**sɛ́** kɔ́, sé yì kɛ́ ɔ̀ bálà]
If you go tell him that he come
If you go tell him to come

(16c) <**Kɛ ɛ** kɔ, ɛ́ɛ wun yi>
/**kɛ́ ɛ̀** kɔ́, ɛ́ɛ̀ wu̱ yì/
[**kɛ́** kɔ́, ɛ́ɛ̀ wu̱ yì**]**
You will run into him on the way

In examples (16b) and (16c) the first word is a function word and the second is a pronoun. When the vowel of the function word is identical with that of the subject pronoun, the last (identical) vowel of the first word is deleted.

The evidence I have for claiming that it is the last vowel of the first word that is deleted comes from the examples of contraction in which the vowels are not identical as in the examples below:

(17a) <Mm**ó a**manın> → [m̀**mą̀mą̀nı́]**
Aunt Amannın

(17b) <F**a ɛ**ya> → [fɛ́jàá]
Get angry

We notice that in (17a) the **/o/** in <**mmo**> is deleted. Similarly, it is the **/a/** in <**fa**> that gets deleted. These examples indicate that in contractions, the tendency is to delete the last vowel of the first word. One should be careful to make a distinction between contraction and word-initial vowel elision (discussed in 5.2.1) because if the latter were to apply to (17a) and (17b) we would have <**mmó mannın**> and <**fa**> <**ya**> respectively instead of <**m'mámanın**> and <**faya**>. In contraction of non-identical vowels, not only does deletion occur but the two words come to be pronounced as a single word. This is not the case in word-initial vowel deletion. I suggest that the distinction between these two similar but not identical processes be maintained in the orthography.

5.2.7.1 **Orthographic Representation of Contraction**

A distinction must be made between the orthographic representation of contraction of identical vowels and that of non-identical vowels. I suggest that when we have a contraction between a pronoun and a function word, the contraction be indicated by an apostrophe as in (18a) and (18b), formerly (16b) and (16d).

(16a) <Kasi **bɔ ɔ** di junman Abijan ɛlɔ.

(16b) <**Sɛ ɛ**, kɔ se yi kɛ ɔ bala>
(16c) <**Kɛ ɛ** kɔ, ɛ́ɛ wun yi>

(18a) <Kasi **b'ɔ** di junman Abijan ɛlɔ.
(18b) <**S'ɛ** kɔ, se yi kɛ ɔ bála>
(18c) <K'ɛ kɔ, ɛ́ɛ wun yi>

Many languages: English, French, and Baule, to mention only a few, use an apostrophe to signal a contraction between a lexeme and a function word. English has <**won't**> for **will not**, <**don't**> for **do not**, etc. French has **je l'ai vu** for **je le/la ai vu** (I saw him/her) **je m'appelle** for **je me appelle** (my name is). In Baule we have **swran ngɔ bu'e i Wa'n swran'n** for **swran nga ɔ bu man i Wa nın swran nın** (he who does not believe in his Son, *New Testament*, John 5:23).

However, when contraction occurs between two non-identical vowels, I propose that it not be represented in the orthography.[81] The reason is that such a contraction gives the impression that one is dealing with a single word instead of two. <**Fa ɛya**> may be thought of as one word whereas it is actually two words <**fa ɛya**>. Writing the words separately simplifies the orthography and satisfies the **Etymological Demand Principle** proposed by Cummings (1988:17).

Etymological demand principle
To the extent possible, a word's spelling must reflect its source.

It will be up to the instructors to teach the students how and when to contract these words into one when they are reading. Therefore, I suggest that examples (17a) and (17b) be spelled as (19a) and (19b) below:

(17a) [m̀**mą́**mą̀nį̀]
Aunt Amannın

(17b) [fɛ̀yàá]
Get angry

(19a) <Mmoó amannın>

(19b) <Fa ɛyaá>

[81]It is also possible to apply the Etymological Demand Principle to cases where contraction occurs between function words and pronouns. The two proposals are valid. It will be up to the Commission on Anyi orthography to decide which one is more efficient.

5.2.8 **Utterance Nasalization and the Orthography**

In Chapter 3, section 3.1.3 it was shown that a nasalizable oral vowel in the environment of a nasal consonant is automatically nasalized. However, this statement was made in relation to lexical phonological rules. Now this statement can be extended to whole phonological utterances[82], as seen in the examples below:

Utterance Nasalization

(20a) <Akɔ **nɪan** tʊ>
/ákɔ́ nɪ̀ą́ tʊ́/
[ákɔ́ nɪ̀ą́ tʊ́]
Chicken the has laid eggs
The chicken has laid eggs

(20b) <M'**an** wun yi>
[mą̀ wṵ yì]
I have seen him

Sentences (20a) and (20b) are both cases of what Nespor and Vogel (1987:232) call utterance nasalization, that is, the nasal feature spreads to the next word if they are both in the same phonological utterance. When said in isolation the words in sentence (20a) are **<akɔ nɪn a tʊ> /ákɔ́ nɪ́ à tʊ́/**. However, we notice that in normal speed the definite article **nɪn** and the resultative aspect marker {**à}** merge and are pronounced as a single word. Morever, the nasality of the nasal consonant **/n/** not only spreads to **/ɪ/** but also to the resultative aspect marker **/à/** which is a separate morphological element. Thus, we have **<nɪan> [nɪ̀ą́]**.

In (20b), on the other hand, two processes are at work. First, we have the deletion [ɪ] and then nazalization. The sentence **<M'an wun yi> [mą̀ wṵ́ yì]** is <**Mɪn a wun yi> [mɪ̀ à wṵ̀ jì]** when said in isolation. However, when it occurs in a phrase the vowel **/ɪ/** in <**mɪn>** is deleted. And since the aspectual marker **{à}** is within the nasality domain of [m] that is, it constitutes a phonological utterance with **{à}**, it gets nasalized. Thus we have [**mą̀ wṵ̀ jì**] instead of [**mɪ̀ à** wṵ̀ jì].

[82] Nespor and Vogel (1986:222) argue that the phonological utterance is delimited by the beginning and end of the syntactic constituent. Here it is useful to make a distinction between major and minor constituents. Phonological utterances usually deal with minor constituents. Thus in example (18a) Det + Noun is a constituent to which post-lexical nasalization applies. There is, however, a danger in claiming that phonological utterances are always delimited by syntactic constituents. In (18b) for instance, it is more plausible to say that the aspectual marker and the verb form a constituent rather than saying that the subject and the aspectual marker form a constituent. Otherwise, one could say that the whole sentence (18b) is a constituent.

5.2.8.1 **Orthographic Representation of Utterance Nasalization**

Following the Principle of Sentence Phonology and the Etymological Demand Principle discussed in 5.1.9 and 5.2.7.1, I propose that utterance nasalization not be represented in the orthography. If <**nɪan**> and <**man**> are kept as such in the orthography, it would be difficult for the reader to know that they derive from <**nɪn a**> and <**mɪn a**> respectively. The Principle of Sentence Phonology ensures that utterance nasalization not be marked in the orthography. **The Etymological Demand Principle** leads us to spell a word as it occurs in the lexicon. Therefore, sentences (20a) and (20b) should be written in the orthography as (21a) and (21b) below:

(21a) <akɔ nɪn a tʊ>
[ákɔ́ nɪ́̃ à tʊ̀̃
Chicken the has laid eggs
The chicken has laid egges

(21b) <Mɪn a wun yi>
[mɪ̀̃ à wʊ̀̃ jɪ̀̃
I Resultative seen it
I have seen it

Here, as is the case in contraction, when the native speaker reaches a good level of reading proficiency he will be able to distinguish which utterances he should pronounce as a phonological utterance and which ones he should not.

5.3 **Loan Phonology and Orthography**

The aim of this section is to give a survey of the phonological processes involved in Anyi borrowing of French and English words and to see how these words should be represented in Anyi orthography. I will give an overview of the mechanisms involved in borrowing and how loanwords should be written in the orthography. The following discussion is divided into three parts. The first part consists in making general statements about borrowing. The second deals with the phonological processes involved in borrowing. The last section discusses the thorny issue of the orthographic representation of borrowed words.

5.3.1 Types of Borrowing

Bloomfield (1965:444-495) divides borrowing into three types: cultural borrowing, intimate borrowing, and dialectal borrowing. He argues that cultural borrowing occurs when "the borrowing people is relatively familiar with the lending language." Intimate borrowing, on the other hand, is claimed to happen "when two languages are spoken in what is topographically and politically a single community, the dominated language borrows from the dominating language." The discussion on borrowing here focuses mainly on French, and occasionally, on English. Loanwords from Dioula are too few to deserve a separate treatment. [83] Borrowing from Baule falls in the category of interdialectal borrowing and

[83] The Barabɔrɔ are greatly influenced by Dioula. They are mostly bilingual in Anyi and Dioula. They

does not offer any major insight worth analyzing.

The presence of French and English words in Anyi can be accounted for historically. English words filtered into Anyi at two different periods. The first wave of borrowing occurred when the Anyi were still part of the Ashanti kingdom, that is, in the 17th and 18th centuries. The Ashanti and the English explorers, traders, missionaries, and colonizers were in contact. When the Anyi seceded and settled in Côte d'Ivoire, they maintained these borrowed words. The second wave of borrowing occurred when many Anyi speakers fled the harshness of the French colonial rule and went back to Ghana. They went at the beginning of the 20th century and stayed there until **le travail forcé** (forced labour) was banned in the 1940s, before returning to Côte d'Ivoire.

The ever increasing presence of French words in Anyi is a direct result of over two centuries of French colonial domination of Côte d'Ivoire. The invasion of French words in Anyi exemplifies Hockett's (1958:405) theory of borrowing. He identifies two major reasons for borrowing: **the prestige motive** and **the need-filling motive**. He argues that when speakers of two different languages live intermingled in a single region, speakers of less dominant culture borrow from the culturally dominant language. The Anyi have borrowed French words for both prestige and need-filling motives. The following excerpt found in Mundt's (1987:24) *Dictionary of Côte d'Ivoire* accounts for the prestige motive aspect of Anyi borrowing of French words.

> The Anyi were among the earliest Ivorians in contact with Europeans and among the first to adopt western cultural forms...They are among the most christianized peoples in Ivory Coast.

Need-filling motives also play an important a role in the borrowing of French words into Anyi. Anyi uses French loanwords to name new experiences, new objects and practices which did not exist in Anyi society prior to the arrival of the French. When these foreign objects or experiences are introduced into the Anyi culture, they prefer to keep the original name of the object or the experience with a more or less profound phonetic modification. Carteron (1966:83) argues that the need-filling motive is responsible for the great number of French words in Baule "... ces mots qui deviennent **de plus en plus envahissants** avec **les nouveaux objets importés**...," (emphasis mine.)

In addition to borrowing for prestige reasons or to fill a need, Anyi has also borrowed function words, especially logical connectors. The reason for this is that those already existing in Anyi are structurally complex. For instance to translate **donc** "therefore" in Anyi, one not only repeats part of the previous sentence but also adds **yı sɔ nın tí**. Therefore, when Anyi speakers find a French function word of similar semantic value, they

---

have even adopted Dioula names. However, when one takes the Anyi dialects as a whole there are very few Dioula loanwords. The most common are **terekele** (wage labourer), **deregeba** (a long moslem dress), **alakabo** (God is great) used in Anyi as an exclamation mark, **kanlanmɔcɛ** (fortune teller).

borrow it instead of using the more complex Anyi structure. It is not uncommon to hear illiterate people use **or** "either", **paseke** "Frch. parce que" "because", **piske** "Frch. puise que" "since", **donkı** "Frch. donc" "therefore", **plìkìa** "Frch. pourquoi" "why." These words are introduced into the language by educated Anyi speakers who prefer these simple words to the complex syntactic structures Anyi uses in expressing these sentence connectors.

5.3.2 The Source of the Data

The data used here are taken from Quaireau (1987:119-120), from Carteron (1966:83), and from data I collected for my research.

N0	**English Words**	**Anyi Borrowing**	**French Words**	**Anyi Borrowing**
1.	<bucket>	[bókìtì]	<midi> [midi] (noon)	[àmi̱díì]
2.	<flag>	[fálą̀ŋá] or [flą̀ŋá]	<sucre> [sykrə] (sugar)	[àsìkɛ̀lɛ́]
3.	<yes>	[jɛ́sì][84]	<baril> [baril] (container)	[bàlíì]
4.	<cornet>	[kɔ́nɛ̀tì]	<baricaut> [bariko] (container)	[bàlìkóò]
5.	<powder>	[páùdà]	<bal> [bal] (ballroom dancing)	[bálʊ̀]
6.	<plate>	[plétɪ] or [pɛ̀létɪ]	<ballon> [balɔ̰] (ball)	[bálʊ̀̃] or [bánʊ̀̃]
7.	<pound>	[pɔ́nʊ̰][85]	<bateau> [bato] (ship)	[bàtóò]
8.	<soldier>	[sóndʒa]	<gin> [dʒi̱n] (hard liquor)	[dʒí̱nì̱]or [dʒí̱rì̱]
9.	<school>	[sùkúlù] or [sùklúù]	<fête> [fɛt] (feast)	[fɛ́tì]
10.	<tyre>	[tájì]	<photo> [foto] (picture)	[fòtóò]
11.	<prostitute>	[túùtúù][86]	<galette> [galɛt] (donut)	[gàlɛ́tì]
12.	<charpenter>	[tʃǎpi̱nà̱]	<gateau> [gato] (cake)	[gàtóò]

[84] This is the name given to all Protestant denominations. The Roman Catholic Church is known as <Woloman> [wlómą̀].

[85] Much of the Anyi monetary system is based on the pound. Pɔnʊ kʊn, that is, one pound, is equivalent to 25 CFA (local currency in Côte d'Ivoire).

[86] Presumably, this name came from the fact in Ghana, prior to the arrival of the Anyi in Côte d'Ivoire, one needed to pay two pennies and cents to a prostitute to avail oneself of her services.

13.	<card>	[kàlátáà] or [klátáà]	<glace> [glase] (ice cream)	[glàséè]
14.			<casserole> [kasrɔl] (pan)	[kàsɔ̀rɔ́] or [kàsʊ́rʊ̀]
15.			<cartouche> [kartuʃ] (gun powder)	[kàtúsʊ̀] or [kàtúsù]
16.			<kilo> [kilo] (kilo)	[kìlóò]
17.			<carte> [kart]	[kàlátáà] or [klátáà]
18.			<commandant> [kɔ̰mą̰dą̰] (commandant)	[kɔ̰mą̀dą̀ą́]
19.			<commis> [komi]	[komḭ]
20.			<étage> [etaʒ]	[ètázì]
21.			<maître> [mɛtr] (school master)	[métìrì] or [métrì]
22.			<mètre> [mɛtr] (meter)	[métìrì] or [métrì]
23.			<docteur> [dɔktœr] (physician)	[ǹnɔ̀tɔ̀rɔ́] or [ǹdɔ̀tɔ̀rɔ́]
24.			<pelle> [pɛl] (shovel)	[pélʊ̀]
25.			<père> [pɛl] (priest)	[pélʊ̀]
26.			<poche> [pɔʃ] (pocket)	[pɔ́sʊ̀]
27.			<chef> [ʃɛf] (chief)	[ʃɛ́fʊ̀]
28.			<table> [tabl] (table)	[tábìlì] or [táblì]/ [tɔ́bìlì] or [tɔ́blì]
29.			<automobile> [otomobil] (car)	[tòmòbíì]
30.			<torche> [tɔrʃ] (flashlight)	[tɔ̀lʊ́sʊ̀]
31.			<verre> [vɛr] (glass cup)	[vɛ́lì]
32.			<jardin> [ʒardɛ̰]	[zàràdą̀ą́]

Table 16: Loanwords

5.3.2.1 **The Contrastive Analysis Hypothesis**

The Contrastive Analysis Hypothesis has been used in Loan Phonology to predict areas which are likely to create problems when borrowing occurs between two languages. Bloomfield (1965:447) argues that

> if the borrowing people is relatively familiar with the lending language, or if the borrowed words are fairly numerous, then the foreign sounds which are acoustically remote from any native phoneme, may be preserved in a more or less accurate rendering than a native phonetic system.

The contrastive analysis below is based on the comparison between the phonological systems of French, English, and Anyi. The Anyi forms used here are words found in the speech of illiterate speaker[s]. The comparison between the phonological systems highlights only the main points that are of interest to the present analysis. The French words are transcribed phonetically as an educated Anyi speaker will pronounce them.

5.3.2.2 **The Consonantal System**

When the Anyi consonantal system is compared with that of French and English one notices that the most striking differences are that Anyi has **labio-velars /kp/** and **/gb/** whereas French and English have only **/p/** and **/g/**. Moreover, English and French have **/v/** and **/z/** as consonantal phonemes whereas these sounds occur in Anyi only as morphophonemic variants of **/f/** and **/s/,** that is, when they are preceded by the syllabic morpheme **{N}**. However, Anyi does not have any problem in borrowing words which have **/p/, /g/, /v/, /z/** as seen in (22a).

(22a)

N0	**Loanwords**	**Anyi Borrowing**	**Gloss**
1.	<powder>	[páùdà]	powder
2.	<pound>	[pɔ́nʊ̃]	pound
3.	<verre> [vɛr]	[vɛ́lì]	glass cup
4.	<gateau>	[gàtóò]	cake

Table 17: Problem-free Loanwords

The fact that Anyi does not turn <**p**ound**, p**ouder**, g**âteau**, v**erre> into <***kp**ɔnì, ***kp**auda, ***ng**atoo, ***nvɛ**rɪ> shows that **/p/** and **/g/** are also phonemes in the language. Furthermore, the ability Anyi speakers have to borrow words with an initial **/v/** and **/z/** without having them be preceded by **{n}**, even though **/v/** and **/z/** never occur word-initially, indicates that they can be considered at least as "potential phoneme."[87]

[87] Actually, this can be accounted for by Implicational universals and by markedness. It can be posited that if a language has **/kp/** and **/gb/** as phonemes, it means that it can borrow words with initial **/p/** and **/g/** without having to turn them into **/kp/** and **/gb/** because **/kp/** and **/gb/** are marked in relation to **/p/** and **/g/**, that is, the former involves more articulatory features than the latter. The same is true for **/nv/** and **/nz/**. If a language has these two, it means it can borrow words in another language which begin with **/z/** and **/v/**.

Problems surface, however, when Anyi borrows words which have the alveo-palatal fricatives **[ʒ]** and **[ʃ]** as seen in (22b).

(22b)

N0	**Loanwords**	**Anyi Borrowing**	**Gloss**
1.	<étage> [etaʒ]	[ètázì]	two-storey building
2.	<Jean> [ʒa̰]	[zá̰]	John
3.	<juge> [ʒyʒ]	[zúzʊ̀]	judge
4.	<Georges> [ʒɔrʒ]	[zólʊ̀zʊ̀]	George
5.	<jalousie> [ʒaluzi]	[zàlùzíì]	jealous
6.	<jugement> [ʒyʒəma̰]	[zùzèmá̰à̰]	birth certificate
7.	<torche> [tɔrʃ]	[tɔ̀lʊ̀sʊ́]	flash light
8.	<chauffeur> [ʃofœr]	[sòfélì]	driver
9.	<chauffer> [ʃofe]	[sòfé]	to heat
10.	<chaussure> [ʃosyr]	[sòsùrú]	shoes
11.	<charbon> [ʃarbɔ̰]	[ʃàlíbɔ̰̀]	charcoal
12.	<chemise> [ʃemiz]	[ʃemiz]	[sémḭzì]

Table 18: Troublesome Loanwords

Whenever an Anyi speaker encounters the French and English alveo-palatal fricatives [ʒ] and [ʃ], he turns them systematically into the Anyi dental continuants [z] and [s] respectively.

Loanwords		**Anyi Borrowing**
{[ʒ, ʃ]}	>	{[z, s]}

Table 19: Palatal Fricative Substitution

5.3.2.3 **The Vocalic System**

When Anyi borrows words from English or French it distinguishes between lax vowels and tense vowels. If the vowels are lax they are replaced by [-ATR] vowels; if they are tense vowels they are replaced by [+ATR] vowels. This is represented schematically as:

Tense = +ATR	Lax= -ATR
[i]	[ɪ]
[e]	[ɛ]/[ə]
[o]	[ɔ]
[a]	

Table 20: The Vocalic System

The data in (23a) exemplify the change from lax to [-ATR], and those in (23b) from tense to [+ATR].

(23a)

N0	**Loanwords**	**Anyi Borrowing**	**Gloss**
1.	<cornet> [kɔrnɛt]	[kɔ́nɛ̀tì]	cornet
2.	<yes> [jɛs]	[jɛ́sì]	Protestant
3.	<casserole> [kasrɔl]	[kàsɔ̀rɔ́]	cooking pot
4.	<maître> [mɛtr]	[mɛ́tìrì]	teacher
5.	<fête> [fɛt]	[fɛ́tì]	feast, holiday

Table 21: [-ATR] Harmony

(23b)

N0	**Loanwords**	**Anyi Borrowing**	**Gloss**
1.	<boutique> [butik]	[bùʊ̀tìkɪ́]	shop
2.	<bouteille> [butɛj]	[búʊ̀tɛ̀ɭi]	bottle
3.	<baricaut> [bariko]	[bàlìkóɔ̀]	container
4.	<automobile>	[tòmòbíi]	car, vehicle
5.	<gin> [dʒin]	[dʒɪ́rɪ̰]	hard liquor
6.	<jalousie> [ʒaluzi]	[zàlùzíi]	jealousy
7.	<jugement> [ʒyʒmą]	[zùzèmą́ą̀]	birth certificate

Table 22: [+ATR] Harmony

It should be recalled that it was argued in Chapter Two, section 2.2.1 that if the first vowel of a word is [+ATR] all the remaining vowels must be [+ATR]; if it is [-ATR] all the following vowels must be [-ATR]. This constraint applies to a large number of borrowed words as seen in (23a) and (23b). However, one must indicate that there are a few exceptions to the [±ATR] harmonic principle. These exceptions are presented in (23c) and discussed in the paragraph immediately following. Here the first vowel of the word does not seem to condition the appearance of [-ATR] vowels in word final position.

(23c)

N0	Loanwords	Anyi Borrowing	Gloss
1.	<tomate>	[tòmàtí]	tomato
2.	<cartouche>	[kàtúsʊ̀]	gun powder
3.	<juge> [ʒyʒ]	[zúzʊ̀]	judge
4.	<bus>	[bùsí]	bus

Table 23: Exceptions to the [ATR] Harmony

5.3.3 **Resyllabification**

Anyi has an important phonotactic constraint, namely that there is no closed syllable in the language. Consequently, when Anyi borrows closed syllable words from other languages, it changes them into open syllable words.

(24a)

N0	Loanwords	Anyi Borrowing	Gloss
1.	<table> [tebl]	[tábìlì]	table
2.	<carte> [kart]	[kàlàtáà]	card, map
3.	<bal> [bal]	[balʊ]	ball
4.	<saccoche> [sakɔʃ]	[sakɔsʊ]	carry-on bag
5.	<père>	[pɛlu]	Catholic Father
6.	<bouteille>	[butɛj]	bottle

Table 24: Resyllabification

The phonological transformation from close syllable to open syllable can be accounted for by a syllable structure condition discussed in Chapter Two, section 2.1. It was argued then that Anyi is a CV(CV) language. Therefore, when a closed syllable word is borrowed it is automatically turned into an open syllable word.

In the transformation of closed syllables into open syllables, it is always the high front vowels [i]/[I] and the high back vowels [u]/[ʊ] which occur as epenthetic vowels. The distribution of [i]/[ɪ] and [u]/[ì] depends on the frontness or backness of the vowels in the closed syllable. The general operating principle can be formulated as follows:

1. *In a CVC syllable, if the V immediately preceding the last consonant is a front vowel, then the epenthetic vowel is [i] or [ɪ] depending on the Lax/Tense distinction.*

2. *In a CVC syllable, if the V immediately preceding the last consonant is a back vowel, then the epenthetic vowel is [u] or [ì] also depending on the Lax/tense distinction.*

In addition to this general principle, there is a tendency for [ɪ] to occur with voiceless final consonant whereas [ʊ] occurs with voiced final consonant and with **/I/** when it occurs in final position in monosyllabic words.

(24b)

[i]/[ɪ] Epenthesis			
N0	**Loanwords**	**Anyi Borrowing**	**Gloss**
1.	<bucket> [bʌkɛt]	[bóòkìtì]	pale
2.	<cornet> [kɔrnɛt]	[kɔ́nètì]	cornet
3.	<yes> [jɛsɪ]	[jɛ́sì]	very upset
4.	<bac> [bak]	[bàkɪ́]	high school do[ploma
5.	<maîtres> [mɛtr]	[mɛ̀tɪ́rɪ̀]	teacher
6.	<fête> [fɛt]	[fɛ̀tɪ́]	feast
7.	<adresse>	[ànɛ̀rɛ́sì]	adresse

Table 25: Epenthesis with /[i][ɪ]

(24c)

[u]/[ʊ] Epenthesis			
N0	**Loanwords**	**Anyi Borrowing**	**Gloss**
1.	<bal> [bal]	[bàlʊ́]	ballroom dancing
2.	<Paul> [pɔl]	[pɔ̀lʊ́]	Paul
3.	<juge> [ʒyʒ]	[zuzʊ́]	judge
4.	<Georges> [ʒɔrʒ]	[ʒɔ̀lʊ̀ʒʊ́]	George
5.	<père> <pɛr>	[pɛ̀lʊ́]	priest

Table 26: Epenthesis with /[u][ʊ]

When an open syllable word that is accented on the last syllable is borrowed into Anyi a rule of **open syllable lengthening** applies to lengthen the vowel of the open syllable. This results in the occurrence of a contour tone on the vowel of the open syllable. In general, the tonal configuration on such words is **High-Low** as seen in (24d).

(24d)

N0	**Loanwords**	**Anyi Borrowing**	**Gloss**
1.	<bateau>	[bàtóò]	ship
2.	<gateau>	[gàtóò]	cake
3.	<baril>	[bàlíì]	container
4.	<automobile>	[tòmòbíì]	vehicle
5.	<tribunal>	[tòròmìnáà]	courtroom
6.	<café>	[kàféè]	coffee
7.	<midi>	[mi̱díì]	noon
8.	<casserole>	[kàsɔ̀rɔ́ɔ̀]	casserole

Table 27: Coda Lengthening

5.3.4 **Final /l/ Deletion**

No syllable in Anyi has an /l/ in the coda. Consequently, when a polysyllabic word has a final **/l/**, a **final /l/ deletion rule** operates to delete that **/l/**. After that rule has applied, **the open syllable lengthening rule** applies too. This explains why the words in (25) below have long vowels.

(25)

N0	**Loanwords**	**Anyi Borrowing**	**Gloss**
1.	<baril>	[bàlíì]	container
2.	<automobile>	[tòmòbíì]	vehicle
3.	<tribunal>	[tòròmi̯náà]	courtroom
4.	<de l'huile>	[dùrùwíì]	cooking-oil
5.	<casserole>	[kàsɔ̀rɔ́ɔ̀]	pan

Table 28: Final /l/ Deletion

5.3.5 **Consonant Cluster Formation**

There are two kinds of consonants clusters in Anyi: **CL(V1)V2** and **CR(V1)V2**. In Chapter Two, section 2.6.3 it was noted that there is an allophonic rule which operates to change **/l/** into **/r/** when it occurs after consonants that have the feature [+coronal]. Consequently, when Anyi borrows a foreign word which has **/l/** or **/r/,** these two consonants change depending on the phonetic feature of the preceding consonant as seen in the example below:

(26a)

N0	**Loanwords**	**Anyi Borrowing**	**Gloss**
1.	<plateau> [plato]	[plàtóò]	plateau, hill
2.	<maître> [mɛtr]	[mɛ̀trí]	teacher
3.	<glace> [glas]	[glàsí]	ice-cream
4.	<table> [tabl]	[táblì]	table
5.	<capable> [kapabl]	[kàpàblʊ́]	capable, strong
6.	<adresse> [adrɛs]	[àdrɛ̀sí]	address
7.	<tribunal> [tribynal]	[tròmi̯náà]	courtroom

Table 27: Allophonic Rules-Part 1

The liquid in these words does not undergo any phonetic/phonological changes when borrowed because they meet Anyi clustering conditions. The lateral **/l/** occurs with consonants which are [-coronal], and **/r/** occurs with those which have the feature [+coronal].

The examples in (26b) are not consonant clusters in French but they are made into consonant clusters in Anyi because the structural condition for clustering them is deemed to have been met.

(26b)

N0	Loanwords	Anyi Borrowing	Gloss
1.	<sardine> [sardin]	[sràádíì]	sardines
2.	<television> [teləvizjɔ̃]	[trévìzi̯ɔ́]	television
3.	<cinema> [sinəma]	[sri̯ímà]	cinema

Table 28: Allophonic Rules-Part 2

However, for these words to be turned into clusters, the French words should have been <**saradine**>,<**terevisiɔn**>, <**cinrinman**>, that is, the vowels surrounding the liquid should have been identical. Even though this condition is not entirely met, Anyi treats the words in (26b) as though satisfying completely the condition for the application of the rule clustering.

The orthographic representation of clusters in borrowed words will be made to conform to the principle of orthographic representation of **CL(V1)V2** clusters discussed in 2.7.1, namely, that all **CL(V1)V2** words are to be written in the orthography as **CV1LV2**.

5.3.6 **Miscellaneous Borrowing**

Not all instances of borrowing can be accounted for by the processes discussed above. There are still some that are conditioned by syntactic and pragmatic factors. Those conditioned by syntactic factors are discussed in (27a) and those conditioned by pragmatic factors in (27b).

(26a)

N0	Loanwords	Anyi Borrowing	Gloss
1.	<radio> [radjo]	[àlàdìó]	the radio
2.	<cle> [kle]	[làklé]	the key
3.	<vin> [vɛ̃]	[dìví]	some wine
4.	<huile> [hɥil]	[drùwíì]	some oil
5.	<pain> [pɛ̃]	[dìpí]	some bread
6.	<midi>	[àmìdíì]	at noon

Table 29: Miscellaneous Borrowing -Part 1

The words in (27a) represent borrowing of whole syntactic phrases. In all these words Anyi has either borrowed the noun with the determiner, as in <**la + radio**> and <**la + clé**> or the noun with the partitive article, as in< **du + pain**>, <**de + l'huile**>, and <**du + vin**>, because these words occur in most cases as indivisible chunks. The word <**midi**> is also borrowed with the preposition <**à**> in Anyi.

(26b)

N0	Loanwords	Anyi Borrowing	Gloss
1.	<docteur> [dɔktœr]	[ǹnɔ̀trɔ̀]	physicians
2.	<gendarme> [ʒɑ̃darm]	[ǹzɑ̀dàlí]	state patrols

Table 30: Miscellaneous Borrowing -Part 2

One wonders why **docteur** and **gendarme** are changed into <**nnɔtɔrɔ**> and <**nzandalı**> respectively. Since Anyi has already word-initial **/d/** it could have turned **docteur** into <**dɔtɔrɔ**> instead of <**nnɔtɔrɔ**>**.** The same argument goes for **gendarme**. This word could have been borrowed as <**zandalı**> instead of <**nzandalı**> because, as discussed in 5.3.2.1, the French alveo-palatal fricative **/j/** becomes **/z/**. In both cases we notice that these words are preceded by **{N}**. The occurrence of this prefix with **docteur** and **gendarme** indicates that these two words are taken to be plural nouns because **{N}** is a plural morpheme. It can, therefore, be argued that **docteur** and **gendarme** are preceded by **{N}** in their Anyi forms not because they could not have been borrowed as such but because they are perceived to be plural nouns. The reason for this is that whenever medical doctors and policemen visit Anyi areas they always go as a team. The word <**nnɔtɔrɔ**> does not mean a medical doctor per se. It is used as a generic name for all those who work in a hospital: nurses, lab technicians, and pharmacists. As for **gendarme** there is an **{N}** preceding the Anyi form because it is a police rule in Côte d'Ivoire that police officers should be at least two when they go on patrol. If this explanation is accepted, it shows that borrowing goes beyond mere phonetic/phonological rearrangement of segmental features. It can also be accounted for by cultural experiences.

5.3.7 **The Orthographic Representation of Loanwords**

The following statement by Carteron (1966:83) is used to introduce the controversy about the orthographic representation of loanwords.

> Pour écrire ces mots, qui deviennent de plus en plus envahissants avec les nouveaux objets importés, il semble préférable de garder une écriture **la plus proche possible de l'original: café** et non **kafé, soucla** et non **soukla...**etc.**,** (emphasis mine).

Carteron claims that French words borrowed into Baule should be spelled almost as they occur in French. This is known in the literature as *"adoption."* Cummings (1988:17) defines adoption as a "word brought into the language with no or very little orthographic change." Some French words adopted in English orthography are <**déjà vu**>**, <laissez-faire**>**,** and <**façade**>**.** The opposite of adoption is *"adaptation."* Adaptation occurs when the borrowing language adapts the word to make it fit the orthographic and phonological constraints of its language. Cummings (1988:19) lists the following words as recent adaptations in English: <**moose**> (from Natick moos), <**soy**> (from Japanese shoyu), <**carboy**> (from persian garaba), <**dervish**> (from Turkish dervis). The orthographic status of the Malay word <**kechup**> is not settled yet. It has three variants: <**kechup**>**,** <**catchup**>**,** and <**catsup**>.

5.3.8 **The Dangers of Adoption**

Adoption creates many problems for the orthographic system of the borrowing language, as pointed out by Cummings (1988:19-20) in the following statement:

> New words are brought into the language through either simple adoption or more complex adaptation, they tend to confirm the existing system, leading to greater predictability, or to challenge the system, introducing spellings that run counter to existing patterns and expectation.

What needs to be emphasized in this quotation is "to challenge the system, introducing spellings that run counter to existing patterns and expectation." Cummings notes that English recent adoption of words such as **<cnida>, <phthalein>, <dghaisa>, and <ngai>** [88] "pose genuine challenges and create complications for English spelling."

The adoption of loanwords into the orthography of another language is full of difficulties, especially when the borrowing language uses an orthographic system that is different from the one used by the lending language. For instance, if a language uses a phonemic/phonetic principle whereas the other uses an entirely different principle, loanwords will lead to pronunciation and spelling difficulties. Let us illustrate this point with some examples from French and Anyi.

Anyi orthography is, generally speaking, based on the principle of one-to-one correspondence between **phoneme** and **grapheme** whereas in French we have **one phoneme-to-many graphemes correspondence** and **many graphemes-to-one phoneme correspondence**. The French phone **[o]** has the following graphemic correspondences:

N0	**Phone**	**Examples**
1.	/ɔ/	<eau> in <beau> [bo] (pretty)
2.		<eaux> in <eaux> [o] (water)
3.		<aux> in <faux> [fo] (false)
4.		<au> in <maudire> [midir] (to curse)
5.		<aut> in <saut> [so] (a jump)
6.		<aud> in <nigaud> [nigo] (stupid)
7.		<ôt> in <tôt> [to] (early)
8.		<os> in <dos> [do] (back)
9.		<ot> in <sot> [so] (idiot)
10.		<o> in <photo> [foto] (picture)

Table 31: Sound-to-Grapheme Correspondence

[88] Cummings (1988:20) lists these words without glossing them. All the names in Matthew 1:1 and in the rest of the New Testamant are unadapted to Baule phonology.

The grapheme **<c>** has two different phonic realizations:

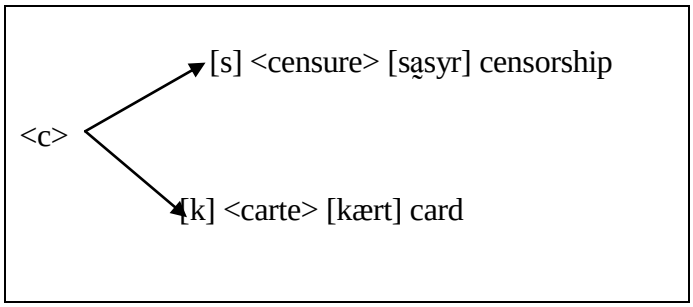


Table 32: Grapheme-to-Sound Correspondence

If the borrowed words in (28) below are to be adopted in Anyi orthography it will create major reading and spelling difficulties because the spelling of these words does not follow the same orthographic principle as Anyi does.

(28)

N0	**Loanwords**	**Anyi Borrowing**	**Gloss**
1.	<baricaut> [bariko]	[bàlìkóò]	container
2.	<gateau> [gato]	[gàtóò]	cake
3.	<Jean> [ʒa̰]	[zá̰]	John
4.	<Georges> [ʒɔrʒ]	[zɔ̀lʊ̀zʊ́]	George

Table 33: Spelling of Loanwords

If loanwords are not adapted to Anyi orthography they will introduce spellings that "run counter to the existing patterns and expectation" as pointed out by Cummings in the quotation above. For Anyi speakers to be able to spell and read French or English loanwords correctly they must also learn the orthographies of these two languages! This alone is sufficient a reason to discourage the most ambitious literacy client.

5.3.8.1 **Cultural Factors and the Orthographic Representation of Loanwords**

The argument presented above against adoption means that my preference for the orthographic representation of loanwords goes to adaptation. However, the decision to adapt loanwords is sometimes met with great opposition. The Baule New Testament constitutes a very interesting case. When the New Testament was being translated into Baule, the translators were faced with the question of whether to adapt French loanwords (including proper names) to Baule orthography or not. When religious leaders were presented with the alternatives, adoption or adaptation, they decided that French words must appear in their adopted forms in the Baule New Testament. The translators' linguistic arguments did not convince the leaders. Furthermore, they threatened to boycott the Baule New Testament if French words and proper names were adapted to Baule phonology.[89]

[89] In a tape-recorded material I discovered that when an educated Anyi is speaking to an illiterate Anyi, he uses the same forms of borrowed words as the illiterate would. However, when educated speakers are speaking among themselves, they use the standard French forms, except for loanwords of English origin. This is

These leaders who are all literate in French were insensitive to the needs of the many uneducated Baule speakers and the problems that the adoption of loanwords creates for them. These kinds of problems where sound linguistic facts are ignored by policy makers and religious leaders are all too frequent in language planning. Ansre (1974:388) observes that in language development "not very many linguists have been influential in the process. The final decisions have been taken by governmental, religious and educational authorities."

5.4 **Punctuation and Style**

The last portion of this chapter is devoted to issues related to punctuation and styling conventions. Gleason (1955:433) argues that "we must not consider the question of punctuation for a new language as a trivial problem." However, most studies on orthography do not even mention punctuation. The importance of punctuation and styling conventions is overlooked because they are assumed to be universal, "people do not expect to find differences in punctuation from language to language," (Gleason 1955:432). Since orthography makers are literate in at least one European language they assume without questioning that the punctuation and styling conventions found in those languages can be duplicated for newly written languages. However, as pointed out by Samarin (1964:161), such naive assumptions have been very costly to literacy teachers and Bible translators. He notes that

> an imperfect system of punctuation, whether in the use of periods, commas, colons, semi-colons, exclamation marks, questions marks, etc., can vitiate any good work done by a translator on the text itself. It can confuse or mislead the reader.

The aim of this section is to examine the syntactic and semantic functions of some punctuation and to see how it may be used in Anyi. It is important to emphasize that only punctuation that symbolizes grammatical units – *the comma, the period, the question mark, the exclamation point, and the quotation mark* – will be investigated here.[90]

5.4.1 **Syntactic and Semantic Functions of Punctuation**

Hockett (1958:548) argues that the distinction between capital and lower case letters does not reflect anything in speech. This remark and similar others have been made for centuries by orthography reformers. However, this opinion is not shared by the editors of *Webster's Standard American Style Manual* who argue that

---

understandable because many speakers do not even know that words such as <**kɔnɔtɪ**> are borrowed from the English <**cornet**>; even if they did many of them do not speak English. All the names in Matthew 1 and in the rest of the New Testamant are unadapted to Baule phonology.

[90]This means that I will not deal with how *the dashes (-), the parentheses ( ), the curly brackets { }, the angle brackets, and the semi-colon.*

> Punctuation marks are used in English writing to help clarify the structure and meaning of sentences. To some degree, they achieve this end corresponding to certain elements of the spoken language, such as pitch, volume, pause, and stress. To an even greater degree, however, punctuation marks serve to clarify structure and meaning by virtue of the fact that they conventionally accompany certain grammatical elements in a sentence, no matter how those elements might be spoken. In many cases, the relationship between punctuation and grammatical structure is such that the choice of which mark of punctuation to use in a sentence is clear and unambiguous.

If punctuation reflects something in speech as suggested in this quotation, and if some styling conventions are syntactically significant, it means that they must be represented in the orthography of every language. It should be emphasized that not all the punctuation and styling conventions found in English and French deserve to be represented in Anyi orthography. Proposals have been made to reduce the number of these punctuation marks and styling conventions to a minimum because, according to Hockett (1958:541), "writing systems must avoid inadequate and superfluous representations." The two principles enunciated by Mundhenk (1981:228) in 1.6.4.26 and 1.6.4.17, namely *"you should not introduce punctuation marks which are not needed in the language,"* and *"in order to get the people to accept the punctuation system, you may have to make it look like the punctuation used in languages they are already familiar with"* will be our guiding principles.

5.4.4 **Justification of Anyi Punctuation**

This section seeks to show the relevance of the punctuation marks and the styling conventions that are to be used in Anyi orthography. The guideline elaborated here is not definitive. It is only an illustration of how these conventions could be used based on syntactic and discourse considerations. As the language develops its written literature more modifications will be brought to the suggestions made here.

5.4.4.1 **Naming Punctuation Markers**

None of the African languages I know of: Igbo, Yoruba, Swahili, Bambara, Baule has names for the punctuation marks they use in their orthography. Readers and writers of these languages who are not educated in a European language do not have any metalinguistic knowledge of punctuation marks. They see them in their manuals but nobody has explained to them what their names are. I deem it very important that labels should be given to punctuation marks to give literacy clients some metalinguistic knowledge of the orthography of their language. The names I suggest here have been carefully selected to reflect the shape of natural objects or to convey an ideophonic concept already used in the language. In the remaining sections, there is a little introductory paragraph which explains the choice of each punctuation mark and how it is to be used in Anyi.

5.4.4.2 **The Comma: <Tʊɛ> [tʊ̀ɛ́]**

The name I propose for the comma is **<tʊɛ>**. It is an ideophone which represents the movement the hand makes when pinching somebody. The editors of *Webster's Standard American Style Manual* note that commas are used to indicate where a pause occurs naturally in speech. In the written text its main function is to "separate items in a series, and to set off syntactic elements within a sentence," as in (29)

(29) <Kasi, Yaʊ, Ama, Kofí nın Aya, b'a hɔ fie sʊ.>
[kàsí, Yàʊ́, àmá, kòfí, nı̨́ àjáà, bà hɔ́ fié sʊ́]

Kasi, Yao, Ama, Kofi, and Aya, they have gone to the farm

Commas should also be used between **<kɛ> [kɛ́]** (when, if) and **<sɛ> [sɛ́]** clauses to set off the main clause from the subordinate clause because there is a natural pause between these clauses as in (30). In the sentence below, the subordinate clause is introduced by **<kɛ>**, a subordinating conjunction.

(30) <Kɛ bɛ julı Salamine'n, be hanli nde heleli juif mɔ>
As they arrived Salamine, they said things show jews
When they arrived at Salamine, they witnessed to the Jews
From the Baule New Testament, Acts 13:5

There is also a slight pause between demonstratives and the coreferential subject in subject copying constructions as in (31):

(31) <Kasi **ɛka, ɔ** tı man kpáa>
[kàsí **ɛ́kà, ɔ̀** tí mą́ kpáà]
Kasi this, he be not good
This guy Kasi is not nice

Between **<ɛka>**, the demonstrative adjective, and <**ɔ>**, the resumptive pronoun which is coreferential with <**Kasi>**, there is a slight pause that needs to be marked in the orthography by a comma. Anyi has several topicalizing deixes of this type. They include but are not limited to the following: <ɛhı> [ɛ́hì] (this one), <sɔ> [sɔ́] (this one), and <bɔlɔ> [bɔ́lɔ̀] (the one over there).

5.4.3.3 **The Period: <Kpɔ> [kpɔ́]**

I propose that the ideophone **<kpɔ>** be used as a label for the period. It is used to describe the noise that is made when water drips, or the noise made by the middle finger when one knocks at on wood. The use of a capital letter after a period or in proper names has come under attack by orthography reformers, especially from the activists in **Simplified Spelling Society**. They argue that the distinction between upper case and lower case letters is useless and constitutes a burden for learners because "the beginner has to learn two or more different letters for each character in the alphabet," Vallins (1973:139). Therefore,

they argue that allograph should not be represented in the orthography. It seems that the *Direction Nationale de l'Aphabetisation Fonctionelle* (DNAFLA) in Mali has opted for this solution. In the new manual *nye kènèya sabatili walew* no upper case letter is used at the beginning of a sentence nor for proper names.

I suggest that the distinction be maintained between upper and lower case letters in Anyi because the argument against it is too weak. If human beings can stores billions of bytes of information, they can certainly remember 40 or so alphabetic symbols. Furthermore, the distinction between lower case letters and upper case letters is so universal that it should be maintained in Anyi. I propose that capital letters be used to indicate the initial letters of proper names and the first letter of sentences. Each letter in an abbreviation should also be in upper case letters.

Since one of the goals of literacy in Côte d'Ivoire is to facilitate the transfer of literacy skills from Ivorian languages into French and vice versa, it is better to maintain, as much as possible, the same styling conventions used in French.[91] I propose that periods be used to indicate complete sentences. They should also be marked between the letters indicating an abbreviation.

5.4.3.4 **The Colon: <Kpʊkpɔ> [kpʊ̀kpɔ́]**

The name **<kpʊkpɔ>** that I propose is simply the reduplicated form of the word **<kpɔ>**, the name for the period. Since reduplication is used to signal plurality in Anyi, it seems logical to name the colon <**kpʊkpɔ>** instead of finding another label for it. In *Webster's Standard American Style Manual* it is argued that a colon introduces a clause or phrase that explains, illustrates, or restates what has gone before. It is also used in direct quotations. These main uses of colons are found in the Baule New Testament and should be kept in Anyi orthography. One example will suffice to illustrate this point.

(32) <ɔ bu bɛ nyánndra kun kusu kɛ**:** anyansifue kun kwla tre'e i wiengu anyansifue kponman,>[92]...
He broke they proverb one also that: blind one all hold his friend blind cane
He also told them this parable: can a blind man lead another blind man? Like6:39.

5.4.3.5 **Quotation Mark: <Tʊtʊɛ> [tʊ̀tʊ̀ɛ́]**

The name **<tʊtʊɛ>** is the reduplicated form of the word **<tʊɛ>** used above to refer to the comma. The plural form of <tʊɛ> is used here to refer to the quotation mark. It is used because of the similarities in shape between the quotation mark and the comma. Anyi

[91] Smalley (1964:4) remarks that "for areas where Roman writing systems are known, however, Roman orthographies without capital letters for minority languages in which the speakers feel cultural insecurity may contribute to the rejection of the system. It appears to them as being substandard, less than completely identified with the prestige system." The current sociolinguistic situation indicates clearly that Ivoirians have some cultural insecurity vis-à-vis French.

[92] This is a quotation from the Baule text. It is not an Anyi text.

has a lexical item, <**wan> [wą́]** which behaves like a quotation introduce. [93] It is used by a speaker when he wants to explain himself or quote somebody else. In *Amanmuo*, whenever <**wan>** is used a direct or indirect quotation follows immediately. Quotation marks and colons are generally used to indicate a quoted discourse as in sentence (33) below.

(33) <ɛhı a, bie ala jasʊ a, yı wan**: "**afúun, yaci, n'ɛ sun kʊn.">
[ɛ́hí à, bìé álá dʒàsʊ́ à, yí wą́, àfṵ̀ṵ̀, jàtʃǐ, né sṵ̀ kʊ̀]
This some stand up and say "humpback, let it go, don't cry anymore
From *Amanmuo*, p.3

The colon should occur immediately after <**wan>** and the material quoted should be enclosed within quotation marks.

5.4.3.6 **The Question Mark: <Tɔkɔlɔ> [tɔ̀kɔ̀lɔ̀]**

The question mark, **<tɔkɔlɔ>**, is named after an instrument that is used to cut grass. It has a curve at one end and a long tail. The shape of the instrument called **<tɔkɔlɔ>** is just like the form of interrogative mark.

The Baule New Testament uses two question marks, one at the beginning of the sentence and another at the end, to indicate interrogative sentences. Before answering the question of whether or not the same principle should be used in Anyi, let us examine the syntactic structure of questions.

Anyi has three types of interrogative sentences as exemplified in (34a), (34b), and (34c).

(34a) <**Wan** yıɛ ɛ wunlı?>
[wą́ jìé è wṵ̀lǐ]
Who that you see
Who did you see?

(34b) <ɛ wunlı **wan?>**
[è wṵ̀lí wą́]
You saw who
Who did you see?

c. <ɛ nʊn nzaáɲ?>
[ɛ nʊ̀ ǹzą̀ą̀]
You drink wine
Do you drink wine?

---

[93] The word <wan> is not a verb because the pronoun that precedes it is not a subject pronoun but, rather, an object pronoun. Thus we have: <**yi** wan> (his said), <**wɔ** wan> (your said), etc. If <**wan>** were a verb the first sentence would have been <***wɔ** wan> (he said) and <***ɛ** wan> (you said). However, these two sentences are ill-formed. Therefore, it can be assumed that <**wan>** is just a quotation marker and the other **wan** is the verb "to speak" or "to say."

In (34a) and (34b) we see that the Wh-word <**wan**> occurs sentence-initially and sentence finally respectively. Other Wh-words are <**nzu**> **[ǹzú]** (what), <**nzuti**> **[ǹzútí]** (why), <**nzukɛti**> **[ǹzúkɛ̀tí]** (why), <**nnyɛ**> **[ǹɲɛ́]** (how much), <**nin**> [**nį̀**] (where), <**benin**> **[bènį́]** (which, what), <**cian benin**> **[tʃį̀ą́ bènį́]** (when), <**sɛ́**> **[sɛ̀ɛ́]** (how). When these words occur in a sentence, they signal the presence of an interrogative sentence. Since there is an open marker for interrogative sentences, there is absolutely no need to have two question marks for Wh-interrogative sentences. Only one at the end of the sentence is enough.

Sentence (34c) is ambiguous because there is no way of telling whether it is an interrogative sentence or a declarative sentence. The distinction is obvious only in spoken speech. In yes/no questions, the subject pronoun has a high tone whereas in declarative sentences it has a low tone. A distinction can be introduced in written texts just by placing a question mark at the end of interrogative sentence. Quaireau (1987:463-4) observes correctly that the pitch is higher in yes/no questions than declarative sentences. From a purely linguistic point of view, there is no need to use the double interrogative symbol **<¿…?>** in Anyi orthography. However, my own experiences and the experimental studies reported by Roberts (2008) have convinced me that something needs to be done orthographically to distinguish between yes/no interrogative sentences from declarative sentences. If the tone is not indicated at all, the reading failures, false starts, and self-corrections increase manifolds. This is particularly true for long rhetorical questions such as those found in the Epistles. However, using a tonal diacritic in the case of Anyi is not feasible. A high tone is already marked on the subject pronouns to indicate the progressive aspect. Using the same convention to signal interrogative sentences will be confusing to readers and will create additional complications. The only reasonable way out of this dilemma is to resort to the double interrogative symbol as used in Spanish.[94] By adopting this convention, sentences (34a), (34b), and (34c) are represented respectively as follows: ¿**Wan** yıɛ ɛ wunlı?, ¿ɛ wunlı **wan?,** ¿ɛ nʊn nzaáⁿ?

5.4.3.7 **The Exclamation Mark <Nnvunnʊɔn> [ǹnvúnʊ̀ɔ̀]**

I propose that the exclamation mark be named **<nvunnʊɔn>** (which means surprise, excitement). Its function in many languages is to express interjections, surprises, excitement, and forceful comments. Exclamation marks can be used along with ideophonic expressions to express forceful comments.

(35) <?**Ai!** bɛ kwlaa nga be idyo ye'n naan Galileefue muon?>[95]
[áí bɛ̀ kʊ́làá ngà bé ídʒɔ̀ jɛ̀ n nà̰ą́ gálìléfùé mʊ̀ɔ̀

Aren't they all who are speaking from Galilee?

New Testament, Acts 2:7.

[94] I once criticized the Baule orthography for using the double interrogative symbols <¿…?> but now I see the rationale behind such a usage.

[95] This is a quote from the Baule text. It is not an Anyi text.

5.5 **Summary**

This chapter has dealt with a number of issues pertaining to sentence phonology, loan phonology, and punctuation. Below are the major proposals made with regards to these issues:

1. Vowel lengthening in possessive constructions, in adverbial clauses, in definite articles, in relative clauses should not be represented in the orthography because of the Sentence Phonology Principle. Vowel lengthening which results from cliticization should not be marked in the orthography but clitics should be represented in their full forms.

2. Word-initial vowel elision should not be marked in the orthography. The **Etymological Demand Principle (1.6.4.15)** and the **Lexical Spelling Principle (1.6.4.4)** ensure that the orthography contains words as they occur in the lexicon and not as they occur after post-lexical rules have applied.

3. I proposed that contraction between function words and personal pronouns be represented in the orthography by an apostrophe. However, when contraction occurs between two non-identical elements, they should be written as they occur in the lexicon because of the **Etymological Demand Principle (1.6.4.15)**. Similarly, utterance nasalization should not be represented in the orthography.

4. As for borrowing I propose that words borrowed from other languages should be made to conform to the phonological patterns of Anyi. The rationale for this proposal is that a simple adoption will lead to spelling problems which, in turn, will create obstacles for reading.

5. A total of six punctuation marks were retained for the Anyi orthography and names were proposed for them. It is also proposed that the distinction between upper case letters and lower case letters be kept in the orthography because the arguments that critics have offered against this convention does not seem to hold water and also because of the quasi universal character of this convention.

Appendix

The following appendix is the eulogy that I said during my father's funeral. It shows how a written Anyi text looks like.

Kofi Jáa Toma Ɛsɛ́ɛ Bolɛ

Baba Kofi Jáa, yι Ewuo nun Ndɛ́ɛ

Yɛ baba Kofi Jáa, yι awulιɛ fufuluwa kele kɛ bɛ wulι yi afuɔ 1920 nun. Ɔ wulι alιɛb́aa 15, sara 4, afuɔ 2009 nun. Kɛ ɔ wu, ɔ le afuɔ abulahunlan nιn ngunlan. Awunnyalɛ ɛtɛ bie bɔ bɛ fɛlɛ diabɛtι, yιɛ ɔ hunlι yi. Awunnyalɛ sɔ, ɔ maán kannιn ɛtɛ bie bolι yι ja wun.

Nzɛmnd́ɛɛ bɔ Yɛ Bolι nun Ndɛ́ɛ

Mιn nιn baba , yɛ bolι nzɛmnd́ɛ ɛ alιɛb́aa 28, sara 5, afuɔ 2004 nun. Mιn fi Amelikιn ɛlɔ M mal ι naán mιn nιn Yabile, yɛ nιn yɛ sι Kofi Jaá, y'a tanran asι , naán y'a bo nnzɛmnd́ɛ ɛ ḱa an. N zelι yi kɛ ɔ h́a n yι awulιɛ nun ndɛ́ɛ , nιn yι kpafunlan nun ndɛ́ɛ , héle mιn maán N ǵɛ lɛ. Nzɛmndɛ́ɛ sɔ, yι ḱaan bɔ N gɛlɛlι, yιɛ.

Baba Kofi Jáa, yι Abusuan nun Ndɛ́ɛ

Baba Kajo, Baba Kofi, Zelemin, Ɛcιn

Yɛ baba Kofi Jaá, yι sι, bɛ fɛlɛ yi Ɛcιn Kua. Yι kunmgba sɔ, bɛ fɛlɛ yi Kuam Tanun. Asala bɛ fɛlɛ yi Kua Filifáa. Yι ńi n b'ɔ wulι yi, bɛ fɛlɛ yi Angan Yáa . Yι suandunmáan, yiele "Awoó." Yɛ Ńannán Ɛcιn K ua, ɔ nιn yι ýι Awoó, bɛ wulι mmáa nnun Nzandɛrɛ (Ganan) máan nun ɛlɔ. Bɛ ẃaa kpanyin yiele Mḿoo Kua Teyia. B'ɔ tua su yiele, Kofi Jáa. Kofi Jáa sin mmáa mɔ yiele Kua Kajo, Kua Aya, nιn Kua Ngulumáa. Mmóo Ngulummáa, yι suandunmáan yiele "Mosi." Mmóo Kua Teyia nιn Mḿo o Kua Mosi, b'a wu. Mmóo Teyia wulι aliɛbáa 7, sara 7, afuɔ 2007 nun. Mmóo Kua Mosi dιɛ, ɔ wulι, ɔ'a hɛ kṕaa. Yɛ sι Kofi Jáa, ɔ tι Dansin busufuɔ́. Bɛ sinfuɔ́ mɔ wɔ Asιɛkɔlɔ nιn Andι.

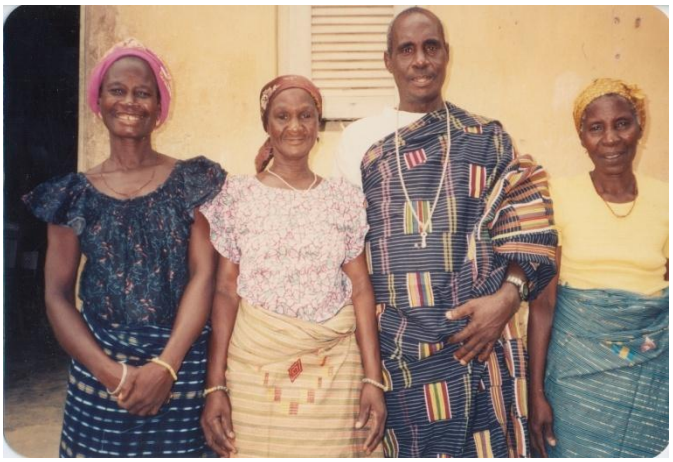
Nzandɛrɛ ɛlɔ nun Ndɛ́ɛ

Nánnán K ua Filifaa nιn yι ýι Awóo, bɛ wulι yɛ baba Kofi Jáa n ιn y ι anianman mɔ k ùláá Gana n máan nun ɛlɔ . Kɛ bɛ wɔ Nzandɛrɛ ɛlɔ , bɛ tanranlι

kuló fáa fáa mɔ sʊ. Kuló bɔ bɛ wʊlɪ Baba Kofi Jáa sʊ, bɛ fɛlɛ yi **Angʊla Dɔbɪnlɪn**. Kuló sɔ, ɔ wɔ Kumansɪ sin ɛlɔ . Kɛ bɛ wɔ Ganan mía an nun ɛlɔ , nɪɪn bɛ sɪ Ɛcɪn Kʊa, ɔ tɪ nzáan kanfʊ́. Yɪ sɔ fi , bɛ tu tanranlɪ kʊ́o fáa fáa mɔ sʊ. Kuló bie mɔ bɔ bɛ tanranlɪ sʊ, bɛ dunman mɔ, yɪɛ: **Asɪ Kunman**, **Bula Apo**, **Nganlan Nʊan Sʊ**.

Baba Kofi Jáa: Yɪ Yɪ mɔ nɪn yɪ Mmía Mɔ, bɛ wʊn Ndɛ́ɛ

Yɛ baba Kofi Jáa, ɔ jalɪ mmala nnan. Yɪ yi kɪkɪlɪ, bɛ fɛlɛ yi **Mmóo Bulu Akosua**. Ɔ nɪn Mmóo Akosua bɛ w ʊlɪ baá bala kʊn. Baá sɔ, bɛ fɛlɛ yi **Kofi Sɔmala Malɪɛtɪ**. Yi yɪɛ ɔ tɪ yɛ k ʊ̀láá, yɛ kpanyin nɪn ɔ. Yɪ sin, Baba Kofi Toma jalɪ **Mmóo Anzin Aja** naán ɔ nɪn yi a wʊ mmaá nnan. Bɛ mmía sɔ mɔ , bɛ fɛlɛ bɛ **Kofi Ɛcɪn Zan**, Kofi Amʊn Kelemantinɪn, **Kofi Yabile Alɛkɪsi**, nɪn **Kofi Kamanlan Ambʊlʊwazɪ**.



Baba nɪn yɪ Yɪ mɔ: Ngisan, Amannin, nɪn Aja

Yɪ sin, baba jalɪ **Mmóo Kasi Amannɪn**, naán ɔ nɪn yi a wʊ **Kofi wáa Kofi Zan Kolodʊ**. Yɛ ńin Amann ɪn fa yɔlɪ nince sɛcɪlɪ, alɪɛbáa 16, sara 12, afʊɔ 2007 nun. Yɛ baba, yɪ ýɪ kasian, yiele **Manmɪn Ngɪsan**. Ɔ nɪn yi, bɛ wʊlɪ **Kofi Kʊa Sɪnpilɪsɪ**. Yɪ mmáa mɔ, nɪn yɪ anianman mɔ mmáa , bɛ wʊlɪ anʊnmaán s ʊnman kpa̍a ma nlɪ yi. Bɛ bie mɔ, yɪɛ bɛ jin ɛwa nɪn ɔ.

Baba yɪ Mmáa bie mɔ nɪn yɪ Anʊnmaán bie mɔ

Baba Kofi Jáá, yı Sonja Falɛ nun Ndɛ́ɛ

Baba hanlı yı sonja falɛ nun ndɛ́ɛ helelı yɛ. Ndɛ́ɛ sɔ, yıɛ. "Yɛ wɔ Ganan ɛlɔ, nɪ́ın sonja ndɛ́ɛ nın a yırı kekele kpáa. Nán kɛ bɛ fa bɛ fɔlɔse fi ɔ. Wɔ bɔbɔ, s'ɛ kulo ɔ, ɛ kɔ sonja. Mgbafunlan mɔ kʊ̀lá́á, bɛ bɔbɔ, bɛ si bɛ ehuo, bɛ wan bɛ fá bɛ sonja. Mınl'a, N zilı mın ehuo bie . Mın anianman bala Teyia , yı wáa Kamanla Yáa , yı sı , nɪ́ın yɛ kʊ̀lá́á, yɛ wɔ nanmuo kʊn nun. Bɛ dıɛ, bɛ tı Nzanranfʊ́ mɔ. Bian sɔ, ɔ hɔlɔ sonja. Yıɛ kɛ ɔ hɔ walı, naán yı kpafunlan b'ɔ di tí, yıɛ mınl'a, mın wan mɪ́ın kɔ sonja bie nın ɔ.

Ganan ɛlɔ Sonja mɔ, bɛ Alapala nın bɛ Darapʼoo

Yıɛ mın nın mın mianngʊn kʊn, bɛ fɛlɛ yi Kajo, yɛ tı sanran nnan bɔbɔ, yıɛ yɛ hɔlı ɔ. Bɛ hɛlɛlı yɛ dunman. Bɛ sanran nzan dıɛ, kɛ bɛ jinran ɛbɛlɛ pʼɛ, bɛ falı bɛ. Kɛ ɔ julı mın dıɛ sʊ, dɔkʊtɛ nian mın wunlun ɗedéé (héé́, amɔ maán mın sʊ kan daá ndɛ́ oo), yı wan: "Wɔ, nán wɔ yıɛ, bɛ falı wɔ sonja daá bɔ ɛ wanti hɔlı ?" Yıɛ mın wan: "Mın?, A fa mın sonja kʊn daá dédéé M'an wanti? Sɛ ɔ tı sɔ , nɪ́ın ɔ yɔ sɛ́ɛ bɔ M'an wa biekun?" Ɔ'a han. M'an han. Ɔ'a han. M'an han! Yı kpɛ nzan sʊ, ɔ'a man yı kpɔman sʊ, ɔ́ɔ sʊ ba fa bo mın. Mın nyın ta yi sííín. Mın se yi kɛ: "S'ɛ fa wɔ kpɔman bo mın, mınl'a, mɪ́ın fa bo wɔ bie."

Kɛ ɔ yɔ sɔ nɪ́ın sonja kpanyin kʊn wɔ ɛbɛlɛ. Ɔ solı mın nun, yıɛ ɔ hyʊnlı mın sielı ahanmıan. Yı wan: "Jinran ɛwa." Kʊsʊ kɛ dɔkʊtɛ lɛ wun mın , nɪ́ın ɔ́ɔ kıkan mın bʊ. Yıɛ sonja kpanyin wan : "Júra asıɛ wʊn ɛlɔ." Yıɛ N juralı ɛlɔ ɔ . Dédéé bɛ bɔ b'a fa bɛ sonja, bɛ nın bɛ hɔlı. Bɛ ɛka mɔ bɔ b'a nva man bɛ kʊsʊ, bɛ fɛlɛ bɛ. Bɛ fɛlɛ ɛka ɔ, bɛ bisa yi kɛ : "Ɛ fi kulʼo benin sʊ?" Ɛ tɛ bɛ sʊ, ɛ wan: "Mın fi ɛwa." Bɛ bisa wɔ kɛ: "Wɔ tobi kpáa, ɔ tı nyɛ́ɛ? K'ɛ fa ju ɛlɔ, ɔ tı nyɛ́ɛ? " Bɛ fa wɔ wʊn kpáa nın wɔ alɪ́ɛ sikaá, nɪ́ın b'a fa man wɔ ." B'a fa sikáa nın a man sanran mɔ ɗedéé, b'a kpɛ mın atisɛrɛ.

Dɔkʊtɛ b'ɔ kpɔ mın , nɪ́ın ɔ wɔ yı salʊn nun ɛlɔ , ɔ́ɔ di yı alıɛ́ . Yıɛ sonja kpanyin, ɔ'a julı ɛbɛlɛ, yı wan: "Kpafunlan ɛka, b'a mman man yi sikaá bie. Yı kʊsʊ ɔ lea ńi n ɛwa, ɔ lea sı ɛwa. Ɔ fata k'ɛ bo yı wʊn kpáa. Dɔkʊtɛ nian mın wunlun ɗedéé, ɔ bisa sonja kpanyin kɛ : "Nan bian bɔ mın nın yi hanlı ndɛ́ɛ nın ɔ?" Sonja kpanyin tɛlı yı sʊ naán ɔ'a se yi kɛ: "Ɛ nın yi hanlı ndɛ́ɛ bɔ ć́ɛ! Kʊsʊ, kɛ ɔ le man sikáa naán ɔ'a hɔ, ɔ fata kɛ yɛ bʊ́ka yi." Sonja kpanyin wunlı mın wʊn

awunnvóo, ɔ yɔlɪ mɪn yie naáa n b'a man mɪn wʊn kpaáa. Kɛ ɔ fa manlɪ mɪn , yɪɛ kówúún, yɪɛ N va N gɔlɪ Nganlan ɔ.

Kɛ N julɪ Nganlan ɛbɛlɛ , mɪn wan mí ɪn kɔ kɛlɛ mɪn dunman biekun. Dɔkʊtɛ kʊn biekun bisalɪ mɪn kɛ : "Nan wɔ yɪɛ dɔkʊtɛ kʊn nɪn wɔ hanlɪ ndɛ́ɛ ?" Mɪn wan: "Mɪn ɔ." Sonja kpanyin kʊn biekun jinranlɪ mɪn sin. Ɔ selɪ mɪn kɛ: "Tanran ɛwa. M ba yɔ ɗe déé maán bɛ fa wɔ." Kɛ ɔ hanlɪ sɔ, N danranlɪ yɪ wʊn ɛbɛlɛ ɗedéé ɔ hɛlɪ kpaa. Sɛ bɛ tʊn bɛ nince kɛ eluo mɔ nɪn banaáan mɔ, ɔ fa yɪ dɪɛ bɛlɛ mɪn, yɪɛ mɪn si maáan yɛ di afíɪn bɛ le kpookpóo bɛ kan nun ɛlɔ. Mɪn yɪ yɪ dɪɛ. Yɪɛ mɪn kʊsʊ, mɪn di mɪn dɪɛ . Ɔ sɪsa nannɪn nnáa n ɛka gua sʊ sʊsɔkɔɔ, níɪn y'a li.

Ɛlɛhʊn kʊn, mɪn da ɛbɛlɛ, M'an nwun man nince b'ɔ hanlɪ mɪn ɔ, alɪɛ hɪnlɪ ɔ, mɪn wan: "Mise, anɛ mɪɪn kɔ yɛ kulo ." Ɔ bisa min kɛ : "Ɛɛ kɔ wɔ kulo ?" Mɪn wan: "ʊnhʊʊn, afɪɪn sɛ mɪn tɪ ɛwa ɔ, mɪn tɪ ɛwa mgbaan. Nince nɪn su mɪn sin , yɪ wan: "Kɔ, kɔ́, kɔ́." N dulɪ mɪn bʊ ɛbɛlɛ N gɔlɪ yɛ kulo. Kɛ mɪɪn ju ɛlɔ, mɪn baba lɛ sɪrɪ, ɔ bisa mɪn kɛ: "A nzea k'ɛ kɔ wɔ sonja? A nzea k'ɛ kɔ sʊ awaá? Mɪnlɪ bɔ M'an wʊ wɔ, mɪn di junman ɔ , ɛ nni man bie . Ɛ wan mí ɪn kɔ sonja ?" Kannzʊ nɪɪn mɪn baba la ɛwa , ɔ́ɔ cɪcɪ mɪn ayire maáa n mɪn sá mɪn sin bá . Ɔ'a fa yɛbʊɔ tandaá nɪn a nɪnnan sʊ. Kɛ ɔ yɔlɪ sɔ, M malɪ, N danranlɪ asɪ dédéé yɪɛ yɛ tulɪ yɛ bʊ Ganan ɛlɔ walɪ Ngan ɛwa nɪn ɔ.

Kɛ yɛ ba, yɛ julɪ Anyinbilekuló nɪɪn bɛɛ fa sonja ɛbɛlɛ. Kɛ N wunlɪ sɔ, mɪn jin ɛbɛlɛ, mɪn ahʊnlʊnbaá tu mɪn saá kʊlʊkʊlʊ kʊlʊkʊlʊ. Bɛ falɪ sonja mɔ ɗeɗéé, bɛ bisa bɛ ngáa mɔ bɔ bɛ jin ɛbɛlɛ kɛ: "Sɛ sanran ɛka b'ɔ kulo kɛ ɔ sí yi huo, ɔ́ɔ si yɪ huo bála . Mɪn jin ɛbɛlɛ, mɪn muan, ɔ si mɪn kpúkpú kpúkpú . Mɪn ɛka bɔ mɪn nɪn mɪn baba lɛ kɔ, yɛ julɪ tɛ wɔ atɪɪn nɪn afían. Sɛ M man mɪn sa bɛ fa mɪn sonja, ɔ tɪ kpáa? Asala, N yɛ kulo wʊn! Mɪn se mɪn kunlun ɛlɔ kɛ, kɔ sonja, ɔ tɪ man kpaa. Sɛ yɛ ju yɛ kulo sʊ ɛlɔ ala, ée si yɪ akpʊlʊwaá ɔ, dédéé, bɛɛ ba fa mɪn sonja. Yɛ tulɪ yɛ bʊ ɛbɛlɛ, yɛ falɪ atɪɪn ɗeɗéé naá n y'a ju Abengolo. Bɛ bɔ bɛ falɪ bɛ sonja kʊláá, bɛ nɪn bɛ walɪ Abengolo ɛbɛlɛ. Kɛ yɛ julɪ ɛbɛlɛ, sonja hɔlɛ ndɛ́ɛ k ʊnmgba sɔ mɔ walɪ mɪn ti nun, kʊsʊ N yacilɪ. Yɪɛ

Kodivua Sonja mɔ

ahʊnlʊnbaá wan: "Nɪnka man ɛlɔ. Yɛ sʊ naán sɛ nwunlɪ man cɛ́cɛ́, sɛ mɪn

kówúún, yıɛ yɛ fa julı Ngan ɛwa ɔ.

Kɛ yɛ julı ɛwa, Nánnán Cinrinmo, amɔ wofa dıɛ, bɛ fɛlɛlı yi sonja. Ɔ hɔ walı naán ɔ'a se mın baba kɛ: "**Kuam Tanun**, wɔ wáa ɛka, nán man yi atiın máan ɔ kɔ́ kɛ́lɛ yı dunman bie. Afíın sɛ ɔ kɛlɛ yı dunman ɔ , bɛ́ɛ fa yi sonja sakpáa. Ɔ hanlı sɔ bɔ ć́ɛ , kusu mın wan miın kɔ sonja kekele su. Kusu mın baba a mgbınlın man su. Ɔ sualı mın atiın. Mın sinbáa Anɔk ua Kajo, yıɛ bɛ falı yi sonja ɔ. Kajo julı ɛlɔ kusu yı ja kpɔlɔ nnyun, ɔ yɔ yı ya kṕaa, ɔ ngula man yı wun kan. Yı sɔ fi, bɛ yacilı yı nun, naán ɔ'a sa yi sin. Yiele mın tılɛ bɔ mın tı ɛwa.

Baba Kofi Jáa, yı Sukulu Hɔlɛ nun Ndɛ́ɛ

Yı sin, N zelı Baba kɛ ɔ h́an yı sukulu nun ndɛ́ɛ hele yɛ. Ndɛ́ɛ b'ɔ hanlı, yıɛ. "Mın Baba Kuam Tanun, ɔ yɔlı mın ɛtɛ oo! Mın ḱaan nun , awulo bɔ yɛ wɔ nun, mın mianngun mɔ, bɛ kɔ sukulu. Kɛ bɛ́ɛ kɔ sukulu, dádáá, mın si bɛ su. Mın fa mın ɛtannın, mın fa bo mın kɔmın, mın nın bɛ kɔ sukulu. Ɛlɔ dıɛ, s'ɛ tı káan sɛ́ɛ́, ɛtannın dıɛ, ɔ nın wɔ pieto , ɔ manke man wɔ . Yɛ kɔ sukulu ɗeɗɛ́ɛ amindi ju ɔ , nín y'a wa. Yɛ kɔ, y'a wa. Yɛ kɔ, y'a wa ɗeɗɛ́ɛ mɛtırı bisa sukulu mmáa mɔ kɛ: "Wan wáa d ıɛ yiele ɛka?" Yıɛ bɛ wan: "Yı sı wɔ awulo ɛlɔ." Cıan kun kɛ amindi julı bɔ ýɛɛ fite kɔ , mɛtırı wan anɛ amɔ máan yɛ hɔ amɔ awulo. Ɔ su m ın s u dédéé y ıɛ yɛ julı awulo ɛlɔ ɔ. Ɔ bisa mın kɛ wɔ baba wɔ nin? Yıɛ mın wan: "Mın Baba, yıɛ ɔ tı ɛbɛlɛ ɔ." Yıɛ mɛtırı lɛ bisa yi nince, yıɛ y ı wan: "Wɔ wáa nın, yı dunman n un man m ın

Ngan Sukulu Sua

fuluwa nun . Yı tí, fá y ı dunman mán m ın maán N gɛ lɛ. Yıɛ m ın baba bisa mɛtırı kɛ: "Ɛ kɛlɛ yı dunman maán ɔ yɔ nzu?" Mɛtırı wan: "Miın kɛlɛ yı dunman maán ɔ kɔ́ sukulu. Wɔ wáa sɔ, ɔ kulo sukulu kṕaa. Yı miannun mɔ lɛ ba bulu, ɔ nın bɛ y ıɛ ɔ ba ɔ . Nesua, ɔ nın bɛ y ıɛ ɔ ba ɔ , kusu yı dunman nun man mın fuluwa nun . Yiele kɛ m ın ba ɔ." M ın baba tɛl ı mɛtırı su naán ɔ'a se yi kɛ : "Mın wáa dıɛ, ɔ ngɔa sukulu." Mɛtırı bisalı yi kɛ: "Nıin sɛ ɔ ngɔa sukulu ɔ, ɔ́ɔ ba yɔ nzu?" Mın baba tɛlı yi su naán ɔ'a se yi kɛ: "Ɔ́ɔ fita aye! Aye bɔ b'a tu a gua , ɔ́ɔ fita! Yɛɛ kɔ fies u, ɔ́ɔ fita aye púú púú púú ! Sɛ ɔ kɔ sukulu , mın nın wan y ıɛ

ý̌ɛɛ kɔ di junman? Sukulu tɪ nzʊ? Bɛ di sukulu aǰaa?" Mɛtɪrɪ jin ɛbɛlɛ nian mɪn baba ďeďée, yɪ wan: "Baba, yáci! Yáci naán fá baá mán m ɪn, afɪin wɔ waá a, yɪ ahʊnlʊn wɔ sukulu s ʊ kpáa!" Mɪn sɪ tɛlɪ yɪ sʊ naán ɔ'a se yi kɛ: "M'an han hele wɔ kɛ mɪn ẃaa ngɔa sukulu ooo! S'ɛ kɔ wɔ awulo, ḱɔ!" Yɪɛ mɛtɪrɪ yɪɛ ḱowúúń! Ɔ'a sa yi sin a hɔ. Dédéé, ɔ'a ju nɛsʊa sukulu hɔlɛ. Kɛ bɛ kɔ, mɪn su bɛ sʊ. Kɛ N valɪ bɔ N julɪ ɛlɔ, mɛtɪrɪ wan: "S̀a wɔ sin. Wɔ baba wan amɔ lɛ kɔ kan nzaán. Kɔ kán wɔ nzaán sɔ!" Sian dɪɛ, sɛ mɪn ju sukulu suá wʊn ɛlɔ, mɪn jabaá nwʊlʊ man nun mʊ̀nlʊ̀n mʊ̀nlʊ̀n. Mɪn jinjin talɛ sin ɛlɔ ďe déé naán kɛ mɪn mianngʊn mɔ lɛ fite, bɔ bɛ kɔ kan ngʊá, bɔ bɛ bo balʊn, mɪn nɪn bɛ wɔ ɛbɛlɛ ďedéé nɛsʊa, nɪin yɛ kʊ̀lá́á, y'a hɔ awulo. Mɪn sukulu bɔ M'an ngɔ man, yɪ nun ndɛ́ɛ, yɪɛ.

Baba Kofi Jaá, yɪ Asɔnɪn Hɔlɛ nun Ndɛ́ɛ

Yɪ sin, M misalɪ baba, yɪ asɔnɪn hɔlɛ nun ndɛ́ɛ. B'ɔ han helɪ yɛ, yɪɛ. Yɪ wan: "Daá́a, mɪn baba, anɛ, bɛ tɛ sinnze Kofi Jaá́a bɔ bɛ fal ɪ sɔ, yɪ bʊ, ɔ wɔ dunman. Yɪ nun sɔ mɔ, ɔ fa wunlɪ nwɛlɛlɛ, sɛ mɪn ɔ, mɪn ngɔ yɪ amʊan mɔ b'ɔ sʊ bɛ mɔ kʊ̀lá́á, anɛ nɪn sinnze sʊ́a nun ɛlɔ. Ɔ yɔ yɪ banzɛrɛlɛ mɔ. mɪn tʊnlɪ yi, Jaá sɔ, ɔ tɪ banzɛrɛlɛ. Amʊan Ngɪsankuló. Mɪn dunman, ɔ tɪ amʊan bɔ mɪn tɪ káan, sɛ mɪn baba lɛ sɔ amʊan kolonvua bo mɪn mʊnmáan s ʊ. Kɛ N ɔ sɔ yɪ amʊan mɔ, mɪn wanndi. Sɛ ɔ fɛlɛ man yɪ wʊn ɛlɔ kʊ̀n.

Baba Dafɪ Zozi Sʊ

Kɛ yɛ fi Ganan ɛlɔ bɔ yɛ walɪ, cɪan kʊn, Nyanmɪan nʊan jʊjɔfʊ́ k ʊn, ɔ tɪ Nzandɛrɛ, ɔ julɪ Ngan sʊ ɛwa. Ɔ kan Nyanmɪan ndɛ́ɛ fa cinman nɪnka mɔ sʊ. Yɪɛ Nyanmɪan nʊan jʊjɔfʊ́ sɔ, ɔ walɪ, ɔ julɪ káayáa bʊ ɛbɛlɛ, naán sanran mɔ, b'a yia. Ɔ sɛrɛlɪ nzɛrɛ ɗeɗɛ́e, naán ɔ'a han Nyanm ɪan ndɛ́ɛ. Nyanmɪan ndɛ́ɛ ngʊnmɪn yɪɛ ɔ kan ɔ. B'ɔ hanlɪ dédéé b'ɔ yiralɪ sʊ yuolɪ, yɪ wan: "Ndɛ́ɛ faa faa bɔ M fi hanlɛ, sanran b'ɔ tɪlɪ, b'ɔ yɔlɪ yi fɛɛ, b'ɔ kʊla su Nyanmɪan sʊ, sanran sɔ, ɔ mán yɪ sa sʊ maán yɛ ní an. Ɛbɛlɛ ala, nince se mɪn kɛ mʹan wɔ sa s ʊ. Yɪɛ M manlɪ mɪn sa s ʊ ɔ. Nyanmɪan n ʊan j ʊjɔfʊ́ bisa m ɪn kɛ : «Ndɛ́ɛ bɔ N ganl ɪ, ɛ tɪlɪ ? » Mɪn wan : « N dɪlɪ. Yɪ tí yɪɛ M manlɪ mɪn sa sʊ nɪn ɔ. Ndɛ́ɛ sɔ, ɔ yɔ mɪn fɛɛ kpʹaa. » Ɔ bisa m ɪn kɛ : « Ɛɛ kɔ asɔn ɪn ? » M ɪn wan : « ʊ̀nhʊ̀ʊn, mɪ̀ɪn kɔ asɔnɪn ! » Kɛ ɔ yɔ sɔ n ɪ̀ɪn Nja Kʹa ku mɔ, nɪn Kakʹú Nɔbɪa mɔ, nɪn Nja Eku mɔ kʊ̀láá tú, nɪn sanran dɔwʊʊn kpʹaa, bɛ kʊ̀láá, bɛ wɔ ɛbɛlɛ. Ngan ɛwa, sannan mɪn baá kʊnmgba cʹéíin yɪɛ M manlɪ mɪn sa sʊ alɪɛbaʹa sɔ nun ɔ. Mɪn Nyanmɪan sʊlɛ bɔ mɪ̀ɪn kɔ asɔnɪn, yɪ bʊ nɪn ala, yɪɛ.

Ngan Yɛsɪ Asɔnɪn Sʊ́a

Kɛ ɔ yɔlɪ sɔ bɔ bɛ kʊ̀láá bɛ sanndɪ hɔlɪ, N julɪ awulo ɛlɔ, yɪɛ M molɪ mɪn asɔnɪnfʊ́ kacilɛ nun ndɛ́ɛ N gele m ɪn baba ɔ. Mɪn wan : « Mɪn baba, ɔ fi anɛ b'ɔ kɔ, s'ɛ sɔ wɔ amʊan annzɛ s'ɛ gua wɔ nzaʹan, wɔ mmaʹa mɔ sɛ bɛ t ɪ nnyʊn o, sɛ bɛ tɪ nzan o, mɪn dɪɛ nʹan bo m ɪn dunman fa gʊ́a nzaʹan af ɪ̀ɪn sian, mɪn tɪ asɔnɪnfʊ́. Ɔ fi anɛ b'ɔ kɔ ɔ, wɔ amʊan faa faa sɔ mɔ bief ɪ̀ɪ, mɪn nɪn bɛ nni man. M'an fa m ɪn wʊn a man Nyanmɪan. » Kɛ mɪn asɔnɪn kacilɛ ndɛ́ɛ, ɔ yɔlɪ saá.

Baba Kofi Jaʹa, ɔ kulo Yɪ Mmaá Kpáa

Yɛ sɪ Kofi Jaʹa, yɪ hulolɛ b'ɔ fa hulolɪ yɪ mmʹaa mɔ, ɔ le man yɪ wʊn sʊ. Yɪ nun bɔ yɛ tɪ ngakáan, b'ɔ bubulɪ, nɪ̀ɪn sikaá a mian bɛ sa nun kekele kpáa. Asala nɪ̀ɪn yɛ

sukulu hɔlɛ nɪn a ju. Sikaá káan b'ɔ wɔ ɛbɛlɛ, b'ɔ fata kɛ bɛ fa yɔ ayire man yi, yɪ wan bɛ fa ťo yɛ sukulu ninnje mɔ, maán yɛ hɔ́ sukulu ! Yɪ sukulu ndɛ́ɛ dɪɛ, ɔ hian yi tara sʊ ! Yɪ sɔ fi, ɔ tʊlɪ yɪ bɔbɔ yɪ mmaá mɔ kʊ̀láá, bɛ sukulu. Asala, ɔ bʊkalɪ yɪ abusuanfʊɔ́ mɔ maán bɛ mmaá mɔlá, bɛ hɔlɪ sukulu.

Baba Kofi Jaá, Yɪ Tanranbɛlɛ nun Ndɛ́ɛ

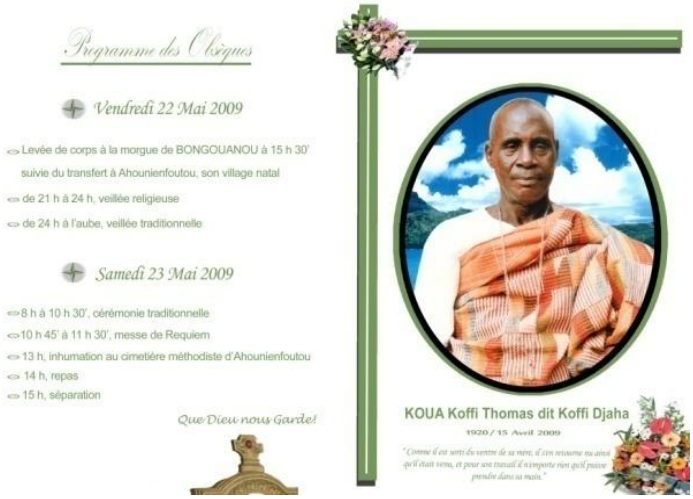
Yɛ baba, ɔ tɪ fie difʊɔ́ kpáa. Ɔ lilɪ fie Ngan ɛwa, asala, ɔ lilɪ fie Anʊnmanbaá ɛlɔ. Ɔ tɪ sanran jojo. Daá bɔ kafe nɪn kɔ́ooko, bɛ su kpáa, nɪ́ɪn sikaá wɔ yɪ sa nun kpáa. Asala, ɔ tɪ sanran bɔ yɪ kunlun tɪ fufuo. Sɛ ɛjɔrɔ tɔ yɪ abusuanfʊɔ́ kʊn w ʊn ɔ , asala sɛ ɔ tɪ kɛ yɪ abusuanfʊɔ́ bie wʊn yɔ yi ya ɔ, ɔ tu yi ja ďe déé ɔ kɔ nian yɪ b ʊsʊ. Yɛ baba kulo nzɛmnďɛ ɛ bolɛ nɪn ngʊ̀a hanlɛ. Yɪ ngʊ̀a b'ɔ kulo tara sʊ, yiele awalɛ. Ngan ɛwa, bɛ bɔ bɛ kpɛ yi awalɛ nun, b'a nzʊn man.

Baba nɪn Kimʊn lɛ tʊ Awalɛ

Baba, Ɛcɪn, Aja nɪn Bala kʊn, bɛ si Abile

Ngalıɛ Lilɛ

Ewuo b'ɔ nzı man awunnvóo, ɔ'a le yɛ sı Kofi Jáa, yɛ sa nun. Baba: Wɔ mmáa mɔ, nın wɔ ýı mɔ, nın wɔ anʊnmaán mɔ, nın wɔ abusuanfʊ́ mɔ, yɛ wʊla ngɔ fi man wɔ ĺe! Baba, k'ɛ falı wɔ wʊn wulalı Famıan Zozi Kilisı saá nun tí, yɛ sı séíín kɛ, anɛ bɔbɔ, ɛ wɔ Nyanmıan Máan nun ɛlɔ, afíın, Somanfʊ́ Pɔlʊ hanlı yı fuluwa nun selı kɛ: "51 Anianman mɔ, M ba yıyı nvıalıwa nun ndɛ́ɛ k ʊn kele amɔ: Yɛ kʊ̀láá, yɛ sʊ ngɔ wu man. Yɛ kʊ̀láá, Nyanmıan maán yɛ ba kaci. 52 Ɔ̀ɔ fu yɛ nun! Kɛ bɛ́ɛ bo bɛ nyınbaá kpɛ́ĺɛ́ɛ, ýɛɛ tı kɔnɛtı kasian. Kɛ yɛ kɔ tı kɔnɛtı sɔ, bɛ bɔ bɛ wulı mɔ, bɛ́ɛ fi ewuo lɛ jɛs ʊ. Bɛ ngɔ mgbɔlɔ man kʊ̀n ĺe... 53 Afíın ɔ fata kɛ wʊnnaán ɛka b'ɔ kpɔlɔ , ɔ fa w ʊnnaán b'ɔ mgbɔlɔ man wúla . Ɔ fata kɛ wʊnnaán ɛka bɔ ewuo kun yi , ɔ fa w ʊnnaán ɛka bɔ ewuo ngʊla ngun man yi , wúla. 54 Tɛmʊn bɔ wʊnnaán ɛka b'ɔ kpɔlɔ kɔ fa w ʊnnaán ɛka b'ɔ mgbɔlɔ man kɔ wula, tɛmʊn ɛka bɔ wʊnnaán ɛka bɔ ewuo kun yi , kɔ fa wʊnnaán ɛka bɔ ewuo ngʊla ngun man yi, kɔ wula, tɛmʊn sɔ nun, ndɛ́ɛ ɛka bɔ bɛ hɛlɛlı Nyanmıan Fuluwa nun lɛ kpın sʊ. Ndɛ́ɛ sɔ, bɛ hɛlɛ selı kɛ:



55

Nyanmıan a bʊ
Ewuo!
Ɔ'a nunkun yi mʊ́nlʊ́n mʊ́nlʊ́n!
Ewuo, wɔ ɛhʊlabʊɔ wɔ nin?
Ewuo, wɔ acuculıɛ wɔ nin?

57 Amɔ maán yɛ ĺa Nyanmıan ası, afíın yɛ Famıan Zozi Kilisı dunman nun fi, y'a nyan ɛhʊlabʊɔ. 58 Yı sɔ fi, ehulo anianman mɔ, amɔ jinran kekele, nán amɔ sa sin bʊ́bu amɔ, amɔ kpinlin amɔ wunlun li Famıan junman. Kɛ amɔ lɛ di junman sɔ, maán amɔ sí kɛ ɛfɛ́ɛ bɔ amɔ lɛ fɛ man Famıan, ɔ tı man mgbaán."

1 Kolıntıan 15: 54-58
Ndɛ́ɛ Kɛlɛfʊ́: Kofi Ɛcın
Alıɛbaá 15, sara 5, afʊɔ 2009

Bibliography

Dolphyne, Florence A. 1986. The Language of the Akan Peoples. *Journal of the Institute of African Studies*. Research Review, 2.1.1-22.

Abercrombie, David. 1971. *Elements of General Phonetics*. Chicago: Aldine Publishing Company.

Anderson, Stephen. 1978. Tone Features. *Tone: A Linguistic Survey*, ed. by Victoria Fromkin, 133-176. New York: Academic Press, Inc.

Anderson, Stephen. 1985. *Phonology in the Twentieth Century*. Chicago: The University of Chicago Press.

Anderson, Stephen and Keenan L. Edward. 1987. Deixis. *Language Typology and Syntactic Description: Grammatical Categories and the Lexicon,* .ed. by Timothy Shopen, 259-308. New York, NY: Cambridge University Press.

Anderson, Stephen. 1987. Inflectional Morphology. *Language Typology and Syntactic Description: Grammatical Categories and the Lexicon,* ed. by Timothy Shopen, 150-201. New York, NY: Cambridge University Press.

Ansre, Gilbert. 1963. Reduplication in Ewe. *Journal of African Languages* 2: 128-32.

Ansre, Gilbert. 1974. Language Standardization in Sub-Saharan Africa. *Advances in Language Planning,* ed. by Joshua A. Fishman, 369-89. The Hague: Mouton.

Anwar, Sami Mohamed. 1980. *Phonologica*. Akten der Vierten Internationalen. Phonologie-Tagung, 23-27.

Bhat, D.N.S. 1978. A General Study of Palatalization. *Universals of Human Language,* ed by Joseph Greenberg, Volume 2. Phonology, 47-92. Stanford, CA: Stanford University Press.

Bloomfield, Leonard. 1965. *Language*. Holt, Rinehart and Winston: New York.

Bolinger, Dwight. 1978. Intonation Across Languages. *Universals of Human Language,* ed by Joseph Greenberg, Volume 2. Phonology, 471-24. Stanford, CA: Stanford University Press.

Booij, Geert and Jerzy Rubach. 1987. Post-cyclic versus Post-lexical Rules in Lexical Phonology. *Linguistic Inquiry*, 18: 47-92.

Booij, Geert E. 1987. Reflection of the Linguistic Structure in Deutch Spelling. *Orthography and Phonology,* ed. by Luelsdorff, Philip A, 215-24. Philadelphia: John Benjamins Publishing Company.

Burmeister, Jonathan. 1983. L'Agni. *Atlas des Langues Kwa de Côte d'Ivoire*. Sous la Direction de G. Hérault. Tome 1, 2e édition. Institut de Linguistique Appliquée - Agence de Coopération Culturelle et Technique. Abidjan, Côte d'Ivoire : Université d'Abidjan.

Burmeister, Jonathan. 1985. *Revue Culturelle Agni: Amanmuo*. Summer Institute of Linguistics. Numéro 1. Aboisso, Côte d'Ivoire: SIL

Burmeister, Jonathan. 1989. *Esquisse Linguistique de l'Agni*, to appear.

Capo, Hounkpatin C. 1981. Nasality in Gbe: A Synchronic Interpretation. *Studies in African Linguistics*, 12: 1-43.

Carteron, Michel. 1968. *Essai de Grammaire de la Langue Baoulé*. Bocanda, Côte d'Ivoire: Mission Catholique.

Chinebuah, I. K. 1963. Category of Number in Nzema. *Journal of African Languages,*

2: 244-59.
Chinebuah, I. K. 1970. Consonant Mutation in Nzema. *Journal of West African Languages*, 7: 69-84.
Chomsky, Carol. 1970. Reading, Writing and Phonology. *Havard Educational Review:* 40: 287-309
Chomsky, Noam. 1970. Comments for Project Literacy Meeting. *Reading in Apllied Transformational Grammar*, ed. by Mark Lester, 277-283. New York: Holt, Rinehart and Winston, Inc.
Clark, David J. 1981. Some Problems in Writing Kwara'ae. *The Bible Translator*, 32: 225-34.
Clifton, John M. 1987. Studies in Melanesian Orthographies. *Data Papers on Papua New Guinea Languages*, 33:1-15.
Cooper, Robert L. 1982. *Language Spread: Studies in Diffusion and Social Change*, ed. by Robert L. Cooper, 5-36. Bloomington, Indiana: Indiana University Press in Cooperation with the Center for Applied Linguistics. Washington, D.C.
Coulmas, Florian. 1989. *The Writing Systems of the World.* Malden, MA: Basil Blackwell, Inc.
Crofts, Marjorie. 1976. Must Tone Always be Written in a Tonal Language? *Technical Papers for the Bible Translator*, 27: 127-134.
Crothers, John. 1978. Typology and Universals of Vowel Systems. *Universals of Human* Ed by Joseph Greenberg, Volume 2. Phonology, 93-152. Stanford, CA: Stanford University Press.
Cummings, D.W. 1988. *American English Spelling*. Baltimore, MD: The John Hopkins University Press.
Dawson, Jean. 1989. Orthography Decisions. *Notes on Literacy*, 57: 1-13.
Eschlimann J. P and P. Jaboulay. 1980. *Lexique Français-Agni*. Manuscrit. Agnibilekro, Côte d'Ivoire : Mission Catholique
Falk, Julia S. 1978. *Linguistics and Language: A Survey of Basic Concepts and Implications*. 2nd edition. New York: John Wiley and Sons.
Faraclas, Nicholas and Kay Williamson. 1984. Assimilation, Dissimilation and Fusion: Vowel Quality and Verbal Reduplication in Lower Cross. *Journal of African Languages and Linguistics*, 6: 1-18.
Feinstein, H. Mark. 1979. Prenasalization and Syllable Structure. *Linguistic Inquiry*, 10: 245-278.
Fishman, Joshua A. 1974. *Advances in Language Planning*. ed. by Joshua A. Fishman, 16-27. The Hague-Paris: Mouton de Gruyer.
George, N. Clements. 1974. Vowel Harmony in Ewe. *Studies in African Linguistics*. 5. 3. 281-301.
George, N. Clements. 1984. Vowel Harmony in Akan: A Consieration of Stewart's Word Structure Condition. *Studies in African Linguistics*. 15.3.321-337.
Greenberg, Joseph H. 1978. Some Generalizations Concerning Initial and Final Consonant Clusters. *Universals of Human Language*, ed. by Joseph Greenberg, Volume 2. Phonology, 243-79. Stanford, CA: Stanford University Press.

Gudschinsky, Sarah C. 1970. More on Formulating Efficient Orthographies. *The Bible*

Translator, 21.1.21-5.
Hartman-So, Helga and David Thomas. 1981. Morphophonemic Writing in Daai-Chin. *Notes on Literacy*, 36: 29-30.
Hass, W. 1970. *Photo-graphemic Translation.* Mont Follick Series, Volume II. Manchester: Manchester University Press.
Hock, Henrick H. 1988. *Principles of Historical Linguistics.* New York: Mouton de Gruyer.
Hockett, Charles F. 1958. *A Course in Modern Linguistics*. New York: MacMillan Publishing Co., Inc.
Hombert, Jean-Marie. 1978. Consonant Types, Vowel Quality, and Tone. *Tone: A Linguistic Survey*, ed. by Victoria Fromkin, 77-111. New York: Academic Press, Inc.
Householder, Fred W. 1971. *Linguistic Speculations.* Cambridge: Cambridge University Press.
Hyman, Larry M. 1972. Nasals and Nasalization in Kwa. *Studies in African Linguistics*. 2.2.167-205.
Hyman, Larry M. 1975. *Phonology: Theory and Analysis*. New York: Holt, Rinehart and Winston.
Jacosen, Brigitte. 1987. *Orthography and Phonology*, ed. by Luelsdorff, Philip A, 102-129. Philadelphia: John Benjamins Publishing Company.
Jones, Daniel. 1967. *The Phoneme: Its Nature and Use*. New York: Cambridge University Press.
Kautzsch, E. 1910. *Gesenius' Hebrew Grammar*. Oxford: Clarendon Press.
Kenstowicz, Michel and Charles Kisseberth. 1979. *Generative Phonology: Description and Theory*. New York: Academic Press, Inc.
Kokora, Pascal D. 1979. *Une Orthographe Pratique des Langues Ivoiriennes.* Institut de Linguistique Appliquée, Abidjan, Côte d'Ivoire: Université d'Abidjan.
Longacre, Robert E. 1964. Tone Orthography in Trique. *Orthography Studies: Articles on New Writing Systems*. Amsterdam: The United Bible Societies in co-operation with the North-Holland Publishing Company.
Luelsdorff, Philip A. 1987. *Orthography and Phonology*, ed. by Luelsdorff, Philip A,77-98. Philadelphia: John Benjamins Publishing Company.
Lyons, John. 1969. *Introduction to Linguistics*. Cambridge: Cambridge University Press.
Maddieson, Ian. 1978. Universals of Tone. *Universals of Human Language*, ed by Joseph Greenberg, Volume 2. Phonology, 335-365. Stanford, CA: Stanford University Press.
Malmberg, Bertil. 1963. *Phonetics: Physiological Phonetics, Experimental Phonetics, Evolutionary Phonetics, Phonemics*. New York: Dover Publication Inc.
Marantz, Alec. 1982. Reduplication. *Linguistic Inquiry*. 13.3. 435-481.
Martinet, André. 1969. *Elements of General Linguistics.* Faber and Faber Ltd, 24 Russell Square, London.
Maw, Joan. 1985. *Twende! A Practical Swahili Course.* University of London: School of Oriental and African Studies.

Muller, M. Eredrich. (unavailable). *Our Accursed Spelling: What to Do with it?*

Published by E. O Vaile.
Mundt, Robert J. 1987. *Historical Dictionary of the Ivory Coast.* African Historical Dictionaries, N0. 41. Metuchen, N.J: The Scarecrow Press, Inc.
Munthali, Priest. 1981. Punctuation. *The Bible Translator*. 32.2: 225-34.
Newman, Paul. 1968. Ideophone from a Syntactic Point of View. *Journal of West African Linguistic.* 2:107-117.
Newman, Paul. 1986. Reduplicated Nouns in Hausa. *Journal of African languages and Linguistics.* 8:115-132.
Nida, Eugene A. 1946. *Morphology: The Descriptive Analysis of Words.* Ann Arbor, MI: University of Michigan Press.
Nida, Eugene A. 1964. *Practical Limitations to a Phonemic Alphabet. Orthography Studies: Articles on New Writing Systems*. Amsterdam: The United Bible Societies in co- operation with the North-Holland Publishing Company.
Nida, Eugene A. 1964. Orthographic Problems in Yipounou. *Orthography Studies: Articles on New Writing Systems*. Amsterdam: The United Bible Societies in co-operation with the North-Holland Publishing Company.
Nikiema, Norbert. 1976. *On the Linguistic Bases of Moore Orthography*. Bloomington, IN: Indiana University Ph.D. Dissertation.
Nespor Marina and Irene Vogel. 1986. *Prosodic Phonology*. (Studies in Generative Grammar.) Riverton, USA: Foris Publications,
Pike, Kenneth L. 1946. *Phonemics: A Technique for Reducing Languages to Writing*. Vol 1 & 2, Glendale, CA: Summer Institute of Linguistics.
Powlison, Paul S. 1968. Bases for Formulating an Efficient Orthography. *The Bible Translator*. 19.2.74-91.
Price, Dorothy. 1987. *Studies in Malanesian Orthographies: Data Papers on Papua New Guinea Languages*. 33: 57-76.
Pulleyblank, Douglas. 1986. *Tone in Lexical Phonology*. Dordrecht: D. Reidel.
Pulgram, Ernst. 1951. Phoneme and Grapheme: A Parallel. *Word*. 7:15-20.
Reed, David W. 1970 A Theory of Language, Speech, and Writing. *Reading in Apllied Transformational Grammar*, ed. by Mark Lester, 284-301. New York: Holt, Rinehart and Winston, Inc.
Retord, Georges L. A. 1972. L'Agni: Variété Dialectale Sanvi. *Annales de L'Université d'Abidjan*, Série H-V, Fascicule 1. Abidjan, Côte d'Ivoire : Université d'Abidjan.
Ruhlen, Merritt. 1978. Nasal Vowels. *Universals of Human Language*, ed by Joseph Greenberg, Volume 2. Phonology, 203-41. Stanford, CA: Stanford University Press.
Samarin, William J. 1964. Questions and Orthography in Sango. *Orthography Studies: Articles on New Writing Systems*. Amsterdam: The United Bible Societies in co-operation with the North-Holland Publishing Company.
Sebeok, Thomas A. 1944. Phonemics and Orthography in Finnish. *Acta Linguistics*, Volume IV: 130-5.
Sgall, Peter. 1987. *Orthography and Phonology*, ed. by Luelsdorff, Philip A. Philadelphia: John Benjamins Publishing Company.
Shand, Jean. 1972. Suggestions for Revision of Phonemic Analysis and Orthography in

Ilianen Manobo. *Notes on Literacy*, N0.14:13-20.
Simons, Gary. 1977. Principles of multidialectal Orthography Design. *Workpapers in New Guinea Languages*. 21: 325-341.
Smalley, William A. 1964. Writing Systems and their Characteristics. *Orthography Studies: Articles on New Writing Systems*. Amsterdam: The United Bible Societies in co-operation with the North-Holland Publishing Company.
Smalley, William A. 1964. How Shall I Write This Language? *Orthography Studies: Articles on New Writing Systems*. Amsterdam: The United Bible Societies in co-operation with the North-Holland Publishing Company.
Smalley, William A. 1964. A Problem in Orthography Preparation. *Orthography Studies: Articles on New Writing Systems*. Amsterdam: The United Bible Societies in co-operation with the North-Holland Publishing Company.
Smalley, William A. 1964. Orthography Conference for French West Africa. *Orthography Studies: Articles on New Writing Systems*. Amsterdam: The United Bible Societies in co-operation with the North-Holland Publishing Company.
Smalley, William A. 1964. Dialects and Orthography in Gipende. *Orthography Studies: Articles on New Writing Systems*. Amsterdam: The United Bible Societies in co-operation with the North-Holland Publishing Company.
Stahlke, F. W. Herbert. 1976. Segment Sequences and Segment Fusion. *Studies in African Linguistics*. 7.1.41-63.
Stewart, John. M. 1956. Notes on Baule Phonology. *School of Oriental and African Studies Bulletin*. 18:353-365.
Stewart, John. M. 1967. Tongue Root Position in Akan Vowel Harmony. *Phonetica.* 16: 185-204.
Stewart, John. M. 1983. Akan Vowel Harmony: The Word Structure Conditions and the Floating Vowels. *Studies in African Linguistics.* 14.2.111-39.
Stewart, John. M. 1990. *The Niger-Congo Languages.* Ed. by John Bendor-Samuel, University Press of America and The Summer Institute of Linguistics.
Stuart, Davis. 1988. On the Nature of Internal Reduplication. *Theoretical Morphology: Approaches in Modern Linguistics*, ed. by Michael Hammond and Michael Noonan, 305-23. New York: Academic Press, Inc.
Tauli, Valter. 1974. The Theory of Language Planning. *Advances in Language Planning*, ed. by Joshua A. Fishman, 49-67. The Hague: Mouton.
Thayer, Linda J. 1981. Tone Orthography- Conventions for languages with Two Tone Levels and Downstep. *The Bible Translator*. 32.2.220-4.
Trubetzkoy, N. S. 1969. *Principles of Phonology.* Translated by A. M. Baltaxe. Published under the Auspices of the Center for Research in Languages and Linguistics. Los Angeles: University of California Press.
Uldall, H. J. 1944. Speech and Writing. *Acta Linguistica*. Volume IV: 11-6.
Ultan, Russell. 1978. A Typological View of Metathesis. *Universals of Human Language*, ed by Joseph Greenberg, Volume 2. Phonology, 367-99. Stanford, CA: Stanford University Press.

Vachek, Josef. 1945. Some Remarks on Writing and Phonetic Transcription. *Acta*

Linguistica. Volume V: 86-93.
Vallins, G. H. 1973. *Spelling.* London: Andre Deutsch.
Welmers, William, E. 1973. *African Language Structures.* Los Angles: University of California Press.
Wolff, Susanne. 1984. *Lexical Entries and Word Formation*. Bloomington, Indiana: Reproduced by Indiana University Linguistic Club.
Wiesemann, Ursala. 1989. Orthography Matters. *Notes on Literacy*. 57:14-21.
Williamson, Kay. 1984. *Practical Orthography in Nigeria*. Lagos, Nigeria: Heinemann Educational Books Limited.