

Morphophonological aspects in Mangoro language

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Abstract: The goal of this work is to determine the sound systems and tones in Mangoro language through a phonetic data on the one hand and then analyze the prosodic domains and rules that occur in this particular language on the other hand. Such a study is a part of phonology that may encompass morphology whereby we examine the way in which words are formed – morphology – in order to give a more complete picture of this language. The choice of Mangoro as a north Mande language of Côte d'Ivoire is significant for descriptive analyses are encouraged to the extent that they present analyses of lesser-known languages, based on original fieldwork. Just to say that this language has not yet been studied or classified in the different atlas of the language of Côte d'Ivoire. It is an endangered language. Let us observe the following prosodic domains, among others, that will be discussed in the present work.

Keywords: syllable, elision, assimilation, autosegmental approach, metrical approach

Résumé: L'objectif de ce travail est de déterminer les systèmes, vocalique, consonantique et tonale de la langue Mangoro à travers des données d'une part et l'analyse des domaines prosodiques et les règles d'autre part. Une telle étude nécessite une analyse phonologique qui fait appel à la morphologie où l'on examine la formation des mots dans le but de donner une description détaillée de cette langue. Le choix du Mangoro qui est une langue Mande nord de la Côte d'Ivoire est significatif car cette langue n'a pas été étudiée et demeure moins connue. Juste pour noter que cette langue n'a pas encore été classée dans les différents atlas linguistiques parmi les langues de Côte d'Ivoire. C'est une langue en danger. Observons les différents domaines prosodiques qui feront l'objet d'une large discussion dans le présent travail.

Mots-clés: syllabe, élision, assimilation, approche autosegmentale, approche métrique

Introduction

Mangoro language is a north Mande language spoken in Côte d’Ivoire. The native speakers of this language live in the prefectures of Katiola and Dabakala located in the north center of Côte d’Ivoire. Notice that the prefectures cited above are areas where one can find more GUR language native speakers. Mangoro is an endangered language. For it has not been studied and classified among the languages of Côte d’Ivoire. And its position within the huge GUR language group pushes Mangoro native speakers to neglect their own language for the neighboring ones.

Our goal in this paper is to present an aspect of the morphophonological studies of Mangoro. It is about rules and prosodic domains in this language. We will explore the data of this language in order to discover and describe consonantization. The present study will need the use of autosegmental and metrical phonological theory.

I. Phonological system of Mangoro

I.1. Vowels

Mangoro language can be considered as having seven vowel qualities, which occur distinctively long or short.

	Front	Central	Back
High	i		u
Mid	e		o
Mid Low	ɛ		ɔ
Low		a	

- (1) [i/u]: tí “straw”
 Tú “forest”
 (2) [e/o]: bè “fall”
 Sè “can”
 (3) [ɛ/ɔ] kete “mat”
 sɔsɔ “bean”
 (4) [a] sà “snake”

We notice the presence of nasal consonants in Mangoro language. However, there are no phonological nasal vowels in this language.

I.2. Consonants

	Bilabial	Labio-dental	Dental	Alveolar	Post-alveolar	Palatal	Velar	Labio-velar
Plosive	p b	t d					k g	kpgb
Affricate					c ʃ			
Nasal	m			n		ɲ	ŋ	

Fricative		f	s	z		ʃ			w
Trill					r				
Approximant		v					j		
Lateral Approximant					l				

There is a plosive glottal consonant in Mangoro that is ʔ which can be illustrated as follows:

(5) sòʔó “meet”

Some examples of the consonants are as follows:

(6) p/b pɛ “slowly”

 bɛ “all”

(7) kp/gb kpìsá “traditional sweet cake”/p

 gbìsá “whip”

(8) f/v fàlí “donkey”

 vâlí “first name”

(9) t/d tò “meal”

 dò “entrence”

(10) s/z sɔzɔ “nail”

 zɔzɔ “shrimp”

(11) c/ʃ cɔ “right”

 ʃɔ “net”

(12) w/j wrì “standing”

 Jri “tree”

I.3. Tones

This language has two tones. The low tone [ˀ] and the high tone [ˀ̄]. We have also modulated tone such as low-high [ˀ̄ˀ] and high-low [ˀ̄ˀ̄]. Some representative examples are given below.

(1) Low tone

 sò “horse”

(2) High tone

 só “village”

(3) Modulated tone low-high

 tě “sun”

(4) High-low modulated tone

 dê “child”

I. Syllable structure in Mangoro

In this section, we turn our attention to the syllable and how sounds or phonemes are distributed in the segmental unit. Syllable structure varies from one language to another. Phonologists state that syllable structure is often discussed in terms of consonant-vowel patterns, commonly abbreviated as C (for consonant) and V (for vowel). We will try to see

whether Mangoro syllable structure is homogenous. We might represent the structure of a syllable such as in the monosyllabic word.

- (5) Monosyllable: dó “mask”
 dà “sort of sauce”
- (6) Dissyllable: wùrú “dog”
 tèná “forehead”
- (7) Trisyllable: gbàbùzù “kitchen”
 jàkpàní “cat”

In the example above, vowels follow frequently consonants. Given this fact, one can state that Mangoro has the universal syllable type CV. However, in mɾɛ “hippopotamus” or bré “stick”, the CCV structure occurs in this language.

II. Elision

Elision as a phonological process is observable in Mangoro. In fact, the first vowel of the second word is deleted with its tone as shown in the following examples.

- (8) à blá à fɛ → à bláfɛ
 Something leave 3Pers. SG Prep
 “Leave it to him.”
- (9) è gbà: à kɔ: → è gbà:kɔ:
 2P.SG. move 3Pers.SG. near
 “Move near him.”

The rule below is suitable for the examples above:

- (10) R₁: V → Ø / V-

III. Assimilation

The following assimilatory processes are found in Mangoro: palatalization and labialization which are consonantization process.

III.1. consonantization

This process shows the transformation of a vowel within a consonant.

- (11) R₂: V → C / -V

III.1.1 Palatalization

The high anterior sonorant vowel [i] is palatalized before low central sonorant vowel [a].

- (12) à ní à: lá → à njà: là
 3Pers. SG. share 3Pers.PL LOC
 “Share with them this thing.”
- (13) à dí á: mã → à djá: mã
 3Pers.SG give 3Pers.SG Prep
 “Give it to him.”

The examples above follow the rule (14) below:

(14)R₃: i → j / -a

III.1.2. Labialization

The high posterior sonorant vowel [u] is labialized before low central sonorant vowel [a].

(15) à súšù á kɔ :nɔ → à súšwá kɔnɔ
 3Pers.SG pound 3Pers.SG inside
 “Pound this thing inside.”

(16) à dú à kɔ: → á dwà kɔ:
 3Pers.SG hang 3Pers.SG
 “Hang it near him”

The examples (15) and (16) above respect the rule (17) as shown below:

(17)R₄: u → w / -a

However, labialization can be seen in the following examples.

(18) bɛ kó à tá → bɛ kwà tá
 Everybody say 3Pers.SG POSS
 “Everybody ask for its own.”

(19) à tó àlá mǎ → à twàlá mǎ
 3Pers.SG leave God Prep
 “Leave it to God.”

The rule in (17) has its prosodic domain in examples (18) and (19). In other words, we can apply R₄ as a rule in ((18-19). The data, we have, show that there are domain of non-application of that rule in Mangoro.

(20) Family name + first name

(21) bàló + àdísá → *bàlwádísá
 Balo Adissa

(22) bàró + àwá → *bàráwá
 Baro Awa

Consonantization process as being in fact merely labialization occurs as a failure in instances or cases like prosodic domain in (20). If labialization is most commonly conditioned by high vowels [i, u], and somewhat less commonly by mid vowels [e, o], we notice that in examples (21) and (22) there is no assimilation. In other words, there is no transformation.

IV. An autosegmental phonological analysis

Notice that the theory of autosegmental phonology was early and originally proposed by John Goldsmith (Goldsmith 1975, 1976). This theory gives a clear description of a segmental representation. Distinctive features of a single phoneme or segment are viewed within the matrix. As in traditional generative phonology, these features are phonological units or segments.

Consider, for example, the Mangoro words *sì* “life” and *bòdró* “struggle”. A precise and concise segmental analysis in this section yields an underlying representation with two separate segments for *sì* “life” and five separate segments for *bòdró* “struggle”, each with its own feature make up:

(23a) <i>sì</i> “life”	s	i
	-syll	+ syll
	+cons	-cons
	-son	+son
	+ant	
	+cor	
	<u>-back</u>	<u>-back</u>
	-high	+high
	<u>-low</u>	<u>-low</u>
	<u>-nas</u>	<u>-nas</u>
	-voice	+voice
	-cont	+cont

(23b) <i>bòdró</i> “struggle”	b	o	d	r	o
	-syll	+ syll	<u>-syll</u>	<u>- syll</u>	+ syll
	+cons	-cons	<u>+cons</u>	<u>+cons</u>	-cons
	-son	+son	<u>-son</u>	<u>-son</u>	+son
	+ant		<u>+ant</u>	<u>+ant</u>	
	+cor		<u>+cor</u>	<u>+cor</u>	
	<u>-back</u>	<u>-back</u>	<u>-back</u>	<u>-back</u>	+back
	-high	+high	<u>-high</u>	<u>-high</u>	-high
	<u>-low</u>	<u>-low</u>	<u>-low</u>	<u>-low</u>	-low
	<u>-nas</u>	<u>-nas</u>	<u>-nas</u>	<u>-nas</u>	-nas
	<u>+voice</u>	<u>+voice</u>	<u>+voice</u>	<u>+voice</u>	+voice
	-cont	+cont	-cont	-cont	+cont

In (23a) and (23b), sounds are influenced by the environments in which they occur. We do not take in account the tonal aspect in both examples. In addition, a single segment manifests features that are shared by neighboring segment. Autosegmental phonology predicts this type

of pattern by its formal representation. In fact, a distinctive feature shows its influence corresponds to a sequence that forms a unit of the phonological hierarchy.

The data we have raise a question of representation of tonal phenomena. In Mangoro, tones seem to characterize entire words rather than syllable. Examples *sì* “life” and *bòdró* “struggle”, discussed in (23a) and (23b) show phonological pattern extending over the entire word, as shown below:

- (24) L *sì* “life”
 LH *bòdró* “struggle”

Here the tone of a specific morpheme is best seen as characteristic of the word as a whole, not specific syllable within it. L and H have widespread distribution and are found in all syllables of the word.

On the basis of Goldsmith¹'s WellformednessCondition (WFC), we can describe how tones are associated with segments in Mangoro. A tonal tier must carry tonal information. Rules of association to make the connection are governed by the WFC.

(25) Wellformedness Condition (WFC)

- a. All autosegments must be associated with at least one appropriate segment on the segmental tier;
- b. All appropriate segments on the segmental tier must be associated with at least one autosegment;
- c. Associated lines cannot cross.

Appropriate representations for some forms in (24) would be as follows:

- (26) *si* “life” *bodro* “struggle”

L L H

- (27) *bodro* “struggle”

L H

- **bodro* “struggle”

L H

One pattern of association for *bòdró* “struggle” is consistent or convenient with the WFC which states that association lines cannot cross.

V. A metrical phonological analysis

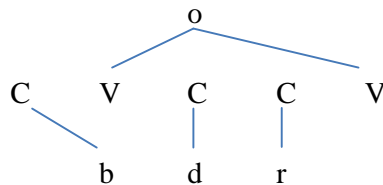
Metrical Phonology has to do with the hierarchical organization of segments into syllables, syllables into metrical feet, feet into phonological words. The present metrical phonological analysis is entirely based upon Goldsmith (1990). The segment is here a composite of co-

¹Goldsmith, John, 1976, Autosegmental phonology, Bloomington: Indiana University Linguistics Club.
 Goldsmith, John, 1990, Autosegmental and metrical phonology, Cambridge, Mass.: Blackwell.

occurring distinctive features. Segmental phonology is not all that is involved, but a phonological hierarchy is required to account for phonological facts.

Given the principle that vowels associate with vowels, and that consonants with consonant positions, and the validity of the Universal Association Convention and Right Spreading Rule, the result is as follows:

(28) *bodro* “struggle”

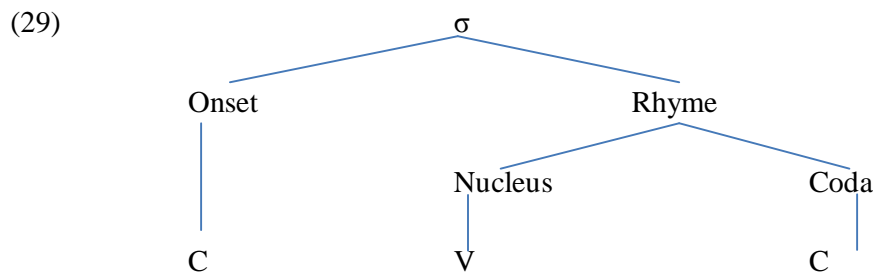


Every language has restrictions on the syllable patterns it makes use of to organize segments into syllables.

The syllable patterns of every language may show that the organization of segments into syllables varies from one language to another as there are restrictions on the syllable structure. Scholars of phonological studies such as Goldsmith proposed the following parametrically varying options:

1. Identification of first the number of consonants that may occur in the syllable onset, secondly the number of vowels that may occur in the syllable nucleus, and then the number of consonants that may occur in the syllable coda position.
2. Identification of first the inventory of consonants that may occur in each syllable onset position, and their order of occurrence, and secondly the inventory of vowels that may occur in the nucleus and their order of occurrence, and finally the inventory of consonants that occur in each coda position and their order of occurrence.
3. Identification of the direction in which the rules are applied into syllable assembling segments. This direction may be specified as left-to-right versus right-to-left.

A hierarchical arrangement of constituents in the construction of syllables is the typical proposal as shown in (29):

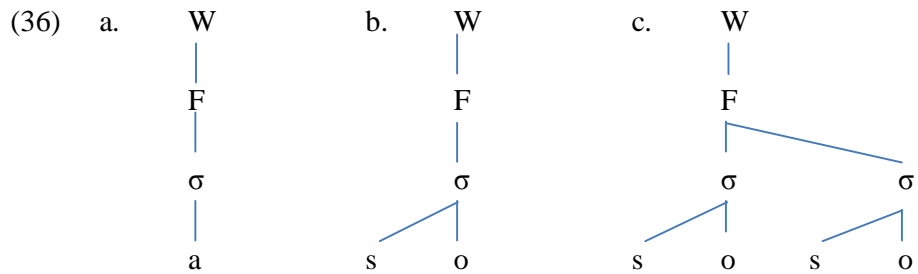
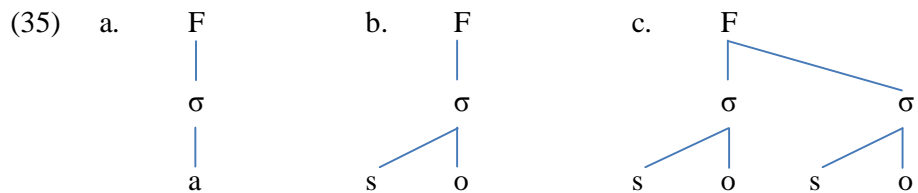
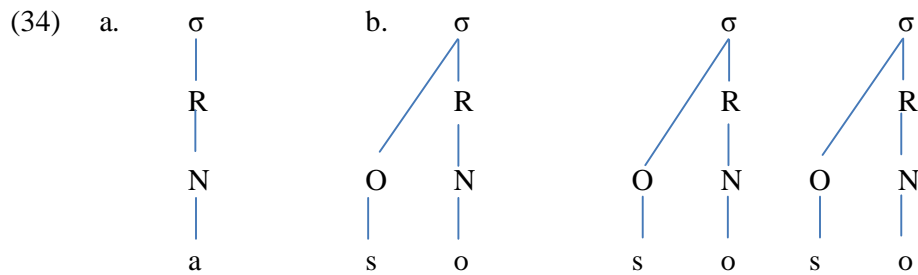


Notice that in (29), the Nucleus and Coda are combined into a Rhyme node, with the Rhyme and Onset then combined into a syllable, typically designed with a lower case sigma.

- (30) V à “he/she”
 é “you”
 (31) CV sò “horse”
 só “village”
 (32) CVCV sòsó “Mosquito”

Apparently, Mangoro language has no examples showing the structure VC and CVC as closed syllables. Even if the language borrows a word a French word such as tabl “table”, it adds or inserts a vowel between consonants. Note that the final consonant disappears.

- (33) tàbá: “table”



In (34) only one consonant may occur in the Onset position and only one vowel may occur in the Nucleus and Rhyme.

In (35), syllables are organized in phonological feet, commonly symbolized as F (feet). We can have more than one syllable in one feet. A binary organization of syllables occurs. Such feet are specified as bounded, with two syllables. The rules to build the feet follow the RIGHT-LEFT direction. Mangoro allows the construction of feet consisting of a single

syllable or a single vowel. This language treats only light syllables such as V or CV. We will avoid the notion of quantity-sensitivity as there is a lack of examples of heavy syllables showing a complex nucleus. F is placed directly above the node.

In (36), F is dominated by W and the lone syllable is incorporated directly into the feet level.

Conclusion

To sum up note that the phonological system of Mangoro language displays seven vowels, twenty three consonants and two tones. Syllable structures identified are commonly monosyllables, disyllables and trisyllables. Morphophonological analysis of Mangoro presents a wider spread usage of elision, labialization and palatalization. The autosegmental and metrical phonological analyses confirm the occurrence of V, CV, and CVCV as major syllable structures in Mangoro language.

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