

# Mòoré vowels revisited

John Rennison

Dept. of Linguistics, University of Vienna

## Abstract

The analysis of the vowel system and vowel harmony of “standard Mòoré” (=the dialect of Ouagadougou) which I previously proposed (1988, 1992) is called into question by data from northern dialects presented by R. Kabore (1994). Here, suffix vowels which in Ouagadougou show the alternations [i]~[e] and [u]~[o] have a third variant, giving [i]~[e]~[ɛ] and [u]~[o]~[ɔ]. In addition, there exist suffixes with the vowel [ɪ] which never changes (i.e. does not harmonize for ATR or A), but which causes a mid vowel in the stem to change from [e] to [ɛ] or from [o] to [ɔ]. Superficially, this looks like RTR harmony. I propose that my 1988 analysis is still correct for Ouagadougou, but that the northern dialects have different parameters for A-umlaut (a process which also manifests itself in other ways). Therefore there is no RTR harmony.

## 1. The vowel system of standard Mòoré (the dialect of Ouagadougou, capital of Burkina Faso)

The standard analysis of the vowel system of Mòoré is that there are 7 lexical and 9 or 10 surface oral vowels, plus 3 lexical nasal vowels. The precise quality of the nasal vowels is still a matter of debate, but is not relevant here. In (1) I give the inventory as presented by Kabore (1994). The number of surface nasal vowels is blurred by the nasalization of **any** vowel after a nasal consonant, so there are also 9 or 10 of them. All of the 7+3 lexical vowels can occur freely in lexical stems (which tend to be phonetically monosyllabic), but there are co-occurrence restrictions on the quality of vowels in suffixes. (There are no prefixes, and proclitic pronouns are inert as regards vowel harmony.)

(1) *The vowels of Mòoré according to R. Kabore (1994)*

<i>Lexical oral</i>	<i>Phonetic oral</i>	<i>Lexical nasal</i>	<i>Phonetic nasal</i>
i u	i u	ĩ ũ	ĩ ũ
ɪ ɔ	ɪ ɔ	ĩ õ	ĩ õ
e o	e o		ẽ õ
	ɛ ɔ		ẽ õ
a	a	ã	ã
	(Λ) <sup>1</sup>		(Λ̃) <sup>1</sup>

### 1.1 Co-occurrence of suffix vowels with stem vowels

According to standard analyses, including Kabore (1994), the presence of ATR in high a stem vowel (*i* of *u*) determines the height (sic! — not ATR) of the suffix vowels. Some relevant data are given in (2).

<sup>1</sup> This vowel appears in Kabore’s transcriptions, but is missing in other parts of his article. Generally, this vowel is ignored by other authors. In northern Mòoré it is allegedly phonetically [o].

- (2) *Examples showing the co-occurrence of suffix vowel quality with stem vowel quality in Ouagadougou (from R. Kabore, 1994, and my own research). Nasal stem vowels are omitted because they behave identically; there are no lexically nasal suffix vowels.<sup>2</sup> Length and tone are irrelevant.*

<i>word</i>	<i>gloss</i>	<i>stem vowel</i> (lex. → phonet.)	<i>suffix vowel</i> (lex. → phonet.)
lígdí	‘money’ (PL.)	i → i	e → i
bííga	‘child’	i → i	a → ʌ
míidu	‘red’ (PL.)	i → i	o → u
sígrè <sup>3</sup>	‘Altar’	ɪ → ɪ	e → e
tíga	‘festival’ (PL.)	ɪ → ɪ	a → ʌ
díibo	‘food’	ɪ → ɪ	o → o
déegè	‘to accept’	e → e	e → e
jéla	‘serious matter’ (PL.)	e → ε	a → a
sèbgó	‘wind’	e → e	o → o
dáare	‘day’	a → a	e → e
dáada	‘buyer’	a → a	a → a
láado	‘(a) laugh’	a → a	o → o
kóorè	‘box’	o → o	e → e
nóaba / nwába	‘hazelnut’ (PL.) <sup>4</sup>	o → oa ~ wa	a → a
kóobò	‘cultivation, agriculture’	o → o	o → o
póorè	‘stomach’	o → o	e → e
sólga	‘spider’	o → o	a → a
póogò	‘field’	o → o	o → o
búsri	‘yam’	u → u	e → i
vúgà	‘stick’ (PL.)	u → u	a → ʌ
fúugù	‘garment’	u → u	o → u

This kind of harmony process could be formulated in SPE terms, but cannot be represented in GP in this form. Superficially, it seems that an A element of a mid suffix vowel is lost iff the stem vowel is high and tense. A low suffix vowel, on the other hand, becomes tense, i.e. gets an ATR element in the same environment. This makes no sense. The converse analysis, where the mid vowels are analyzed as lexically high, is equally bad. The problem is that we expect assimilation processes to involve the same element, but here ATR seems to affect A.

In my 1988 analysis I claimed that the problem lies in the transcription that we are using. In fact the vowels transcribed as tense mid [e] and [o] in (2), and in standard transcription that is widely used for Mòoré, are high lax vowels [ɪ] and [ʊ] respectively. And the vowels transcribed as high lax [ɪ] and [ʊ] are the tense mid vowels [e] and [o]. This is shown in (3). Because this is potentially very confusing, I stick to the standard transcription throughout this paper, but please remember that the vowel transcribed [e] is just a single I element, with no ATR, and so on.

<sup>2</sup> There do exist other postclitics with nasal vowels, but these are all invariant.

<sup>3</sup> The transcribed medial [g] of this and several other example words is actually realized as a fricative, except when the preceding segment is a high tense vowel, where only the stop occurs. The point is not relevant for the vowel qualities discussed here.

<sup>4</sup> Cf. singular *nóbre* ‘hazelnut’

- (3) *The skewed transcription of Mòoré vowels. The vowels above and below the double line have the wrong symbols in standard transcription.*

<i>Traditional Transcription</i>		
i u	ATR	high
e o	non-ATR	vowels
ɪ ʊ	ATR	mid
ɛ ɔ	non-ATR	vowels
ʌ	ATR	low
a	non-ATR	vowels

The reanalyzed vowel system is given in (4).

- (4) *The GP representation of the vowels of Mòoré (from Rennison 1988, 1992). The vowels are transcribed here and throughout this handout according to standard Mòoré orthography, apart from ʌ, for which there is no standard symbol.*

ATR-line	ATR	ATR		ATR			ATR	ATR	
A-line		A		A	A	A		A	
I,U-line	I	I	I	I			U	U	U
skeleton	x	x	x	x	x	x	x	x	x
vowel	i	ɪ	e	ɛ	ʌ	a	ɔ	o	u

Now the vowel harmony falls out quite naturally: a high tense stem vowel passes on its ATR quality to **every** suffix vowel, be it I, U, or A.

- (5) *ATR harmony with unskewed vowels (analysis from Rennison, 1992). The first three words harmonize, the last does not (ATR is blocked by the A element).*

ATR,A-line	ATR	ATR	A	ATR	A	ATR	ATR	A												
I,U-line	I	I	I	I	I	I	U	I												
skeleton	x	x	x	x	x	x	x	x												
transcription	l	i	g	d	i	b	i	i	g	ʌ	m	i	i	d	u	s	i	g	r	e

## 1.2 Further repercussions of unskewing the vowels

### 1.2.1 There are no honest-to-goodness suffix vowels with ATR

All the suffixes we have seen so far now contain a vowel that has just one element lexically, I, U or A. One suffix is given by Kabore that has *ɪ*, i.e. (I,A,ATR), but this is quite rare and only has that one phonetic realization — which is exactly what we expect if the assimilations are additive. (Mòoré does not seem to have any autosegmental licensing failures of the kind described by John Harris.)

### 1.2.2 The strange formation of glides is now quite natural

Words such as *nóaba* / *nwába* ‘hazelnut’ (PL.) in (2) are typically pronounced in Ouagadougou with a glide *w* rather than the vowel *o*. The same occurs with the glide *j*. However, glides are never formed from the vowels transcribed *ʊ* and *ɪ*. This is exactly what we would expect if the vowels that form glides just have a single U or I element, but the non-gliding vowels also contain an A element.

## 2. The vowels of northern dialects (e.g. Ouahigouya)

### 2.1 The suffix vowels

In contrast with Ouagadougou, the northern dialects have **three**, not two variants of the normal non-low suffix vowels. Some forms are given in (6).

- (6) *Examples showing the co-occurrence of suffix vowel quality with stem vowel quality in the northern dialect of Ouahigouya (from R. Kabore, 1994), with Ouagadougou equivalents for comparison. Forms with a high tense suffix vowel are identical in both dialects, and are therefore omitted.*

<i>Ouagadougou</i>	<i>Ouahigouya</i>	<i>gloss</i>	<i>Ouahigouya stem vowel (lex. → phonet.)</i>	<i>Ouahigouya suffix vowel (lex. → phonet.)</i>
bííɣɔ	bíigo	‘child’	i → i	a → o (*ɔ, *a)
bóose	bóouse	‘goat’ (PL.)	o → o	e → ε (*e)
kòaaɣá / kwàaaɣá	kòɔɣá	‘liquid’ (SG.)	o → ɔ	a → a (*ɔ, *o)
kòosé	kòosé	‘liquid’ (PL.)	o → o	e → e (*ε)
ròɔɣó	ràwwɣó	‘(piece of) wood’ (SG.)	a → ao (aw)	o → ɔ (*o)
ràadó	ràadó	‘(piece of) wood’ (PL.)	a → a	o → ɔ (*o)

First, the easiest part: the tense variant of the low suffix vowel *a* is realized as mid tense *o* in Ouahigouya, where Ouagadougou has *ɔ*. This is simply a different phonetic realization, but presents no problem of analysis; it is a simple across-the-board phonetic substitution.

A look at the Ouahigouya column suggests, however, that here we really have ATR harmony. The word *bóouse* ‘goat’ (PL.) now has a lax suffix vowel in place of the tense one in Ouagadougou, and all the words in the Ouahigouya column agree in ATR — superficially. In fact, if we were unaware of the skewed transcription of the Ouagadougou vowels, this would be a reasonable analysis for these forms.

However, there exists an even more problematic case, of which an example is given in (7).

- (7) *An example of ‘RTR harmony’ in Ouahigouya (from R. Kabore, 1994), with Ouagadougou equivalent for comparison.*

<i>Ouagadougou</i>	<i>Ouahigouya</i>	<i>gloss</i>	<i>Ouahigouya stem vowel (lex. → phonet.)</i>	<i>Ouahigouya suffix vowel (lex. → phonet.)</i>
véndí	véndí	‘Fr. <i>qui s’avalent</i> ’	e → ε	ɪ → ɪ

Here the stem vowel changes in quality in Ouahigouya from supposedly tense [e] to lax [ɛ]. I assume that other forms of this word have a tense [e] in Ouahigouya, although R. Kabore does not actually say so. However, this word is the key to the forms in (6). But first we must show some details of U and A-umlaut in the two dialects.

### 2.2 U and A-umlaut

The processes of U and A umlaut are very similar to one another in both dialects, but the phonetic reflexes differ slightly in the north. Basically, the A or U element of a suffix gets attached to the preceding vowel (i.e. the vowel of the stem). The element I never does this. The resulting stem vowels are either monophthongs (resulting from the combination of elements that are attached to them) or diphthongs, where the first part had the colour the

original stem vowel and the second the colour of the suffix vowel. These processes do not affect the length of the stem vowel; in the standard transcription the second vowel of a diphthong is doubled to indicate that the whole diphthong is long. Some examples are given in (8) and (9) for Ouagadougou and Ouahigouya respectively. I have not given all the different vowel combinations that are possible, because we are here only interested in the existence of process as such.

In Ouagadougou the sequence *wa* remains a diphthong, but *aw* is monophthongized to  $\text{ɔ}$ . This can be seen in the first two forms in (8). In Ouahigouya the reverse holds: *wa* is monophthongized to  $\text{ɔ}$  but *aw* remains a diphthong (the first two forms in (9)). In both dialects, the diphthong *ja* monophthongizes to  $\text{ɛ}$ . The third form in (8) and (9) shows the failure of any kind of I-Umlaut; but in (9) this third word also has an additional association from the A element to the suffix vowel. The northern dialect has forward attachment of an A element of the stem to the suffix vowel.

(8) *U and A umlaut in Ouagadougou*

ATR,A-line				
I,U-line				
ON-line <sup>5</sup>				
skeleton				
transcription				

  

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(9) *U and A umlaut in Ouahigouya (thicker lines are associations which are not permitted in Ouagadougou)*

ATR,A-line				
I,U-line				
ON-line				
skeleton				
transcription				

  

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### 2.3 A-umlaut in the north

The A element is much freer to attach to neighbouring vowels in the north than in Ouagadougou. We just saw that it can attach rightwards from a stem vowel to a suffix vowel. In (10) we see A-umlaut from the A element of the complex suffix vowel *ɪ*.

(10) *A-umlaut originating from ɪ in Ouahigouya*

ATR,A-line	
I,U-line	
skeleton	
transcription	

  

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In (11) we see that A-umlaut fails in Ouagadougou in the same word.

<sup>5</sup> The ON-line is added for clarity in this and the next diagram only. In all others it can easily be derived from the I,U-line.

