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Assimilation, Deletion and Vowel Harmony in Mòbà, Ìgbòmìnà; Owé and Àkúré Dialects of Yorùbá

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ABSTRACT

There has been considerable phonetic research and, by extension, phonological research testifying to domain-sensitivity in the phonetic interpretation of the sentence: (cf. Selkirk, 2011). This paper examines assimilation, deletion and vowel harmony in Yorùbá drawing evidence from Mòbà, Ìgbòmìnà, Owé and Àkúré dialects. It claims that the three phonological processes are domain-sensitive. These domains are defined in terms of a properly phonological prosodic structure representation of domain . . .” (Selkirk, 2011: 2). As for deletion and assimilation, it is demonstrated that their application are in complementary distribution, such that, the prosodic word (e.g. between grammatical formatives and the subject NP) where one applies is blocked for the other to apply. However, as for harmony, it is shown that whereas, in Standard Yoruba, its domain is within words; in dialects like Mòbà, Ìgbòmìnà, Owé and Àkúré it occurs in prosodic word. The paper further demonstrates, following Selkirk (2011) that the application of this phonological process is from right to left. This prosodic word is referred to as the locus of vowel harmony claiming that the phenomenon
is driven by a pressure for surface phonological representations to respect general wellformedness condition (cf. Selkirk, 2011: 2).

INTRODUCTION

It is an established fact that theoretical linguistics can be sub-divided into branches of phonetics, phonology, morphology, syntax and semantics. However, what has not been systematically demonstrated among Yoruba and its dialects is the fact that there is interdependence among those branches. Thus, an understanding of one branch may crucially depend on the understanding of others. This paper examines one of such branches, namely, phonology; drawing evidence from Moda, Akure, Igbomina and Owé dialects of Yoruba. Specifically, the paper will discuss how three well established phonological processes, namely; assimilation, deletion and harmony operate in a domain bigger than the morpheme or word in these dialects, though differently. This should not be surprising; as Selkirk (2011) notes, one “… source of variation lies in the phonology proper, more specifically in the theory of domain sensitivity …’ (Selkirk, 2011: 14).

Though the phonological processes of assimilation, deletion and harmony in Standard Yoruba have been exhaustively discussed in Oyelaran (1971, 1973), Awobuluyi (1982), Akinlabi (1984), Owolabi (1989); Awoyale (1995), Pulleyblank (1986, 2000, 2008), Anchargeli and Pulleyblank (1994), Allen et al. (2013) among others, this present work will go a step further in two major important ways: it will go into some of its dialects to shed more light on the claim that what operates in assimilation and deletion of features cannot be properly understood independent of each other and their prosodic domain. It will extend its searchlight to vowel harmony to show that though, it is a phonological process; the domain is bigger than the ordinary word/ morpheme at least in some of the dialects of study. It therefore proposes a prosodic word and claims that in this domain, the verb serves as the right edge and harmony spreads is leftward. As to the size of domain, I am going to show that the ATR harmony operates between a subject pronoun (and never, with a noun), negative marker, tense and modals that may occur between it and the verb, even though, as it will be shown, some of such elements are opaque to harmony.
ASSIMILATION AND DELETION

Awoyale (1995) discusses how the unresolved issues surrounding the way the phonological rules of vowel deletion and assimilation in Standard Yoruba may be resolved through interaction of both phonology and syntax and also establishes the complementary roles of the two rules, i.e. the application of the two occurring in mutually exclusive environments. This, according to the researcher, provides a distinctive approach from previous attempts as contained in the works of Oyelaran (1972), Ola (1989) and Bamgbosse (1990), among others. The major submission of Awoyale shows that the operation of these two phonological processes cannot be fully accounted for without assuming some syntactic motivation. Awoyale concludes that, though elision and assimilation are rules of phonology, their application is of serious syntactic consequence. We are going to test this claim to see the extent to which syntax has impact in the phonology in dialects of study. I begin with a review of Awoyale (1995).

A Review of Awoyale (1995)

According to Awoyale, there are five domains where these two rules apply as shown in (1).

**DOMAIN A** (between a set of grammatical formatives (e.g. complementisers, yes-no question markers, disjunctions, etc.) and the head noun of the lexical subject noun phrase);

The observation made in Awoyale’s work is that in this domain, only deletion takes place. The examples in (1)-(6) are drawn from the cited work.

(1) (a) Ngbó Adé lọ  > ighb’Adé lọ  ‘confirm, did Adé go?’
    (b) àni Adé lọ  > àl’Adé lọ  ‘yes, Adé went’

The only exception to the application of assimilation is with the grammatical particle and the third person subject pronoun where deletion has to take place due to what Awòbúlúyì (1992) calls obedience to Homophony Avoidance Principle.

(2) (a) Ñjé o lọ  > Ñjóo lọ  ‘did you go?’  Assimilation
    (b) Ñjé ó lọ  > Ñj’ó lọ  ‘did s/he go?’  Deletion
We turn to Domain B.

**DOMAIN B** (between any head noun and its nominal possessive qualifier in a noun phrase, wherever the noun phrase occurs in a sentence);

For the syntactic Domain B, i.e. cases where two nouns are juxtaposed, the phonological process that takes place in many cases according to Awoyale is assimilation. Two of the examples from the work are cited in (3).

(3) (a) owó ẹmu  >  owé ẹmu  ‘palm-wine’s money’  
(b) owó epe  >  owé epe  ‘oil money’

However, there are exceptions to this rule even in the seeming same syntactic domain as contained in the following examples

(4) (a) ọgá ogun  >  ọgá’gun  ‘a warlord’ (bkwd)  
(b) ọmọ adié  >  ọmọ’díẹ  ‘a chick’

In the syntactic Domain C, as shown below, only deletion rule is allowed to apply. This according to Awoyale *comes in as a word formation rule to create new nouns out of the sequence, thus providing the grammatical motivation for the change of strategy (Awoyale 1995: 5).

**DOMAIN C** (between verb-like elements [prepositions, genitive marker, Focus marker, etc.] and the head noun of a noun phrase, which together form what we call prepositional phrase):

(5). (a) sí okó  >  s’óko  ‘to the farm’  
(b) ní Adó  >  l’Ádó  ‘at Ado’

There is no exception to the rule here as in all contexts as contained in Awoyale’s Domain D, only deletion rule applies. The next context is between the verb and its object noun.

**DOMAIN D** (between a verb and the head noun of a noun phrase which is the argument of the verb in a verb phrase):

(6) (a) gbé ẹsẹ  >  gbé’sẹ  ‘dies’  
(b) gbé ẹsẹ  >  gbé’sẹ  ‘lifts a foot’

(b) fẹ ọwọ  >  fẹ’wọ  ‘be a thief’  
(b) fẹ ọwọ  >  fẹ’wọ  ‘desires a hand’
The interesting thing about deletion in this context is that the vowel that deletion depends on is the intended meaning between regular and idioms. When the vowel of verb deletes, we get the regular meaning. By contrast, when the vowel of noun deletes, the meaning obtained is idiomatic (cf. Oyelaran, 1971).

**DOMAIN E** (between the subject position and the short forms of either the negative ọ, or the future marker ọ̀).^4^ Of the five domains in Awoyale's work, this present study will focus on Domains A and E only. The first is the domain of grammatical formatives where deletion takes place in Standard Yorùbá. There are two reasons for the choice of those two domains. First, these two domains present intriguing data from some dialects that are not at par with Standard Yorùbá. As such, it will be interesting to note why this is so. Second, from the sampled data that I collected, there is no significant difference with what is reported in the work under review. One significant thing about variants of a language is that much as there are many things that such variants share together (similarities), there must be some other things that they do not share (differences). Those things that they share are what qualify them to be variants of the same language; whereas, those things that they do not share are what qualify them to be distinct dialects. Such similarities and differences can be at phonetic, phonological, morphological/lexical, syntactic and even semantic levels.

**Deletion versus Assimilation**

I start my presentation of a full data set in Awoyale's domain “A” and from there I proceed to the presentation of parallel data in the selected dialects. In all the examples in (7), only deletion rule applies and it is the vowel of the grammatical formative particles that deletes.

(7) *Standard Yoruba Deletion*

(a) Ngbọ̀ Adé lo > ngb’Adé lo  "confirm, did Ade go?"
(b) àní Adé lo > ál’Adé lo  "yes, Ade went"
(c) asè Adé lo > às’Adé lo  "so, Ade went!?!"
(d) ̀ábi Adé lo > ab’Adé lo  "did Ade go?"
(e) ́njè Adé lo > ́nj’Adé lo  "did Ade go?"
(f) sé Adé lo > s’Ádè lo  "did Ade go?"
(g) tí Adé lo > t’Ádé lo  "that/which Ade went"
(h) bí Adé lọ > b'Adé lọ  'if Ade went'
(i) pé Adé lọ > p'Adé lọ  'that Ade went'
(j) kí Adé lọ > k'Adé lọ  'that Ade should go'
(k) ni Adé lọ > l'Adé lọ  'Focus Ade went'

(Awoyale, 1995: 2).

It can be said without any contradiction that vowel deletion takes place in the prosodic domain that will be defined below where the vowel of the noun acts as the trigger. I turn to Mòbà case. First is data presentation. The observation made in respect of Mòbà examples in (9) is that the phonetic features of the second vowel, i.e. the vowel of the noun that assimilate to the preceding vowel i.e. the vowel of the grammatical formatives. Awoyale refers to this as forward assimilation.

(8) Mòbà Assimilation

(a) ūngbọ Adé lọ > ūngbáadé yún  'confirm, did Ade go?'
(b) Úwí Adé lọ > Úwáadé lọ  'yes, Ade went'
(c) āsé Adé lọ > āsáade lọ  'so, Ade went!!?'
(d) ìbi Adé lọ > ìbáadé lọ  'did Ade go?'
(e) sé Adé lọ > sáadé lọ  'did Ade go?'
(f) tin ni Adé lọ > tin ni Adé lọ  'that/which Ade went'

The case in Ìkúrè is similar to the case of Mòbà as only assimilation rule applies:

(9) Ìkúrè Assimilation

(a) Ngbọ Adé lọ > nga'Adé lọ  'confirm, did Ade go?'
(b) Ìbí Adé lọ > ìbí Adé lọ  'yes, Ade went'
(c) āsé Adé lọ > āsáAdé lọ  'so, Ade went!!?'
(d) ìbi Adé lọ > ìbáAdé lọ  'did Ade go?'
(e) sì Adé lọ  sáAdé lọ  'did Ade go?'
(f) kí Adé lọ  káAdé lọ  'that/which Ade went'
Of particular interest are (8e) and (8g) where neither assimilation nor deletion is allowed. For (8e), Mòbà does not have ńji as a question marker (Ajiboye, 2012). The case of (8g) is also interesting because the domain of application has been eroded by the presence of an additional element ‘ńi’.

In sum, what we witness in the case of Mòbà and Àkúré tends to suggest that assimilation may be a stage in the process that leads to deletion in Standard Yorùbá. As In the next set of examples, I show that what holds of Mòbà and Àkúré dialects is in sharp contrast with Ìgbòminà and Owé. I begin with a presentation of data in Ìgbòminà.

(10) Ìgbòminà

(a) Mò wí Adé lọ > Mò w’Ádé dé 'confirm, did Ade go?'
(b) ìnì Adé lọ > àl’Ádé lọ 'yes, Ade went'
(c) ìsé Adé lọ > às’Áde lọ 'so, Ade went!?'
(d) abí Adé lọ > àb’Ádé lọ 'did Ade go?'
(e) ńjé Adé lọ > ńj’Ádé lọ 'did Ade go?'
(f) sè Adé lọ > s’Ádé lọ 'did Ade go?'
(g) tí Adé lọ > t’Ádé lọ 'that/which Ade went'
(h) bì Adé lọ > b’Ádé lọ 'if Ade went'
(i) wi Adé lọ > w’Ádé lọ 'that Ade went'
(j) ki Adé lọ > k’Ádé lọ 'that Ade should go'
(k) ni Adé lọ > l’Ádé lọ 'Focus Ade went'

Thus, unlike Mòbà and Àkúré, where only assimilation rule applies, it is the rule of deletion that holds in Ìgbòminà. As such, there is nothing that is significantly different in Ìgbòminà and Standard Yorùbá as in all the examples above, only deletion takes place. Finally, we need to examine Owé dialect. One can observe that the dialect is not different from Standard Yoruba and Ìgbòminà in the sense that only deletion is allowed in this domain.

(11) Owé dialect

(a) ngbó Adé rè > ngb’Ádé rè 'confirm, did Ade go?'
(b) áhí Adé rè > áh’Ádé rè 'yes, Ade went'
| (c)  asé Adé lo  | > as'Áde rè  | 'so, Ade went!/?' |
| (d)  àbí Adé lo  | > àb'Ádé rè  | 'did Ade go?'    |
| (e)  njé Adé lo  | > nj'Ádé rè  | 'did Ade go?'    |
| (f)  sé Adé lo  | > s'Ádé rè  | 'did Ade go?'    |
| (g)  ngha Adé lo | > ngh'Ádé rè | 'that/which Ade went' |
| (h)  Adé lo   | > b'Ádé rè  | 'if Ade went'    |
| (i)  pé Adé lo  | > p'Ádé rè  | 'that Ade went'  |
| (j)  ki Adé lo  | > k'Ádé rè  | 'that Ade should go' |
| (k)  ni Adé lo  | > l'Ádé rè  | 'Focus Ade went' |

Apart from the domains above, there are other domains where only assimilation is allowed in some of the dialects of study. One such domain is between the 3sg subject and the negative morpheme. Note that, in Standard Yoruba, the 3sg subject of negative sentences is not pronounced.

(12) (a)  ó dé  's/he arrived'  Ø kò dé  's/he did not arrive'  
         3sg arrive             3sg Neg arrive

(b)  ó lo  's/he went'  Ø kò lo  's/he did not go'  
         3sg go             3sg Neg go

In Ìgbómínà, first, and more interesting is the fact that the third person subject pronoun is overtly present when occurring in negative sentences. Not only that the pronoun is pronounced, it assimilates features of the negative morpheme but first, the consonant of the negative morpheme must be deleted.

(13) Ìgbómínà:
(a)  ó dé  's/he arrived'  é è dé  's/he did not arrive'  
         3sg arrive             3sg Neg arrive

(b)  ó lo  's/he went'  é è lo  's/he did not go'  
         3sg go             3sg Neg go

In Àkúrè however, neither assimilation nor deletion takes place. Instead, in this context, vowel harmony rule applies. For Owé, the story is the same as neither assimilation nor deletion takes place in this domain. Instead, what we have as an expression of negation is tonal polarity.
Assimilation, Deletion and Vowel Harmony

(14) Ọwé
    (a) Ọ dè 's/he arrived'
    (b) Ọ dè 'They arrived'
    Yà dè 's/he did not arrive'
    Ọ dè 'They did not arrive'

In Mòbà, as I show in Section 3, the 3sg pronoun is not pronounced and assimilation is disallowed. However, the dialect permits harmony rule to take place between negative and the 3sg pronoun. This will be discussed in the next section.

Vowel Harmony

Like the case of deletion and assimilation the case involving vowel harmony or vowel co-occurrence restriction in Yorùbá and its dialects at the phonological level is well documented in the literature (Awobuluyi 1967, Bamgbose 1967, Oyelaran 1970, Akinlabi and Oyebade 1987, Pulleyblank 1988, 1996; Owolabi 1989, Archangeli and Pulleyblank 1994 among others). Specifically, while the works of Awobuluyi, Bamgbose, Oyelaran, Owolabi and Archangeli and Pulleyblank cited above focus on Standard Yoruba, Bamišile (1986), Ajiboye (1991), Perkins (2004), Przedziacki (2006) examine vowel harmony in Standard Yorùbá and selected dialects of Yorùbá such as Èkìti, Ìfè, Mòbà and Àkúrè. Yet, there are others that carry out a cross linguistic study of vowel harmony as in the case of Orie's (2003) study of Yorùbá and Ebira. One indisputable fact is that their coverage and analyses vary. Our concern is not to repeat what these scholars have done. Quite the contrary, the task before us is to look at the operation of harmony in prosodic word, drawing evidence from dialects of Yorùbá. We begin with harmony within words.

Word Domain Harmony

The well established fact in the literature relating to Standard Yorùbá is that there is no full harmony (Awobuluyi, 1967; Bamgbose, 1967; Oyelaran, 1973). On the identification of the harmonic features in cases where partial harmony is observed according to Allen et al (2013), there are arguments that harmonic vowel classes in Yoruba are distinguished by height features, as well as conflicting arguments that they involve a tongue-root feature. The cited work, using ultrasound recordings of
Yoruba data 'demonstrates the significance of tongue-root position but not tongue height, in articulatorily distinguishing the two harmonic vowel classes' (Allen et al 2013: 3). Thus, following Hudu's (2010: 136) 'Direct Mapping Hypothesis', Allen et al claim that the Yoruba vowel system maintains a phonological contrast between [+ATR] and [-ATR] vowels. In this present study, I go along the lines of Allen et al. The example in (15) supports this claim:

(15) [ATR]
(a-i) edë 'snake' (a-ii) òkê 'hill/mountain'
(a-iii) òkëtè 'rodent' (a-iv) ekòlò 'earthworm'

[RTR]
(b-i) edëjò 'tase' (b-ii) òsè 'week'
(b-iii) òròòdò 'mud' (b-iv) ògèdè 'banana'

I use this evidence to argue that the phonological feature which distinguishes the vowels [e o] from [e o] is [ATR] feature, not a height feature (cf. Allen et al, 2013).

So, talking seriously about vowel harmony within words in Standard Yoruba, only the mid vowels are involved. Much as this writer can tell, the issue of vowel harmony beyond word level has not been properly documented in the literature (cf. Ajiboye, 1991). However, for the purpose of this paper, I will assume the two harmonic classes in (16) for our discussion.

(16) Yoruba Harmonic Classes.
+ATR
i i u u e e ò ò
-ATR
ò a a
Prosodic Domain Harmony

This section provides evidence from dialects of Yorùbá which establishes that vowel harmony has a domain of application. I refer to this as the prosodic domain structure of the sentence. I define my prosodic word for vowel harmony as words or grammatical formatives that fall between the subject and the verb which are the following:

(i) Subject clitic, HTS and verb,
(ii) Subject clitic, negation and verb,
(iii) Subject clitic, future marker and verb,
(iv) Subject clitic, aspectual element and verb,
(v) Subject clitic, Modals and verb.

The fact revealed here shows that the restriction of harmony to a domain smaller than the prosodic word in Standard Yorùbá is an innovation.

I put forward the following assumptions about vowel harmony in the Yorùbá syntax:

(a) The VERB is pervasive for the application of harmony, and
(b) The direction of harmony is always LEFTWARD up to the subject NP IFF it is a short pronoun.
(c) Any grammatical word that has an opposite value to the phonetic feature of the verb is opaque to vowel harmony and prohibits harmony spread.

In what follows, we test these assumptions in the selected dialects.

Subject clitic, tense and verb

The Yorùbá subject clitics are six in number as shown in (18).

<table>
<thead>
<tr>
<th>Clitic Type</th>
<th>Singular</th>
<th>Plural</th>
</tr>
</thead>
<tbody>
<tr>
<td>1st Person</td>
<td>mo/n</td>
<td>a</td>
</tr>
<tr>
<td>2nd Person</td>
<td>o</td>
<td>e</td>
</tr>
<tr>
<td>3rd Person</td>
<td>ò10</td>
<td>wọn</td>
</tr>
</tbody>
</table>

Though, there is a slight difference from dialect to dialect on the form of these clitics, such difference has no consequence with respect to how the rule of harmony operates in these speech forms.

Subject clitic, non-future tense and verb

One prosodic domain where vowel harmony across words manifests
itself is in syntactic structure with subject clitic, the high toned syllable (henceforth referred to as HTS) which here in is assumed to be the non-future morpheme and the verb. Let me start by recognising the well-established fact in the literature that the HTS morpheme has restriction in terms of distribution. Precisely, it is established that it only occurs with referential nouns and pronominals but not with clitic pronoun (Oyelaran 1970, Deichaine 1993: 481)\textsuperscript{11}, hence the ungrammaticality of (18c).

(18) (a) Êbün \textit{un dé}  
\hspace{2em} Ebun HTS arrive  
\hspace{2em} ‘Ebun arrived’

(b) Êmi \textit{in dé}  
\hspace{2em} 1sg HTS arrive  
\hspace{2em} ‘I arrived’

(c) *Mó \textit{ó dé}  
\hspace{2em} 1sg HTS arrive

However, the non-occurrence of HTS is not correct with facts of Mòbà.

(19) (a) \textit{Mi in dé}  
\hspace{2em} ‘I arrive/arrived’

(b) \textit{Ó ó dé}  
\hspace{2em} ‘You arrive/arrived’

(c) \textit{É (é) dé}  
\hspace{2em} ‘s/he arrives/arrived’

(d) \textit{Á á dé}  
\hspace{2em} ‘We arrive/arrived’

(e) \textit{In in dé}  
\hspace{2em} ‘You (plural) arrive/arrived’

(f) \textit{An án dé}  
\hspace{2em} ‘They arrive/arrived’

In order to prove that the HTS in (19) is a separate morpheme which is overt and which must be pronounced in Mòbà, consider the following where the negative marker is present.

(20) (a) \textit{Mi ké dé}  
\hspace{2em} ‘I did not arrive’

(b) \textit{Ó ké dé}  
\hspace{2em} ‘You did not arrive’

(c) \textit{Ø ké dé}  
\hspace{2em} ‘s/he did not arrive’

(d) \textit{A ké dé}  
\hspace{2em} ‘We did not arrive’

(e) \textit{In ké dé}  
\hspace{2em} ‘You (plural) did not’

(f) \textit{An ké dé}  
\hspace{2em} ‘They did not arrive’

Note that in Standard Yorùbá, whenever this negative element is present
whether with referential nouns or pronominals, the HTS syllable is absent. The exact opposite is what we find in Mòbà.

(21) *(a) Èbùn ké dé b. Èmi ké dé
Ebun NEG arrive 1sg NEG arrive
‘Ebun did not arrive’ ‘I did not arrive’

Our concern, having shown that the HTS is present with clitics in Mòbà is to show how its phonetic form varies in the prosodic word. We first consider the instance where the subject is the first person singular clitic occurring with verb.

(22)  
<table>
<thead>
<tr>
<th>1sg</th>
<th>HTS</th>
<th>verb</th>
</tr>
</thead>
<tbody>
<tr>
<td>(a)</td>
<td>Mè⁸</td>
<td>dé</td>
</tr>
<tr>
<td>(b)</td>
<td>Mè</td>
<td>ró</td>
</tr>
<tr>
<td>(c)</td>
<td>Mè</td>
<td>kì</td>
</tr>
<tr>
<td>(d)</td>
<td>Mè</td>
<td>tú</td>
</tr>
<tr>
<td>(e)</td>
<td>Mè</td>
<td>jè</td>
</tr>
<tr>
<td>(f)</td>
<td>Mè</td>
<td>kò</td>
</tr>
<tr>
<td>(g)</td>
<td>Mè</td>
<td>tà</td>
</tr>
</tbody>
</table>

It is clear from the examples in (22) that both the HTS and the first person singular pronoun have two forms; the reason is due to the phonetic feature of the vowel of the verb. The same is witnessed with the 3sg clitic, though the HTS does not surface there ‘since its phonetic effect is vacuous’ (Deichaine 1993: 481).

(23) (a) é dé
(b) é lò

However, with other clitics, the harmony rule does not operate. Instead, it is the rule of assimilation that pervades between the subject clitic and the HTS.

(24)  
<table>
<thead>
<tr>
<th>2sg</th>
<th>HTS</th>
<th>verb</th>
</tr>
</thead>
<tbody>
<tr>
<td>(a)</td>
<td>Ò</td>
<td>rí</td>
</tr>
<tr>
<td>(b)</td>
<td>Ò</td>
<td>sì</td>
</tr>
</tbody>
</table>

(25)  
<table>
<thead>
<tr>
<th>1pl</th>
<th>HTS</th>
<th>verb</th>
</tr>
</thead>
<tbody>
<tr>
<td>(a)</td>
<td>À</td>
<td>rí</td>
</tr>
<tr>
<td>(b)</td>
<td>À</td>
<td>sè</td>
</tr>
</tbody>
</table>
The fact reported here shows that when the vowel of the monosyllabic verb has the [+ATR] feature, the phonetic feature of the HTS and the subject NP, if it is 1sg or 3sg clitic will be [+ATR]. By contrast, if the vowel of the monosyllabic verb has [-ATR] phonetic the HTS and the subject NP (1sg or 3sg clitic) will also take the [-ATR] feature value. Observe that in (24) and (25), vowel harmony rule is blocked simply because of obedience to wellformedness condition. In order words, if the harmony rule applies in the dialect, this will yield ungrammatical forms.

(26) 2sg HTS verb (27) 1pl HTS verb
(a) O é rí (a) À é rí
'You saw' 'We saw'
(b) O é sè (b) À é sè
'You sinned' 'We sinned'

The case of Òkûrê is not exactly the same as that of Môbà. In particular, the HTS does not show up with subject clitics. Despite this, like the case of Môbà, vowel harmony is also in place as demonstrated in the following examples. Of particular interest is the data in (28) and (29). Assuming that the negative morpheme is “e” which has the [+ATR] value, we observe that this form is retained when the vowel of the verb is [+ATR]. As one can see, the harmony rule is sensitive to singular pronoun only.

(28) (a) Mé è dé 'I did not arrive'
(b) We è kó 'You did not gather'
(c) È è kú 's/he did not die
(d) À a rú 'We did not carry'
(e) In in jó 'You (plural) did not dance'
(f) Án àn se 'They did not do

But the stage changes when the verb has a vowel of the opposite [-ATR] value.

(29) (a) Mé è je 'I did not eat'
(b) We è tà 'You did not sell'
(c) É è ko 's/he did not write
Assimilation, Deletion and Vowel Harmony

(d)  Á  à  fé  'We do not want
(e)  Ìn  in  ò  'You (plural) did urinate
(f)  Án  àn  sè  'They did not commit sin

Looking at it on the face value, one may be tempted to assume that what operates in (28) and (29) is assimilation if the vowel is excluded. However, taking the whole prosodic domain as an entity, such opinion does not hold. We look at yet another prosodic domain.

Subject clitic, future tense and verb

What with the subject clitic, future tense and the verb? Whereas in Standard Yorùbá, the future markers are realised as yòó, òó, ò, or màà; in Ìgbòminà, its form is é, in Mòbà, it is realised as éé and in Àkúrè and Owé, it is realised as á.

(30). (a)  Adé é rí ó bó bá dé  Ìgbòminà
(b)  Adé ée rí ó bë bá dé  Mòbà
(c)  Adé á rí ó kó bá dé  Àkúrè
(d)  Adé á tí wọ́ ì bá dé  Owé
 'Ade will see you when he comes'

We observe that only in Mòbà but not in Àkúrè, Ìgbòminà and Owé, the rule of vowel harmony is applicable between this element and the verb even up to the subject NP if it is a clitic as the following examples show.

(31)

<table>
<thead>
<tr>
<th>(31)</th>
<th>Mòbà</th>
<th>Àkúrè</th>
<th>Ìgbòminà</th>
<th>Owé</th>
</tr>
</thead>
<tbody>
<tr>
<td>(a)</td>
<td>(i)</td>
<td>Adei ée kí</td>
<td>Adé á ké</td>
<td>Adé é kí</td>
</tr>
<tr>
<td></td>
<td></td>
<td>'Ade will cry'</td>
<td>'Ade will cry'</td>
<td>'Ade will cry'</td>
</tr>
<tr>
<td>(ii)</td>
<td></td>
<td>Òjó ée kú</td>
<td>Òjó á kú</td>
<td>Òjó é kú</td>
</tr>
<tr>
<td></td>
<td></td>
<td>'Ojó will die'</td>
<td>'Ojo will die'</td>
<td>'Ojo will die'</td>
</tr>
<tr>
<td>(iii)</td>
<td></td>
<td>Ábá ée kó</td>
<td>Ábá á kó</td>
<td>Baba é kó</td>
</tr>
<tr>
<td></td>
<td></td>
<td>'Father will gather'</td>
<td>'Father will gather'</td>
<td></td>
</tr>
<tr>
<td>(iv)</td>
<td></td>
<td>Èbè ée dé</td>
<td>Èbè á dé</td>
<td>Èbè é dé</td>
</tr>
<tr>
<td></td>
<td></td>
<td>'Ebe will arrive'</td>
<td>'Ebe will arrive'</td>
<td>'Ebe will arrive'</td>
</tr>
</tbody>
</table>
The fact reported here also shows that when the vowel of the monosyllabic verb has the [ + ATR] feature, the phonetic feature of the future tense and the subject NP, if a clitic of the aforementioned types will all share [ + ATR] feature in Mòbà but not in any of the other dialects. By contrast, if the vowel of the monosyllabic verb has [ - ATR] feature, the HTS and the subject NP which are vowels only will also share the [ - ATR] feature. We turn to the prosodic domain of negation.

Verb and Negative marker kò, ki i

Two of the negative markers in Standard Yorùbá are "kò"13 and "ki"; the latter occurs only with the habitual particle "i". When a positive sentence is turned negative with these elements, their phonetic forms remain unchanged.

(33) (a-i) Adè kò dé (a-ii) Adè kò je
NP Neg arrive NP Neg eat
'Adè did not arrive' 'Adè did not eat'

(b-i) Adè ki ì dé ilé ni ìskò
NP Neg HAB arrive house in time
'Adè does not get home in time'
(b-ii) Adé. kì i je iresi  
NP  Neg  HAB  eat  rice  
'Ade does not eat rice'

Recall that in Ògbómìnà and Òwè, only assimilation is allowed in this phonological domain structure. But in Mòbà and Òkùrè, the case is not the same. Let us take the case of Mòbà where this negative marker has two variants as opposed to one form in SY and Ògbómìnà. The two variants are “kè” [kè] and “kè” [kè] and it is the rule of vowel harmony that determines which of the two variants that will surface in a given syntactic context. When the vowel(s) of the verb share the feature [+ATR], the form of the variant [kè] is the choice, whereas when the vowel(s) of the verb share the feature [-ATR] “kè” [kè] is the choice. Consider the following examples:

(34) Mòbà  
(a) Adé [kè ri] ajá  
A. neg see dog  
'Ade did not see a dog/the dog (in question)  
(b) Adé [kè ra] ajá  
A. Neg buy dog  
'Ade did not buy a dog/the dog (in question)  

As one can see from the examples above, “kè” is the choice in (34a) because the verb “ri” has vowel “i” which shares the same phonetic feature of [+ATR] with “e”. On the other hand, “kè” is the choice in (34b) because the verb “ra” has vowel “a” which shares the same phonetic feature of [-ATR] with “e”. This much supports the claim that vowel harmony at least in some dialects of Yorùbá operates beyond word level. With the introduction of modals pàpà (35a-i) and têtè (35a-ii), we continue to see the effect of vowel harmony between the two variants of the negative morpheme whereas in Standard Yorùbá (35b), such variant is not witnessed as the negative marker, kò remains the same with both modal words.

(35) (a) (i) Adé [kè] pàpà ra ajá  
Mòbà  
'Ade neg still buys dog  
'Ade still didn’t buy a/some dog(s)’
(ii) Adé [kè] tètè rí ajá.
Ade neg still buy dog
’Ade did not see the dog in good time’

(b) Adé kó pàpà/tètè rí ajá Standard Yorùbá
’Ade did not see the dog after all/early enough’

In Ògbomínlà and Àkúré, the rule of vowel harmony is not obeyed in the same phonological domain, i.e. between the verb, the negative morpheme and even when the modal elements are introduced. Rather, what we witness is assimilation between the last vowel of the subject NP, the HTS* and the negative marker.

(36) Àkúré
(a-i) Èbùn ún ún [rì] ajá
E. HTS neg see dog
’Èbùn did not see a dog/the dog’

(a-ii) Èbùn ún ún tètè/pàpà rí] ajá

(b-i) Èbùn ún ún ra] ajá
A. HTS Neg buy dog
’Ade did not buy a/the dog’

(b-ii) Èbùn ún ún ra tètè/pàpà ra] ajá

(37) Ògbomínlà
(a-i) Adé [èè rì] ajá
(a-ii) Adé [èè tètè/pàpà rí] ajá
A. neg see dog
’Ade did not see a dog/the dog’

(b-i) Adé [èè ra] ajá
(b-ii) Adé [èè tètè/pàpà ra] ajá
A. Neg buy dog
’Ade did not buy a dog/the dog’

But the situation is not the same when the subject is a pronoun, at least in Àkúré. Consider the following examples:

(38) Àkúré
(a) ò dè ‘s/he arrived’
3sg arrive
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(b) ́lọ́ ́ s/he went
    3sg go

c) ́é ́ dé ́ s/he did not arrive
    3sg Neg arrive
d) ́é ́ lọ́ ́ s/he did not go
    3sg Neg go

Going by the examples in (38), it is right to admit that there is vowel harmony controlled by the verb as witnessed, first, between the verb and the subject pronoun in (38a) and (38b) and between the verb, the negative marker and the subject pronoun as in (38c) and (38d). However, with the latter, apart from the harmony rule, there is also the involvement of assimilation rule. On the other hand, Ìgbòminà continues to be deviant to the rule of harmony in those contexts. But when the negative marker is introduced as in (39c and d), like Àkúrè, Ìgbòminà also allows assimilation to take place between the 3sg subject pronoun and the negative marker.

(39) Ìgbòminà
    (a) ́ó dé́ ́ s/he arrived
        3sg arrive
    (b) ́ó lọ́ ́ s/he went
        3sg go
    (c) ́é ́ dé ́ s/he did not arrive
        3sg Neg arrive
    (d) ́é ́ lọ́ ́ s/he did not go
        3sg Neg go

For the negative marker “ki” and the habitual marker “i”, in Mòbà, the form of the two elements are “kè” and “i” respectively and we observe that vowel harmony rule does not apply between the verb, the habitual marker and the subject clitic.

(40) (a) ́á kè ́ i ́ dé ́ u tè ́ ní ójúmọmọ
        1pl Neg HAB arrive house in daytime
        ‘We do not arrive home in daytime’

(b) ́á kè ́ i ́ lọ́ ́ ́ s i o kó lọ́jọ́ ́ ó sè
        1pl Neg HAB go to farm on-day Sunday
        ‘We do not go to farm on a Sunday’
If vowel harmony were to apply in (40), we expect (40b) to be rendered as “a kẹ́ i lọ”, but this is not so. In Àkúrè, there is no evidence of vowel harmony in this environment. What we continue to witness is assimilation between 1plural subject pronoun and the negative.

(41) (a) á è pàpà dé > á à pàpà dé
1pl Neg MOD arrive
‘We still did not arrive’
(b) á è kúkú lọ > á à kúkú lọ
1pl Neg MOD go
‘We did not even go’

For explanation on why harmony does not take place in this environment, see section 4 below.

HARMONY AND OPAcity THE CASE OF ASPECTS, HABITUAL AND MODALS

Opacity in phonology is a case involving resistance of certain segments in harmonising with features of a neighbouring segment and at the same time preventing such feature from spreading on to other segments before or after them depending on the domain of location of such features as well as direction of spread within the prosodic word. Such segments that are opaque are also referred to as blockers (Pulleyblank, 1996; Ajiboye and Pulleyblank, 2012).

In what follows it will be demonstrated that certain grammatical categories constitute themselves as blockers or opacity to harmony in Móbà. The categories of such grammatical entities that are opaque to harmony are the aspect marker ti, the progressive marker “i”, and the modals kúkú and pàpà. First to be considered is the sentence that has ti, the aspectual perfect marker. In (42), where the data split into two with respect to the harmonic feature of the verb, the first set in (42a-d) has [-ATR] feature and the second set (42e-g) have [-ATR] feature. As it is clearly shown in the examples, harmony rule is not obeyed. This is traceable to the intervening aspect marker ti which has vowel /i/. I treat this as as a blocker to harmony.

(42) 1sg HTS ASP verb OBJECT
(a) Mi in ti ní Adé ‘I have seen Adei’
(b) Mi in ti rù 'erù 'I have carried the load'
(c) Mi in ti dé 'I have arrived'
(d) Mi in ti kò usu 'I have gathered the yams'
(e) Mi in ti sè 'I have sinned'
(f) Mi in ti kò letà 'I have written the letter'
(g) Mi in ti pa ejò 'I have killed a snake'

The same blockage is witnessed in cases involving negation. Recall that it has been earlier established that the negation has two forms, namely kè and kə the choice of which is determined by the quality of the vowel of the verb. That this harmonic rule is blocked can only be due to the intervening habitual marker “f”. As one can see in (44), the negation morpheme is kè throughout.

(44) 1sg NEG HAB verb
(a) Mi kè í rí 'I do not use to see'
(b) Mi kè í rù 'I do not use to carry'
(c) Mi kè í dé 'I do not use to arrive'
(d) Mi kè í kò 'I do not use to carry'
(e) Mi kè í sè 'I do not use to sin'
(f) Mi kè í kò 'I do not use to write'
(g) Mi kè í pa 'I do not use to kill'

The same blockage is manifested by the modal elements kúkú (45), pàpà (46) and yò (46), the former predictably not surprising because of the presence of “u” a neutral vowel. What is indeed surprising are the cases of pàpà and yò which have a vowel that is [-ATR].

(45) 1sg HITS MODAL verb Object
(a) Mi in kúkú ki 'I even shouted'
(b) Mi in kúkú ru èrù 'I even carried the load'
(c) Mi in kúkú dé 'I even arrived'
(d) Mi in kúkú kó usu
   'I even gathered yams'

(c) Mi in kúkú jẹ'
   'I even ate'

(f) Mi in kúkú kọ
   'I even wrote'

(g) Mi in kúkú tà
   'I even sold'

(46) 1sg. HTS MODAL Verb Object

(a) Mi in pàpà kí
    'I still shouted'

(b) Mi in pàpà ru ěrù
    'I still carried the load'

(c) Mi in pàpà dé
    'I still arrived'

(d) Mi in pàpà kó usu
    'I still gathered yams'

(e) Mi in pàpà jẹ ọriṣi
    'I still ate rice'

(f) Mi in pàpà kọ ọwé
    'I still wrote a letter'

(g) Mi in pàpà tà usu
    'I still sold yams'

(47) 1sg. HTS MODAL Verb Object

(a) Mi in yó kí
    'I can shout'

(b) Mi in yó ru usu
    'I can carry yams'

(c) Mi in yó dl
    'I can arrive'
The summary of discussion on the data presented above is as follows. The phonological processes discussed in this paper, though, occur in the syntax, they have a domain which is identified as the prosodic word. In appropriate context, the harmony rule is obligatory in Móbà and to a large extent in Ìkúlé but neither in Ìgbóminà nor Òwé. In addition, a prosodic domain that has a lexical word or grammatical formative which bears an opaque vowel will not only resist harmony but will prevent the harmonic rule from spreading pass it. On the case of pápá which has ‘a’, a vowel that participates in vowel harmony, the explanation for being a blocker is in two fold. Borrowing from Ajibaye and Pulleyblank (2012), it may be the case that both high and low vowels are opaque to tongue root harmony across words in these dialects. This will be a weak argument as yó has a mid-low vowel, which actively participates in harmonic process. Yet, like “à”, “ó” also resists harmony spread. The other explanation may be that both modal, habitual and aspect are grammatical categories that disallow vowel harmony rule. This is where the issue of syntax comes to play a role. This argument is more plausible considering the data set presented above.

CONCLUSION

From the discussions so far, it is further established that one area of dialect variation is in phonological domain. In Awoyale’s (1995) dottain “A”, where deletion takes place in Standard Yorùbá, Òwé and Ìgbóminà, only assimilation is allowed in Móbà and Ìkúlé. As for vowel harmony, this is more robust in Móbà and Ìkúlé. In both dialects, it is established that the verb serves as the root and the direction of harmony spread is leftward. As to the phonological domain of application, it is observed
that the [ATr] harmony can take place between the subject NP and the verb with possible intervening elements such as the HTS and negation but not with the habitual marker "i" and modal. Even with this, there are conditions that must be met. First, concerning the subject NP, it must be a subject pronoun and not a noun. Second, even with pronouns in the subject position, only 1sg and 3sg pronouns are sensitive to harmony in Mòbà whereas, in Äkùré, all the singular pronouns are sensitive to harmony. Third, an intervening element between the subject NP and the verb cannot be an aspect or a modal since they constitute opacity to harmony spread.

**ENDNOTES**

1. This paper emanates from an ongoing research from the fellowship award by the American Council of Learned Societies on African Humanities Programme. The researcher is 2009 Fellow. Thanks to Yusuf Fadairo, Deji Medubi and Mrs Babatunde for supplying data on Äkùré, Owé and Igbómíná dialects respectively. The researcher is the major source of data on Mòbà dialect. In addition, special thank goes to Yusuf Fadairo for collecting data on Owé, for proofreading the manuscript as well for his useful comments on the draft. The dialects of study were selected at random, two from Yorùbá central and two from Northwest Yorùbá. Thanks to the two anonymous reviewers one of who referred me to Selkirk's works which I quote extensively in the review of my work.

2. In essence, I do not dispute the fact that there is certainly a demarcation in spite of the fact of interconnectivity. Thus we uphold the existence of relationship and interdependence of units in linguistics.

3. Unfortunately, Awoyale's work does not contain any example on disjunctions.

4. Unfortunately, Awoyale did not give any example of this domain.

5. Nevertheless, Äkùré is slightly different from Mòbà for the lexical variants of 'that' in example (8g) and the presence of ni between ti and the subject noun in Mòbà which blocks assimilation.

6. Observe that in (8b), neither assimilation nor deletion takes place. From our finding, this is due to the fact that ani-sentence on its own is emphatic. As such, in Äkùré, the way this is expressed, since the morpheme ani is not present is to make the 1sg clitic emphatic.

7. Ajibóye (2006) accounts for the position of complementiser in Mòbà as either featuring 'double complementiser' in which case it is pronounced as ti ni (i-a) or 'null' in which case it is not pronounced as shown in (i-b):
(i) (a) Ṣé ni e pè ò (b) Ṣé ò pè ò 'I that/who called you'

8. See section on vowel harmony.
9. This fact is contained in virtually all the works cited above. In particular, the behaviour of [a] is less than perfect as it co-occurs though in a non-restricted way with mid-vowels and even all other vowels. Consider: adé, crown, òdò, 'medicine gourd', òpò, 'bag', òrò, 'a chieftaincy title' and akin, 'valiant', àkún, 'bead', àti, 'and', àkò, 'scabbard', eja, 'fish', àká, 'barn'.
10. There is disagreement on whether or not the 3rd person singular pronoun in the subject position has phonological content. However, in this paper, I assume it does and it is realised as [ó]. For divergent views, see Awobuluyi (2006) among others.
11. What remain to be understood are the syntactic properties that inform such a constraint?
12. The 1sg is also realised as mi, a form that is not susceptible to vowel harmony.
13. Note that in Standard Yorùbá, with the negative marker kò and ki, the 3sg subject clitic pronoun is not pronounced. The fact reported here is in contrast with that of Akúrè where the 3sg is pronounced in the environment of a negative morpheme:

(i) (a) ò kò dé (b) ò kò je
NP Neg arrive NP Neg eat
's/he did not arrive' 's/he did not eat'

14. The presence of the HTS with the negative marker in Akúrè is puzzling as it is never present in Standard Yorùbá and other dialects of study. Further research is required to ascertain the status of the HTS whether it is to be analysed as a separate entity or as part of the negative morpheme.

REFERENCES


Assimilation, Deletion and Vowel Harmony


