ON PHONOLOGICAL PROCESSES OF DIALECT OF YORÙBÁ, SPOKEN NASALIZATION, VOWEL HARMONY AND DELETION IN IFÈ IN BANTÈ REGION OF BENIN REPUBLIC

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Abstract
This work is a preliminary phonological study of Ifè dialect of the Yorùbá language, spoken in diaspora, in Bantè Region of Benin Republic. The dialect is one of the Yorùbá dialects in diaspora which is yet to be comprehensively linguistically researched. Using the framework of generative phonology, the study has investigated the phonological processes of nasalization, vowel harmony, vowel deletion and consonant deletion, with a view to establishing a systematic theory of phonology for the dialect. Data for this work were collected from five informants (Ifè native speakers) in Bantè using Ibadan wordlist of four hundred basic items, with the aid of tape recorders. Both progressive and regressive types of nasal assimilation are revealed in the study. There are also phonemic nasal vowels in Ifè. Partial vowel harmony operates in this dialect. Like standard Yorùbá, Ifè has seven oral vowels and these vowels can be divided into two harmonizing Sets: Set A, produced with Advanced Tongue Root, with the feature [+ATR] and Set B, produced with Retracted Tongue Root, with the feature [-ATR]. Furthermore, V₁ or V₂ vowel deletion occurs in noun-noun and verb phrase constructions as a result of juxtaposition of vowels across morpheme boundary. In Ifè also, there is consonant deletion, especially deletion of the alveolar approximant [r]. This deletion is usually triggered by harmonizing vowel sets. This dialect, although a Yorùbá dialect spoken in diaspora, exhibits some phonological similarities with standard Yorùbá. The dialect is traced as one of the descendants of Yorùbá language and geneologically classified under Edekiri of the Yoruboid group of languages. A systematic theory of phonology has been established for Ifè dialect in this work.

Keywords: Ifè, Benin Republic, phonology, nasalization, vowel harmony, deletion.

Conventions
[ ] phonetic brackets
/ / phonemic slash
~ nasalization/nasal diacritics
´ high tone
ˏ low tone
unmarked mid tone
+ binary sign which shows the presence of a feature
- binary sign which shows the absence of a feature
V vowel
C consonant
→ transformational arrow
V-V intervocically
Ø null
/ boundary
* used to signify false data
-V before vowel
V- after vowel
V₁ final vowel of the word before the boundary
V₂ initial vowel of the word after the boundary or collocating word
CV consonant and vowel
This paper discusses three common phonological processes operational in Ifè dialect of Yorùbá, spoken in Banté region of Benin Republic. These are nasalization, vowel harmony and deletion.

**Phonological Processes**

Phonological processes are those changes which segments undergo, resulting in various phonetic realizations of the underlying phonological segments. Schane (1973) says:

When morphemes are combined to form words, the segments of neighbouring morphemes become juxtaposed and sometimes undergo change.

When this happens, some of the juxtaposed segments under various conditions may undergo changes. Some of these changes may be affected by the adjacent segments, while others may be affected by the environments in which the segments occur. These changes are called 'Sound change or Assimilation'. For example, in Ifè dialect, the phoneme /n/ changes to [l] when it occurs intervocally and especially when the alveolar nasal /n/ occurs before a back vowel. Consider the following examples:

(i)

1a. ifa + nî + ɔla /ifanɔla/ [ifalɔla] ‘person’s name’
1b. ogu + nî + ɔla /ogunɔla/ [ogulɔla] ‘someone’s name’
1c. oní + ɛda /olέda/ [olέda] ‘creator’
1d. oní + aɗá /oláɗá/ [oláɗá] ‘dog owner’

In examples (1a and 1b) above that the derivation of the phonetic form of each word occurs in hierarchical stages. The first stage is the deletion of the front vowel /i/ in (i). The second stage is the nasalization of [ɔ] in (ii) from each adjacent nasal segment respectively. To derive the phonetic form in (iii), the nasal consonant is denasalized and transformed to [l] which also makes the /ɔ/ in (ii) to lose it nasality and become oral vowel. Furthermore, in examples (1c and d) like in standard Yorùbá, /n/ changes to [l] after the deletion of the front vowel /i/ before a mid vowel (i.e. a nasal becomes lateral) if it is followed by any vowel other than /i/ which is front vowel. It should be noted that in Ifè dialect, a vowel does not assimilate totally the features of a following vowel across morpheme boundary unlike the standard Yorùbá, especially when the two vowels are separated by a lateral [l]. Consider the following examples in standard Yorùbá:

2a. onî + ɔmge /onm ɔge/ [ɔlmɔge] ‘damsel’
2b. onî + ɛkpo /one ɛkpo/ [olékpo] ‘palm oil seller’

However, Ifè unlike the standard Yorùbá examples (2a and b) above does not totally assimilate the feature of the vowel across morpheme boundary in order to conform with the rule of vowel harmony as presented in Ifè examples (1c and d) above.

Thus, we can propose a rule that

\[
\begin{array}{c}
+\text{cons} \\
+\text{nas}
\end{array}
\rightarrow
\begin{array}{c}
+\text{cons} \\
-\text{nas}
\end{array}
\rightarrow
\begin{array}{c}
+\text{syllable} \\
+\text{back} \\
+\text{mid}
\end{array}
\]

Phonological processes could be divided into two, which are:

1. Assimilation Process
2. Dissimilation Process

**Assimilation Process**

This is the most frequent or common of all the processes. The modification to which sounds are subjected when in contact with others is Assimilation process. Yul-Ifode (2008: 82)1 says:

Assimilation is a modification of sound in such a way that are made similar to one or more sounds in their environment. This way, the sounds become more alike, or even identical.

This means that the act of a sound to become more like another by acquiring one or more of its features is called assimilation. In assimilation, there is one sound which causes another to change,
this is known as the conditioning or assimilating sound, while that which is affected by the change is known as the assimilated sound.

There are various types of assimilation process in languages, but the focus of this work is on nasalization and vowel harmony. The choice of nasalization and vowel harmony is because they are highly productive in Ìfè dialect

**Nasalization**

Nasalization is a common type of assimilation which could either be regressive or progressive depending on the language. This is a process where a non-nasal segment acquires the nasality of an adjacent nasal segment. An oral vowel may be nasalized if it occurs before or after a nasal consonant. Yul-Ifode (2008: 55) says:

> Vowel has been described as oral sound during the production of which the velum is normally raised and the airstream made to pass through the mouth only. A lowering of the velum during the production of a vowel automatically adds a nasal quality.

In some languages (English for example), consonants are the only phonemic nasal segments while vowels are always phonetically oral. Often, when such a vowel occurs after a nasal consonant, the vowel takes on the nasal quality of the consonant, i.e. it becomes phonetically nasalized. dialect is of different types. However, nasalization in Ìfè There are instances whereby every vowel that occurs after a nasal consonant is nasalized. That is, a nasalized vowel acquires nasality as a result of proximity to a nasal consonant. This is a progressive type of nasalization. Consider the following examples:

3a. /ìbinû/ ‘jealousy’
b. /àmû/ ‘drinking pot’
c. /isimî/ ‘rest’
d. /àmu/ ‘breast’
e. /ònû/ ‘path’
f. /àni/ ‘mat’
g. /ìmû/ ‘nose’
h. /ìmênû/ ‘fire’
i. /ìmû/ ‘soul’

There are also instances of nasalized vowels that do not occur in the environment of any nasal segment. Consider the following examples:

4a. /amàrà¡/ ‘blood’
b. /ojàjì/ ‘breast’
c. /àràjì/ ‘star’
d. /òjì/ ‘bee’
e. /èjàjì/ ‘meat’
f. /èkpéjì/ ‘testicle’
g. /ègbéjì/ ‘ribs’

Some scholars, precisely Hyman (1972) and Williamson (1973) in their papers titled "Nasal and Nasalization in Kwa" and "More on Nasal and Nasalization in Kwa" respectively, argued that nasalized vowels such as those shown above in examples (4a - g), historically have each an abstract nasalized segment which is represented as [N], and after the abstract entity has nasalized the vowel, it is deleted. Thus, the result is an independent nasalized vowel or an inherent vowel. One can therefore propose that the inherent or independent nasalized vowel in Ìfè is derived as shown below:

5. \( \varepsilon k\bar{p}_\circ \rightarrow /k\bar{p}_\circ [\varepsilon k\bar{p}_\circ] \) ‘testicle’

The following derivation is also plausible:

6. \( \varepsilon k\bar{p}_\circ \rightarrow /k\bar{p}_\circ [\varepsilon k\bar{p}_\circ] \) ‘testicle’

Note that the same analysis is applicable to all the items in examples (4a - g). Also, the above nasalized vowels are analyzed as independent phonemes in contrast with their oral counterparts. This is illustrated below:

7a. /kù/ ‘die’
b. /kù̀/ ‘full’
c. /òtù/ ‘saliva’
d. /ɪtɔ/ ‘lap’
e. /rɪ/ ‘sink’
f. /rə/ ‘work’

From the above examples, we can explain nasalization of vowels as contextual variants of basically oral vowels.

Nasalization in Ifè dialect is phonemic. The six vowels presented in examples (7a and b) /u/ and /u/), (7c and d) /l/ and /l/) and (7e and f) /i/ and /i/, respectively are phonemes. /ɪ / and /l/) for instance, are said to be in contrast since the difference between them is significant. If we were to ignore this difference, we would not be able to differentiate between the examples in (7a-f), for instance.

Apart from a nasal vowel being a phoneme dialect like in standard Yorùbá, there is also consonant nasalization. In Ifè Some oral consonants, precisely approximants are nasalized when they occur in proximity or are of the same syllable with nasal vowels. These are shown in the following examples:

8a. /ɪrʊ̯/) [ɪrʊ̯] ‘hair’
b. /ɛdɪkɔ/ [ɛdɪkɔ] ‘fingernail’
c. /awɔ/ [awɔ] ‘alligator’
d. /jɔ/ [jɔ] ‘bee’
e. /ɛrɔ/ [ɛrɔ] ‘meat’
f. /jìjì/ [jìjì] ‘praise’
g. /iwɔ/ [iwɔ] ‘tongue’

From the above examples (8a - g), it is observed that the nasalized vowels are the ones conditioning the preceding consonants - the approximants [j, w, r] to be nasalized. These are cases of regressive assimilation when consonants assimilate the nasal feature of the following vowels. Another type of regressive nasalization in Ifè dialect is the type commonly known as homorganic nasal assimilation. This involves the assimilation of a nasal consonant to the feature of place of articulation of a following consonant. When two consonants occur contiguously, or in a sequence of a nasal plus another consonant, the nasal consonant takes on the place of articulation feature value of the following consonant.

In Ifè dialect, the prefix which marks the progressive aspect becomes homorganic with the following consonant. The morph /n/ marks progressive form while the morph /n/ marks the first person singular form. The high and low tones are constrastive here. Consider the following examples:

9a. /fɔ/ ‘wash’~~~~~~~~mɔ ‘washing’
    atʃɔ ‘cloth’
    ñ wɔŋɔ̯ atʃɔ .
    ‘I am washing cloth’.

b. kɔ ‘write’~~~~~~~~ŋkɔ ‘writing’
    iwé ‘book’
    ñ wà ŋkɔ iwé.
    ‘I am writing book’.

c. ta ‘sell’~~~~~~~~nɔ ‘selling’
    iwé ‘book’
    ñ wà nɔ iwé.
    ‘I am selling book’.

d. tɔ ‘urinate’~~~~~~~~ntɔ ‘urinating’
    ñ wà ntɔ
    ‘I am urinating’.

e. bɔ ‘arrive’~~~~~~~~mɔbà ‘coming’
    ñ bà
    ‘I am coming’.

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All the above examples of nasal homorganicity (see the arrows) show regressive, contiguous partial assimilation.

Sometimes, this nasal homorganicity can occur within a sequence of a word and can be called intra-morphemic nasality. Consider the following examples:

10a. /än̩tɔ/ [än̩tɔ] ‘chair’
b. /kɛŋkɛtɛ/ [kɛŋkɛtɛ] ‘donkey’
c. /lɛŋɡa/ [laaŋɡa] ‘jaw’
d. /tanbo/ [tambo] ‘pepper’

**Vowel Harmony in Ifè Dialect**

Linguists have proposed various definitions of the term vowel harmony. It is a phonological phenomenon in which the vowels in a language are divided into two broad grades, such that each grade harmonizes with themselves and with each other in the grade. A grade is a vowel, each of which occurs with every other vowel in the grade including itself within some grammatically defined unit. This unit may be morpheme, word or sentence. Crystal (1992: 168) says:

> Vowel harmony is a type of assimilation which takes place when vowel comes to share certain features with contrastive vowels elsewhere in a word or phrase.

It imposes constraints in the string of vowels occurring in a word, thus allowing or disallowing certain sets of words in successive syllable within a word or sometimes across word boundaries. Vowel harmony can be partial or complete. When vowels of a language fall into two or more harmonic sets without any overlap, that is, where vowels in one harmonic set are not found in any other set, such a language is said to operate a full vowel harmony system. Also, we talk of partial vowel harmony system when a language falls into two or more harmonic sets with overlaps, that is, the same vowels are found in the different harmonic sets. Thus, Ifè dialect is a typical example of partial vowel harmony system.

Ifè dialect like standard Yorùbá has seven oral vowels, these vowels can be divided into two harmonizing sets, Set A, and Set B. Set A vowels are produced with Advanced Tongue Root which is ascribed the feature [+ATR] while set B vowels are produced with Retracted Tongue Root which is ascribed the feature [-ATR] as shown below:

<table>
<thead>
<tr>
<th>Set A</th>
<th>Set B</th>
</tr>
</thead>
<tbody>
<tr>
<td>i</td>
<td>i</td>
</tr>
<tr>
<td>u</td>
<td>u</td>
</tr>
<tr>
<td>e</td>
<td>o</td>
</tr>
<tr>
<td>a</td>
<td>a</td>
</tr>
</tbody>
</table>

Although, it is claimed that tongue root position controls many vowel harmony systems, there is no substantial claim that the main phonetic control of the vowel harmony is the movement of the tongue root. This tongue root mechanism is mostly combined with vertical larynx displacements and sometimes with movement of the back pharyngeal wall. In this case, what a speaker tries to accomplish is variation of the pharyngeal size so that Set A vowels are produced with a relatively large pharynx by advancing the root of the tongue beyond the 'normal' position for that vowel, by lowering the larynx. On the other hand, the relatively small pharynx of the Set B vowels are produced by retracting the root of the tongue beyond its 'normal' position by a relatively high larynx, Harrison (1989). Below are some examples of vowel harmony in Ifè dialect:

11. [+ATR]

a. éwo ‘head’
b. iřù ‘hair’
c. èfú ‘intestine’
d. èkulé ‘rubbish dump’
e. éwọlè ‘root’
f. àtò ‘gorilla’
g. èkúté ‘mouse’
h. jèke ‘sugar cane’
12. [-ATR]
   a. ìbì ‘buttocks’
   b. gègè ‘throat’
   c. bààle ‘duke’
   d. èmètì ‘youth’
   e. àtì ‘river’
   f. àjàjù ‘butterfly’
   g. ìbè ‘soup’
   h. ìmò ‘child’

Also, in harmonizing vowels, there are some vowels that violate the association of vowels. When this happens, a neutral vowel must mediate between them and this occurs only in roots larger than VCV. In a VCV structure, vowels /e, o/ do not co-occur with vowels /E, //. Therefore, vowels that are common to both sets are called neutral vowels. They are neutral to harmony rules. are /i, u, a/. Neutral vowels • Neutral vowels in Ifè may be opaque and block harmonic process or they may be transparent and not affect them. Examples are shown below:

13a. ègídì ‘lady’
    b. agémò ‘chameleon’
    c. ìgídì ‘tortoise’
    d. agínò ‘firewood’
    e. ìrùkò ‘goat’
    f. àjígbò ‘old person’
    g. ìjímà ‘pineapple’

From the examples (13a - g), one important point to note is that [+ATR] vowels /e, o/ and [-ATR] vowels /E, / in examples (11 and 12) are restricted to a set respectively and do not co-occur with each other. However, these same sets of vowels in example (13) co-occur with a neutral vowel mediating between or around them. This occurs only in roots that are larger than VCV.

**Dissimilation**

This is the opposite of assimilation. It can as well be called non-assimilation process. While assimilation is basically motivated by ease of articulation and makes sounds more similar in their environments, dissimilation makes them more different and distinct from other sounds in their environment. Thus, it is a process whereby sounds become less similar to their surrounding segments. Bertil Malmberg (1963:62) says:

>The assimilative tendency is, so to speak, a negative force in the life of languages. It tends to reduce the difference between phonemes as much as possible.

Dissimilation sometimes serves to avoid an annoying repetition of two identical phonemes. The conditioning factor may be juxtaposition which undergoes change, or it may be operating at a distance.

**Deletion Process**

This is another common process in Ifè dialect. It is a process that allows for the elimination of a segment. It involves the loss of a segment under some language – specifically imposed conditions. According to Oyebade (2007) in his contribution to the book titled ‘Basic Linguistics’, edited by Ore Yusuf: this involves consonant and vowels, deletion is a process that occurs in allegro speech. The process may affect a vowel or a consonant. Segments that are heard in the deliberate speech in isolation may get lost in rapid speech. An alternation of a structure of a syllable or in sequence of consonants and vowels occurring in the string of word or across morpheme boundary may be caused by this process.

Ifè dialect exhibits both consonant (especially the deletion of Ifè the approximant [r]) and vowel deletion. On consonant deletion, the deletion of the approximant [r] at the intervocalic position gives rise to a VV sequence in dialect. Consider the examples below: Ifè

14a. /kìkò̀rò/ → [kìkò̀] ‘bitter’
    b. /eworo/ → [ewoo] ‘rabbit’
c. /kòkòrò/   [kòkò]  ‘guinea worm’  

d. /èkekeré/  [èkekeré]  ‘scorpion’  

e. /kabɔɔrɔ/  [kabɔɔrɔ]  ‘ring’  

The examples in (14a - e) illustrate [r] deletion between two identical oral vowels. Furthermore, [r] deletion in Ifè dialect also occurs between two unidentical vowels, as shown in examples  (15a - g) below:

15a. /agbora/  [agboa]  ‘strength’  

b. /akparo/  [àkpao]  ‘partridge’  

c. /odɔju/  [odɔju]  ‘sunshine’  

d. /itʃɔra/  [itʃɔa]  ‘vigilant’  

e. /àdura/  [àdua]  ‘prayer’  

f. /ɔlɔru/  [ɔlɔu]  ‘God’  

g. /arù/  [au]  ‘luggage’  

From the above illustration in (15a - g), it is observed that both oral and nasal vowels co-occur in the deletion process. This is unlike the cases in examples (14a - e) where only oral vowels co-occur in the deletion process. Also, the vowels in examples (15a - g) co-occur with the vowels of the same vowel harmony set. In other words, vowel harmony is in operation in this process. Only vowels produced with retracted tongue root are involved.

It is important to note that the [r] deletion is inapplicable between non-identical vowels and between non-tongue root retracted vowels. This is shown in the asterisked examples (16a - d) below:

16a. /akɔri/  #[akɔi]  ‘singer’  

b. /olidáàri/  #[olidáài]  ‘jester’  

c. /íru/  #[íu]  ‘hair’  

d. /àrirá/  #[àiá]  ‘thunder’  

The following rule can therefore be proposed for the consonant deletion in Ifè dialect:

\[
C \rightarrow \emptyset /V-V
\]

However, Oyebade (2004:69) says:

Vowels are usually deleted when two or more vowels occur across the morpheme boundary. When such an occurrence is introduced by morphological processes, the language may choose to drop the first of the contiguous vowels.

The rule in vowel deletion requires that vowels be adjacent to each other. In other words, vowels have to be in juxtaposition in a way that one vowel ends a word and the other begins the following word. Vowel deletion is a common phonological process in Ifè dialect. It applies in slow deliberate speech as well as in normal conversational speech. In any utterance, a number of vowels may be deleted but it is done in a systematic way, based on morpho-syntactic considerations, so that communication is sustained. In this discussion, \( V_1 \) represents the final vowel of the first noun or verb while \( V_2 \) represents the initial vowel of the second noun in a noun-noun or noun in a verb-noun collocation, respectively. Examples of this process in noun-noun and verb-noun collocations in Ifè dialect are shown below:

**Noun + Noun**

17a. /étí + odò/  [étídò]  ‘riverine’  

b. /E₂ + okò/  [E₂ko]  ‘wild animal’  

c. /adʒá + okò/  [adʒáko]  ‘hyena’  

~

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In noun-noun collocation deletion, (example 17a - e) above, it is observed that the V₂ vowels are deleted. Also, V₂ vowel dialect verb phrases. Examples of these are shown: deletion takes place in Ifè in (18a- e) below:

18. Verb Noun

a. /bɛ/ + /ɛtʃu/ → [bɛtʃu] ‘peel yam’
   ‘peel’ ‘yam’

b. /gbà/ + /isimí/ → gbàsimí ‘take rest’
   ‘take’ ‘rest’

c. /wa/ + /ɔkɔ/ → wakɔ ‘drive car’
   ‘drive’ ‘car’

d. /ʃa/ + /oko/ → ʃako ‘cut grass’
   ‘cut’ ‘grass’

e. /ké/ + /igi/ → kégi ‘cut tree’
   ‘cut’ ‘tree’

Nevertheless, instances of V₁ deletion also abound in dialect verb phrases. These are shown in examples (19a- e) below: Ifè

19. Verb Noun

a. /fa/ + /ewo/ → fewo ‘scrape hair’
   ‘scrape’ ‘head’

b. /ka/ + /eso/ → keso ‘pluck fruit’
   ‘pluck’ ‘fruit’

c. /ʃe/ + /olè/ → ʃolè ‘stealing’
   ‘do’ ‘thief’

d. /mu/ + /omi/ → momi ‘drink water’
   ‘drink’ ‘water’

e. /kpá/ + /edʒɔ/ → kpeʤɔ ‘kill snake’
   ‘kill’ ‘snake’

From the examples (18a - e) and (19a - e) above, it is observed that the deletion of V₂ and V₁ respectively is a natural phenomenon in that nothing can be accounted for that triggered the deletion.
of the vowels. Thus, there is no specific rule that determines which vowel should be deleted in both \( V_1 \) and positions in Ifè \( V_2 \) dialect verb phrases.

dialect which \( \theta \) There is also a case of vowel deletion in Ifè makes the dialect to appear as if it operates consonant clusters. Consider the following examples:

20a /ògiri / \[ògri \] ‘wall’

b. /kukurú/ \[kukrú\] ‘short’

c. /okiri / \[okri \] ‘man’

d. /sukiri/ \[sukri \] ‘sugar’

e. /èkikirí/ \[èkikri\] ‘ant’

From examples (20a - e) above, it is observed that high front vowels get deleted after velar plosives [k] and [g]. This process is quite different from the standard Yorùbá in that the standard Yorùbá syllable structure does not permit consonant clusters. Although Ifè dialect syllable structure does not naturally permit consonant clusters, it does that through vowel deletion. In other words, consonant cluster is only phonetically realized in Ifè. Thus the following rule format can be proposed for this process:

\[ \begin{align*}
  &\text{+(syl)} \rightarrow \emptyset \\
  &\text{+(high)} \\
\end{align*} \]

Conclusion and Recommendation

Ifè dialect of Yorùbá, spoken in Banté region of Benin Republic is one of the Yorùbá dialects in diaspora which is yet to be comprehensively linguistically researched. It is hoped that this work will serve as a point of reference for those that may want to study this dialect. It is also important to note that this study is by no means a complete work on the phonology of Ifè dialect. Rather, it serves as a stimulant for further linguistic research in this dialect.

References


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